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"There is no education without relation!"

A Grounded Theory Study on Integration of Education for Sustainable Development in Teacher Education in Uganda

Dissertation to obtain the academic degree Doctor of Philosophy (Dr. Phil.) at the Faculty of Cultural Studies, Institute for Educational Science at Paderborn University

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Chapter1 Introduction

The concept of education for sustainable development has occupied a central place among the contentious contemporary issues of discussion. This can be attributed to the attention given to sustainable development due to the numerous challenges emerging worldwide as a result of unsustainable development. In this regard, ESD emerges from a worldview which perceives the survival, continued progress, and maintenance of the human community as dependent on the continued health and viability of the earth's life support systems, (Bell & Cheung, 2008: 4). The awareness about the unsustainability of human lifestyle at many levels, that is, environment, economic and social levels and the power of education to transform human conduct and society are key drivers of ESD, (Badjanova & Drelinga, 2014: 2932; Pisani, 2006: 85). As early as in the 18th and 19th century the link between education and sustainability had been considered. For instance, philosophers, writers and educationists such as Rousseau, Froebel, Goethe, Dewey, Montessori, Steiner and others had already published important studies on the integral link between education and environment, (Jucker & Mathar, 2015: 15; Leicht et al., 2018: 8; York, 2009: iii). These educationists postulated that education should include a focus on the environment. For instance, Rousseau termed it a "return to nature" and Froebel "the development of both natural and environmental abilities of a student," (Barrable, 2019: 2; Lähde, 2008: 133).

In more recent times, education was recognized as instrumental in addressing sustainability issues in the United Nations Conference on the human environment in Stockholm in 1972, (Shobeiri & Meiboudi, 2014: 230; Wu & Shen, 2016: 633). In 1975 the Belgrade Charter collaborated that environmental challenges could better be mitigated through education, (Blumstein & Saylan, 2014: 974). This was re-echoed further by the 1977 first global conference by UNESCO on environmental education in Tbilisi, Georgia, (Michelsen & Wells, 2017: 8; UNESCO, 1977: 5). These conferences and all other subsequent United Nations and other major international conferences have been stressing that education is crucial for sustainable development because it creates awareness, develops attitudes, competences, acquiring knowledge and skills and enabling participation in a sustainable manner. In particular, United Nations Decade for ESD (DESD) from 2005-2014 sought to integrate principles, goals, values, practices, knowledge, skills, attitudes, behavior and lifestyles inherent in sustainable development into all aspects of education right from nursery to university level in order to combat sustainable development challenges within and among countries, (Aceska & Nikoloski, 2017: 3; UNESCO MGIEP, 2017: 28; Vladimirova & Blanc,

2015: 10; Bangay, 2016: 5; Kimberly et al., 2010: 4). Currently, ESD is at the centre of the Agenda 2030 for sustainable development. The Agenda 2030 for Sustainable Development is a plan of action for people, planet, prosperity, peace and partnerships to "Ensure that no one is left behind," (United Nations, 2012: 3). It was during this period of DESD that the process to integrate ESD into teacher education started, (Hopkins & McKeown, 2014: 4; Leicht et al., 2018: 55; Schreiber & Siege, 2016: 34). It was acknowledged that "no country can be better than the quality of its education system and no education system can be better than the quality of its teachers," (The Uganda Ministry of Education and Sports, 2010: iv; UK Department for Education, 2010: 3). In other words, the quality of any education system is significantly dependent on the quality of teachers in that system, (Ming & Guan, 2006: 1). This implies that the quality of teachers determines the quality of education, that is, a good teacher training is a condition for the development of quality education and achievement of sustainable development goals.

Teacher educators and teacher education institutions (TEIs) are key instruments in building knowledge, skills, awareness, values and sustainable action necessary to achieve the goals of sustainable development, (African Union Commission, 2017: 15; Keleş, 2017: 171; Leicht et al., 2018: 55; UNESCO, 2016: 15). They are also key change agents in promotion, implementation and advancement of ESD, (Hopkins & McKeown, 2014: 4; Schreiber & Siege, 2016: 34). Various studies had been conducted on the integration of ESD into teacher Education. All these studies had, however, left some contextual, methodological, and research gaps which this study sought to investigate. For instance, the studies that were conducted in Uganda focused on assessment of unit based sustainability in areas of curriculum, research and scholarship activities, and community engagement. None of them had a specific focus on teacher educators and how they could integrate ESD in teaching and learning activities in teacher education institutions. Yet, several studies which have been conducted on the integration of ESD into teacher education revealed that ESD integration is highly dependent on teacher educators in teacher education institutions, (Aceska and Nikoloski 2017: 1). This implies that teacher educators are key players for the integration of ESD in teacher education, therefore, investigating the ways in which they can integrate ESD in teaching and learning activities is inevitable. The failure to integrate ESD in teacher education affects the entire education system, since teachers at different levels of the education system are trained in teacher education institutions.

This study focused specifically on teacher educators and how they could integrate ESD in teaching and learning activities. The main research question in this regard was, how could

teacher educators integrate ESD in teaching and learning activities in teacher education? The data were collected from four public universities specifically in faculties of teacher education. The four universities were chosen because they have the highest number of students and teaching staff in teacher education in the country. The huge number of teaching staff in these institutions offered the researcher an opportunity to have access to the participants, especially at the time when the country was still in lockdown due to the Covid-19 pandemic. These institutions are public and they receive support from the government which puts them in a privileged position to integrate ESD compared to privately owned institutions. The researcher would like to make it clear at this point for the purpose of the readers of this dissertation who might not be used to grounded theory method (GTM) to research that GTM shapes the actual structure of the written dissertation in a manner which other research methodologies typically do not. For instance, instead of following the traditional linear research process which begins with the introduction, literature review, methodology, data collection, data presentation and analysis, discussion and conclusion model, the structure of this dissertation is informed by GTM which appears to deviate from the traditional structures. The first chapter presents the introduction of the study. The second chapter presents the sensitizing concepts, whereas the third chapter presents the methodology employed by the study. The fourth chapter presents and explains the emergent grounded theory established by this study and chapter five presents the general conclusion which highlights the key tenets of the emergent grounded theory, the recommendations, suggestions for further research, contributions and limitations of the study.

Chapter2 Conceptual Background

This chapter presents the sensitizing concepts for this study. The notion of sensitizing concepts was coined by sociologist Herbert Blumer, the founder of symbolic interactionism to mean general abstract notions which lack precise reference and have no bench marks which allow a clean-cut identification of a specific instance, but merely suggest directions along which to look, (Bryant & Charmaz, 2020: 84). Unlike definitive concepts which clearly prescribe what to see and be followed, sensitizing concepts merely suggest a general sense of reference and helpful directions along which to look in approaching empirical instances, (Blumer, 1969: 148). In this case, sensitizing concepts are starting points in thinking about a topic about which the social researcher has no definite idea, (Stebbins, 2003: 812; Charmaz, 2014: 505). Sensitizing concepts give, therefore, researchers initial but tentative ideas to start an inquiry, not to end it and questions to raise about their topics, (Charmaz, 2014: 84). In the case of this study, the study started by examining sensitizing concepts about sustainable development, education for sustainable development, academic tribes and territories, and teacher education. The concept sustainable development was considered because it gave rise to the field of education for sustainable development, the research area of interest for this study. The concept of academic tribes and territories was examined because teacher education, the study context of this study offers various academic disciplines. According to Tony Becher (1989) (cf. 2.4), academic disciplines are tribes and territories of higher education institutions. On one hand, as a matter of policy, pre/in-service teachers have to specialize at least in two teaching disciplines in teacher education, and on the other hand, education for sustainable development cannot exhaustively be explained by any single discipline. These sensitizing concepts were used as points of departure to launch this study but the researcher remained as open as possible to whatever the empirical data revealed as explained in sections 3.5.4 and 3.7.3 and presented in chapter four of this study. This approach of grounded theory is contrary to operationalization of established concepts in a theory as accurately as possible which lock the research process into the original concepts, (Bryant & Charmaz, 2020: 535). In brief, this chapter presents the sensitizing concepts (conceptual background) examined before data collection was conducted. These concepts also help to situate this study in a broader context of existing body of knowledge and current debate.

2.1 Sustainable Development (SD)

According to UNESCO (2018b: 34) a good way to understand education for sustainable development (ESD) is to first understand the concept of sustainable development. This is because the concept of ESD cannot be properly understood or appreciated without understanding and appreciating the concept of SD from which it emerged. Secondly, sustainability constitutes the basis and ultimate goal of ESD. Therefore, before the concept of ESD is examined, the genesis, objectives, the three pillars of SD, SD in the context of Uganda and some hurdles of SD in Uganda will be presented.

2.1.1 The Theoretical Genesis of Sustainable Development

The concept of SD has attracted the attention of various scholars almost of all disciplines and indigenous cultures for centuries, (Agbedahin, 2019: 2). Consequently, several scholars have attempted to trace the genesis and also make sense of the concept of SD both in scholarly literature and other fora. For instance, Gupta (2017: 2) argues that the concept of SD is as old as human existence since the idea of peaceful co-existence among humans and also with nature has been part and parcel of human existence since time immemorial. On the other hand, Durana, et al. (2015b: 813) place the starting point of the concept of SD from the global ecological crisis ignited by the industrial revolution around 1800s. They postulated that SD was conceived as a solution to the ecological crisis caused by intense industrial exploitation of resources and the continuous degradation of the environment. From their point of view, SD is a deliberate move to reconcile society, economy and environmental aspects since the triad affect and depend on each other in one way or another. While Coriddi (2008: 49) postulated that the concept of SD emerged as a response to the great impact human society imposes on the natural environment.

However, scholars such as Waas et al. (2011: 1639) considered SD as generally a new development model that emerged during the late 20th century. They argued that soon after World War II countries all over the world concentrated on the reconstruction program and development process of their nations which had been affected by the war. The main focus was on economic development through increased output. This resulted into tremendous economic and social transformation such as large scale industrialization, technological advancement, growth of mega cities, improved standards of living and so on. However, this was achieved at the expense of massive exploitation of natural resources leading to enormous loss of forests, extinction of animal and plant species, depletion of the ozone layer, air, water and soil pollution, loss of marine life and biodiversity to mention but a few. These dire effects of

uncontrolled economic prosperity have forced people to reexamine their perceptions, basic assumptions and understanding of economic development in relation to the overall order and survival of life on the planet earth.

Therefore, in 1950s, 60s, 70s and 80s various concerned groups both nationally and internationally emerged and advocated for protection of the ecosystem and biodiversity, (Gupta, 2017: 2; Klarin, 2018: 71; Leal Filho et al., 2017: 369; Purvis et al., 2019: 3). Since then, various major United Nations international conferences have vehemently discussed the issue of SD. For instance, in 1951 the International Union for the Nature Conservation published the first report on the global environment, which called for a reconciliation between economy and ecology, (Durana, et al. 2015b: 813). In 1968 UNESCO organized the first intergovernmental conference, which aimed at reconciling environment and development, (Klarin, 2018: 71; Leal Filho et al., 2017: 369). In 1972, the United Nations organized a Conference on the Human Environment (UNCHE) held in Stockholm. It focused on creating increased global environmental awareness. In 1979 UN organized the first world climate conference in Geneva Switzerland to address the issue of air pollution and creation of a climate change research and program monitoring, (United Nations, 1979; Klarin, 2018: 71). In 1980 UN came up with the World Conservation Strategy (WCS) which focused on achieving sustainable development through the conservation of living resources. Furthermore, in 1983 UN established the World Commission on Environment and Development (WCED) chaired by Gro Harlem Brundtland, who was the Prime Minister of Norway. The objective of this commission was to reexamine the critical environment and development challenges on the planet and formulate realistic proposals to mitigate them so that human progress can be balanced with environmental concerns. This Commission published its report in 1987 titled "Our Common Future". In this Report, SD was defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs, (United Nations, 1988; Paul, 2008: 577). This definition highlights the fact that as much as development is necessary for attainment of human needs and improved quality of life, it must not happen by depleting the capacity of the natural environment to meet the needs of present and future generation, (Coriddi, 2008: 49).

This definition of SD is of critical importance to the evolution of the definition and understanding of the concept of SD. It gives the essence of SD as the process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change should be all in harmony and for enhancement of both the current and future human needs and aspirations, (Salunkhe, 2003:

72). The findings of this Commission paved way for the United Nations Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992, (United Nations, 1992; Grober, 2007: 7). The UNCED developed an action plan for the 21st century known as Agenda 21 which was adopted by all the 178 United Nations (UN) member states that attended the assembly as the global action plan for SD, (United Nations, 1992; Bell & Cheung, 2008: 2; Hughes, 1997: 8). The Agenda 21 called upon all UN member states to take action on every area in which people impact on the environment. Whilst in 1997, 160 countries signed the Kyoto Protocol advocating for reduction of toxic emissions by 5.2%, with commencement in 2005. In 2000 United Nations organized the Millennium Summit (2000) that came up with eight millennium development goals with specific targets to be achieved by 2015, (United Nations, 2000b; The International Institute for Sustainable Development, 2012: 8). In the same year 2000, the Earth Charter was launched as a declaration of basic ethical principles for building a just, sustainable and peaceful global society in the 21st century, (United Nations, 2000; Waas et al., 2011: 1642). In 2002, UN organized a World Summit on SD in Johannesburg, South Africa as a follow-up of the resolutions passed in Rio de Janeiro in 1992, (Hens & Nath, 2003: 8; United Nations, 2002: 2). It was in this conference that concrete measures were formulated to implement the Agenda 21 and the decade for ESD from 2005-2015 was also declared. In 2012, United Nations organized another Conference on Sustainable Development (UNCSD) in Rio de Janeiro to assess the achievement and failures on the implementation process of SD and also address new emerging challenges of SD, (United Nations, 2012b: 1). In September 2015 at the 70th Session of the UN General Assembly, 193 member states adopted a new global development agenda, "Transforming Our World: The Agenda 2030 for Sustainable Development" to encompass and even go beyond the unfinished business of the millennium development goals for a period of 15 years, (Fukuda-parr, 2018: 2; Group, 2016: iii; United Nations, 2015: 6; Hanson et al., 2017: 1). There are 17 sustainable development goals (SDGs) embedded in the 2030 Agenda. The 17 SDGS offer development priorities with key thematic areas, 169 action prescriptive targets and 230 indicators to be achieved in a period of 15 years, (Barbier & Burgess, 2017: 2; Filho, et al., 2017: 3).

In summary, Klarin (2018: 73) reported that the genesis of the concept of SD can be divided into three periods. The first period begins in 1770s with economic theorists such as Smith, Marx, Malthus, Ricardo and Mill who recognized the limitations of development and environmental requirements. In 1972 the Club of Rome pointed out the uncontrolled dangers of economic development. This epoch ends with the first United Nations Conference on the

Human Environment held in 1972 in Stockholm which stressed the need for changes in economic development policy and balance economic development with environmental concerns. The second period started after the Stockholm Conference and stretched up to 1987 when the UN World Commission on Environment and Development (WCED) published the Brundland Report titled 'Our Common Future'. In this Report, the concept of SD was defined and fundamental principles of SD were promulgated. Finally, the third period started from the publication of Brundtland report and still goes on up to today with the current 17 SDGs which run up to the year 2030 guiding the SD discourse.

In relation to the definition of the concept of sustainable development, there is no one-size-fits-all definition for SD, however, various people have attempted to define it in various ways, sometimes depending to the context, (Flint, 2013: 41). For instance, Brundtland Report, WCED defined sustainable development as development that meets the needs of the present without compromising the ability of future generations to meet their own needs, (Rosiek, 2016: 553). Amasuomo et al. (2015: 45) defined sustainable development as a dynamic process, which enables all people to realize their potential and improve their quality of life in ways which simultaneously protect and enhance the earth's life support systems. Whereas Makrakis (2012: 411) defined sustainable development as making informed, contextual and conscious decisions driven by the principles of solidarity, justice, accountability, equity and transparency for the good of the present and future generations, locally and globally and to act upon those decisions for advancing social, economic and environmental wellbeing. Sustainable development therefore calls for integration of economic growth, social development and environmental management since they are interdependent, mutually supportive and reinforcing pillars of long-term development, (Purvis, 2018: 3; Purvis et al., 2019: 6; Wals, 2015: 7). Thus, the various definitions of sustainable development given above emphasize the fact that sustainable development takes place when environmental, societal and economical needs of both the present and the future are put into consideration with the purpose of improving the quality of life for both humans and other creatures.

2.1.2 Objectives and Key Pillars of Sustainable Development

The basic objective of SD is to balance the economic, environmental and social needs in order to allow prosperity for now and future generations, (Klarin, 2018: 68; Basheer et al., 2022: 1). In this regard, the objectives of SD can, therefore, be grouped into three categories, economic, social and ecological objectives, (Duran et al., 2015: 816). The economic objectives aim at maximizing the amount of goods and services produced and have efficient use of resource

flows, (Purvis et al., 2019: 688). While social objectives focus on striving for equality, human rights, improving the quality of life for all citizens, peaceful co-existence, preservation of cultural identity, respect of divergent views, equal access to education, livelihood and resources and so on, (Astara, 2014: 96; Purvis et al., 2019: 687). On the other hand, environmental objectives focus on maintaining the quality of the environment, biodiversity, and protection of the eco-system which are crucial for economic activities and well-being of people, (Purvis et al., 2019: 683).

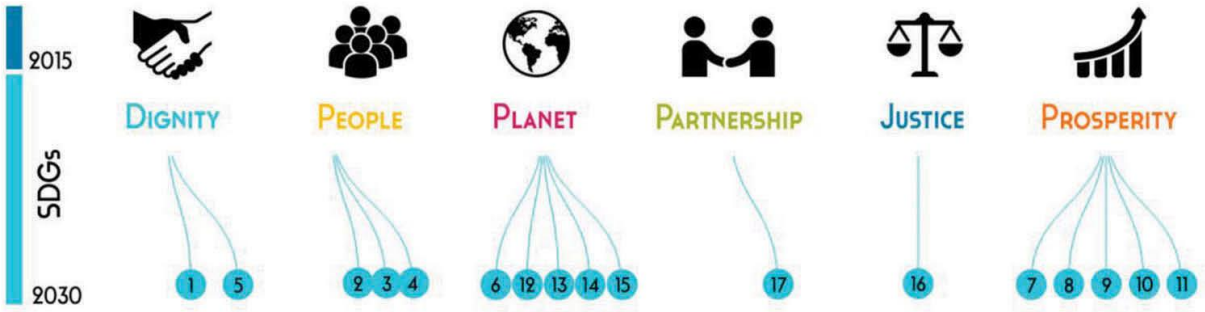
In this respect, the economy, society and environment constitute the three key pillars of sustainable development, (Leal Filho et al., 2017: 6). In 2005 during the United Nations World Summit, the three pillars were approved as interdependent and mutually reinforcing pillars, (United Naitions, 2005). According to Purvis et al. (2019: 6) the origins of the three-pillar paradigm of SD as society, economy and environment have been variously attributed to the Brundtland Report of 1987. However, according to Howes et al. (2017: 1) the origin can also be implicitly traced way back to 1972 Stockholm conference which addressed issues concerning development and environment. Since then, there has been a gradual shift in international debates from primarily focusing on environmental issues to a shared focus on environmental, social and economic development, (Paul, 2008: 579). The appropriate consideration of the three pillars is vital in order to achieve SD.

These pillars have specific focus but at the same time are mutually interdependent. The interdependence means that no single social or economic or environmental objective should be pursued to the detriment of the others. The environment cannot be protected in a way that leaves the majority of humanity in poverty. Likewise, long-term development cannot exist on a depleted planet, (Clune & Zehnder, 2018: 214; Kimberly et al., 2010: 5; United Nations, 2002: 125). It should be noted that balancing these three pillars of SD is, however, not an easy task because in an attempt to achieve the goals of one pillar, the goals of other pillars must be respected. Thus, as one pillar of SD becomes sustainable, the others may become unsustainable as it has been in the past with economic development which led to environmental degradation. Some scholars have also argued that cultural and political aspects of SD can be regarded as independent pillars of SD. Nevertheless, society, economy and environment are the most referred to as pillars of SD in literature, while the cultural and political aspects are cross-cutting. Thus, regardless of the context or worldview, SD remains intertwined in the three fundamental pillars.

2.1.3 Sustainable Development Goals

There are 17 sustainable development goals (SDGs). Chronologically, these goals aim to: 1. End poverty in all its forms everywhere. 2. End hunger, achieve food security and improved nutrition, and promote sustainable agriculture. 3. Ensure healthy lives and promote well-being for all at all ages. 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. 5. Achieve gender equality and empower all women and girls. 6. Ensure availability and sustainable management of water and sanitation for all. 7. Ensure access to affordable, reliable, sustainable, and modern energy for all. 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all. 9. Build resilient infrastructure, promote inclusive, and sustainable industrialization and foster innovation. 10. Reduce inequality within and among countries. 11. Make cities and human settlements inclusive, safe, resilient, and sustainable. 12. Ensure sustainable consumption and production patterns. 13. Take urgent action to combat climate change and its impacts. 14. Conserve and sustainably use the oceans, seas, and marine resources for sustainable development. 15. Protect, restore, and promote the sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation, and halt biodiversity loss. 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels. 17. Strengthen the means of implementation and revitalize the global partnership for sustainable development, (Barbier & Burgess, 2017: 7; Crespo et al., 2017: 5; UNESCO, 2017a: 6).

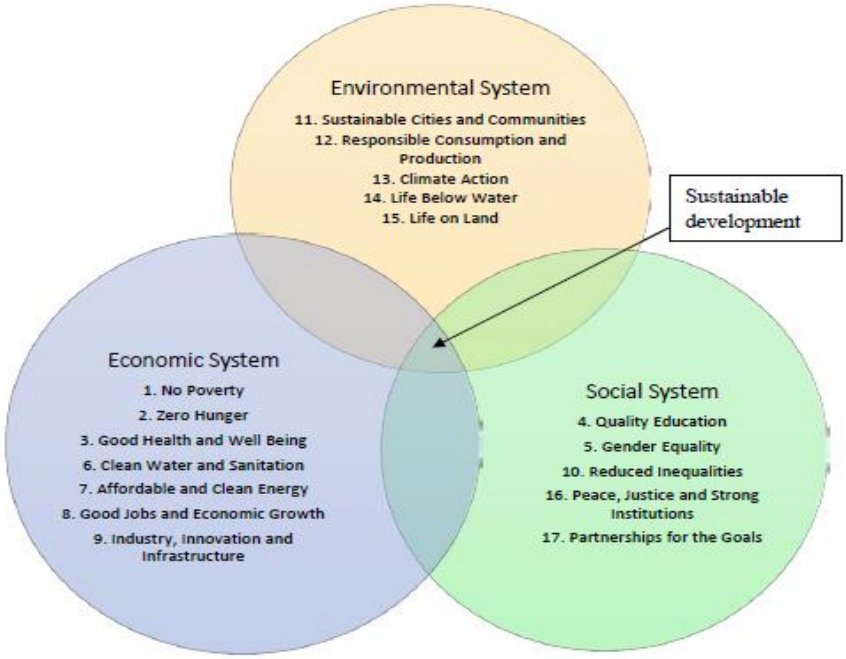
According to Leal Filho et al. (2017: 3) these 17 SDGs can be grouped into six thematic areas: Dignity, People, Planet, Partnership, Justice and Prosperity as presented in Fig. 1 below.



Source Filho, et al. 2017: 3)

According to the Fig. 1 two goals are concerned with human dignity in relation to financial well-being and equality, three goals are concerned with people in relation to food, health and education in general, five goals are related to planet and protection of the ecosystem, one goal is concerned with global partnership and solidarity, still one goal is concerned with justice and five goals are concerned with prosperity and well-being.

According to Barbier and Burgess (2017: 8) the 17 SDGs are also aligned to the three pillars of sustainable development as indicated in Fig. 2.



Source: Barbier & Burgess (2017: 8).

The figure 2 above indicates that of the 17 SDGs, there are seven goals related to economy (1,2,3,6,7,8&9), five goals to environment (11,12,13,14&15) and five goals to social (4,5,10,16&17) aspects of SD. It should be noted whilst that these goals are interdependent and interlinked irrespective of the category in which they belong.

2.1.4 Sustainable Development in the Context of Uganda

Uganda has made some progress towards SD, (The Republic of Uganda, 2017: ix; UNDESA, 2016: 3). For instance, Uganda is one of the first countries to align her national planning processes to the Agenda 2030 of SDGs, (The Republic of Uganda, 2011: 2; UNDESA, 2016: 16; United Nations, 2015b: 1; The Republic of Uganda, 2016: 3). It is estimated that 69 percent of the SDGs are already integrated into the National Development Plan II and other key government policy documents, (Abebe, 2017: 52; The Republic of Uganda, 2016: 16). A

case in point is the Constitution of Uganda which explicitly spells out the commitment of the people of Uganda to build a better future by establishing a socio-economic and political order based on the principles of unity, peace, equality, democracy, freedom, social justice and progress. Secondly, Uganda's Vision 2040 aims at transforming Uganda from a peasant to a modern and prosperous country within 30 years, (The Govenment of Uganda, 2007: 3). Thirdly, the overall goal of the third National Development Plan (2020-2025) is to increase household incomes and improved quality of life of Ugandans, (National Planning Authority, 2020: xxi). Furthermore, the country's commitment to SD is demonstrated through ratification and domestication of international, continental and regional development agendas such as the 2030 Agenda for SD, the Africa Union Agenda 2063 and the East African Community Vision 2050, (Owori, 2017: 6: Uganda, 2018: 6). Various laws and policies have also been put in place according to the three pillars of SD to keep the country steadfast on the road to sustainable development. For example, environmental policies such as, the National Environment Management Policy (1994); the National Policy for the Conservation and Management of Wetlands (1995); Uganda Wildlife Policy (1999); the National Water Policy (1999); Uganda Forestry Policy (2001); National Oil and Gas Policy (2008); the Energy Policy (2002); the Renewable Energy Policy (2007); National Land Use Policy (2010); Disaster Preparedness and Management Policy (2011); National Agricultural Research Policy (2005); National Fisheries Policy (2003); Uganda Food and Nutrition Policy (2003) and the Urban Policy (2011), to mention but a few. Whereas economic policies such as, the Uganda Investment Code Act (Cap 92); the Uganda Revenue Authority Act (1991); the Income Tax Act (Cap 340); the Value Added Tax Act (Cap 349); the Exercise Duty Act; and the East African Customs Management Act, to mention but a few. Finally, social policies such as the USE/Universal Post Primary Education Training policy (2007); Agriculture Education Policy (2004); Second National Health Policy (2010); the HIV/AIDS Policy (2011); National Gender Policy (2007); the National Population policy (1995); National Employment Policy (2011); the National Equal Opportunities Policy (2007); the National HIV/AIDS and the World of Work Policy (2007); and the National Child Labor Policy (2007); the Public Finance Management Act (2015), the Public Private Partnership Act (2015), Public Procurement and Disposal Act (2014), and the Registration of Persons Act (2015). The laws include the Local Government Act (1997); the University and other Tertiary Institutions Act (2001); the National Curriculum Development Centre Act (2000); the Equal Opportunities Act (2007); The Uganda National Cultural Centre Act (Cap. 50); The National Council for Disability Act (2003); The Persons with Disabilities Act (2006); The National Youth Councils Act (2003);

the Land acquisition Act (Cap 226), the Domestic Violence Act (2010); the National Women Council Act (2010); the Genital Mutilation Act (2010); the Universal Primary Education Act (1997); the Prevention in Trafficking of Persons Act (2009); the workers' Rights to Labor Unions Act No 7 (2006); the Occupational Safety and Health Act No.9 (2006), to mention but a few, (Government of Uganda, 2016: 2; The Republic of Uganda, 2017a: 6).

These and many other examples indicate Uganda's commitment on the path to SD. However, in all the above mentioned country´s approaches to SD, integration of ESD into teacher education is not mentioned anywhere as a means to attain SDGs. Yet education has been described as the key factor to the attainment of SDGs, (Leicht et al., 2018: 8; Sterling, 2014: 90; Uganda Bureau of Statistics, 2017: 33; UNESCO, 2017c: iv). Whilst even when ESD was mentioned in the review report on the country´s readiness for implementation of the 2030 Agenda, it is clearly indicated that there are no baseline data on it, (The Republic of Uganda, 2017b: 84). Furthermore, many laws have been put in place but most of them have remained on paper without implementation. It is, therefore, hoped that the recommendations of this study could be of help for both policy and practice.

2.1.5 Some Hurdles of Sustainable Development in Uganda

Despite the numerous progress Uganda has achieved in the area of sustainable development, there are still many daunting challenges the country is facing as regards SD. Some of these challenges are: poverty, demographic structure with a high dependency ratio, inequality, service delivery bottlenecks, high rates of unemployment especially among the youth, reliance on natural resources and agriculture, reliance on water-fed agriculture, low agriculture productivity, low levels of access to clean and modern energy, natural resource degradation, and vulnerability among different segments of the population, such as women, children, persons with disabilities, indigenous communities, hard to reach populations, and other vulnerable groups, (The Republic of Uganda, 2011: 104, 2016a: 3, 2017b: 12).

According to national statistics the country's average annual population growth rate is at 3.3%,(Uganda Bureau of Statistics, 2017: xi). Uganda has one of the youngest population in the world, whereby 55% of the total population is between 0-15 years old, 78% is 30 years and below and 2% 65 years and above, (Pulse lab Kampala, 2017: 4; Uganda Bureau of Statistics, 2017: 14; UNFPA, 2017: 2; Winthrop et al., 2018: 7; New Partnership for African Development, 2017: xxiv). The fertility rate is 5.8 children per woman, (Oesingmann, 2017; Uganda Bureau of Statistics, 2017: ii; Ministry of Healthy, 2018: 14) and it is estimated that by 2025 the total population will be approximately 63 million people, (Daumerie & Madsen,

2010: 4; Musasizi, 2018: 46). This demographic trend, therefore, poses great challenges to the future growth, structural transformation as well as pace of development of Uganda as a country.

The percentage of people without access to affordable and clean energy is at 73%, (Africa-EU Renewable Energy Cooperation Programme (RECP), 2015: 6; Can et al., 2017: 2; World Bank, 2018: 23) and almost 90% depend on unsustainably used biomass and use rudimentary technologies to meet their energy needs, (Diisi, 2017: 23; Gustavsson & Broad, 2015: 7; Ministry of Water and Environment, 2015: 33; Uganda Bureau of Statistics, 2016: 35). The percentage of people living below the poverty line, that is, less than US$1.90 per day is 21.4% , (Civil Society of Uganda, 2017: 10; PWC Uganda, 2018: 5; The World Bank, 2016: x; UNDP, 2015: 1; UNFPA, 2017: 9; UNICEF, 2017: 1; USAID, 2018: 1). Only 15% of people have access to tap water, (Alabaster & Kručková, 2015: 13; Nampala, 2018: 6; PMA2020/Uganda, 2015: 4). Eighty percent of the population entirely depend on agriculture and this has increased the rate of deforestation, (Ggoobi et al., 2017: 1; Hepworth & Goulden, 2008: 28; Irish Aid, 2016: 2; Musasizi, 2018: 1; Uganda Bureau of Statistics, 2016: 5; Winthrop et al., 2018: 5). Over the last 15 years, Uganda has lost 63% of her forest cover, (African peer review mechanism (APRM), 2017: 336). Recent studies indicate that forest cover loss has now increased to over 200,000 hectares annually, (Diisi, 2017: 27; Musasizi, 2018: 46). Musasizi postulates further that Uganda may not have any forests left in the next 83 years unless serious interventions are taken both by Ugandan Government and also the International Community. Uganda hosts the largest number of refugees in Africa: 1.38 million and is the second country in the world with the highest number of refugees, (Ahimbisibwe, 2018: 6; Maastricht University, 2017: 3; UNHCR, 2018: 2; Watera, et al., 2018: 9). Gender disparity is still high, women are 51.2% but only 20% are in gainful employment, (The Republic of Uganda, 2016b: 11; UNFPA, 2017: 2). Innovation in national economic growth and competitiveness is still very low, (Jowi & Obamba, 2015: 3; World Bank, 2018: 51). Uganda faces these and many other national and global SD challenges. It can be postulated therefore, if urgent and adequate measures are not put in place, these cases of unsustainable development trends can greatly put the country with a population of over 43,746,516 people at stake, (Musasizi, 2018: 47). Secondly, if stringent measures are not taken, a country referred to as gifted by nature (Wolfgang, 2010: 1), the pearl of Africa (Churchhil, 1908: 2), the land of beauty (Sullivan, 2014: 3), home to 10,041 bird species and over half of all the bird species in Africa (Bolwig et al., 2006: 42), and more than half of the world´s mountain gorilla population (Mackay & Campbell, 2012: 1), home to over 18,783 plants and animals

species and over 7% of global mammal species, and unique game, (Behangana, 2016: 83), and many other living creatures are at a great risk of total extinction. It is still hoped therefore that this study will offer a contribution in terms of providing information on how ESD could be integrated into teacher education because of its gross multiplier effect. Possibly, in the long run it might help to alter some of the unsustainable practices.

2.2 Education for sustainable development

Having looked at the concept of SD from which ESD originated, the focus is shifted to the concept of ESD. In this subsection, the concept of ESD, aims of ESD, relationship of ESD to other SD goals, relation of ESD to SD and ESD in the context of Uganda will be presented.

2.2.1 The Concept of Education for Sustainable Development

Makrakis and Kostoulas-Makrakis (2012: 7) defined the concept of education for sustainable development, as a new vision for teaching and learning that helps people reconnect with nature, by addressing the complexity and interconnectedness of sustainability issues such as poverty, peace and international understanding, sustainable consumption and production, environmental degradation, climate change, water protection and health and other sustainable development goals. While Goldstein (2005: 4) and Wendy (2005: 4) defined it as a lifelong learning process that leads to an informed and involved citizenry having the creative problem solving skills, scientific and social literacy and commitment to engage in responsible individual and cooperative actions. Finally, Chinedu et al. (2018: 111) defined education for sustainable development as a transformative learning process that equips students, teachers, and educational institution systems with new knowledge and ways of thinking needed to achieve economic prosperity and responsible citizenship while restoring the health of the living systems upon which lives depend and act in ways that will safeguard the future and wellbeing of people and earth´s support systems. Thus, the various definitions of ESD highlight that ESD aims at integrating inherent values of sustainable development into all aspects and levels of teaching and learning in order to improve the quality of life of the present and future generations.

According to Leicht et al. (2018: 10), ESD has a long history and emerged out of a number of global discourses aimed at addressing the key sustainability challenges facing the planet. While according to Nasibulina (2015: 1078), the concept of ESD first appeared in the UN documents in the second half of the 20th century. It was around this time when education was deemed paramount to the achievement of SD because it offers knowledge, skills, values and

attitudes that empower people to contribute to SD, (UNESCO, 2012: 33). ESD empowers and equips the current and future generations to meet their needs using a balanced and integrated approach to the economic, social and environmental dimensions of SD, (Agbedahin, 2019a: 9; Leicht et al., 2018: 7). ESD has four main areas of emphasis. First, it focuses on improving access and retention of quality education. Secondly, it focuses on reorienting existing educational programs to address sustainability. Thirdly, it focuses on increasing public understanding and awareness of sustainability. Lastly, it focuses on providing training to all sectors of the workforce, (UNESCO, 2012: 34). Addressing ably all the four major concerns of ESD requires active participation of all stakeholders in education (cf. 4.8). Despite the fact that there are various adjectival fields of education which advance the goals of SD such as sustainability, environmental, human rights, development, peace and global citizenship education, ESD is the most frequently used type of education in international conventions especially in United Nations documents, (United Nations, 2012: 39; Whitby & Wandel, 2019: 6). Similarly, it is ESD which has been frequently used in this study.

2.2.2 Aims of Education for Sustainable Development

Education is not only a basic human right but also the foundation on which SD can be realized, (Uganda National Commission for UNESCO, 2010: 10; UNESCO, 2016: 17; Wu & Shen, 2016: 635). Education in the perspective of SD is both a goal in itself and a means for attaining SD because it is not only an integral part of SD, but also a key enabler to its attainment. It empowers learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for the present and future generations, while respecting cultural diversity, (Al-Naqbi & Alshannag, 2018: 4; UNESCO, 2014: 12, 2016: iv, 2017a: 17). Thus, it aims at informing behavior and lifestyle choices in the three pillars of sustainability, that is, economy, environment and society. It promotes the development of knowledge, skills, understanding, values and actions required to create a sustainable world. According to the study which was conducted using data of 114 countries for the period between 1985–2005, it was discovered that one extra year of education is associated with a reduction of the Gini coefficient by 1.4 percentage points, (Bhutoria, 2016: 24; De Gregorio & Lee, 2002: 403; Patrinos & Psacharopoulo, 2011: 25; UNICEF, 2015: 9; United Nations, 2015b: 2). The Gini coefficient is a statistical measure of economic inequality in a population, that is, the dispersion of income or distribution of wealth among the members of a population, (Greselin, 2018: 1). Additionally, Laurie et al. (2016: 226) conducted a study on ESD in 18 countries. They found out that ESD helps to prepare students for a sustainable future by ensuring that they are environmentally responsible, globally aware, economically

astute, socially responsible, and technologically proficient citizens who are capable of coping with the emerging challenges and opportunities in the modern world.

Secondly, it incorporates critical SD issues in teaching and learning with local and global perspectives and empowers learners to understand and respond to the changing world. Whilst Annan-diab and Molinari (2017:) in their study on interdisciplinarity found out that ESD encourages interdisciplinary and cross-curricular work, strengthens research skills, questioning, risk-taking, critical thinking and collaborative learning. This in turn enables learners not only to reflect on their own actions but also consider their responsibility for the present and future generations, (Leicht et al., 2018: 7; UNESCO, 2017b: 10; United Nations Economic Commission for Europe, 2011: 7). Finally, according to The Higher Education Academy Group (2014: 7), ESD encourages different disciplines to enter into dialogue, make connections, share knowledge, and work together on various issues. It enables students to understand and evaluate connections between sustainability issues, such as inequality, public health, global consumption, biodiversity loss and the limits of natural systems, (Coriddi, 2008: 50). These findings underscore, therefore, the fact that ESD is indispensable for the realization of SD. Far more critically, Balčiūnaitienė (2017: 247) observed that despite the numerous advantages of ESD, there is still little research conducted so far on ESD, hence a need for more research to be conducted. This study is one of the responses to this call.

2.2.3 Relationship of Education to other goals of SD

It has already been highlighted that ESD is not only one of the goals of SD but also the key enabler of all other SD goals, (UNESCO, 2017d: 7). It is at the centre of the 2030 global agenda for SDGs and related to all the remaining 16 goals of SD, (Didham & Ofei-Manu, 2015: 97; Leicht et al., 2018: 26; Mohanty & Dash, 2018: 2244). For instance, according to Leicht et al. (2018: 31), ESD is critical at lifting people out of poverty and reduction of social and economic inequality. It helps people to embrace sustainable farming methods and understand nutrition issues. It gives people skills on how to participate in shaping and maintaining more sustainable cities and be prepared for disastrous phenomena. It reduces mortality rate and provides knowledge, skills and information for health living, good hygiene, disease control and prevention, healthy lifestyles, and general well-being. It also provides information on sustainable production patterns and consumer understanding of more sustainably produced goods, waste management and prevention of toxic materials. It promotes gender equality and respect of human dignity. It is key to understanding the impact of environmental degradation, climate change and how to mitigate their effects. It increases

skills and capacity to use natural resources more sustainably and how to ensure good sanitation for all. Education is instrumental in increasing awareness of the marine environment and proper use of natural resource and promotion of biodiversity. It is key to proper energy consumption, conservation and use of renewable energy sources. It offers access to economic vitality and decent jobs through acquisition of knowledge and skills. It is crucial for the attainment of social justice, inclusion and coherence. Education develops skills necessary for building more resilient infrastructure, industries and progressive innovation. Finally, education facilitates and enhances partnership, for instance, through research and sensitization among various stakeholders both locally and internationally to promote SDGs.

2.2.4 Education for Sustainable Development and Sustainable Development

According to Leicht et al. (2018: 37) the development of ESD has been a dialogue between education and SD, that is to say, integration of education into SD and integration of SD into education. Beyin and Edet (2018: 45) asserted that from time immemorial, scholars have been very much concerned about the relationship between education and development. On the other hand, (McKeown, 2002: 10) explained further that from the time SD was first endorsed at the UN General Assembly in 1987, the parallel concept of education as promoter of SD has also been explored. Since then, according to UNESCO (2017d: 7), the international recognition of ESD as a key enabler for SD has been growing steadily. Thus, there is a significant relationship between ESD and SD. This is because good quality education is a prerequisite for achieving a more sustainable world, (Coriddi, 2008: 50). For example, education can improve agricultural productivity, enhance the status of women, reduce population growth rates, enhance environmental protection, and generally raise the standard of living and all these are components of SD, (UNESCO, 2012a: 34, 2017d: 7). Furthermore, when education levels are low, for instance, SD options are severely hindered and it limits sustainable resource extraction and use. People need knowledge, skills, values and attitudes that can empower them to contribute to SD and all that is acquired mainly through education, (Beyin & Edet, 2018: 46). Therefore, the major role of ESD to SD is to help people develop the attitudes, values, skills and knowledge in order to make informed decisions for the benefits of themselves and others, now and for the future, and to act upon those decisions. Several researchers have regarded SD and ESD as essentially consisting of a single discourse. For instance, Fergus and Rowney (2005: 15) acknowledged that a scientific-economic paradigm, attained through scientific methodologies of education, dominated the interpretation of SD. It has been emphasized that education plays a critical role to SD,

(Chinedu et al., 2018: 116; Svalfors, 2017: 116). It should be noted however that this relationship is complex and not linear.

2.2.5 Education for Sustainable Development in Uganda

Uganda cannot afford to remain aloof when it comes to matters of ESD especially at this time when there is much criticism of the education system for producing graduates without adequate practical and innovative skills, values, attitudes and work ethics which can promote SD, (The Republic of Uganda, 2011: 104; & cf. 4.10). ESD is considered in Uganda as the key to creating understanding and ensuring SD, (Uganda National Commission for UNESCO, 2010: 9). In response to the implementation of UN Decade of ESD 2005-2015 the government of Uganda through the Ministry of Education and Sports developed a strategy for implementation of ESD in Uganda. The development of ESD strategy involved the participation of a cross-section of various stakeholders in education, economy, environment and society through meetings, workshops and seminars, (Uganda National Commission for UNESCO, 2010: 6). The strategy gives guidance on how ESD should be implemented and it considers the national aspirations and goals as stipulated in the Constitution, country's vision 2040 and the National Development Plans. At the end of 2016 a new national ESD policy was enacted and it provides a framework for reorienting ESD in both formal and informal education, (Uppsala University, 2017: 29). The new ESD policy puts in consideration not only the national SD aspirations but also regional and international development agenda such as the East African Community Vision 2050, the Africa Union Agenda 2063 and the global agenda 2030 of SDGs, (The Republic of Uganda, 2017b: 7). In the context of Uganda as stipulated both in the old and new ESD strategies, the major aim of ESD is promotion of values and practical processes which provide knowledge, skills, attitudes, and competences to nurture sustainable development at all levels, (The Republic of Uganda, 2017b: 20; Uganda National Commission for UNESCO, 2010: 18; UNESCO, 2017d: 50). The Ministry of Education and Sports is the leading ministry in matters concerning ESD and works in partnership with other government regulatory bodies, agencies, education institutions, politicians, civil societies and all other stakeholders in matters of education. Educational institutions are recognized as key players and change agents in instilling and propagating positive attitudes, promoting public awareness and understanding of ESD. Little has been done, however, to integrate ESD in education institutions in Uganda especially in teacher education institutions which have a duty to pass on ESD relevant information to both in-service and pre-service teachers who in turn pass it to their students, (Aguti, 2013: 24; Ssozi, 2012: 8). This was one of the gaps exploited and motivations for conducting this study.

Having looked at the concepts of SD and ESD, the focus is now directed to the concept of teacher education because this study is contextualized in teacher education.

2.3 The Concept of Teacher Education

Samsujjaman (2017: 1995) defined teacher education as policies, procedures and provision designed to equip both pre-service and in-service teachers with the knowledge, attitudes, behavior and skills required to perform their tasks effectively in classroom, education institution and in the wider community. On the other hand, McGregor (2022: 2) defined teacher education as all formal and informal activities and experiences that help to qualify a person as a member of the educational profession and execute their responsibilities more effectively. Teacher education is broad and comprehensive. It is a global profession that needs to be understood properly, (The University of Mumbai, 2000: 16). Teaching is one of the oldest and respected professions in the world. According to Råde (2015: 205), in many countries, there were two broad orientations in the history of teacher education, that is, theoretical and practical orientations. The theoretical orientation focused on academic training and research. The focus was on acquisition of subject and content knowledge. It was also research based with an intention of preparing a teacher for the academic world. On the other hand, the practical orientation focused on the preparation of students for the practical work of teachers with an intention of making a teacher a loyal civil servant. This type of orientation originated from the universities´ role of educating priests and civil servants. These two orientations are still visible in teacher education systems today in many countries. It is important to combine the two orientations because they enhance each other, that is, academic orientation to acquire theoretical knowledge and practical orientation to acquire knowledge and experience for practice and research.

Loughran and Hamilton (2016: 313) argued that before the nineteenth century, the idea of educating teachers was unknown in some countries. They asserted that it was in the nineteenth century that formal teacher preparation programs gained momentum. The preparation of teachers for their profession emerged by teachers practicing specific skills in simplified situations and received feedback on their use of the skills either from their trainers or learners, (Loughran & Hamilton, 2016: 314). According to Leicht et al. (2018: 135), teacher education and preparation usually consist of three different stages which are universally consistent. These are initial teacher education, in other words, pre-service training programs undertaken before teachers enter the classroom. One of the key objectives of initial teacher education is to prepare future teachers to practice their profession and prepare them in the best way possible,

(Québec Gouvernement du L'Éducation Ministère de 2021: 22). The second is induction programs in form of supervised 'apprenticeship' learning opportunity designed to support novice teachers while teaching, usually during the first year in the classroom, normally organized by individual schools or as part of a university training program. The third and last stage is the teacher professional development or continuing professional development or in-service training programs. Classroom teachers have mostly experienced at least one of these three preparation strategies prior to entering the classroom. On the other hand, according to Perraton (2010: 4) teacher education generally includes four elements, that is, improving the general educational background of the trainee teachers; increasing their knowledge and understanding of the subjects they are to teach; pedagogy and understanding of learners and learning; and the development of practical skills and competences. The balance and emphasis between these four elements vary widely.

In this regard, teacher education encompasses teaching skills, pedagogical theories and professional skills. Teaching skills may include skills such as effective classroom management, preparation and use of instructional materials and communication skills. On the other hand, pedagogical theories may include philosophical, sociological and psychological theories that enable teachers have a sound basis for practicing the teaching skills in the classroom. While professional skills may include skills such as counseling, interpersonal, information retrieving and management and lifelong learning skills. These techniques, strategies, and approaches help teachers to grow in the profession. The teaching skills, pedagogical theory and professional skills serve as means to attain the right knowledge, attitude and skills needed in the professional life of a teacher. Consequently, teacher education is very important in professionalizing the teaching field, improve student learning, and contribute to the overall success of the education system.

2.3.1 Higher Education in Uganda

Before the situation of teacher education in Uganda is examined, the state of higher education in the country where teacher education is situated is presented. Currently there are 221 Higher Education Institutions (HEIs) in Uganda. Higher education institutions in Uganda are divided into three sub-sectors: Universities, Other Degree Awarding Institutions (ODAI) and Other Tertiary Institutions (OTI) sub sectors, (The National Council for Higher Education, 2018: 12). The statutory body mandated to monitor and ensure quality standards in higher education sector is the Uganda National Council for Higher Education (NCHE). According to NCHE there are 9 public universities, 42 private universities, 10 Other Degree Awarding Institutions,

whereby 9 are private and only 1 public and 160 Other Tertiary Institutions, (The National Council for Higher Education, 2018: 14-24). Public ownership of higher education institution is at 27% (61) while 73% (163) belong to the private sector, (Kasozi, 2016: 24). The fact that the majority of higher education institutions are privately owned is quite a challenge for the government to regulate, for example, hiking of tuition fees and other requirements in these institutions since Uganda is a liberalized economy. It is also a challenge to regulate and enforce adequately quality standards in these institutions despite the existence of proper regulatory frameworks. Teacher training institutions in Uganda are comprised of Primary Teachers 'Colleges (PTC), National Teachers 'Colleges (NTC), Instructors Training Colleges (ITCs), Health Tutors College (HTC) and universities, (Teachers initiative in Sub-Saharan Africa (TISSA), 2014: 59; The Uganda Ministry of Education and Sports, 2008: 20; TISSA, 2013: 36). There are 52 Primary Teachers 'Colleges of which 7 are privately owned, 4 Instructors Training Colleges, one Health Tutors College, (TISSA, 2013: 37) and 5 National Teachers 'Colleges, (The National Council for Higher Education, 2018: 18). The nine public universities are Makerere University founded in 1922, Mbarara University of Science and Technology (1989), Kyambogo University (2003), Gulu University (2002), Kabale University (2005), Busitema University (2007), Muni University (2013), Soroti University (2015) and Lira University (2015), (Kasozi, 2016b: 127; The National Council for Higher Education, 2018: 14). The names of the public universities have been mentioned here because data for this study were collected from four of these universities.

2.3.2 Teacher Education in Uganda

The development of teacher education as it was in the case of formal education is indispensably linked to missionary work, (Scanlon, 1964: 10). Missionaries established teacher training colleges with an intention of generating a critical mass of teachers who would advance the transformation of the socio-economic life of the local people by teaching them how to read, write and vocational skills besides the development of morals and character formation. During the colonial era, various education commissions were established, for instance, Phelps-Stokes on education in East Africa in 1924 and the British Government White Paper on Education in Tropical Africa in 1925. These commissions recommended the establishment of more teacher training colleges. Consequently, in 1925 Makerere College started three years teacher training programme for upper primary teachers and later started teaching secondary school teachers for the East Africa region, (Ssentamu, 2014: 134). The Faculty of Education was established in 1949, when Makerere College was affiliated to the University of London, (The Republic of Uganda, 2016b: 5). The newly created faculty

awarded postgraduate diplomas and teaching certificates and in 1962 Makerere University introduced the Bachelor of Education degree course, (Ssentamu, 2014: 135). As the demand for teacher education increased in the country, a decision was made to transfer diploma program from Makerere University to Government Teacher Training College Kyambogo, (Aguti, 2003: 115). Aguti stated that Kyambogo became a National Teachers' College in 1964 and admitted its first diploma students in 1965 and in 2003 Kyambogo became a fully-fledged university. As the number of enrollments in teacher education increased, several national teachers´ colleges were established in the 1980s. Kyambogo University has the mandate to design the curriculum and award certificates for all teacher education programs in national teacher education institutions. Teacher education in Uganda was modelled on the education system of Britain that had colonized Uganda. The type of teacher education institutions and their number has already been presented in 2.3.1 above.

Table. 3: The Structure of Teacher Training in Uganda

Subsector	Award	Academic Entry Requirement	Duration/Mode of Delivery	Institutions
Pre-primary	Certificate in Community Child Care (CCC)	None	In-service ; 12 weeks	ECD Training Institutions
	Certificate in Child Care (CC)	PLE Certificate	Pre-service ; 1 year	
	Early Childhood Development Teacher's Certificate (CEC)	O-Level certificate with a minimum of 4 passes, incl. English	Pre-service ; 2 years	
Primary	Grade III Teacher Certificate	UCE/O'level with a minimum of 6 passes incl. English and Mathematics and any two Sciences subjects (agriculture, biology, physics/chemistry + must not exceed 3 years after O'level expect for A'Level leavers.	Pre-service ; 2 years With supervised school practice	PTCs
	Grade III Teacher Certificate	UCE/O'Level with a minimum of 6 passes incl. English and Mathematics and any two Sciences subjects + Must be a licensed teachers practicing in primary and must be recommended by the school head teacher, DEO or DIS	In-service; 3 years, part time	PTCs
	Diploma in Education Primary (DEP)/ Grade V Primary Certificate	Grade III Certificate or its equivalent + 2 years of teaching experience as a Grade III teacher + at least 6 passes at O'level; and a pass either in math or English at O'level. Must be registered, appointed and confirmed	In-service; 2 years	Universities
Secondary	Diploma In Secondary Education (DES)/ Grade V Secondary Certificate	A-Level with at least 2 principal passes in Art subjects or 1 in Science subject and two subsidiary passes for Science subject; plus O-Level with at least 6 passes incl. English; or Post-O-Level Diploma/Certificate + Business studies: a principal pass in Economics at A-Level and 1 pass in O-Level (Commerce, Accounts, Typing, Office Practice, and Shorthand) and credit passes in English and Math; Technological studies: a principal pass at A-level in any of specific subjects (1) and a pass in O-level in one among Math, Physics, Chemistry or Fine Art.	Pre-service; 2 years	NTCs Universities
	Bachelor in Education (B. Ed)	A-Level with 2 principal passes in any of the Arts, Science and Vocational subjects; or Grade V Teacher's Certificate Or DTE, DEP, DSE or DSNE, with 2 years of experience	Pre-service; 3 years	Universities
	Bachelor in Education (B. Ed)	A-Level with 2 principal passes in any of the Arts, Science and Vocational subjects; or Grade V Teacher's Certificate or DTE, DEP, DSE or DSNE, with 2 years of experience	In-service; 2 years course	Universities
	Bachelor Degree with Education (BSc./Ed, BA/Ed)		Pre-service; 3 years	Universities
	Bachelor Degree with Education (BSc./Ed, BA/Ed)		In-service; 3 years	Universities
	Post-Graduate Diploma in Education		In-service; 1 year	Universities
	Masters in Education		In service; 2 years minimum	Universities
	Ph. D in Education		In service; 3 years minimum	Universities
Special Need Education	Diploma Grade V – SNE /(DSNE)	Grade III Teaching Certificate	In service; 3 years, including two supervised school practice (Y2 and Y3)	PTCs

Source: TISSA (2013b: 45)

Teacher preparation in Uganda is structured into three levels: the primary, secondary and tertiary levels, (Opolot-Okurut, 2005: 1). Teacher education in Uganda is under the ministry of education and sports, (Raby & Valeau, 2009: 343) and for purposes of quality assurance the training institutions are connected to other educational statutory bodies like the Education Standards Agencies (ESA), National Council for Higher Education, the National Curriculum Development Centre (NCDC), the Uganda National Examinations Board (UNEB) and the Teaching Service Commission (TSC), (Opolot-Okurut, 2010: 2). The main goal of teacher education in Uganda is, to provide, support, guide, coordinate, regulate and promote quality Teacher Education for the training and development of competent and ethical teachers, (The Uganda Ministry of Education and Sports, 2019: 9). Some scholars have, however, noted that

the structure and organization of teacher education in the country is still predominantly the same as the one in the post-independent period, that is to say, the curricula are still mainly teacher-centered and heavily reliant on examinations, (Makokha, 2001: 23; Ssentamu, 2014: 136; also cf. 4.10). This implies that educators instead of targeting acquisition of competences required in workplace and for life-long learning such as creativity, critical thinking, problem-solving, communication, leadership, environmental and conservation skills, among others, they put more emphasis on written summative examinations targeting only competences which can be theoretically assessed.

2.3.3 Education for Sustainable Development and Teacher Education

There is no doubt that teacher education is very essential to the achievement of ESD, (Chinedu et al., 2018: 205; Omodan & Tsotetsi, 2018: 83; Rieckmann & Holz, 2017: 4; Wilson, 2012: 42). Teacher education is very instrumental in the integration of ESD because it reaches out to the student teachers by providing the relevant knowledge, awareness, values, attitude and skills needed for ESD and sustainable action necessary to achieve the goal of sustainable development, (Chin et al., 2019: 14; Keleş, 2017: 171; McKeown & Nolet, 2013: 53). Teacher education institutions play a critical role in preparing teachers to serve as agents in transforming society towards sustainable development by equipping and enabling both pre-service and in-service teachers appreciate the complex nature and interconnectedness of the issues involved in SD, (O'Flaherty & Liddy, 2018: 1031; UNESCO, 2018a: 105). Teacher education as the primary source for the preparation of new teachers, delivery of professional development and advancement of lifelong learning has, therefore, a lot of influence on the integration of ESD. It is because of the indispensable role of teacher education towards both individual and societal transformation that some scholars have adduced that "no country can be better than the quality of its education system and no education system can be better than the quality of its teachers", (The Uganda Ministry of Education and Sports, 2010: iv; The UK Department for Education (2010: 3). In the same regard, the American Commission on Teacher Education postulated that "The quality of a nation depends upon the quality of its citizens. The quality of its citizens depends not exclusively, but in critical measure upon the quality of their education, the quality of their education depends more than upon any single factor, upon the quality of their teacher", (Himmat, 2017: 78). In other words, the quality of teachers determines the quality of education and this must be in tandem with a good teacher education system which educates teachers. Teachers play a central role of being at the frontline in the transmission of knowledge, skills and values needed for SD, (Leicht et al., 2018: 55; African Union Commission, 2017: 15; Ferreira et al., 2007: 225; UNESCO, 2016:

15). Teachers play a great role in social transformation and in the education process of learners and reorientation of education to address sustainability, (UNESCO, 2005: 12, 2018a: 17). It is because of the indispensable role of teacher educators in integration of ESD in teacher education that teacher educators were chosen as units of analysis for this study.

2.3.4 Education for Sustainable Development in Teacher Education in Uganda

Reorienting teacher education towards ESD is as important in Uganda as it is globally. According to Uganda National Commission for UNESCO (2010: 16), integration of ESD into teacher education in Uganda seeks to promote inter/trans-disciplinarily and holistic learning across curricula as opposed to the traditional discipline-based approach. At the moment, efforts are under way to implement ESD in teaching and learning environment despite the many challenges the system is still facing. Several studies indeed have already been conducted to find out the extent to which ESD has been integrated into teacher education in Uganda. These studies reveal several noticeable efforts already in place towards integration of ESD in teacher education in Uganda. Some of the noticeable efforts are creation of ESD clubs which bring together teachers and students on related issues of ESD, (Aguti, 2013: 24). Other efforts include institutional workshops involving university management, staff, students and the wider community, (Lotz-Sisitka et al., 2015: 62).

However, despite the above stated efforts towards integration of ESD into teacher education in Uganda, research reveals further that there are still enormous challenges hampering the integration of ESD into teacher education in the country. For example, several studies have been conducted in various universities in schools and faculties of teacher education. Some of the findings of these studies are as follows. They discovered that teachers focused mainly on their subjects of specialization. There was a gross mismatch between theory and practice, poor integration of ESD in all courses and low sustainable development expertise among staff, (Månsson & Mukanya, 2015: 60; Agbedahin, 2016: 139). They also established that there were low levels of integration of sustainability issues in curriculum, teaching and research and dominance of teacher-centered methods in the instruction of pre-service teachers, (Agbedahin, 2016: 137; UNEP, 2008: 43; Lotz-Sisitka et al., 2015: 242). They also revealed that ESD was not well understood in teacher education institutions, (Agbedahin, 2016: 140). They also highlighted that there was lack of community engagement, negative attitudes toward ESD by students and staff, lack of skills and competences by staff to implement ESD, lack of awareness of ESD and key issues relevant to sustainability, (Agbedahin, 2016: 141; Lotz-Sisitka et al., 2015: 117, 129 & 133). Once more, they revealed that teacher educators also

lack adequate competences to train pre-service and in-service teacher trainees to address current global challenges such as sustainability, (Kasule, 2014: 2; Kasule et al., 2015: 2, 2016: 4; Otaala et al., 2013: 98; TISSA, 2013: 68). These various challenges affecting the integration of ESD in teacher education offered a leeway to conduct this study as one of the ways to find explanations and remedies to the established challenges in literature.

2.4 The Concept of Academic Tribes and Territories

Hall (2018: 2) defined academic discipline as a community of practice, consisting of a complex network of predecessors, mentors, peers, colleagues, collaborators, post-docs, graduate students, technicians, undergraduate students, researchers, and students enrolled in courses. Whereas Amaral et al. (2008: 19) defined academic tribalism as seemingly unquestionable knowledge, skills, values, beliefs, norms and practices adopted and propagated by members of an academic discipline. This can be the modes of instruction, methods of conducting research, validation of truth, socialization, ontological and epistemological assumptions and so forth. The concept of academic tribes and territories was popularized mainly by Becher (1989) in his landmark book entitled "Academic Tribes and Territories", (Becher & Trowler, 2001: 1ff). In this book, Becher explains the nature of academic institutions, their knowledge communities and how they deal with their core business of knowledge production and dissemination. He applies the concept of academic tribes and territories to explain and aid understanding of how academics and their respective academic disciplines operate within the academia, (Tight, 2015: 278). On one hand, Becher used the concept academic tribes to refer to colleges, faculties, departments, research centres, professional associations, academic units, specialist conferences and other special academic groups of an academic institution, (Becher & Trowler, 2001: 7). On the other hand, he used the term territories, to denote the academic disciplines and their knowledge characteristics such as content/subject matter, methods and modes of inquiry, (Bray & Manzon, 2014: 2; Messer-Davidow, 1992: 678). The concepts academic tribes and territories were, therefore, used by Becher metaphorically, (Becher & Trowler, 2001: 44).

According to Biglan (1973), academic disciplines are classified into three categories, hard and soft, pure and applied and life and non-life academic disciplines, (Simpson, 2015: 2). These can in turn be classified into hard-pure or hard-applied, soft-pure or soft-applied. Whilst they can be hard-pure-life (e.g. Biology, Genetics, Physiology, Biochemistry, etc.) or hard-pure-non-life (e.g. Mathematics, Chemistry, Astronomy, etc.). They can be hard-applied-life (e.g. Agriculture, Medicine, Pharmacy, Dentistry, Horticulture, etc.) or hard-applied-non-life (e.g.

Computer Science, Civil, Telecommunication, Mechanical, Chemical, Electrical Engineering, etc.). They can be soft-pure-life (e.g. Sociology, Psychology, Anthropology, Political Science, etc.) or soft-pure-non-life (e.g. Literature, Economics, Philosophy, Linguistics, History, Geography, Communications, Creative Writing, Archaeology, etc.). Furthermore, they can be soft-applied-life (e.g. Education, Human Resource Management, Counseling, Conservation, Nursing, Recreation, etc.) or soft-applied-non-life (e.g. Arts, Interior Design, Crafts, Music, Dance, Finance, Accounting, Banking, Journalism, Marketing, Law, Architecture, Library and Archival Science, etc.) academic disciplines, (Coughlan & Perryman, 2011: 16; Tight, 2008: 594).

Academic disciplines have a specific focus, area of specialization and distinctive characteristics. For example, the nature of knowledge of Physics in the category of hard-pure sciences is cumulative and atomistic. Hard-pure disciplines are mainly concerned with universals, quantities, simplifications, clear criteria for knowledge verifications and obsolescence, consensus over questions to address now and in the future. Their results end usually into discovery and explanation of a phenomenon. On the other hand, the nature of knowledge of humanities (e.g. history) or pure social sciences (e.g. anthropology) in the category of soft-pure is repetitive and holistic. These knowledge domains are concerned mainly with particulars, qualities, complication. They are value-laden and members often have dispute over criteria of knowledge verification and obsolescence, lack consensus over significant questions to address. This results into misunderstanding and diverse interpretations. Whereas the nature of knowledge of technology disciplines (e.g. mechanical engineering, clinical medicine) in the category of hard-applied is purposive and pragmatic. These disciplines are mainly concerned with mastery of physical environment, application of heuristic approaches that use both qualitative and quantitative approaches, their criteria for judgement are purposive, functional. Their process results into development of products or techniques. Lastly, the nature of knowledge of applied social sciences (e.g. education, law, social administration) in the category of soft-applied is functional and utilitarian. These disciplines are mainly concerned with enhancement of (semi-) professional practices, they use case studies and case law to a large extent that result in protocols and procedures, (Becher & Trowler, 2001: 36). Therefore, there are distinctions between disciplinary knowledge in terms of their characteristics in relation to their nature of enquiry, the nature of knowledge growth, the relationship between the researcher and knowledge, enquiry procedures, extent of truth claims and criteria for making them, the research findings and so forth.

The various knowledge domains also differ in terms of culture, (Becher & Trowler, 2001: 27). For example, the hard sciences tend to be competitive, with high publication rates. They have well-organized approaches, whereas, the soft-applied disciplines are power oriented, often fall prey to intellectual fashions, they tend to have low publication rates, and their sub-disciplinary groupings are even more unstable. On the other hand, some academic disciplines are closer to one another and others are quite far from one another basing on their study focus. For instance, sociology is closer to history than to physics because it is more concerned with the existing body of knowledge than creating totally new knowledge, (Rogers, 2017: 46). Clark (1987: 4) claimed that disciplines shape how departments internally operate, how they relate to other departments, and how they expose themselves to higher-level commands. For example, departments that operate with well-developed, accepted bodies of knowledge can arrive at a consensus more easily than those confused by ambiguous materials and conflicting perspectives. All these disciplinary categorizations, characteristics and the nature of their knowledge domains constitute the differences among academic tribes and territories. The nature of knowledge domains and their categorizations are of great interest to this study because they reveal the differences and power struggle among the various academic disciplines. Secondly, these conventional practices and occurrences have a lot of influence and variation impact on academics and their daily operations. They are the embodiment of academic tribalism among academic practitioners. This is explained in detail in the following section. In this study, the concepts of academic tribes and territories are used in reference to the way of thinking about academics, their disciplines and their relationships.

2.4.1 The Concept of Academic Tribalism

Becher and Trowler (2001: 165) argued that as academics get involved in their core business of knowledge production and dissemination in their respective academic disciplines, they develop distinctive culture, patterns, practices, norms, values, attitudes and features that influence and guide their academic and non-academic activities. These particular features become in turn the distinguishing traits among academics in their various academic disciplines, (Bazerman, 1990: 265). Clark (1987: 5) also remarked that those differential characteristics based on academic disciplines exert a lot of influence on the behavior and practices of academics. Clark claimed that the more the work of academics become more specialized, the more they begin to have fewer things in common with members of other academic disciplines. As a result, they may have even less desire and ability to interact with one another. For example, academics of the mechanical engineering tribe may rarely interact with their colleagues in the social sciences and may even have little idea of what their fellow

academics do in their respective academic disciplines. They become quite literally “foreign” to one another. However, occasionally on issues which affect all academics, such as salary increment or academic freedom, may bring them together.

Tight (2015: 278) asserted that due to such differential characteristics, academics in the academia exist, behave and interact with one another more or less in a similar way like members of social cultural tribes. For example, social cultural tribes have distinct names, territories, kings, chiefs, elders, social hierarchy, sense of common ancestry through clans and families, cultural practices, norms, customs, beliefs, modes of interaction, sometimes go to war with others tribes, have distinct language or at least a distinct dialect and a variety of symbolic ways of demonstrating their uniqueness from others tribes and so many other tribal attributes, (Bailey, 1977: 212). On the other hand, academic disciplines and knowledge communities have also recognizable identities and particular socio-cultural attributes similar to those of social cultural tribes. For example, knowledge communities have chiefs and elders such as persons who have done distinguished and excellent work in their particular academic fields. They are persons who have worked a lot especially in the area of knowledge advancements, for instance, professors, researchers, innovators and Nobel price personalities. Knowledge communities have norms, core values and beliefs, internal social and disciplinary hierarchies, modes of interaction, boundaries and modes of settling internal and external disputes, (Clark, 1987: 4; Commission on the Social Sciences, 2015: 24; Krishnan, 2009: 9; Trowler et al., 2012: 5; Ylijoki, 2000: 339). Academic disciplines have, furthermore, their own traditions with heroes, taboos and rituals and categories of thought, which provide the members of the field with shared concepts of theories, training procedures, methods, specialized vocabulary, a systematic research strategy, techniques for replication and validity, techniques for investigation, checks and balancing, understanding and responding to the world, quality controls, punishment and reward mechanisms, (Hativa & Goodyear, 2002: 56; Weingart & Stehr, 2000: xi & xiv; Guimarães et al., 2019: 14). Each discipline has its own activities, structures for knowledge production and dissemination, social structures, and communication patterns, (Hedtke, 2006: 2; Hoidn, 2018: 293).

Full or provisional membership in a given academic community requires acceptance of certain ideas, methods of teaching and conducting research, procedures for validation of truth, habits of mind, rhetorical conventions, genre practices, and publication patterns, modes of instruction and interaction, pedagogical and ethical codes of conduct, social structures, lifestyles, ontological, philosophical and epistemological assumptions, (Amaral et al., 2008: 19; Al Lily, 2014: 19). Novices of the academic tribe must learn the local culture in order to

gain access in the membership of the academic circle. Ylijoki (2000: 341) claimed that each discipline has its own moral order which defines the basic beliefs, values, norms and aspirations prevailing in that particular discipline and if a novice member fails to adhere to that moral order, his/her social identity as a member of that particular academic tribe is in jeopardy and may end up in identity crisis. Quite often members of academic disciplines have, furthermore, intellectual disputes within or outside their academic fields. They are often dismissive of one another´s intellectual thoughts in various intellectual fora such as in intellectual debates and discussions. Teaching and research are often done by disciplinary specialists. These specialists are usually past students of the same academic disciplines, (Rogers, 2017: 46).

Quite often academics operate as if they are possessed by their academic disciplines and they exhibit more loyalty to their areas of specialization than to their academic institutions, (Clark, 1987: 5). Similarly, Amaral et al. (2008: 19) claimed that oftentimes academics and their students identify themselves more with their disciplinary community than with their academic institution. He postulated further that academics in various disciplines can even become dogmatic in their approach to teaching, learning and doing research. They become sometimes reluctant and unwilling to approach different learning styles. They work hard to own their ideas and defend them against unauthorized use through patent rights. Quality assurance of academic work is mainly under the hands of disciplinary experts and through their positioning in peer review, they act as gate keepers who decide which academic work is of high or low quality or anecdotal. These conglomeration of attributes of academic disciplines form territories or boundaries which make a given academic discipline/tribe and its practitioners to be seemingly unique and different from other academic disciplines and their subscribers, (Jacob et al., 2009: 342). Contrastingly, members of social cultural tribes adhere also to their cultural practice, tribal hierarchy, traditions, norms, values, habits, customs and other tribal conventions and failure to do so a member or members are ostracized, (Al Lily, 2018: 2). Various scholars (e.g., Becher, 1989, Becher & Trowler, 2001, Ylijoki, 2000, Clark, 1989, Lily, 2014 & Tight, 2015) claim, therefore, that these various academic and disciplinary attributes that exist in the academia are quite similar to those existing in social cultural tribes, hence the concept of academic tribalism. According to Becher and Trowler (2001: 4), these tribal like patterns among academic communities extend and go to the heart of teaching, research and student-faculty relationships. These tribal like patterns pose, therefore, a big challenge to successful and proper integration of ESD into teacher education due to their delimiting factors. In the opinion of Vick (2004: 10) these boundaries which separate

academic disciplines from one another can be adjusted since they are socially constructed. This could take place, for instance, when a discipline extends into new territory or when new concepts and methods are imported from other disciplines. Consequently, the proper understanding of the operations of academics in their disciplinary fields could offer a framework for analysis, interrogation and understanding of how ESD can be integrated into teacher education.

2.4.2 Academic Tribalism in Teacher Education

During the scientific revolution in the 17th century and also in 19th and early 20th century many general subjects gave birth to a couple of specialized disciplines and one subject after another greatly extended their boundaries. For example, subjects such as biology, chemistry, physics and some branches of mathematics which were a part of the academic discipline natural of philosophy were recognized as distinct specialized subjects, (Onyekachi Nnaji, 2013: 34; Uskokovíc, 2014: 9). Since knowledge evolves, these same subjects have expanded their boundaries and many other specialized fields and disciplines have emerged out of them. For instance, natural science was divided into astronomy, biology, chemistry, earth science, and physics. These same branches of nature science gave, furthermore, birth to other specialized branches. For example, Biology gave birth to specialized disciplines such as zoology, botany, genetics, ecology, microbiology, and biochemistry. On the other hand, philosophy was divided into epistemology, logic, metaphysics, ethics, aesthetics, philosophy of education and political philosophy. Whilst chemistry was divided into organic chemistry, inorganic chemistry, analytical chemistry, physical chemistry, and biochemistry. All these sup-disciplines share a lot with the major disciplines from which they emerged. They have, however, something which makes each unique from the other branches. This is due to the nature of knowledge, that is, as knowledge gets more specialized, the more it becomes unique from other knowledge domains due to its specific study aims and research focus. Therefore, all those major disciplines and their branches have distinctive culture, patterns, practices, norms, values, attitudes and features that make them unique and also influence and guide the activities of those who study them. This applies also to all those who teach and study such academic disciplines in teacher education.

In Uganda, teaching and learning takes place according to subjects of specialization coupled with foundational and professional courses such as psychology, philosophy of education and teaching methods which all students ought to study, (TISSA, 2013: 63). Pre-service teachers, for example, take subject combinations such as Mathematics/Physics, History/Geography,

Agriculture or English or Fine Art double main, History/Religious Education, Biology/Chemistry, Biology/Sports Science, Physics/Biology and so on. Besides, all teacher educators teach according to their subjects of specialization, (TISSA, 2013: 143; Nzarirwehi & Atuhumuze, 2019: 29). The qualities of these various disciplines shape and influence teachers' professional practices, (Sethy, 2018: 292). Consequently, this study sought to unearth ways in which ESD, which is transdisciplinary, can be integrated into teacher education, despite of teachers' academic professional tribalism pegged on teachers' area of academic specialization. What was established in literature about academic tribalism also resonates very much with the findings of this study in subsection 4.10.

Chapter3 Research Methodology2222 and Design

This study sought to investigate ways in which education for sustainable development can be integrated into teacher education. This chapter explains and discusses the research methodology and design which was employed by this study in data collection and analysis. The explanation and discussion of the methodology and design intends to enlighten and indicate how the study was conducted and how the research findings were obtained. This chapter begins with the declaration of the philosophical underpinnings of the study, followed by the research paradigm, grounded theory approach, research design for data collection and analysis, research trustworthiness and authenticity and ends with ethical considerations.

3.1 Research Motivation

The motivation to conduct this particular research endeavor can be stretched up to my observation and experience as a child up to date. Growing up as a child, our home, my village, and school were, for instance, surrounded by forests but currently one can hardly tell if there ever existed a big forest. These forests provided habitat for various creatures and species. We used to pick various fruits and edibles from these forests but now both the forest and everything therein have disappeared. The destruction of natural resources is a common phenomenon in various parts of the country (cf. 2.1.5). The disappearance of such natural resources essential for human survival and wellbeing of the ecosystem has greatly affected the quality of life not only for humans but also other creatures and the entire ecosystem both in my home area and in various parts of the country. Uganda is an agricultural nation and entirely relies on rainfall for agriculture. As a result of unsustainable human activities, people are facing various challenges such as soil unproductivity and unreliable rainfall. Consequently, there is increasing level of human suffering and poverty. Having read various literature on sustainability, I found out that education is one of the SD goals and a key enabler to sustainable development. This key finding and also my long-term experiences and observation of continued unsustainable activities, I was motivated to embark on this study in order to find ways in which ESD can be integrated in teacher education in Uganda. I hope that the findings of this study will contribute to the search for solutions to the current sustainable development challenges in my country and the world, especially related to the integration of ESD in teaching and learning activities.

3.2 Philosophical Underpinning

The fundamental purpose of research is to examine, create and advance knowledge about the dimensions of the physical and social world. In order to fulfill this purpose, it is important that the researcher from the outset declares his/her philosophical stance in the research process. This is because the researcher's worldview, such as ideas about the nature of reality, how reality can be understood and discovered and the purpose of the research project influence a lot the choice of a research paradigm, methodology and how generally research is conducted. Every research paradigm has its own specific assumptions, beliefs, norms and values that guide the research process. The choice of a research paradigm means therefore that the research project will be nested in a particular epistemological, ontological, methodological and axiological world view. These four elements of a research paradigm reveal a researcher´s basic assumptions, beliefs, norms and values, perception of reality and how reality or truth can be comprehended, (Nguyen, 2019: 1; Kivunja & Kuyini, 2017: 27). This in turn determines the choice of a research design that offers the best way to answer the question under investigation. In this study, the researcher subscribed to a relativist ontology, a subjectivist epistemology, an interpretivist methodology, and a balanced axiology.

Relativist ontology because the researcher believed that there was no single reality or truth for integration of ESD into teacher education rather, multiple realities could be explored, created or reconstructed through interactions with the research participants who experience daily the challenges of ESD integration in their natural setting and social context. Subjective epistemology because the researcher believed that reality needs to be interpreted in order to be comprehended. The researcher made sense of the research data through thinking, reflection and cognitive processing of data informed by the interactions with participants. Interpretivist methodology because the researcher intended to construct meaning and understanding based on the collected data in the course of interacting with the participants and from the point of view of the participants in their natural social context. Lastly, balanced axiology because the researcher´s value systems were reflected upon and did not influence the research process and outcomes. The balanced axiology is elaborated in detail in section 3.9 of this chapter concerning ethical considerations. The researcher's philosophical world view can be nested in the philosophical stance of philosophers like Max Weber's subjectivism and Herbert Blumer's symbolic interactionism. According to Max Weber (1864–1920), understanding of social phenomena und social actions is possible only insofar as such phenomena and actions have meanings attached to them by the acting individuals, (Hewa & Herva, 1988: 145). In this regard, the understanding of social phenomena and actions according to Weber should be

examined from the points of view of the phenomena or research participants in order to understand why a phenomenon exists or why the participants act the way they do, (Ryan, 2018: 9). Similarly, Herbert Blumer (1900–1987) argued that meaning is not inherent in objects but formed through social interactions, that is, people construct meanings based on their perceptions of situations or their experiences of them, (Ryan, 2018: 9). In a nutshell, the philosophical underpinnings orientated the researcher's thinking and understanding of the research problem, appreciated its significance, and enlightened the researcher on how to approach it, in order to find answers to the research questions and contribute to the existing body of knowledge. Of the three research paradigms, that is, quantitative, qualitative and mixed methods paradigms, the qualitative research paradigm was found to be the most suitable paradigm to be employed in the investigation of the researched phenomenon. The details about qualitative research paradigm and why it was chosen for this study are presented in the following section.

3.3 Qualitative Research Paradigm

Khan (2014: 225) described a qualitative research paradigm as a research paradigm that seeks to explore and understand the meaning people attribute to social and human phenomena. In the qualitative inquiry process, the researcher plays an active role by interacting with the study participants in their natural and social setting and constructs meaning out of what is discussed and observed, (Aspers & Corte, 2021: 142). The qualitative research paradigm assumes that knowledge is partial, subjective and value laden. It believes in the existence of multiple realities which can be socially constructed. In qualitative research, it is more important to understand the individual or specific dimensions of a complex reality than to make generalizations or to detect and apply universal laws and inferences. This comes from the presumption that the social world where humans are involved cannot be static and value-free to make it always possible to provide explanations of cause-effect nature or make appropriate predications, (Chilisa & Kawulich, 2019: 10). The qualitative research paradigm enables a research to investigate, explore and gather in-depth information about a complex research phenomenon or problem, (Aspers & Corte, 2021: 146). This study examined the integration of ESD in teacher education. ESD issues are by nature and design very complex and require a researcher to consider the natural contexts in which the research participants live and work in order to develop an in-depth understanding of researched phenomenon and grasp the meaning that people ascribe to their experiences, views, and assumptions. It is for this reason that the qualitative research paradigm was preferred over other research paradigms. It enabled the researcher to investigate and gather in-depth information from the participants

through active engagement with them within their natural setting, lived experiences and processes. The information gathered from the participants would possibly not have been captured if another research paradigm was employed. The participants' views, experiences and perceptions cannot be easily quantified and addressed appropriately by other research paradigms but the qualitative research paradigm. In this regard, the qualitative research paradigm enabled the researcher to develop ways in which ESD can be integrated into teacher education in Uganda. Secondly, the qualitative research paradigm assumptions are also in line with the philosophical world view undertaken by this study (cf. 3.2). Quantitative research design was not employed because of its descriptive character, over-simplifying individual aspects in the cause of generalization and focus on testing hypotheses in order to predict cause and effects of a given phenomenon. Similarly, mixed methods research paradigm was rejected because of its lack of focus on a single and in-depth research investigation. The explanation of the grounded theory research methodology which is a methodology within the qualitative research paradigm and employed by this study is presented in the following subsection.

3.4 Grounded Theory Methodology

According to Creswell (2014: 292) grounded theory is a qualitative strategy in which the researcher derives a general, abstract theory of a process, action, or interaction grounded in the views of participants in a study. In other words, it is a method of conducting qualitative research that focuses on creating conceptual frameworks or theories through building inductive analysis from the data, (Bryant & Charmaz, 2020: 91; Charmaz, 2006: 187, 2014: 396; Glaser & Strauss, 2006: 33; Corbin & Strauss, 2015: 49; Bikner-Ahsbahs et al., 2015: 3). A grounded theory researcher takes on a systematic and rigorous process of constant comparison and analysis that aims at generating a theory grounded in data collection and analysis, (Charmaz, 2008: 155; Khan, 2014: 227). The direct generation of a theory out of empirical data without the researcher choosing an existing theoretical framework makes grounded theory quite different from the traditional theory driven model of research. According to Bryant and Charmaz (2020: 90) and Higginbottom and Lauridsen (2014: 8) the grounded theory approach to research was developed by two sociologists. They were Barney Glaser, a schooled expert in quantitative methods at Columbia University, and Anselm Strauss, a sociologist and ethnographer, expert in pragmatism and symbolic interactionism from the Chicago School in 1967. This was during their collaborated study on the treatment of the dying hospital patients in the San Francisco Bay area in the United States of America. They were based at the School of Nursing, University of California, for the duration of their collaborative study, (Charmaz, 2008: 168). Their philosophical and academic background

helped them to develop a method of inquiry that bridged the gap between positivist and interpretivist methods. Grounded theory brings together two contrasting and competing traditions in research as represented by each of its originators. These are positivism of the Columbia University tradition and pragmatism and ethnographic research of the Chicago school tradition. For instance, the epistemological assumptions, logic, and systematic approach of grounded theory methods reflect the rigorous quantitative training Glaser received at Columbia University under Paul Lazarsfeld. On the other hand, the emergent processes, social and subjective meanings and the open-ended study of action to grounded theory reflect Strauss' pragmatist philosophical tradition, symbolic interactionism and ethnographic research expertise that he studied while on his doctoral program at the University of Chicago, (Charmaz, 2006: 7; Corbin, 2013: 170; Corbin & Strauss, 2015: 28; Strauss, 1997: 1). Furthermore, there are notions of human agency, that is, human beings are active agents in their lives and in their worlds rather than passive recipients of larger social forces.

3.4.1 Approaches to Grounded Theory

There are three basic approaches to grounded theory, that is, Classical/Glaserian, Straussian and constructivist grounded theory approaches.

3.4.1.1 *Classical/Glaserian Grounded Theory Approach*

The classical or Glaserian grounded theory approach is the one that was developed by Glaser and Strauss in 1967 and published in their seminal work entitled "The discovery of grounded theory", (Glaser & Strauss, 1967: 1). According to this approach, the study may commence with research questions or begins straight away with data collection and analysis and then followed by literature review. The reason given for this approach is that theory formation should be left to emerge directly and rigorously out of the data without being influenced by preconceived ideas or biases, theoretical or conceptual knowledge from priorly reviewed literature. Glaserian grounded theory (GGT) is based on a dictum that 'all is data', that is, everything a researcher encounters when studying a particular issue is data. This could be any information collected, for instance, from interviews, observations, literature review, surveys, and all other sources of information considered good for the study and for the generation of a theory, (Alemu, et al., 2015: 520). The classical grounded theory approach contains some elements of positivist design. This is attributed to the positivist traditional background of Glaser one of its developers, (Birks & Mills, 2015: 15). For instance, its philosophical stance based on critical realism and the objectivist approach of a researcher during data collection,

that is, a researcher as an observer from the outside and not as an interpretivist researcher who cannot detach him/herself from the study. In qualitative research design, however, a researcher cannot be detached from his study, that is, the researcher is part and parcel of every step of the entire research process. A mutual, but not neutral relationship exists between the researcher and the participants, (Thurairajah, 2019: 144). The voices of both the participants and the researcher's own voice are equally important since both parties participate in the co-creation of reality. In this regard, the classical grounded theory elements of positivism somehow contradict the subjective nature of qualitative research design in which grounded theory is located, (Rieger, 2019: 3).

3.4.1.2 *Straussian Grounded Theory Approach*

A conflict occurred between the two inventors of the grounded theory approach to research, that is, Glaser and Strauss. The cause of their conflict was on the proper interpretation and application of grounded theory in research. They parted ways and discontinued their professional collaboration, (Duchscher & Morgan, 2004: 608). Anselm Strauss continued his research on grounded theory, and in 1990 developed another approach to grounded theory together with Juliet Corbin, called Straussian ground theory approach (SGT). They published it in their book entitled "Basics of qualitative research: Grounded theory procedures and techniques", (Muhaiyuddin et al., 2016: 188; Rieger, 2019: 1). One of their major aims was to offer well-described procedures and techniques for conducting grounded theory studies. The theory bares some elements of pragmatist and symbolic interactionism. This is attributed to the academic background of one of its developers Strauss, (Birks & Mills, 2015: 15). The SGT approach offers a clear description of its complex research procedures. It employs very systematic procedures especially at the axial coding stage referred to as a coding paradigm, (Bryant & Charmaz, 2007: 223). The Straussian grounded theory approach permits a researcher to conduct preliminary literature review in order to get acquainted with issues surrounding the research problem, (Thai et al., 2012: 4). In this regard, conducting research without prior literature review might risk a researcher coming up with acceptable but rather very shallow grounded theory, which offers limited contribution to knowledge or may not be supported by the existing literature. The underlying principle, however, remains that the selected related literature must be emergent and not imposed on the collected data. In this case, it is better for the researcher to remain open minded rather than empty headed in the research process, (Alvinius et al., 2016: 29; Giles et al., 2013: 35). The pre-data collection literature review can guide the researcher in identifying a starting point for data collection (cf. 2.0), nevertheless knowledge of the reviewed literature should be given no relevance until

validated or dismissed by the formulation of the emerging theory, (Breckenridge & Jones, 2009: 120).

3.4.1.3 *Constructivist Grounded Theory Approach*

The Constructivist grounded theory (CGT) approach was developed in 1995 by Kathy Charmaz, a sociologist, while investigating the process of therapeutic engagement and professional boundary maintenance by mental health nurses, (Muhaiyuddin et al., 2016: 188). It was part of her PhD study and she published it in her book entitled "Constructing Grounded Theory – A practical guide through qualitative analysis". Charmaz developed the constructivist grounded theory based on her extensive knowledge and mastery of both the classical and Straussian grounded theory approaches. This explains why CGT has a lot in common with the first two approaches to grounded theory. For example, the respective methodological strategies are quite similar such as coding, memo-writing, and theoretical sampling, (Charmaz, 2006: 183, 2017: 2; Charmaz & Reiner, 2016: 14). However, CGT is closer to SGT, especially on the issue of beginning with a literature review before data collection so that the researcher gets abreast with the facts surrounding the area of study interest. Charmaz stated however that the researcher needs to be reflexive to avoid forcing his/her preconceived ideas on the data and the subsequent theory formation, (Charmaz, 2017: 7).

It is worth noting that all the three approaches to grounded theory have similar sets of core elements. In particular, they all emphasize theoretical sensitivity, theoretical sampling, theoretical saturation, constant comparative analysis, coding and the categorizing of data, theoretical memos, generation of a theory grounded in data, and among others, (Kenny & Fourie, 2015: 1281). They have, therefore loose boundaries. Thus, researchers can choose any approach that suits their philosophical stance, (McCann & Clark, 2003: 29). Among the three approaches to grounded theory, this study adopted Corbin and Strauss grounded theory methodology because the researcher also started the research process by examining the existing literature around the areas of research interest as already explained in section 2.0 about the sensitizing concepts. In addition to the permission of a pre-data collection literature review, the Straussian grounded theory approach is compatible with the philosophical world view adopted by this study (cf. 3.2). That is, relativist ontology, subjectivist epistemology and interpretivist methodology.

3.4.2 Rationale for a Grounded Theory Study

The grounded theory design was chosen for this study because of the following reasons: Firstly, grounded theory research approach was considered for this study because it offers the researcher flexible guidelines which let the researchers' imagination to freely flow and remain open to all possible theoretical understandings in investigating and interpreting complex phenomena such as ESD without imposing on the researcher very dogmatic and rigid approaches to follow in doing the analysis. Rigid approaches make the analysis superficial and fails to provide the novel insights into human behavior that give qualitative research its dynamic edge, (Bryant & Charmaz, 2020: 250; Charmaz, 2014: 78; Corbin & Strauss, 1990: 5; Glaser & & Strauss, 2006: 188; Glaser & Strauss, 1999: 21; Glaser & Strauss, 1967: 5; Corbin & Strauss, 2015: 24). In this study, grounded theory approach offered flexible and systematic procedures that allowed the researcher to maximize conceptual and creative thinking through constant comparative analysis and application of inductive logic in order to generate a theory out of data (cf. 3.7.3). Secondly, unlike other qualitative methods, grounded theory was found suitable for this study because it enabled the researcher to go beyond mere exploring and describing to explaining the complex phenomena of ESD integration into teacher education. This is epitomized by the presentation of the results of axial coding in chapter four about the causes, contextual, intervening, action and interaction strategies, and consequences of the respective phenomena. Thirdly, grounded theory approach as one of the methodological approaches in qualitative research paradigm enabled the researcher to gain in-depth data from the participants on a range of perspectives. Fourthly, the grounded theory approach enabled the researcher to give specific attention and concentration on data collection and analysis in order to facilitate theory formation rather than trying to find out how the data collected resonate with an existing theory. Consequently, an emergent grounded theory was generated out of research data that explains the ways in which ESD can be integrated into teacher education. Finally, a theory generated out of data has several advantages, for instance, Burch (2018: 30) asserted that a theory generated out of data is more likely to resemble reality than when already developed theory is imposed on a series of concepts based on experience or speculation. A theory generated out of data is most likely to offer insights that enhance understanding and provide meaningful solutions and guide to action as it is the case with the emergent grounded theory presented in chapter four of this study. All the advantages of grounded theory provided were instrumental in investigating various ways in which ESD can be integrated into teacher education in Uganda.

3.5 Research Design

A research design is a systematic plan of investigating a scientific problem, (Akhtar, 2016: 68). The research design offers the overall framework for data collection and analysis and each research paradigm has an implication on the choice of the research design, (Ugwu et al., 2021: 119). There are many research designs depending on the study type, for example, exploratory, descriptive, correlational, semi-experimental, experimental, review, meta-analytic. This study employed an exploratory design of grounded theory in order to explore, achieve new insights, and develop a well-grounded theory that explains how to integrate ESD into teacher education.

3.5.1 Data Collection Process

The data collection process included various interrelated activities. These activities enabled the researcher to answer the research questions and also to evaluate the outcomes. The data collection process for this study commenced with the recruitment of the participants, collection of data, analysis, generation and presentation of the emergent grounded theory. The collected data was qualitatively analyzed following grounded theory methodological procedures.

3.5.2 Recruitment of Participants

The recruitment of the participants and data collection commenced after one of the recognized research ethics committees in one of the public universities in Uganda reviewed the research protocols of the study and cleared it for research. The clearance report of the Research Ethics Committee and the approved research proposal were submitted to the Uganda National Council for Science and Technology (UNCST) for the final issuing of the research permit. Permission was sought from the various universities where data were collected. The researcher was assisted by friends who work in universities where data were collected to contact the research participants because all education institutions had been closed due to the Covid-19 pandemic. The research participants were contacted and recruited basing on the classification of the academic disciplines explained in sections 2.4 and 3.5.3.1 respectively. In order to build good rapport with the participants, the researcher thoroughly explained to the participants the purpose and the benefits of participating in the study. Those who accepted to participate in the study were recruited and interviewed.

3.5.3 Sampling Strategy

The sampling strategy is one of the methodological aspects that distinguish the grounded theory method from other forms of qualitative research methods, (Holton, 2008: 68). The sampling strategy for this study was also directed by the purpose of the research. The demographic table below indicates some of the individual characteristics of the participants.

Table: 1 Demographic Information of the Participants

Participants	Gender	Qualification	Rank	Discipline	Teaching Experience	Department
P1	Male	MA	Lecturer	English/Literature	12 years	Languages
P2	Female	PhD	Assoc. Professor	Curriculum Studies	33 years	Foundation & Curriculum Studies
P3	Female	MSc.	Lecturer	Mathematics	33 years	Mathematics
P4	Female	MA	Lecturer	History	27 years	History
P5	Female	PhD	Assoc. Professor	Research Methods	40 years	Open Distance & E- Learning
P6	Male	PhD	Assoc. Professor	Mathematics	23 years	Mathematics
P7	Male	PhD	Senior Lecturer	History	20 years	History & Political Science
P8	Male	PhD	Lecturer	Geography	10 years	Humanities
P9	Female	PhD	Assoc. Professor	Chemistry	20 years	Chemistry
P10	Male	PhD	Professor	Geography	20 years	Geography
P11	Male	PhD	Lecturer	Curriculum	28 years	Curriculum, Educ. Techn. & Media
P12	Male	PhD	Senior Lecturer	Soil Science & Education	30 years	Agriculture
P13	Male	MSc.	Lecturer	Physics	20 years	Physics
P14	Male	PhD	Senior Lecturer	Biology & Physical Education	30 years	Science, Technology & Voc. Education
P15	Male	MA	Lecturer	Educ. Planning & Admin. Management	16 years	Education Foundations
P16	Male	MSc.	Senior	Agriculture	30 years	Science,

Participants	Gender	Qualification	Rank	Discipline	Teaching Experience	Department
			Lecturer			Technology & Voc. Education
P17	Male	PhD	Senior Lecturer	Psychology	20 years	Psychology
P18	Male	PhD	Senior Lecturer	History	17 years	History & Political Science
P19	Male	PhD	Senior Lecturer	History	10 years	History
P20	Female	PhD	Senior Lecturer	Religious Education	26 years	Humanities/ Languages
P21	Male	PhD	Senior Lecturer	Mathematics	18 years	Education, foundations & psychology
P22	Male	PhD	Senior Lecturer	Computation of Physics	7 years	Physics
P23	Female	PhD	Senior Lecturer	Biology	10 years	Biological Sciences
P24	Male	MSc.	Lecturer	Sports Science	8 years	Sports Science

3.5.3.1 *Purposive sampling*

Razavi and Iverson (2006: 461) asserted that in grounded theory method research participants chosen for interviewing should be participants who have experience on the issue under investigation in order to be able to provide the researcher with in-depth and accurate information. In this regard, the participants for this study were chosen purposively following the four classifications of academic disciplines explained in section 2.4. The four classifications of academic disciplines were considered because the researcher did not want to overrepresent or ignore any category of the four classifications during the sampling process because all of them are crucial for the integration of ESD.

3.5.3.2 *Theoretical Sensitivity*

Corbin and Strauss (2015: 49) described theoretical sensitivity as the ability to identify subtle cues in the data and abstract meaning. Theoretical sensitivity is a core component of grounded theory research and involves recognizing what is important in the data, acknowledging the

meaning of data in abstract terms and understanding conceptual relationships between patterns in the data, (Charmaz, 2014: 281). The researchers' level of theoretical sensitivity is deeply personal as it reflects the researchers' level of insight into themselves and the area that they are researching, (Bulawa, 2014: 88; Charmaz, 2014: 404; Corbin & Strauss, 2015: 291). In this study, the theoretical sensitivity was put into consideration by exercising openness to emerging data as much as possible in order to avoid importing concepts from preexisting theories or imposing preconceived personal ideas and experiences on data. Openness to data enabled the researcher to remain sensitive to the participants' differences and complexities in meaning and interpretation of their situation. In order to gain theoretical sensitivity, furthermore, the researcher looked at data from multiple vantage points so as to identify possibilities. Comparisons of data, concepts, codes, subcategories and categories were made in order to establish connections, discern meanings in the emergent patterns and identify the distinguishing properties of the constructed categories and phenomena. Clues and leads were followed by asking questions and building on ideas through abstraction of meaning from data. Theoretical sensitivity also advanced with exposure to data. Through theoretical sensitivity, the researcher was able to move from purposive sampling to theoretical sampling as explained below.

3.5.3.3 *Theoretical sampling*

Theoretical sampling is the process of data collection with a purpose of generating a theory whereby the researcher jointly collects, codes and analyses the data and decides what data to collect next and where to find them, in order to develop the theory as it emerges, (Charmaz, 2014: 556; Holton, 2008: 80). It helps the researcher to identify and follow clues from the analysis, fill gaps, clarify uncertainties, check hunches and test interpretations as the study progresses, (Chun Tie et al., 2019). In this study, basing on the initially collected and analyzed data, some preliminary concepts and categories began to emerge and enabled the researcher to decide the next phase of data collection until theoretical saturation was attained as explained in section 3.5.6. The identified categories guided the researcher on looking for evidence and fill the gaps within and between provisional categories in the next set of data and questions were raised in order to look for evidence of these categories and their properties as reflected in the memo in section 3.5.5. This process was theoretically motivated without intending simply to verify concepts and categories in the classifications of the participants (cf. 2.4). This process did not only enhance sorting and integrating of concepts and categories but also advanced theoretical sensitivity and the process of data collection was controlled by the emerging theory and data saturation.

3.5.4 Researcher's Role

Berthelsen et al. (2018: 71) asserted that the researchers' role is very important to be described in a grounded theory study in order for the reader to understand the researchers' actions during the research process. In tandem with this study's purpose, philosophical underpinnings, and explorative nature of grounded theory, the researcher played an integral and interpretive role in all stages of the research process. The researcher made sure that all procedures that precede data collection, such as looking for ethical approval and contacting relevant people and authorities for data collection were fulfilled. The researcher collected data, arranged, analyzed, wrote memos, and wrote the study findings of the emergent theory. In qualitative research, the researcher is the instrument through which the participants are studied, (Rager, 2005: 424). In this regard, the researcher remained open-minded and respected the participants´ views in data collection, analysis and the entire research process so that the emergent theory was not interrupted by personal interests, bias or preconceived ideas. Preconceived ideas, interests and bias were controlled through open-mindedness, memo writing (cf. 3.5.5), application of reflexivity (cf. 3.7.5), constant comparative analysis (cf. 3.6.2), exchange with others, and judiciously follow the methodological research procedures of Straussian grounded theory.

3.5.5 Memos

Memos are the researcher's theorizing write-up of ideas about data, the substantive codes and their theoretically coded relationships and connections between various categories as they emerge during coding, correcting and data analysis, (Bryant & Charmaz, 2020: 657; Charmaz, 2014: 364; Holton, 2008: 85; Corbin & Strauss, 2015: 136). Memo-writing was a crucial practice in this study. It enabled the researcher to analyze data and to develop codes into subcategories, categories and eventually phenomena. It was a continual process that helped the researcher to raise the data to conceptual level and develop properties for each phenomena. For example, one of the key aspects of the phenomenon "Teachers' Competences" is being knowledgeable which requires continuous learning. For instance, memo 13 is one of the memos written on the concept of teacher educators being continuous learners as postulated by one of the participants (cf. P1, 12 on page105 of this study).

MEMO 13, April 23, 2021 Concept: Being a lifelong learner This concept implies that a teacher ought to be a lifelong learner so that he/she can be in

position to know various aspects of ESD in order to overcome ignorance. A teacher may also need to be a lifelong learner because he/she has to keep himself abreast with whatever is going on in the world so that he/she can share relevant information with their learners. Relatedly, the participant said, "show me a teacher who has stopped learning and I will show you one who has stopped being a teacher". This implies that the aspect of lifelog learning is very important for this participant but it could also be essential for ESD integration. This concept can also be linked to the previously constructed codes which have a connection with the category "being knowledgeable" in order to integrate ESD in teaching and learning. In this case, a teacher can become knowledgeable though "being a lifelong learner", and other codes "attending refresher courses", "embracing a reading culture on his own", "yearning to learn from other people" and "conducting research". In this regard, these codes can become constructs of "being knowledgeable" as one of the key competences of teacher educators. There are also other codes which can be associated to the category "being knowledgeable" such as "willingness to learn" and "being teachable" which are directly related to being a lifelong learner. I have already written memos on these codes such as memo 12 on willingness to learn and I will integrate them with this memo on lifelong learning and see if they can form the various dimensions of being knowledgeable. But I will continue to gather more information about these concepts in the forthcoming data. The questions I need to ask is: how could there be other dimensions of the category "being knowledgeable"? How could these various dimensions of being knowledgeable enhance teacher educators' ability to know ESD and consequently integrate it in their teaching and learning activities?

Memos writing and raising questions about data and the entire process guided the researcher to the next steps of data collection, coding and analysis. Writing memos and capturing all ideas which emerged in the researcher's dairy were important tools for both refining and keeping track of ideas that developed during the research process. Memos were written about codes, emerging categories, connections between these categories and emerging assumptions and questions. Memos provided an audit trail of the researcher's analytical process and decision making throughout this study.

3.5.6 Theoretical Saturation

Theoretical saturation refers to the point at which gathering more data about a theoretical category reveals no new properties nor yields any further theoretical insights about the emerging grounded theory, (Aldiabat & Le Navenec, 2018: 247; Charmaz, 2014: 557; Daher, 2023; Hennink & Kaiser, 2022: 1). Corbin and Strauss (2015: 203) remarked that theoretical

saturation is not that simple and it is not determined by how many interviews or observations a researcher has done rather that each category is well defined and developed in terms of its properties and dimensions and includes sufficient variation to show the range to which the categories apply. On the other hand, (Charmaz, 2014: 213) acknowledged the fact that a theory may not ever be fully exhaustive because contexts and conditions change over time, subjective interpretation of new ideas could lead to further development of the theory, and it may not be feasible for the researcher to know absolutely everything about the researched phenomenon. Similarly, Willing (2008: 37) highlighted that theoretical saturation functions as a goal rather than a reality because even though the researcher ought to strive for saturation of the categories, modification of categories or changes in perspective are always possible. Furthermore, Glaser (2001: 191) cautioned researchers that saturation is not seeing the same pattern repeatedly. It is the conceptualization of comparisons of these incidents which yield different properties of the pattern, until no new properties of the pattern emerge. In this study, the researcher constantly remained alert to emergent perspectives, defined, checked and explained relationships between categories and the range of variation within and between the categories in order to arrive at theoretical saturation. After the initial data collection, analysis was done, and theoretical sampling was continuously conducted (cf. 3.5.3.3) until theoretical saturation was obtained when the categories, their properties, and variations were fully developed.

3.6 Data collection tools and methods

According to Creswell (2014: 234) researchers of qualitative studies collect data themselves. Creswell (2014: 269) asserted that the data gathered in grounded theory is typically derived from interviews but may also come from observations, documents, and other sources of data. For the purpose of this study, data were collected through interviews, observation and document analysis. The tools that were used to collect data for this study were basically open-ended semi-structured interview guide, observation of the participants and their workplace during and after the interviews. Relevant documents were mainly accessed from relevant authorities, from the websites of the relevant authorities, and online search engines such as google scholar.

3.6.1 Interviews

The Straussian grounded theory methodology adopted for this research recommends that the interview processes be open-ended, conversational, and mutually constructive in order to ensure that the required in-depth, richness and rigor are obtained, (Corbin & Strauss, 2015:

34). The interviews for this study were conducted in a face-to-face setting with the participants so that the researcher could attentively listen, observe expressions, and probe further in order to have an in-depth dialogue and retrieve more necessary data from the participants. Prior to the open-ended questions which were used in order to facilitate a more in-depth investigation into the research phenomenon, questions about the demographic characteristics of the participants were posed. The questions about the demographic characteristics of the participants intended to capture the biodata of the participants as reflected in section 3.5.3. Whereas open ended questions intended, furthermore, to examine and explore the different options for integrating ESD. They also enabled the researcher to obtain participants' views, beliefs, knowledge, reasoning, motivation and feelings about integration of ESD into teacher education. The original questions were broad, open-ended and in line with the purpose of the study. Some of the questions were, what is your understanding of ESD and in which ways can it be integrated into teaching and learning activities in teacher education? What could affect teacher educators' abilities to integrate ESD in teacher education? Numerous questions arose in the course of the interviews and during analysis, leading the researcher in directions often unanticipated at the beginning of the research. Some of these questions were, which competences do you consider to be important for integration of ESD in teacher education? Could you please explain more why you consider such competences to be very important for integration of ESD in teacher education? Among the competences you have just mentioned which competences do you emphasize most in your teaching and learning activities? What should be done by stakeholders of teacher education to enhance teacher educators' abilities to integrate ESD in teaching and learning activities? Which issues of ESD do you normally share with your students in teaching and learning activities? What should be done in general in order to integrate ESD in teacher education? And many other probing questions in order to get more information from the participants.

These open ended questions gave the researcher and the participants the opportunity to discuss the issues in considerable depth about the researched phenomena. Fortunately, all interviewees accepted the interview proceedings to be audio recorded. This facilitated attentive listening and critical probing by the researcher. It also enhanced accuracy in data collection, minimize the need to rely on memory and prevented the researcher and the participants from being distracted during the course of the interviews. It was also very useful during transcription of data. On average, interviews lasted between 45 minutes to three hours.

3.6.2 Observation

Observation was employed in order to provide an added perspective to the responses of the participants. It enabled the researcher to discover and capture aspects that the participants did not verbally talk about such as their body language, tone of voice, level of emotional intensity, and inconsistence between what was said and did in reality. For instance, on issues concerning why ESD is not being integrated in teaching and learning activities, the participants were very quick to blame others and rarely acknowledged their individual inadequacies. In this regard, observation included looking and listening very carefully, in order to discover particular information about the participants' actions, behavior and experiences. It also enabled the researcher to use gentle probing in order to elicit valuable and detailed responses from the participants. Observation also consisted of observing the facilities and compound of the teacher education institutions where interviews were conducted in order to witness some of the challenges raised by the participants during the interviews.

3.6.3 Document Analysis

According to Dalglish et al. (2020: 1425) document analysis is a method of qualitative research in which documents are analyzed and interpreted by the researcher to give a voice and meaning surrounding the research problem. For the purpose of this study, various documents on ESD and its integration into teacher education were analyzed. The documents analyzed included UNESCO policy documents and ongoing reports on ESD, universities implementation policies and strategic plans for ESD, manuals, peer reviewed journal articles, books, newspapers and so many other documents related to ESD. The documents analyzed helped the researcher to explore the study area of research interest, supported and strengthened the research findings of the emergent grounded theory.

3.7 Data analysis

In this study, the analysis of data took place immediately from the very first set of the collected data in order to inform the next set of data to be collected. In other words, data collection was followed by analysis. The analysis led to the development of concepts and the developed concepts generated questions. This process continued until the point of saturation (cf. 3.5.6). However, since it was during the lockdown time due to the Covid-19 pandemic, it was a challenge for the researcher to collect one set of data, do thorough analysis as stated in section 3.5.2 and then collect another set of data. This was also influenced by the limited time the researcher had to collect data and then come back to the place of study in Germany. In this case, data were collected every moment the researcher had the opportunity to meet the

participants and thorough analysis was done after conducting the interviews. This is permissible under the Straussian grounded theory because after analyzing the initial set of data, sampling is done on the basis of theoretical concepts, (Corbin & Strauss, 2015: 362). In this regard, a researcher can sample theoretically by sorting through interviews and observations by looking for incidents of relevant concepts and analyze them. This is because the more interviews or observations that a researcher conducts, the more likely it is that conceptual variations will be found in data. Thorough data analysis was conducted following these procedures.

3.7.1 Data Transcription

Data were collected and transcribed using F4 Software. Each participant was given a unique identification number, which was entered into the computer at the beginning of each transcription from P1 up to P24 as indicated in Table 1 section 3.5.3. The data obtained through interviews were transcribed verbatim as captured from the participants and the data from observation and document analysis was carefully and critically read through by the researcher and integrated with the transcribed data during the analysis and presentation of the emergent grounded theory. The table below indicates the transcription rules employed in this study.

Table 2: Transcription Rules Observed in this Study

Symbols	**Meaning**
I	Interviewer
P	Participant
(.)	A short pause for up to one second
(…)	A long pause for up to or more than three seconds
Capitalized	Words with a special emphasis
(---)	Breaking off a word
(( ))	Emotional non-verbal utterances such as laughter and sighs.
“ ”	Direct speech/ demonstrate what someone said
(−)	Repeating the same word, or abruptly changing the language
[ ]	Words added to the transcription that the interviewee did not mention or translate a word from another language into English.
…	Ellipsis points indicate that words have been cut from a direct quote

3.7.2 Idiographic analysis

After collected data were transcribed, the researcher focused on individual cases of collected data through a process called idiographic analysis. In this case, the researcher observed the minute details of all collected data in order to construct an overall picture of the collected data. This enabled the researcher to uncover a great deal of detailed information and meaning of the collected data. It was also facilitated by abduction reasoning that attempted to find out the most likely explanation of occurrences and observations by creatively imagining all possibilities and checking out these assumptions until finding the most plausible interpretation, (Charmaz, 2008: 154). The idiographic analysis did not only enhance theoretical sampling and theoretical sensitivity but also enabled the researcher to carry out comparative and multiple data analysis as explained in the section below.

3.7.3 Constant Comparative & Multilevel Data Analysis

Gibson and Hartman (2014: 24) asserted that in grounded theory data collection and analysis occur concurrently from the beginning of the study in a process referred to as constant comparative analysis. The grounded theory researcher goes back and forth while comparing data, constantly modifying, and sharpening the growing theory, (Charmaz, 2017a: 3). Through constant comparative and multilevel analysis of data, the researcher was able to generate successively more abstract concepts and assumptions. This was attained through inductive processes of comparing different participants' views and actions, new data with existing data, incident by incident, codes with data, codes with codes, codes with categories, categories with categories, categories with concepts and concepts with existing literature, (Charmaz, 2006: 187). For instance, codes were compared with codes in order to establish underlying uniformity and variations. The variations and uniformities generated more codes, subcategories, categories and assumptions. Generated categories and assumptions were compared with more subcategories and categories to generate new theoretical properties of the categories and more assumptions. This led to theoretical elaboration, saturation and verification of categories, densification of categories by developing their properties and the generation of further categories. Lastly, categories were compared with categories. The purpose was to establish the best fit of many choices to particular subcategories and categories. This process also helped the researcher to identify patterns in the data which needed further conceptual analysis, theoretical sampling regarding the emerging theory. Consequently, a theory was generated through that systematic and explicit coding and analytic

procedures. This iterative process guarded the researcher against bias and preconceived ideas and it also helped the researcher to create greater precision and consistency.

3.7.4 Coding

Coding is the process of defining, describing and extracting meaning from data, (Charmaz, 2017: 3). It is generally the first major analytic strategy for constructing a rigorous conceptual analysis that results into a grounded theory, (Charmaz & Thornberg, 2021: 307). In this regard, codes represent an abstract understanding of the data, (Charmaz, 2015: 10). During the coding process for this study, the researcher was aided by F4 software. The coding process enabled the researcher to identify issues, similarities, and differences in data and also to grasp the researched phenomenon from each participant's perspective. Coding enabled the researcher to systematically organize and condense down the collected data into manageable amounts of analyzed information. During the coding process, the researcher remained open-minded in order to explore whatever ideas and eventualities that emerged out of the data. It also enhanced the researchers reflexibility and theoretical sensitivity to the data so that preconceptions, personal biases, and preexisting concepts of theories were not imposed on the data. The coding process for this study included three coding procedures. These are open coding, axial coding and selective coding. These coding procedures should neither be seen as clearly distinguishable procedures nor as temporally separated phases in the process, rather, they are different ways of handling data between which the researcher moves back and forth if necessary in order to form a coherent research process, (Flick, 2009: 307). These procedures are presented in the following sections.

3.7.4.1 *Open Coding*

Open coding is the process that enables collected data to be assembled, categorized, and thematically sorted, providing an organized platform for the construction of meaning, (Corbin & Strauss, 2015: 104; Bryant & Charmaz, 2020: 174; Williams & Moser, 2019: 45). It aims at developing substantial codes by describing, naming or classifying the phenomenon under consideration, (Blair, 2015: 17). For this study, open coding began with the first set of data collected. It included labeling concepts, defining, and developing categories based on their properties and dimensions. The researcher coded data quite often using gerunds in order to gain a strong sense of the processes, actions, and sequence of data from the participants points of view. Coding with gerunds helped the researcher, therefore, to detect processes, think about actions, and stick to the data, (Charmaz, 2014: 221). Besides, in vivo codes were also frequently used in order to preserve the participants' meanings of their views and actions so as

to stay close to the data and also facilitate the formation of an emergent theory grounded in data. In vivo codes helped the researcher, therefore, to preserve the participants' meanings of their views and actions in the coding itself, (Bryant & Charmaz, 2020: 343; Corbin & Strauss, 2015: 103). The two paragraphs and their corresponding tables below are extracts from two interviews which indicate how the open coding process progressed.

"There must be a conscious effort (…) by the government to offer structural requirements for things that we need. If you don't have demonstration farms, you don't have tractors, how will you demonstrate even if in the head you know as a lecturer, (.) I am supposed to take these students out and see those things. If I am teaching water treatment (.) I want the students actually to do it but where I am going to take them? The labs are not there, so those are the systemic issues I am talking about", (P9, 143).

Interview Extract	Codes
There must be a conscious effort	• Planning deliberately and strategically
by the government to offer structural requirements for things that we need	• Providing teaching facilities
If you don't have demonstration farms, you don't have tractors	• Lacking instructional and teaching facilities
how will you demonstrate even if in the head you know as a lecturer	• Incapacitating factor • Frustrating
I am supposed to take these students out and see those things	• Engaging in field studies • Learning by seeing
If I am teaching water treatment (.) I want the students to do it but where will I take them?	• Teaching and learning by practice • Lacking instructional materials
The labs are not there	• Lacking teaching facilities
those are the systemic issues I am talking about"	• "In vivo code" – systemic challenges

"A teacher should be a continuous learner and teachable, if ESD is to take course, you didn't know this, okay, there is a workshop, okay, rush for knowledge because that is our preoccupation, (.) that is our trade, we trade in knowledge, (.) a teacher should be a teacher and a continuous learner. Yes, show me a teacher who has stopped being a learner and I will show you one who stopped being a teacher ((laughs)). So, when we have those continuous refresher courses, they get us back and they get us sensitized again, keep us straight. A teacher trainer should be a teacher trainee all the time ((laughs)). I believe that (…) when I the teacher have understood then I can make others understand (…) and if I the teacher, when I have misunderstood, then I am ready also to make others misunderstand.", (P1, 12).

Interview Extract	Codes
A teacher should be a continuous learner and teachable	• In vivo code: Being a continuous learner • In vivo code: Being teachable

if ESD is to take course, you didn't know this, okay, there is a workshop, okay, rush for knowledge because that is our preoccupation, (.) that is our trade, we trade in knowledge	• Acknowledging one's limitations • Utilizing the available opportunities • Searching for knowledge • Knowing one's responsibilities
a teacher should be a teacher and a continuous learner	• "In vivo code"
show me a teacher who has stopped being a learner and I will show you one who stopped being a teacher	• Continuous learning
So, when we have those continuous refresher courses, they get us back and they get us sensitized again, keep us straight.	• Getting reinvigorated • Being sensitized
A teacher trainer should be a teacher trainee all the time.	• Being a continuous learner
when I the teacher have understood then I can make others understand	• Empowering by knowing
when I have misunderstood, then I am ready also to make others misunderstand	• Miss informing others (learners)

In initial stages of the coding process, the transcribed data were conceptualized and coded line by line by labelling each line of the transcribed data in order to produce concepts that seem to fit the data, (Bryant & Charmaz, 2020: 76; Corbin & Strauss, 2015: 100). This helped the researcher to identify small nuances, squeeze as much meaning out of the data as possible, verify and saturate categories, minimize omission of important aspects of the categories and ensure the grounding of categories and the phenomena in the data. Open coding also fostered theoretical sampling by following the kind of categories that needed more elaboration. After developing the subcategories, categories and their respective phenomena, the next step was to conduct axial coding presented in the next section.

3.7.4.2 *Axial Coding*

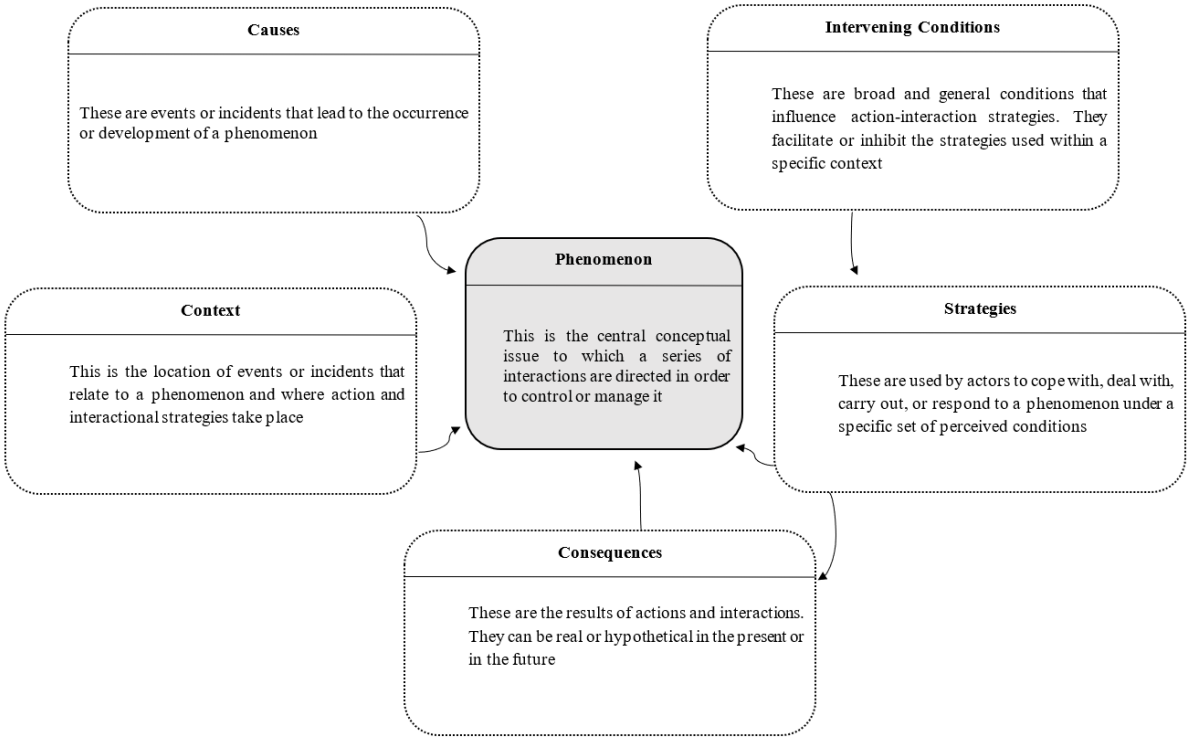
Axial coding is a complex process of inductive and deductive thinking involving several steps, (Flick, 2009: 311). It treats each category as an axis around which the analyst delineates relationships and specifies the dimensions and properties of a category or a phenomenon, (Bryant & Charmaz, 2020: 650). It enables the researcher to specify the properties and dimensions of a category, (Charmaz, 2014: 260). The major purpose of axial coding is to bring the data back together again into a coherent whole after the researcher has fractured

them through open coding, (Bryant & Charmaz, 2020: 650; Rich, 2012: 5). Axial coding answers questions such as when, where, why, who, how, and with what consequences, (Bryant & Charmaz, 2020: 645; Corbin & Strauss, 2015: 232). These questions help the researcher to fully explain the studied phenomenon. This study employed the coding paradigm suggested by Strauss and Corbin for axial coding. This is in accordance with the Straussian grounded theory approach adopted by this study. According to Corbin and Strauss (2015: 163) the coding paradigm is an analytic tool to help analysts carry out axial coding or coding around a category. After developing the substantive categories, refining, aligning, and conceptualizing them into phenomena, the researcher identified relationships, links, and connections between the phenomena and their categories and subcategories in terms of their causal, contextual and intervening conditions as well as the action/interaction strategies and their consequences. The coding paradigm helped the researcher to sort out and arrange concepts by asking questions and thinking in terms of possible linkages. Strauss and Corbin (1998: 127), Charmaz, (2014: 294), Flick (2009: 310) and Mey and Mruck (2011: 39) asserted that posing questions before, during and after axial coding offer a rich framework for preparation, open up, interpretation and examination of data and the various aspects of the phenomena in relation to the coding paradigm. Some of the basic questions they proposed and considered by the researcher in this study are as follows:

- What? — What is the issue here? Which phenomenon is mentioned?
- Who? —Which persons, actors are involved? Which roles do they play? How do they interact?
- How? —Which aspects of the phenomenon are mentioned (or not mentioned)?
- When? How long? Where? —Time, course, and location.
- How much? How strong? — Aspects of intensity.
- Why? —Which reasons are given or can be reconstructed?
- By which? —Means, tactics, and strategies for reaching the goal.
- What for? — With what intention, to which purpose? Which consequences are anticipated?

These questions helped the researcher to uncover relationships among categories, contextualize the phenomena, and identify the means through which a phenomenon can be manifested, (Strauss & Corbin, 1998; 127; Charmaz, 2014: 371). In this case, the researcher examined the various aspects of the phenomena in particular the conditions, consequences, variations, and processes related to the identified phenomena. These questions enabled, therefore, the researcher to deeply reflect on the phenomena, categories, their properties and dimensions and was able to detect relations and connections between them which enhanced

density and precision of not only the phenomena but also the emergent theory. In order to unearth the causal, contextual and intervening conditions of the phenomena, the researcher examined data, codes, subcategories, categories and their respective phenomena by posing questions, which related to the perceived reasons the participants gave for why, when, and how come things happened and their response to them. Quite often the participants also used words, such as because, since, due to, and when, which gave the researcher a clue that they were about to explain and give reasons for their responses and actions. In regard to examination of action-interaction strategies, the researcher examined data, for instance, to find the meaning the participants attached to ESD and the actions they took or suggested to be taken in order to integrate ESD in teaching and learning activities in teacher education. Whereas for the consequences, the researcher examined data for the anticipated and actual outcomes of the action-interaction strategies undertaken or suggested by the participants. The graphic below was used in the presentation of the results of axial coding in relation to the causal, contextual, intervening, strategies and consequences of the phenomena (cf. 4.3.2, 4.6, 4.8 & 4.10) respectively.



The descriptions of the causal, contextual, intervening, strategies and consequences in the graphic were adopted from Corbin and Strauss, (Corbin & Strauss, 2015: 167-8). The phenomenon is placed in the middle of the paradigm because it forms the axis around which the items of the paradigm are linked, connected and assessed. The whole paradigm serves to

clarify the relations between a phenomenon, its causes and consequences, its context, and the strategies of those who are involved, (Flick, 2009: 310). In other words, it helps to reveal the possible relations between subcategories, categories, properties and variations of the phenomena along the items of the paradigm. The paradigm helps to combine the structure/context with process in order to get at some of the complexity that is so much part of life. Unless one understands the nature of their relationship both to each other and to the phenomenon, it becomes difficult to truly understand the why and how of what is going on, in the case of this study, the integration of ESD in teacher education, (Strauss & Corbin, 1998: 127).

3.7.4.3 *Selective Coding*

Selective coding is the process of integrating and refining categories by choosing the core category and relating all other categories to it, (Strauss & Corbin, 1998: 143; Rieger, 2018: 3). It is the third and last procedure of coding according to the Straussian grounded theory which enables the researcher to select and integrate the categories or phenomena developed through axial coding in cohesive and meaning-filled expressions, (Williams & Moser, 2019: 52). In other words, axial coding enables the researcher to systematically develop the categories or phenomena and connect them, however, it is not until the major categories are finally integrated to form a larger theoretical scheme that the research findings take the form of theory, (Strauss and Corbin 1998: 143). In this regard, selective coding continues the axial coding at a higher level of abstraction, (Flick, 2009: 312). In this study, the researcher examined and reflected on the developed subcategories, categories and the four phenomena and found out that although the four phenomena tell part of the researched phenomenon, none of them captured it completely. A core category was, therefore, abstracted that seem to connect and relate the four phenomena and explains how ESD can be integrated into teaching and learning activities in teacher education. In this case, the phenomena were theoretically integrated and subsumed under a consistent overarching core category that linked all of them in order to generate an emergent grounded theory. The detailed explanation of the core category and the corresponding phenomena are presented in chapter four of this study about the research findings.

3.7.5 Generated Grounded Theory

The emergent grounded theory generated out of data that explains and offers a better understanding of the ways in which ESD can be integrated into teacher education states that the integration of ESD in teacher education occurs when teacher educators possess the key

teachers' competences (cf. 4.6) and have an enabling environment (cf. 4.8) that supports and facilitates them to engage in relational teaching and learning process by considering multiple aspects of ESD (cf. 4.3). A visual model was also created (cf. 4.1, graphic 1). It is accompanied by a written description that explains the phenomena, their relationships, and linkages.

3.8 Research Trustworthiness

Unlike in quantitative research paradigm where concepts of validity and reliability are used to justify the study findings, in qualitative research paradigm internal validity is replaced by credibility, external validity by transferability, reliability by dependability and objectivity by confirmability as explained in the subsequent subsections, (Golafshani, 2015: 601; Prince Alamina et al., 2022: 199; Richard P. Bagozzi, 2017: 14; Rashid et al., 2019: 4; Creswell, 2014: 251). The four criteria act as measures of trustworthiness and authenticity of qualitative research findings. They reflect the underlying assumptions involved in qualitative research, (Trochim, 2006: 162; Trochim & Donnelly, 2016: 71). Secondly, they enable the researcher to be transparent and explicit on how the study was conducted, the procedural decisions taken, and the details of data collection and analysis, (Trochim & Donnelly, 2016: 342). They enable also the readers of the research project to follow the progression of events, decisions and understand their logic because they provide adequate description, explanation and justification of the methodology and methods, (Rashid et al., 2019: 8).

3.8.1 Credibility

Credibility refers to confidence in the truth of the data and its interpretations, (Polit & Beck 2012: 585). It is the criterion for evaluating the truthfulness of qualitative research. Credibility in qualitative research is achieved through ascertaining how compatible the findings of a particular study are with reality, (Trochim & Donnelly, 2016: 72). For the purpose of this study, the researcher made sure that the research process was followed according to the ground theory approach judiciously such as accurate transcription, coding, constant comparative analysis, theoretical sampling and the writing of memos, and so on.

3.8.2 Dependability

Dependability is the ability to observe the same outcome or finding under similar circumstances, (Golafshani, 2015: 601; Rashid et al., 2019: 8). Dependability does not mean that the same results would necessarily be found in other contexts but that, given the same data, other researchers would tend to find similar patterns, (Hammarberg et al., 2016: 500). It

is a measure of consistency in a study, (Bevan, 2014: 142). It should be noted however that since quite often interpretivist researcher deals with human behavior which is by its very nature unstable, contextual, and subject to multiple interpretations of reality, it may not be easy to reproduce exactly the same results, (Lazer et al., 2021: 191; Flick, 2009: 314). This is one of the weaknesses of qualitative research in general and grounded theory approach in particular. In this study, dependability was safeguarded by making sure that the generated theory is generated exactly from the collected data in order to reflect the views of the participants and their context.

3.8.3 Transferability

Transferability is the extent to which the study findings can be transferred to other settings or groups of the similar nature, (Trochim & Donnelly, 2016: 72; Flick, 2009: 395). It occurs when the study findings can fit into contexts outside the study situation and the readers of the study can view the findings as meaningful and applicable in their own experiences, (Trochim, 2006: 162). Trochim and Donnelly (2016: 71) argued that from a qualitative perspective, transferability is primarily the responsibility of the one doing the generalizing. Additionally, the main goal of qualitative studies is not to generalize the study findings but to provide a rich and contextualized understanding of the studied phenomenon. In this study, transferability was guaranteed by remaining faithful to the data, research method, and explaining thoroughly the research findings. It will be incumbent, therefore, on the people who might wish to transfer the study findings to their respective contexts to decide on how sensible and suitable the findings could be relevant and applicable in their own contexts.

3.8.4 Confirmability

Confirmability is the degree to which study findings can be confirmed or corroborated by others in the field and how the research findings can be supported by the collected data, (Polit & Beck, 2013: 457; Trochim & Donnelly, 2016: 72). In this study, confirmability was observed by clearly following the procedures of grounded theory approach such as proper transcription of data, coding, iterative comparative analysis, and memo-writing. This study progressed under a very competent supervisor who was always available to advise and guide the researcher. Besides, the monthly colloquia were also very helpful because they offered an opportunity to the researcher always to discuss with colleagues the progress and the findings of the study which enhanced and ensured consistency, plausibility and confirmability of the study.

3.8.5 Reflexivity

Reflexivity is the researcher's scrutiny of his or her research experience, decisions and interpretations in ways that bring the researcher into the process and allow the reader to assess how and to what extent the researcher's interests, positions and assumptions influenced inquiry, (Bryant & Charmaz, 2020: 150; Charmaz, 2014: 60; Corbin & Strauss, 2015: 67; Polit & Beck, 2013: 142; Flick, 2009: 472). Reflectivity helps a researcher not to focus and force his or her preconceived ideas on data and the research process, (Charmaz, 2015: 273). In this study, reflexivity was exercised by the researcher by constantly reflecting on actions and decisions taken, impressions and observations encountered, and acknowledge personal irritations, feelings and disappointments in the entire research process. Constant reflexivity increased the researcher's awareness of the interaction between the data and the self so that the researcher's feelings, preconceived ideas and biases are not forced on data, its interpretation and the presentation of the emergent theory. In this regard, reflexivity helped the researcher to remain consistent and faithful to the steps and principles of grounded theory data collection and analysis as presented in the sections of data analysis (cf. 3.6 & 3.7). It also enhanced theoretical sensitivity (cf. 3.5.3.2). The researcher's experiences, routines, and knowledge of the researched phenomena were never substituted for data but used as points of departure and sensitizing tools to look for potentially important aspects in the entire research process.

3.9 Ethical Considerations

Ethical considerations are crucial in research, especially when the research involves human participants whose privacy and dignity must be respected. Ethical issues in this study were ensured through the following procedures. Recruitment of participants and data collection commenced after the research protocols were reviewed and approved by the research ethics committee. Respect for the autonomy and dignity of persons was ensured throughout the study. Confidentiality was observed, for instance, pseudo names were given to each participant to hide their identity as already indicated in section 3.5.3 Table 1. Responses to all interviews were stored in a secure location and will be destroyed and information recorded erased after the completion of the study. Digitally collected data were kept in a password protected personal computer owned by the researcher. Formal consent was sought from the participants and the participants reserved the right and freedom to stay or withdraw from participating in study. The nature and purposes of the research were fully revealed to the participants and deception was avoided by all means. The participants were given time and

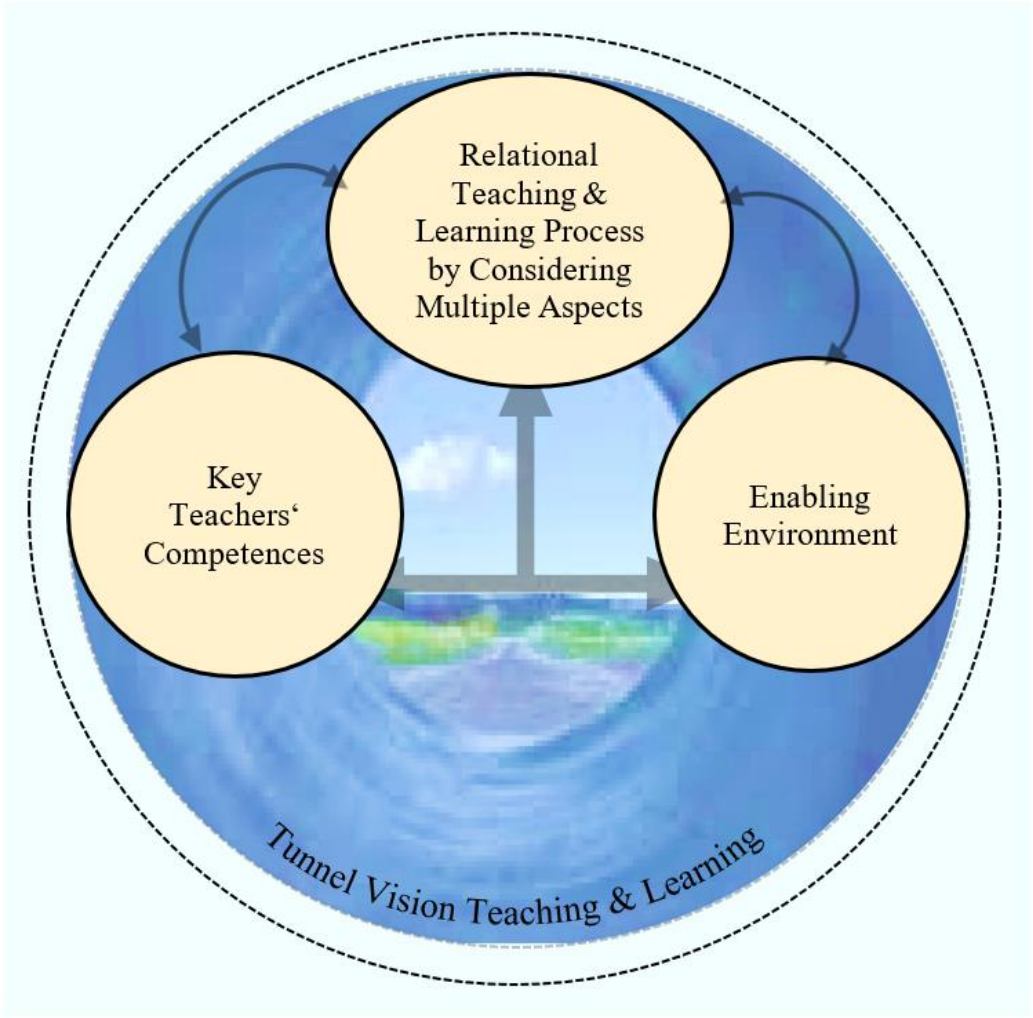
space to reflect on the questions and the opportunity to raise concerns, ask questions or share any comments. Before data were collected from the participants, rapport was established between the researcher and the participants. This was done, for instance, through greeting, choice of a comfortable and convenient place for interviews and assuring them that there is no harm intended to be inflicted on them during and after data collection as a result of their participation in the study. At the end of each interview process, interviewees were and remained highly appreciated for their valuable contributions and time spent by participating in the study. On site appreciation was in form of thank you.

Chapter4 Research Findings

This chapter presents the emergent grounded theory as the findings of the study on the integration of ESD in teacher education in Uganda. It consists of the core category and the phenomena which are the constituents of the emergent grounded theory. They emerged in the course of the data analysis.

4.1 Presenting the Emergent Grounded Theory: Integration of ESD is a Relational Teaching and Learning Process by Considering Multiple Aspects

The main purpose of this study was to investigate and explore ways in which education for sustainable development could be integrated into teacher education in Uganda. The core category of the emergent grounded theory that was developed from data analysis is "Integration of ESD is a Relational Teaching and Learning Process by Considering Multiple Aspects". This core category represents the central phenomenon of the study and it addresses and answers the study's main purpose and research question. The core category emerged from the process of selective coding, a process of integrating and refining categories around a central explanatory concept, (Strauss & Corbin, 1998: 143). There are four phenomena that emerged out of the collected empirical data during the process of axial coding. These phenomena are "Relational Teaching and Learning Process by Considering Multiple Aspects", "Key Teachers' Competences", "Enabling Environment", and "Tunnel Vision Teaching and Learning". The emergent grounded theory is presented following these four established phenomena. These four phenomena constitute the subcategories of the core category as represented in the following graphic:



Graphic 1: Phenomena of the Emergent Grounded Theory

Graphic one displays the four phenomena that emerged during the analysis of data for this study. The phenomena "Relational Teaching and Learning Process by Considering Multiple Aspects", "Key Teachers' Competences" and "Enabling Environment" are interconnected in the graphic because they are all important for the integration of ESD in teacher education. For the purpose of this study, the phenomena "Teachers' Competences" and Enabling Environment" are very crucial in enabling, supporting, and facilitating teacher educators to integrate ESD in a relational teaching and learning process by considering multiple aspects. The T-shaped big arrow in the middle of the graphic implies that interrelationship. Whereas the double-headed curved small arrows connecting the three phenomena imply the symbiotic relationship that exists between the three phenomena in relation to the integration of ESD. On the other hand, the phenomenon "Tunnel Vision Teaching and Learning" is positioned in the background of the other three phenomena because it is an antagonizing phenomenon which

teacher educators should circumspect. The phenomenon has the potential to obstruct and frustrate teacher educators' efforts and ability to integrate ESD in relational teaching and learning process by considering multiple aspects. This phenomenon is associated with the concept of teachers' academic tribalism or the practice of subject specialization deeply entrenched in teacher education as reflected and explained in subchapters 2.4.2 and 4.10 respectively of this study. In this study, teacher educators could circumvent and forestall tunnel vision teaching and learning by having and focusing on the aspects of the three phenomena superimposed and obstructing the antagonizing phenomenon by forming the frontispiece of the graphic. The interconnections of the phenomena and the core category of this emergent grounded theory will be presented in the subsequent subchapters 4.1, 4.5, 4.7, and 4.9 respectively of this chapter. The participants' voices (words) will be quoted during the presentation of the theory as evidence that substantiates specific aspects. Besides the quotation of participants' voices, relevant literature will be concurrently integrated in order to add more authority and credibility, enhance the explanatory scope and depth of the emergent theory by locating and connecting it to the existing literature and theoretical frameworks. According to Snyder (2019: 333) building research on and relating it to existing knowledge is the building block of all academic research activities, regardless of discipline. In this regard, Goldkuhl & Cronholm (2010: 3) stressed that researchers often build new knowledge on existing knowledge, therefore, it is important to relate the emergent theory to related literature. Connecting the emergent theory with the existing theoretical frameworks helps to substantiate, confirm, and enhance an emerging grounded theory and situate it within the existing body of knowledge, (Bryant & Charmaz, 2020: 87; Goldkuhl & Cronholm, 2010: 197; Luckerhoff & Guillemette, 2011: 400; Nathaniel, 2022: 45; Urquhart et al., 2010: 378). The integrated relevant literature with the participants views in this study will not only be restricted to existing literate about ESD in the context of Uganda because not so much research has been conducted about ESD in Uganda. Thus, general literature about ESD and its integration in teacher education will also be incorporated in this study. In this case, the researcher is cognizant of the literature contextual differences and only literature which resonates with the participants views even if the study was not conducted in Uganda will be considered and integrated with the participants' views. In this respect, the following section approximates the emergent grounded theory with already existing theoretical frameworks on relational teaching and learning.

4.2 Situating and Conceptualization of Relational Teaching and Learning Process in the Context of Current Debate.

This section serves to offer a brief theoretical view of the aspect of relational teaching and learning process by considering multiple aspects advanced by this study. Relational teaching has recently gained increasing prominence across academic disciplines in an attempt to explore and understand complex phenomena such as sustainability and its relationality, (Walsh et al., 2021: 74). The educational paradigm of relational teaching can be traced from numerous theoretical traditions right back to Aristotle's philosophical thoughts on education. Aristotle perceived the teacher's role as a facilitator who guides, nurtures, and helps the learners to actualize their potentiality, (Annarumma, 2016: 382; Donskikh, 2018: 10; Kristjánsson, 2020: 359; Ladikos, 2010: 78; Mozelius et al., 2020: 2). Throughout the ages various scholars have devoted available time on the concept of relation teaching (e.g., Dewey 1929; Buber 1937; Lewin 1942; Cohn 1962; Bowlby 1969; Vygotsky, 1978; Noddings, 1984, Biesta (1994; Bingham and Sidorkin, 2004; Margonis, 2007; Aspelin 2014; Ljungblad, 2019, etc.). The concept of relational teaching is ontologically based on the idea that people share a social living space with other people, that is, human beings are born into relationships and live within relationships, (Ljungblad 2021: 863; Häggström, 2022: 48).

In this respect, teaching is viewed as a relational process that places the relationship between teacher and students at the centre of the learning process, (Fraser et al., 2007: 42). Teaching is perceived as a relational process and without a relation, effective teaching cannot take place, (Aspelin, 2020: 2; Anne Winter, 2018: 347; Frelin, 2013: 20). This perception may explain why most of the studies conducted so far on relational teaching have focused mainly on the relationship between teachers and their students such as, (Biesta, 2005: 61; Fraser et al., 2007: 43; Aspelin, 2020: 2). Relational teaching has been influenced partly by the neo-liberal educational reforms that borrow their logic from the business world of cordial interaction between client and supplier or customer and seller relationship, (Frelin, 2013: 14). This approach to teaching also depicts a departure from traditional educational paradigms which focused on the development of the self as a separate, autonomous and independent individual to the development of the self-with-others, (Edwards & Richards, 2002: 37; West et al. (2020: 304). In the case of Aspelin (2014: 235), relational teaching is a path between the two main roads built in education during the twentieth century, that is, teaching-centred and learner-centred approaches. These approaches have a unidimensional focus and emphasis on the learning process as opposed to the bidimensional and reciprocal approach of relational teaching. In this regard, Aspelin and Jonsson (2019: 7) conceptualized relational teaching as

an ongoing process of communication, in which the actions of the teacher foster the relationship to the student.

However, focusing only on the teacher-student relationship may push other aspects of teachers' relations to the periphery, including those that are involved in the development of other types of relations that are also part of a teacher's relation such as the relation with parents, colleagues and administrators, each of whom can make an educator's job either a joy or an ordeal, (Frelin, 2013: 2). Aspelin (2014: 235) also stressed that as much as the primary relation is that of teacher-student, teachers' relation extends to other levels, that is, from individual, social, organizational up to societal levels. This implies that the relational dimension of teaching as a central feature of the teaching process goes beyond the teacher's relation with the students, (Frelin, 2013: 2). In this respect, as much as many studies focus on relation teaching, this study includes the aspect of learning. The focus on both teaching and learning highlights the notion that teaching does not equal learning, if it was the case, teaching would be a simple affair. Learning remains, therefore, the purpose of the relationship, although relation is central to teaching in order to enable the student to learn, (Frelin, 2013: 14). Therefore, teaching and learning are both important for this study because the activity of teaching presupposes the notion that someone else will learn. The relational teaching and learning process in this current study extends to relations with other people, academic disciplines, and nature, due to the complexity of ESD issues. Nevertheless, the teacher-student relationship remains at the core of the central category of this study because without good teacher-student relationship, teaching and learning cannot effectively take place, (Vidmar & Kerman, 2016: 44; Tormey, 2021: 478). This will become clearer in the subsequent subsection 4.3.

In relational teaching and learning for the integration of ESD, all relational levels act as avenues for support and facilitation of teacher educators, (Reeves & Le Mare, 2017: 86). This will also be expounded in the subsequent section 4.8. In this regard, Frelin (2013: 24) remarked that the teacher's responsibility exists towards the individual learners, the staff and society. This indicates that relational teaching and learning is, therefore, based on the assumption that the relationship between teachers and students as well as the interpersonal, social, cultural, and environmental issues influence the teaching and learning processes, (Wang, 2012: 60). This implies furthermore that the integration of ESD in teacher education cannot simply be attributed to just a single stakeholder of education, but all stakeholders cooperate to integrate ESD. Specifically, the interaction and cooperation ought to be anchored on genuine openness, respect and readiness to show resolve to integrate ESD in a relational

approach to teaching and learning. This will be elucidated in detail in the subsequent subsection.

4.3 Phenomenon: "Relational Teaching and Learning Process by Considering Multiple Aspects"

The phenomenon "Relational Teaching and Learning Process by Considering Multiple Aspects" was developed during axial coding (cf. 3.7.4.2), a coding paradigm proposed by Strauss and Corbin, (Corbin & Strauss, 2015: 166-168). This phenomenon refers to the ability of teacher educators to relate with their learners and other people, to relate their subject of specialization to other academic disciplines, and to relate what they teach to ESD issues existing within and outside teacher education institutions. These three-dimensional relations of teacher educators were identified during data analysis. They constitute the three properties of the phenomenon "Relational Teaching and Learning Process by Considering Multiple Aspects". They act as avenues through which teacher educators can integrate ESD in teaching and learning activities in teacher education. All participants passionately talked about the three-dimensional relationship of teacher educators during the interviews. For instance, the importance of teacher educators having a good relationship with people, especially their learners, was clearly accentuated by the participants. They based their arguments on the view that it enhances learners' attention and motivates them to love and follow what they learn. This is spelled out clearly in the following statements of the participants:

"Teachers teach better when they have a good relationship with their students (…) if you find somebody saying I don't familiarize myself with students, yes you are right, but you need to only know that when these children realize that you love them, they respect you more. When these children realize that such and such a teacher likes us, even when this teacher does something that hurts them, they will say, we have not just understood you, but you always mean well," (P1, 25).

Another participant highlighted that:

"You see sometimes one of the things I look at is gaining learners on my side (.) when you are a teacher, gaining learners on your side is a very good competence you need and how do you do that automatically some people say you cannot befriend learners, yet you cannot teach students who are not your friends ((laughs)). So befriending learners, friendliness is a competence that a teacher needs for sustainability because they will be open to you and such open mindedness comes when you are friendly," (P13, 188).

This indicates that a good relationship between teachers and their students facilitates learning, whereas an unfavorable relationship distracts learning. Relational teaching creates furthermore a meaningful connection between the student and teacher and provides a

foundation for personal growth, (Edwards & Richards, 2002: 45; Québec Gouvernement du L'Éducation Ministère de, 2021: 22). Scrimsher and Tudge (2003: 308) remarked that student teachers cannot simply be taught in a relatively didactic manner but they need to experience cordial relationships in their own education if they are to be able to apply it after becoming teachers themselves. Ljungblad (2021: 4) argued that it is essential to place the relationship between the teacher and the student at the core of teaching. It promotes dialogue and places appropriate relation on both the teacher's authority and on the student's capacities, performance, social development, interests and needs, (Guilherme & Morgan, 2009: 568; Aspelin & Jonsson, 2019: 1). On the other hand, Agyekum (2019: 121) studied the impact of the teacher-student relationship in promoting learning and found out that a negative teacher-student relationship promotes significant problems that can affect students to the highest level. One example given by the participants was that of students complaining about not being taken seriously by some teachers, about not feeling heard even when they were performing well in their respective academic disciplines. In the opinion of the interviewees, this appears to be an important sign that successful learning has probably more to do with human relations than with just academic grades (cf. P1, 24). Yan (2019: 448) argued that the teacher-student relationship is the most basic interpersonal relationship in colleges because it does not only ease students' emotional obstacles and learning anxiety, but also can promote students' learning motivation and autonomous learning consciousness. According to the participants, teachers' relation goes beyond mere socialization with their learners to the relation of what they teach to the learners' life experiences. For instance, some participants said:

"So, we have to be creative and you relate the learned experiences to what students normally experience, with their life experience so that now you make it relevant to their life situation," (P13, 188).

"If we could teach them everyday life experiences and bring out those issues critical to their daily lives like may be having practical skills of farming and also showing them documentary. It will give them really that insight such that by the time they come out even if they are not able to achieve certain things or even if they achieve, they can use this information in their day-to-day life," (P23, 316).

In this regard, Sanford et al. (2015: 30) asserted that relational teaching and learning requires teacher educators to value and respect learners' prior knowledge and their style of learning as well as support students to make connections between theory and personal experience. In this case, teacher educators create opportunities for learners to actively make sense of the teaching and learning tasks based on their lived experience. Mavuru and Ramnarain (2018: 3) argued that teachers' consideration of the teaching and learning environment necessitate integrating learners' socio-cultural practices, experiences and beliefs when teaching. Whilst Mahona and

Mkulu, (2020: 20) in their study on teacher-student relationships found out that teacher-students relationships help students to feel cared for by their teachers, have freedom of expression in the classroom and enable teachers and students to be an integral part of the classroom as they actively participate. In this case, building a positive teacher-student relationship promotes participatory and action-oriented teaching and learning, (Lohmann et al., 2021: 14). Whereas, Aspelin (2014: 239) suggested that teachers ought to relate to the learners' actual and potential existence. This approach resonates well with the understanding of sustainability as development that meets the needs of the present without compromising the ability of future generations to meet their own needs, (Bac, 2018: 577). The participants also stressed that if what students learn with their teachers is related to their life experiences, they understand and appreciate it more because they get to know that what they are studying is relevant both to their life in the education institution and their life after study. This is substantiated by one of the participants in the following statements:

"Teaching should not be only knowledge oriented (…) it should be both knowledge and practice oriented, real life situation so that when a student is given the knowledge, he sees a real life situation and he is able to (---) and when he goes out is able to apply the knowledge in the really life situation," (P4, 80).

In this case, teaching and learning become a way of bonding between the teacher, students and the acquired knowledge. Aspelin (2020: 7) argued that teaching and learning without a bond between teacher, student, and what is being learnt, there cannot be transformative teaching and learning. According to the participants, teachers' relationship extends further to other people, such as fellow teachers and other stakeholders. Good relationships among teachers and also with other stakeholders promote cooperation, teamwork, and improve teachers' performance. This is made clear in the response of one of the participants:

"Then also a teacher should be somebody who associates with other people (.) he should be a team player, you should relate with them very well, you should work with them well, you should understand and integrate with that society. So, it is important because without those (---) it will be very difficult for the teachers to promote development or to undertake development activities, in case of anything in society," (P18, 249).

McNally (2016: 5) observed that if relationships with students are important, then good relationships with colleagues are equally important because they offer psycho-social support both from individuals and in a collective manner. In this regard, Ljungblad (2022: 1) stated that teaching is a profession with various interpersonal processes that are highly contextualized and situated. It is, therefore, not enough for teachers to simply know their subject matter and support their students but also know how to relate with other people. In this case, relational teaching and learning enable academics to work together on the basis of an

ontologically shared approach that acknowledges the social and relational character of teaching and learning, (Ljungblad, 2021: 5). Collaboration among teachers can also improve students learning, (Mora-Ruano et al., 2019: 1; Saka, 2021: 35). The participants pointed out, furthermore, the aspect of ESD being transdisciplinary. They stated that ESD issues are not restricted to any particular academic disciplines, rather all disciplines contribute to ESD and sustainable development. This necessitates, therefore, teacher educators to teach beyond the content related to their subjects of specialization by relating what they teach to other academic disciplines. This becomes clearly evident in the statement of one of the participants:

"Yes, the other aspect which is also important for us teachers in this sustainable development is to be able to connect knowledge. I am a teacher of agriculture I should also know what is happening in economics. I am a teacher of agriculture I should know what is happening in art and design. I am a teacher of agriculture, I should know what is happening in physics, in law and now recently leadership, yes, leadership and entrepreneurship. I should know what is happening in commerce, in banking even when I am teaching my biology. Seek for knowledge outside discipline and then incorporate it in the topic. There you will start seeing now learners finding value for your information. A learner who is interested in art and design, when you start mentioning art in your topic of biochemistry, they start seeing whether using those chemicals formula, they can get a good color or even an art piece and that is where sustainable development comes in because you are in class yes, but you take note of other sources of knowledge, other disciplines and how they relate to your discipline," (P12, 173).

The knowledge of various academic disciplines as stated by participant P12 is very crucial for integration of ESD into teacher education. In this case, teacher educators ought to strive toward systematic knowledge, which is possible only through the formation of a broad view of their subjects of specialization based on the links with other subjects, (Donskikh, 2018: 10). McGregor (2022: 7) augmented that educators ought to know that no discipline is privileged to address the complex issues of ESD in isolation but all disciplines have something to contribute, therefore, learning them is worthwhile. This is also corroborated by various studies such as (Evans, 2019; Leal Filho et al., 2017; Rudhumbu et al., 2017; Tiwaone Mkandawire et al., 2016; Nordén & Nordén, 2018). They stressed that ESD issues are transdisciplinary. The participants emphasized furthermore the issue of teachers relating what they teach in class to ESD issues existing within and outside the education institutions. They argued that if what is taught in class is related to sustainability issues happening in and outside the precincts of teacher education institutions, learners can be able to perceive continuity of knowledge and appreciate what they study as applicable to their live during and after study. This is epitomized by the statements of some of the participants:

"Yes, now when you are teaching that is, if you fix yourself only into the classroom and your teaching notice then you are finished, you will find problems but if you begin teaching every topic and relate it to society then

you are in business because if you are relating every topic to what is happening to society, I start talking about soil formation and then the landslides, okay, I am looking at the movement of water as a degradation factor, I am looking at the floods in Kasese, the message comes in very handy. In fact, when you apply the knowledge then definitely you will mention the culture, you will mention economics, you will mention the environment, everything will be there. If our knowledge during teaching is detached from application, then we are closed. So, it is important that the subject fits into the day to day activities of the society," (P12, 175).

"Teachers must know the needs of the people so that they come up with ways of how they can instill in children or in students skills and knowledge of dealing with problems that are there," (P7, 108).

The ability to relate what is taught in class to what is taking place in society externalizes therefore the teaching curriculum so that what is taught does not remain theoretical and abstract knowledge for learners but bridges learners' life in and outside the institution of learning, (Aspelin, 2020: 4; Bingham & Sidorkin, 2004; 33; Yan, 2019: 453). Teachers make learning more relevant and meaningful to their learners, when teachers look for contexts and examples beyond the textbook, , (International Bureau of Education (UNESCO-IBE), 2016: 21). This signifies a dynamic relationship of teacher educators, that is, relation with students, colleagues, and the broader society, (Lohmann et al., 2021: 11). One of the participants explained that instead of asking learners abstract questions, it would be better to ask practical questions which could enable learners to think and find a solution for themselves:

"I am saying that when you don't relate your content to the neighborhood then you will never know the value when you are doing it and it will not stay with you and your learners (…) personally have problems with teachers who teach in class and they begin with a statement, like in case they bring this question what do you do? … like we normally have those questions, assuming you are being appointed a firm manager of this university and you have found there three cows, two kids, three what, and you find that this one is behaving like this and this one is behaving like this, how will you advise top management to improve the performance of the farm? You see, this is an application question but when we are teaching we even say, assuming you have this and that and in case they ask you like this what do you answer?", (P12, 183).

In the opinion of participant P12 asking students questions which require them to give practical solutions to existing problems in their contexts helps them to relate what they are learning in class to the existing challenges in society. This approach to teaching makes students to actively get involved in their learning process and they become co-creators of knowledge with the guidance of the teachers and in collaboration with their peers, (Jacobs & Renandya, 2021: 349). Whereas OECD (2009: 93) argued that students learn best when they have the opportunity to find solutions to problems on their own. According to Chin and Osborne (2008: 5), asking students practical questions provides insights into their knowledge, understanding, and puzzlement, and act as a window into their minds. Some participants

argued furthermore that relating what is taught in class to what is happening in and outside the education institution environment necessitates teacher educators to take their learners to the field to have an opportunity to see, touch and experience what they are learning. This could be in form of fieldwork or community-based learning which can last for a few hours, a day, a week, months or even a semester. This is evidenced in the statement of some of the participants:

"So, you have to bring in community-based programs. So, integrate society in teaching means you have to take students to society. We do that as teacher-like school practices. We encourage them to do more to participate in other activities besides teaching, sports, general co-curricular activities, yes, through career guidance and so on," (P6, 99).

"Even in the evaluation itself, limited attention is given to what someone can do. That is a question of what you can do (.) not to assume that what you can write is equivalent to what you can do. Let us say, (…) if someone was studying a subject like agriculture; we would want to see their report from the farm contributing a major part of evaluation as opposed to what we do now. Let us say that when students go for an internship, their contribution is 30% or 30% to 70% of the overall ratio or it can be 50-50. You know by the time someone goes to university they have proved their ability to recall so we now need to see them doing it. I think that is what is missing. Yes, (.) our education system is geared to evaluating the ability to reproduce the work but is limited on the practical part of the evaluation", (P9, 137).

Christie et al. (2013: 398) argued that community-based education encourages cross-discipline thinking and learning among teachers and students and communities are also helped by students to solve problems which is a key component of ESD. Whereas Esteves et al. (2019: 77) observed that fieldwork in education is an important activity in terms of promoting the development of knowledge and skills that go beyond educational institution learning. Additionally, Brundiers et al. (2010: 313) postulated that real-world learning opportunities seem to be a suitable way for students to develop key competences in sustainability. In this regard, some participants stated that when fieldwork and community-based learning are conducted, both teachers and learners have an opportunity to develop and improve on their competences and life skills. For example, some participants said:

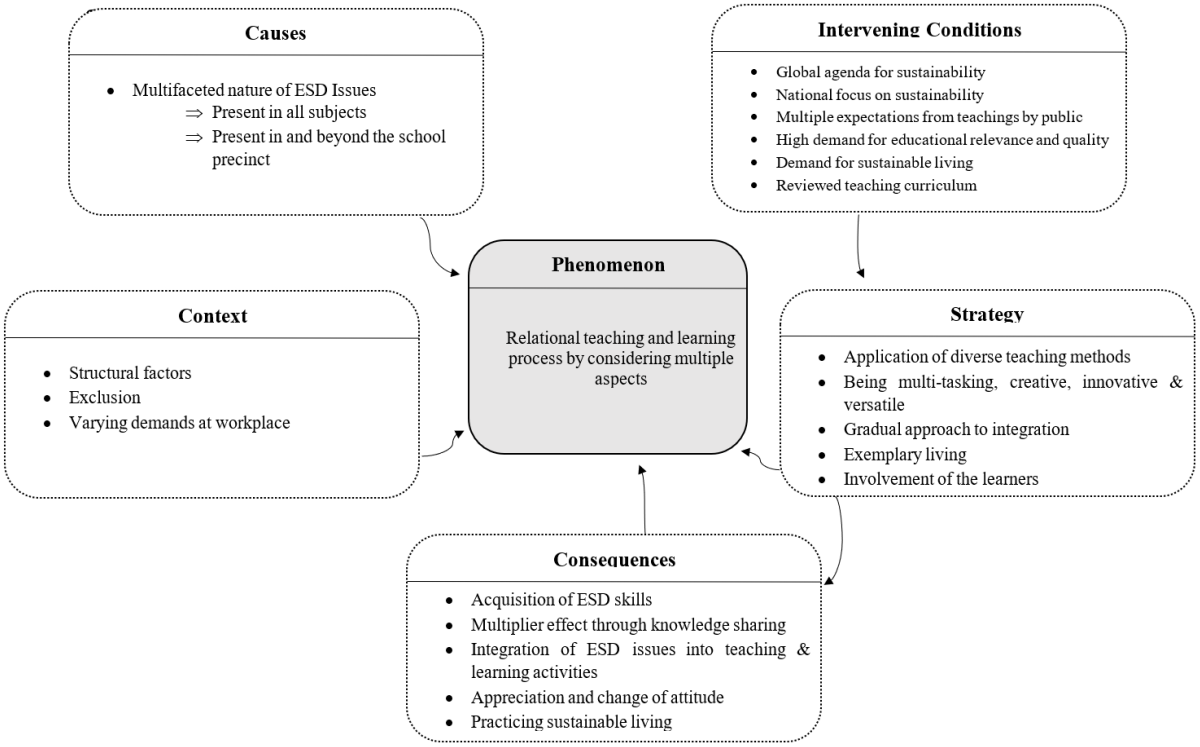
"First of all, the thing is this, if you really want to gain skills, you need to be going to the community and understand their challenges and once you know that, then ask yourself, how can we solve this (---) and then that question will lead to the problem you need to solve and when you realize that then you have to gain the skills (…). Now, how do you gain the skills, you have to go to the right people, you have to know that this skill is related to this one, so may you have to go and create a network of people and people will be very happy to talk to you, if you talk in a very logical way," (P22, 306).

"If you are teaching a topic like agriculture or farming, the learners have to go to the community and find out the challenges because some of the problems we are talking of might not be there in the community and some of them are there, the community have better experience, they know what has been happening and how they have suffered and they know and they can give certain cues and they can give solutions and then the technical people pick them up," (P4, 75).

In this case, community based learning does not only provide teachers and students with a vivid and specific learning environment, but also stimulates students' interest in learning, develops their knowledge and practical skills, changes their learning attitude and transforms the entire learning process from passive learning to active learning, (Gao, 2019: 62; Ling Meng-qi, 2020: 1171). Singleton (2008: 6) remarked that relational teaching and learning in field work helps students to find personal meaning and relevance in learning locally that adds purpose to their education. Problem-oriented teaching and learning also strengthens the student's ability to work in groups by making the group-work as important as finding a solution to the presented problem, (Wiener & Schröder, 2018: 1). It also invokes a sense of autonomy, competence, and relatedness in the students to foster intrinsic learner motivation, (Wellhöfer & Lühken, 2022: 864). Harfitt (2018: 4) also conducted a study on the role of the community in teacher preparation. The study established that community-based placements for novice teachers presents a fundamental and complementary layer of learning that supports the work of teacher educators and school-based teacher mentors in developing and cultivating key competences that teachers of the twenty-first century need including specific subject content skills. On the other hand, Lastra and Durán (2018: 209) conducted a study on community-based pedagogy as an eye–opening for pre-service teachers' initial connections with the school curriculum. The study revealed that community-based learning motivated their students to explore their communities from different perspectives and promoted students' role of self-inquiry and what takes place in their communities. The findings of these studies continue to highlight the important role which fieldwork activities contribute to the integration of ESD in relational teaching and learning.

In a nutshell, the phenomenon "Relational Teaching and Learning Process by Considering Multiple Aspects" presents an inclusive approach to integration of ESD by teacher educators in their teaching and learning activities with their learners. It tends to consider all aspects of sustainability and nothing seems to be taken for granted both theoretically and practically. This is reflected in the teacher educators' relational dimensions with their learners, other people, other academic disciplines, and consideration of sustainability issues in and outside the geographical area where actual teaching and learning process takes place. On this note,

therefore, having looked at the meaning and properties of the phenomenon "Relational Teaching and Learning Process by Considering Multiple Aspects", the next section examines the interactions and contextual explanation of this phenomenon. The presentation will follow the framework of Strauss and Corbin's axial coding paradigm depicted in the graphic below. The interactions and contextual explanation of all phenomena in this study will be presented consistently in this format.



This format of presenting the phenomenon has been chosen because it offers a general frame for analyzing the relationships between the phenomenon and its related properties and dimensions. It shall help both the researcher and the readers of this work to locate and link actions and interactions of actors in the study context within a framework of the given dimensions. Furthermore, it also allows the emergent theory to go beyond mere description of the phenomena to explanation of the interactions that occur up to the real or anticipated consequences of the actors' action–interactions, (Corbin & Strauss, 2015: 165). The focus and relation of causal conditions, context, intervening conditions, strategies, and consequences is based on the empirical data gathered from the participants in this study.

4.3.1 Causes

The causes of the phenomenon "Relational Teaching and Learning by Considering Multiple Aspects" evolve from the very nature of ESD issues which are multidimensional, multifaceted

and multivariate as highlight by the participants and distilled in the data analysis. Participants pointed out that ESD issues can neither be located nor confined in one academic discipline or aspect, rather all academic disciplines contain aspects of ESD. This necessitates, therefore, teacher educators to consider multiple aspects in their teaching and learning activities with the learners as highlighted by some of the participants:

"As an individual, I don't believe in independence of a single subject or its dominance over the others. I believe in interdisciplinarity because all of these subjects add," (P9, 137).

"ESD is in all subjects and you cannot just make it a subject of itself, otherwise it will lose its meaning," (P13, 185).

This implies that ESD issues are transdisciplinary and no discipline can claim ESD as its own, but all disciplines can respond and contribute to ESD, (Leicht, 2018: 35; Hoidn, 2018: 288). Lozano et al. (2022: 632) also acknowledged that each discipline has its own nature and scope and has a different approach in contributing to sustainability, where there is art in science, and science in art. Similarly, Evans et al. (2021: 1197) argued that the broad nature of global sustainability problems that include environmental, economic and social dimensions, sustainability science is a transdisciplinary process working simultaneously between, across and beyond disciplines. In this regard, Giacosa (2020: 447) suggested that teachers need to overcome the practices of traditional knowledge transmission by developing a new perspective less tied to individual disciplines and more open to the many facets of reality. This is very crucial because ESD issues are found not only in academic disciplines but also in and outside the precincts of educational institutions in everyday aspects of life, (Leal Filho et al., 2018: 290; UNESCO, 2021: 30; European Commission, 2022: 13). This was also stressed by various participants when they talked about issues concerning teaching beyond the teaching syllabus, relating what is taught in class to what is happening in society. This practice enhances the relevance of what is learned in class and accentuates the importance of conducting field studies to enable learners have experiential and practical knowledge. This is exemplified by the statement of one of the participants:

"Now I am looking at things going beyond (---) mainly environmental, SD brings in social, political and economic issues which concerns sustainable development because some of them might be beyond one aspect (…) so if you just look at the environmental thing, without looking at the decision-making body. I think we are not taking any steps towards SD. I think there should be some component of it in your teaching actually to bring in such issues," (P21, 286).

The participants' views are also similar to the research findings of some scholars on ESD integration. For example, UNESCO (2021b: 66) remarked that students should be taught and enabled to encounter sustainability issues in all areas of life, so that they can appreciate the importance of living within planetary boundaries and not compromise future generations or the natural ecosystems of which we are all a part. Therefore, the very nature of ESD issues, which exist in all domains of academic disciplines and also in and outside education institutions authenticates this phenomenon and teacher educators ought to relate their teaching and learning activities to all aspects of ESD, rather than those which exist in their domain knowledge. The next section examines the contextual conditions of the phenomenon.

4.3.2 Context

The contextual environment of the phenomenon "Relational Teaching and Learning Process by Considering Multiple Aspects" is complex because it is characterized by multiplicity of interrelated factors. These interrelated factors range from structural to human agency factors. For instance, teacher education institutions are usually structured according to academic disciplines located in various academic units, departments and faculties. According to the participants, this structural set-up is, on the one hand, an important factor and, on another hand, a challenge. They argued that if this structure is well harnessed, it offers teacher educators the opportunity to consult, share knowledge and even offer support to one another in their attempt to integrate ESD in teaching and learning activities. This happens when teachers from diverse teaching units and departments cooperate, share the knowledge and skills and work as a team in order to integrated ESD. The benefit which accrued from working in a complex structural set up of teacher education institutions is exemplified in the statements of some of the participants:

"We are so many in order to keep together, (.) actually we may be a cobweb. We are a huge network and none of us is alone and each one depends on another and nobody knows it all and (.) thank God for that and none of us will remain here forever. So, in preparation for exit, we must share our knowledge and work together while we can exist. … While we are still here because there will come a time when I will not be able to teach and then another person must teach and another one and hand over. It is like racing ((laughs)). It is better to come together because none of us is able to do all things on their own and succeed", (P17, 245).

"I was teaching something about error analysis to first year students, I know very well that error analysis is applied in quality control engineering, I have a good understanding (.) but I don't have the practical aspects of how this is done in quality control in industrial engineering and so on, (…) so I had a colleague, I brought him and I introduced everything concerning the theory and so on, and now I introduced him that this is so and so and he is an industrial engineer and he started explaining for just one hour and the students appreciated it. I don't know whether my colleagues do this but it is really very important," (P22, 307).

The aforementioned views of the participant indicate that cooperation through knowledge sharing among teacher educators and between their respective academic units can facilitate the integration of ESD in teacher education. Badea et al. (2020: 10) affirmed that collective actions among several educators facilitate sustainability initiatives on campuses. In the study conducted by Lakkala et al. (2021: 3) on teachers supporting students in collaborative ways, it was found out that more and more scholars have become aware that a teacher working alone inside the classroom is not able to pay attention to the learning of every student because their needs are very diverse. Unfortunately, cooperation among teachers and between academic units is not always forthcoming, (Hoinle et al., 2021: 12). This was also pointed out by some participants. For instance, some participants stated that some academic units exclude other units, which constrains collegial cooperation. One of the issues they brought up as an example was lack of cooperation related to funded projects, whereby one department may want to use the funds alone without involving their colleagues in other departments. These aspects are well illustrated in the statements of some of the participants:

"I hope I am not blaming them, (.) but they own many of these projects. They own them, stay with them in the department and the issues I told you of dissemination arise from there (…) they stick with them and do them alone. They don't involve teachers of professional studies and that is psychology, sociology of education yet they also teach these teachers. They don't bring us on board. So, when I am teaching my [discipline], I am not talking about these issues. I am not so sure that this professional teacher of the faculty of education will talk about them. So, the integration and collaboration, they forget us (---). The faculty of teacher education does not involve us and it stops with them and they are few by the way," (P3, 65).

"Yes, the integration, at the stage of implementing or designing the curriculum, usually that is where we see ourselves as we don't come together and talk about those cross-cutting issues. Yeah, actually at this level we see ourselves as very independent of each other, very independent. We need to think more of cross-cutting issues and how to bring them on board," (P3, 66).

The practice of excluding and lack of cooperation among teacher educators contravenes the spirit of ESD integration because teamwork and collaboration among teacher educators is essential for the integration of ESD. Besides, some participants had already highlighted and acknowledged that teachers cannot be good in all the subjects, so the tendency to exclude some teachers and their academic units affects the integration of ESD, (cf. P11, 166). The participants also stated that teacher educators experience varying demands at their places of work, such as expected high performance and paying attention to the diverse needs of the students. Quite often such expectations insert pressure on teacher educators. This is apparent in the responses of some of the participants:

"Then the issue of diversity because you are working with people from different background (…) different people and everybody has a unique way of looking at things and you know even the way they are gifted is not the same way and you are expected to attend to them all," (P15, 218).

"You must have technical ability to deal with today's world you must be able to prepare your material using modern learning, techniques because our students now days get exposed to technology very early, so the teacher himself must also be technologically equipped, you can no longer have a teacher who does not know what the computer does ((laughs)), you can no longer have a teacher who does not know what an apparatus in a lab do and why they are there," (P7, 108).m

All these demands denote a huge task which teacher educators face in their daily operations. Understanding the context of both the learners and society where teacher educators work is quite challenging but very important in fostering their relational abilities with the learners and also relate what they teach to what takes place in society as augmented by one of the participants:

"When we are thinking of the needs of the society, the needs of the learners and so on (…) we need to know how it is important for us to understand the context," (P5, 89).

This indicates that although teaching is an extremely rewarding profession, it is also highly stressful and demanding, (Carroll et al. 2022: 442). Hummelstedt et al. (2021: 5) in their study on discourses on multicultural education among teacher educators discovered that several teacher educators wanted to relate and attend to the diverse individual needs of the learners but at the same time they were sensitive to whether or not students wanted to bring up their backgrounds. This appears to create a dilemma whereby teachers may want to relate and address the individual needs of their learners, but at the same time students may not be willing to disclose so much to their teachers. This may affect and frustrate teachers' attempt to relate and address the needs of the students. Kaptingei (2016: 70) studied the experiences of teachers with learners' diverse linguistic needs and found out that teachers lacked the experience to handle linguistic needs of students. This reveals the challenges which teacher educators experience at work and the multiple aspects they need to consider in teaching and learning activities. The participants expressed some actions and interactional strategies which are directed towards the phenomenon. These strategies are considered in the following section.

4.3.3 Actions and Interactional Strategies

The actions and interactional strategies of the phenomenon range from teaching techniques to the mode of integrating ESD issues in teacher education. The participants raised aspects like

application of diverse teaching methods in teaching and learning activities so that the various aspects of ESD, the phenomenon's pivotal focus, are taken into consideration. This is echoed in the responses of some of the participants:

"… we have to consider the methodology, how do we deliver content as teacher educators. That is very important for SD … so, when I identify a task, I get somebody [student teachers] who teaches history/geography, history/religion, history/economics, YES, I mix them up so that the one who doesn't do economics will get that knowledge from the economics students and then one who doesn't do religion will also learn from the one of religion so by the end of it all, you have cross-cutting knowledge," (P4, 72).

"For example, you can use collaborative methods of teaching, which will involve group work, project-based methods of teaching, (…) you can also think about other innovation like field work, gallery walks and so many others and the list is endless," (P8, 122).

The aforementioned views of the participants indicate that using various techniques of teaching enhances teacher educators' ability to bring out some aspects of ESD in their teaching and learning activities. Riess et al. (2022: 14) augmented that teacher educators can also use potentially suitable methods that facilitate the promotion of motivation and attitudes of learners such as role playing, simulation games, observation and imitation learning, value clarification, projects and internships in contexts relevant to sustainability, and the formation of student parliaments in which the learners participate in decisions on matters relevant to sustainability. Whereas Schreiber and Danz (2018: 8) suggested that teacher educators can as well use a combination of thematic contents and learning methods that are well concerted with the category of students. Christoforatou (2021: 6) stressed that dealing with issues of sustainable development in teaching and learning processes requires teacher educators to create transformative methods that consider the freedom and responsibility of the students to facilitate open interaction between the teachers and the learners. Besides, Anyolo (2018: 74) studied the implementation of ESD in Namibia and found out that successful learning in ESD is closely related to the methods used by the teachers in teaching and learning activities. For example, participatory active teaching methods stimulate learners to reflect on their own learning regarding sustainability and enhance their participation in class. On the other hand, traditional teaching and learning methods, which make learners passive listeners in the classrooms, hinder integration of ESD in teaching and learning activities, (Imara, 2021: 12). In addition to the use of various teaching methods, the participants also talked about the need for teacher educators to be multi-skilled, multi-tasking, creative, innovate and versatile in order to address the multiple aspects of ESD in teaching and learning activities. As a case in point, some participants stated:

"A teacher ought to be multi-skilled, multi-tasking, you know computer, you know how to speak, you know how to debate, you know how to train, you know how to dig … you are versatile, alright, you can sing … you are multi-talented. You may not be multi-talented because that is natural, but you must be multi-skilled," (P1. 6).

"So, you must really have a lot of knowledge of other fields and so on so that you can kind of motivate and nurture the interests of multiple learners," (P22, 302).

In this regard, Brandt et al. (2021: 10) argued that engagement of learners in multiple learning activities such as working on the final project, or activities which connected them to real-world strengthens students' pedagogical skills, as well as their motivation to act as future change agents. The participants preferred, furthermore, a gradual approach to integration of ESD issues in teaching and learning activities compared to instant whole institution or nation-wide integration. They noted that integration can begin at various levels, such as at lesson, subject, semester, program, department, faculty levels. They overlooked instant large-scale approaches because both teachers and institutions may not handle everything at once due to inadequate resources and competences. This is evidenced in the statement of one of the participants:

"And may be (…) also integration should be gradual in a way that you may not be able to do all within one lesson or within one period or even within one semester, but you see that today you start by looking at one aspect. You start by say we want to see how we can change the mentality here. You can begin by changing the mentality by talking about it. You may not have that change immediately but if you talk about it in this lesson and also in the next lesson then gradually the learners begin to see that this is what is actually done. So, that feeling of impatience, when they are not patient enough, you may not be able to promote sustainable development because you don't have the feeling to wait to do things gradually so that eventually something comes. The love for short-cut can be a problem to development," (P18, 252-253).

The gradual integration of ESD enables teacher educators to acquire experience, establish locally relevant teaching materials which meet the local circumstances and requirements of the curricula, (Spahiu & Lindemann-Matthies, 2015: 8062). In addition to the gradual integration of ESD in teacher education, the participants highlighted that it is important for the educators to live exemplary and act as change agents for ESD. They emphasized that when teachers live by example, they can inspire both their learners and other people who see what they do. This was based on the argument that teachers are generally influential in society. In this respect, the learners could emulate their teachers, when they value sustainability issues and practice them in their daily life. This presupposes also that teachers' actions both in and outside education institutions have an impact on other people. As an example, some participants said:

"You know (.) this teacher should be able to show that. We had a teacher, whom I will never forget, he used to grow tomatoes on the verandah of his house like flowers and ever since I saw that, that is what I have been doing," (P14, 200).

"If we the teachers are also exemplary, our conduct, our team-meeting, our activities, what we say, then it will be easy for the learners to pick up (…) but if we don't walk the talk, we just talk but behave in a different way then it will also be hard for the learners to pick but if we say something and we do it, we behave that way, we live that way, then the learners will emulate us and with that it will be easy to integrate," (P18, 253).

The submissions of the participants highlight the important role and influence which teachers have toward their students. Manju (2018: 1527) claimed that after the parents, teachers play a central and indispensable role in molding the character of students. In this case, teacher educators could demonstrate their commitment to issues of sustainability through their actions, (Pokhrel and Behera 2016: 190). It also requires teacher educators to actively involve the learners in sustainability activities. The active involvement of the learners in the teaching and learning process promotes inclusivity and improves the faculty and student academic performances, (Marco-Fondevila et al., 2022: 1; Munna & Kalam, 2021: 1). The involvement of the learners in teaching and learning activities motivates them and gives them, furthermore, an opportunity to have a say in what they study. This becomes clearer in the statements of some of the participants:

"And also, when you involve them in clubs they are able to develop these skills very well because there they put them in practice", (P23, 316).

"Just like laboratory kind of (---), like in chemistry you know the practical example, biology practical example, even in agriculture is more less the same thing, may be identifying certain things, describing certain things but we do not involve them, you know, you do not involve students. We do not assess their practical abilities [for example] how do you transplant a seedling? How you do mulching?," (P16, 230).

The various views of the participants on the possible strategies to be applied in relation to the phenomenon reveal complex demands which teacher educators ought to embrace in their attempt to integrate ESD in teaching and learning activities. It can also be depicted that such demands contain a broader set of conditions which appears to have an impact on the phenomenon. These broader conditions are the intervening factors presented in the following section.

4.3.4 Intervening Conditions

The intervening conditions in relation to the phenomenon are quite broad conditions that influence the daily operations of the teacher educators. The responses of the participants portrayed a broader spectrum of issues that influence their actions and interactions as they

carry out teaching and learning activities. These broader conditions range from local to international matters of concern such as the global agenda for sustainability. From the participants' points of view, these issues either directly or indirectly affect their work because they are expected to know and apply them in teaching and learning activities. Some of these expectations invoke sentiments of anxiety in the participants. This can be detected in some of their responses. As an example, some of the participants mentioned global issues which they are expected to know and include in teaching and learning activities:

"For example, today people are talking about global warming, so, as a teacher, if you don't understand or if you don't know what global warming is and what causes global warming and how you as an individual or your family or your community either promote global warming or dealing with global warming, then, you won't include those issues in your subject," (P5, 85).

"So, we have to think locally but also globally, YES. So, that as we are teaching and learning we don't only restrict ourselves only to our area because we are in a globalized world. We need to know what is happening in other areas and how can we live with people not only from our locality but also people from other areas," (P1, 33).

According to the participants, these global concerns which they ought to consider in their teaching and learning activities are also coupled with national concerns, such as aligning the content of their teaching with the institutional strategic plans, the national, regional, continental and global agenda. These are issues which are complex in nature but teacher educators are expected to adapt their teaching and learning approaches to such issues, (Méndez et al., 2022: 1; Puertas-Aguilar et al., 2021: 1). This means they have to relate and integrate both national and global ESD issues in teaching and learning activities. This is also apparent in the response of one of the participants:

"For the universities, every five years, we review our curriculum, either writing a new one or review the existing ones. So, (.) we make sure that SDGs are covered within the curriculum; it may not be all of them but some of them," (P18, 251).

"You should look at your national goals and these national goals should feed in either East African goals and then African, they call it African Agenda 2065 (-) which is a global phenomenon but how are we going to enforce that", (P10, 155).

In this regard, Pokhrel and Behera (2016: 193) stressed that educators are expected to be more skill oriented and subject specific experts who should relate their lessons to various issues and provide very specific information that could be helpful to students in order to improve the learning process. The participants mentioned, once more, the multiple expectations which society looks forward from both teacher educators and those who graduate from teacher

education institutions. Some of those expectations are caused by the changing nature of the participants' working environment and the labor market for graduates. A case in point is the ability to know and use information, technology and communication devices. According to the participant, such expectations pose great challenges among teacher educators especially those who lack such skills. This is embodied in the views of one of the participants:

"We were trained in 20th century and so we still use the traditional methods and now we are in the 21st century (.) and we are teaching digital natives (…) and some of us are digital migrants (.) and some of us are digital aliens (.) and we are away from the digital world, where people talk of internet of things, (…) 5Gs and some of us are still stuck in 3Gs … that is a very big challenge and we have to catch-up, a teacher educator has to catch-up technological advancement and he has to catch up with knowledge advancement because right now, we are in the knowledge economy, (hmm), a liberal knowledge economy where you really need knowledge and for you to teach without having knowledge, it becomes a challenge (…) you cannot teach and prepare that graduate for the world and it will mean development will not be sustained because of the quality of the graduate is lacking," (P4, 69).

Varghese and Alias Musthafa (2021: 45) argued that the twenty-first century is a time of rapid changes in an increasingly diverse and complex world. Teacher educators should, therefore, be prepared to train teachers who are skilled with 21st century skills and proactive problem solvers. Whereas, Huss (2019: 26) stated that if teachers are not being prepared to teach in a digital classroom, or at least with digitally enhanced curriculum delivery, then their skills are outdated even before they begin their profession as educators. In this regard, OECD (2018: 30) noted that the challenge of improving education is compounded by rising expectations for what education systems should deliver. Some participants appeared therefore scared and despondent due to the unpredictable demands of their graduates in society. This can be captured in the narrative of one of the participants who exhibited unpreparedness and anxiety due to the expectations and the changing nature of teachers' working environment:

"I say, so many things have happened (…) I complain to my students, I tell them that you are here and I am teaching you but by the time you will be leaving, you will be outdated because those people out there are being trained on more newer things because for me I am stuck to what is on paper and the curriculum which was done [---] ten years and so on," (P3, 65).

In this regard, Hartono et al. (2020: 309) also remarked that today's students are fundamentally different from students in the past because many students are ICT literate, therefore, by implication, they have different learning goals, necessitate, and teaching approaches which teachers ought to know. Skills such as transferable skills, for instance, communication skills, interpersonal skills, problem solving skills, computing, information technology and related skills are very important for both teacher educators and their learners.

Some studies have, however, established that many graduates lack such skills, (Muhamad, 2012: 883; Ddungu et al., 2018: 261). This continues to highlight that the contextual and intervening conditions of the phenomenon are complex and teacher educators ought to be equipped in order to address them. Fortunately, most of the participants were quite cognizant with the existence of such issues both in the institutions where they work and in society at local and international levels, although they were quite not sure how to handle them. This is reflected in the anxiety which the participants portrayed in their responses. The anxiety could be attributed to some extent to the level of unpreparedness among some teacher educators to address and relate what they teach to various contemporary issues in teaching and learning activities. This study postulates that teacher educators could become prepared by acquiring and possessing the necessary competences required to apply relational teaching and learning and also address the multiple aspects of ESD as presented in the phenomenon "Teachers' Competences" (4.6) one of the phenomena of this study. The action and interaction strategies employed by the participants in relation to the phenomenon generate some consequences. These outcomes are addressed in the following section.

4.3.5 Consequences

The action and interactional strategies employed by the participants in relation to the phenomenon contain both anticipated and actual outcomes. This is based on the reported actual and anticipated outcomes of the actions of the participants. For instance, some participants reported that when they apply various teaching methods such as learner-centered methods which enable learners to actively participate and interact with one another in the learning process; they notice that their learners are gaining some abilities which indicate that some aspects of ESD integration are being realized. The learner-centered approaches to teaching encourage active participation of the students and enable educator to be facilitators of the learning processes instead of being experts who only transfers structured knowledge, (UNESCO, 2017: 55). In this case, the educator is a facilitator who empowers and challenges learners to alter their worldviews. As a case in point, one participant shared that students are assigned group tasks and this enables them to learn various observable skills, values and competences such as teamwork, communication and use of power-point:

"… So, they come and they do the presentations in the class and I tell them that it is a power point presentation and [there are] many teachers who have not been exposed to that, so by doing that they are learning skills, they are learning to work together, they are becoming confident and being able to take on (---) and they are even assisted by their colleagues. They can accept that positively, while they are doing that I am watching and I am grading how they present but at the end of it they would have learnt so many things in just that ((laughs)).

Actually, they have made that presentation. They get feedback from their colleagues, you see ((laughs)), so at the end of it, they have learnt presentation skills, (…) gained ICT skills, (hmm) confidence, communication skills and they have to write out a paper which will be shared with the rest of the class. They will have also developed some values ((laughs)). Thus, they have expanded their knowledge, skills and values," (P2, 38).

The optimistic expressions of the aforementioned participant indicate that educators become happy when they experience good outcomes from the learning process, whereas poor learning outcomes frustrates and causes anxiety among educators (cf. P4, 69). The participants also argued that when the learners have acquired knowledge, skills and values of sustainability during their training in teacher education, they will be able to share the same information with their learners and communities at their various respective places of work. This implies a multiplier effect potential, which teacher education institutions have when ESD issues are integrated in teaching and learning activities:

"If we integrate [ESD] in teacher education then it will have the multiplier effect. So, that is why I would say that if you want it to multiple, (…) you want it to be disseminated then you work with teacher educators because we have that multiplier effect," (P2, 36).

"The learners can pass on to their parents, when they are at home, they can pass these things on their parents and now the homestead can learn from these people [student]," (P16, 232).

"For example, we are teaching sports science as teachers and when they go out there and maybe they train somebody and the person remain healthy," (P24, 324).

Participant P2 elaborated further that when both educators and learners grasp the issues concerning sustainability, they will be in position to live a sustainable life by putting in practice what they learnt and also share the same information with other people:

"When teacher educators actually know ESD, then they are in position to integrate it in their teaching and learning activities, then they will be in positions also to pass it on their learners and at the end, since they are training teachers, those who are going to be teachers, they will be in position to teach those they will be teaching in various schools and then you find that these issues on concept of SD will be understood and possibly be in position to live a sustainable life," (P2, 39).

This implies that integration of ESD into teaching and learning activities benefits teacher educators, learners and consequently the entire society. On the other hand, some participants hypothesized that when issues of sustainability are not integrated into teaching and learning activities, there will be insufficient awareness created among the populace about sustainability issues. In turn, this could give a leeway to people to continue with unsustainable practices due to lack of information. The participants held, therefore, the opinion that when ESD issues are integrated into teaching and learning activities, it may change people's attitudes, reduce

unsustainable practices and perhaps human caused disasters could be avoided. One of the participants said:

"Yes, these days, it is not farfetched because we have seen all the calamities which we have experienced as a result of lack of integrating sustainable development and they are our activities, like the global warming. We are talking of global, but it is local warming. These days the house is too hot, the rain and the floods. So, we need sustainability and with sustainability, you don't need to go very far," (P10, 161).

The participants stated furthermore that if teacher educators continue to focus only on their area of specialization without developing interest to know what is in other disciplines and relate their domain knowledge to other disciplines, then they will continue to have a narrow view of reality compared to teachers who have a wider knowledge of other disciplines. This is evidenced in the response of one of the participants who stated that having knowledge of various disciplines widens one's horizon and facilitates acquisition of more skills:

"Okay, say if somebody is doing physics and mathematics and maybe chemistry, he/she will acquire more skills than if I only teach geography or I learn geography, that specialization will take me longer further but it will be narrow, okay, so if it is narrow, I may not be able to really come out with better ideas like somebody who actually has been taught integrated skills because in integrated skills, it means that the horizon will be wider, alright, they will be a lot of other skills that he/she will be able to acquire from there. Alright, I may be called a specialist with little or limited knowledge," (P11, 165).

Whilst participants also felt that if learners get to know the importance of ESD issues through teaching and learning activities, they will appreciate them and then put them into practice. This suggests that proper understanding of ESD can be a motivation for both teacher educators and their learners to integrate it in teaching and learning activities and also promote SD as exemplified in the statements of some of the participants:

"If I appreciate that I am living in a tropical region with a lot of sunshine, then I can embrace solar and that would help me to reduce on the use of hydropower, electricity costs, because I am now applying my knowledge, (.) if solar can be cheaper because I am living in equatorial region, I will survive," (P8, 131).

"If they understand ESD issues well, (…) at the end of the day you see that they are appreciating and they say that you have given us something which many lecturers do not give us ((laughs))," (P15, 217).

In this regard, Dumitru Tăbăcaru et al. (2022: 1) conducted a study on what students appreciate and expect to receive from their studies and they found out that many students were highly motivated when pursuing studies from which they expected to receive a solid professional preparation and benefit from practical activities. Duță (2015: 57) also augmented that when students appreciate the value of classroom activities and apply reasonable effort, they believe that they will become successful. This implies that students get motivated when

they appreciate what they learn in class. In this case, the participants highlighted that if teacher educators do not relate what they teach to the life experiences of the learners, they can easily forget the learned subject matter as soon as the activity ends because the study would not resonate with their life experiences:

"If ESD is taught [in] abstract way, it will be forgotten easily. It can even be a topic, but if it is just put theoretically and the students are not experiencing to appreciate it, (---) is it connecting to life outside the classroom or is it just remaining an abstract concept which students cannot even relate to? If we are talking about deforestation, does it just remain a concept in geography or environment class? So, like building these skills, building these values, building this knowledge, it happens only if we do it in an authentic learning context so that the knowledge, (…) the skills, and the values are applied and not just so remain in the abstract form as something that I learned at the university and it remained there", (P2, 40).

The process of integrating ESD issues in teacher education was also perceived by some participants to increase cooperation among teachers and their learners. However, it was envisaged to be also a demanding, humbling and challenging process, especially for teacher educators who lack the required competences. It was described as a humbling experience because some of the teachers will have to learn from their students who might have more knowledge, exposure and understanding of sustainability issues than their teachers. One of the participants stated:

"… Then I go and read books and then I inquire from technical persons and then I go and do that but of course there are some challenges (.) because you are an amateur in this field, yet you ought to integrate it. Sometimes you are superficial, you are not deep, yet some learners are deep already … so it is a learning (---) while you are in class, it is a learning experience, (…) so, you expect challenges. It is humbling because you know that some people know what you do not know, learners also know what you may not know," (P1, 10).

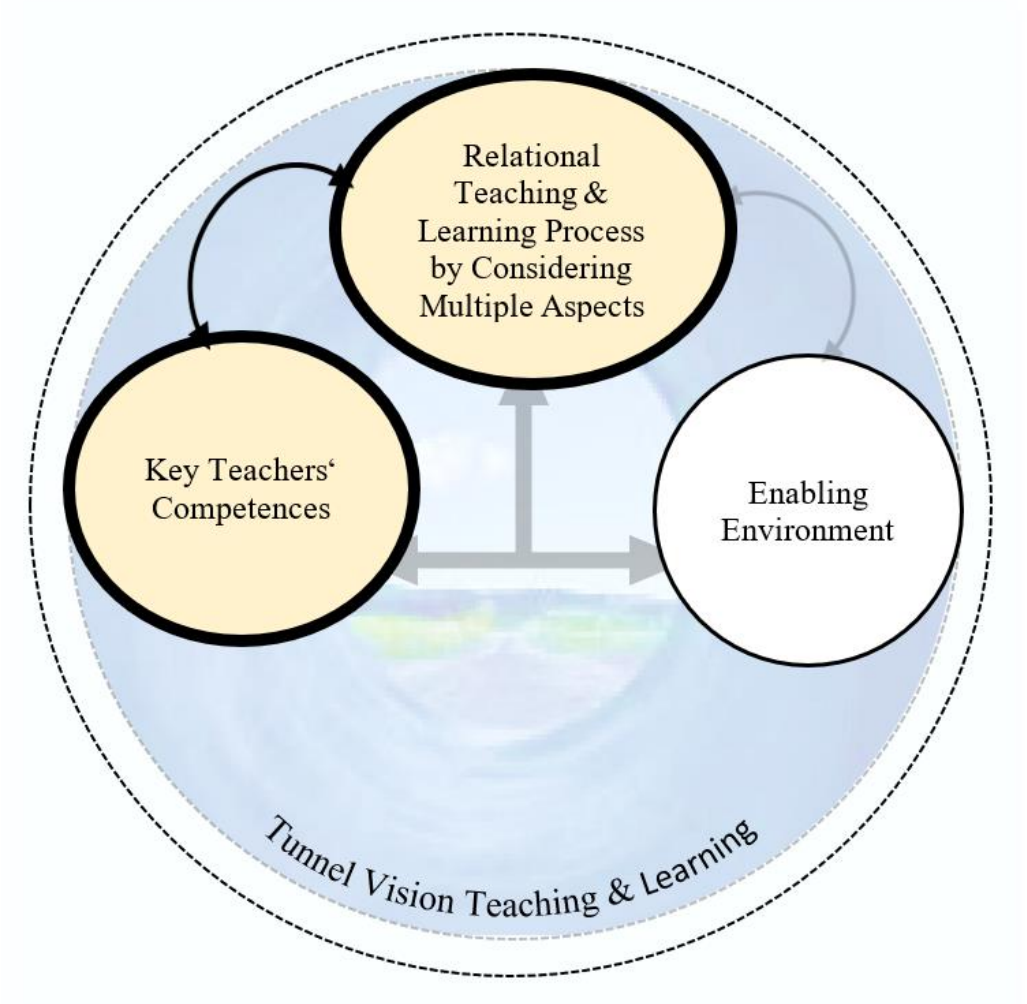
In summary, the importance of integrating ESD issues in teaching and learning activities was recognized by the participants. However, they also acknowledged the challenges they experience and those challenges which they are most likely to encounter in relation to the phenomenon and the entire process of integrating ESD in teacher education. In this regard, considering the conditions which influence the phenomenon and its consequences, teacher educators ought to be prepared and ready to integrate ESD in teaching and learning activities. The key competences which teacher educators ought to possess and employ in order to integrate ESD in relational teaching and learning process by considering multiple aspects are discussed in section 4.6.

4.4 Integration of ESD is a Relational Teaching and Learning Process by Considering Multiple Aspects: Nexus between Teachers' Competences, Enabling Environment, and Tunnel Vision Teaching and Learning

This section presents the connections that exist between the core category and the phenomena. The core category "Integration of ESD is a Relational Teaching and Learning Process by Considering Multiple Aspects" is connected to all the phenomena established during data analysis except the phenomenon of "Tunnel Vision Teaching and Learning" which reveals aspects that could contradict the essence of the core category. This phenomenon can frustrate teacher educators' efforts to employ relational teaching and learning process by considering multiple aspects if it is not managed and avoided (cf. 4.10). The phenomena will be presented sequentially beginning with the phenomenon of "Key Teachers' Competences", followed by "Enabling Environment" and "Tunnel Vision Teaching and Learning" respectively. However, this chronological presentation does not denote any degree of importance except a mode of presentation chosen for this study to lay out the phenomena and their connection to the core category.

4.5 Nexus between Integration of ESD as a Relational Teaching and Learning Process by Considering Multiple Aspects and Key Teachers' Competences

In this subsection, the connection between the phenomenon "Key Teachers' Competences" and the core category will be presented. The nexus between the phenomenon and the central category is an inextricable interconnection. This was unearthed during data analysis and it is also supported by the existing literature.



The nexus between the core category and the phenomenon reveals that teacher educators require specific competences in order to integrate ESD as specified by the core category. The nexus between the central category and the phenomenon is also fortified by the strong relational aspects embedded in the elements of the phenomenon. In other words, teachers' competences do not operate in isolation, but they are interdependent, interrelated and collective in reinforcing teacher educators to integrate ESD as stipulated by the core category. These competences also underscore teacher educators' autonomy and role of discerning what is appropriate for a particular teaching and learning activity. With these competences, teacher educators could integrate, share, mobilize and develop networks among educational stakeholders around the central focus of ESD integration in teacher education. On the other hand, the absence of such competences makes it extremely hard for teacher educators to integrate ESD issues as stipulated by the core category. This is due to the complexity of ESD issues. The dimensions of teachers' competences play, therefore, a crucial role in enabling teacher educators to integrate ESD in a relational teaching and learning process. These

competences are comprised of qualities, traits, knowledge, skills, attitudes, and values which enhance teacher educators' ability to employ relational teaching and learning process by considering multiple aspects of ESD in teaching and learning activities. In this regard, Jensen et al. (2015: 203) specified that relational teaching and learning require teachers to employ specific strategies and techniques in order to gain students' attention and engagement. Whereas, Mavuru and Ramnarain (2018: 2) augmented that both teacher educators and student teachers require a set of professional qualities that could enable them to employ relational teaching approaches. On the other hand, Fischer et al. (2022: 167) remarked that teachers are responsible for operating the educational system and they need, therefore, strong and efficient professional attributes. All the previous studies indicate the importance of teachers to possess competences that could enable them to effectively conduct teaching and learning activities. This study postulates that there are key teachers' competences which teacher educators ought to possess in order to integrate ESD in relational teaching and learning process by considering multiple aspects. These competences were distilled during the data analysis. They are, therefore, based on the views of the participants. These competences are discussed in the following section.

4.6 The phenomenon "Key Teachers' Competences"

The phenomenon "Key Teachers' Competences" is conceptualized in this study as the indispensable qualities, traits, knowledge, skills, attitudes, and values which individual teachers or teams of teacher educators need to integrate ESD issues in teaching and learning activities. These competences are considered fundamental for teacher educators to integrate ESD in a relational teaching and learning process by considering multiple aspects. They are integral aspects of teacher educators' capacity to integrate ESD. They can empower teacher educators by drawing on and mobilizing them to consider multiple aspects and address the complex demands of integrating ESD in teaching and learning activities. The key teachers' competences, which were distilled during data analysis as specified by the participants to be paramount for integration of sustainability issues are: being knowledgeable, creative and innovative, flexible and open-minded, exemplary, empathetic and understanding of nature, continuous learning, and hardworking. Besides, they also stressed the importance of teacher educators having the ability to collaborate, network, act responsibly, teach trans disciplinary, motivate themselves and others, participate in community activities, use the available resources sufficiently, teamwork, directly get involved and committed to the sustainability agenda, and to be self-conscious and aware. Likewise, they emphasized the ability to apply

anticipatory or precautionary, systematic and critical thinking, good communication, personal and professional ethics, and emotional intelligence. According to the participants, if these competences are harnessed by teacher educators, they could enhance their ability to know about ESD, its varied aspects, consider them in teaching and learning activities, and possibly live according to them. For instance, all participants highlighted the importance of teacher educators being knowledgeable. They based their arguments on the fact that no one can give what they do not have. In other words, teacher educators cannot teach or share knowledge and information on what they do not know. This is clearly pointed out by some of the participants:

"First of all, (.) a teacher should be knowledgeable because you cannot teach what you don't know. So, (…) the teachers need to have the knowledge themselves and also pass it on to others. A teacher should have general knowledge because you are influencing so many things and at the end of the day, you need somebody who has some basic knowledge of something before he/she talks about it. So, (…) all teachers should be introduced to ideas of economics, ideas of some technology. They should be introduced to some ideas of entrepreneurship, they should be introduced to economics of some sort", (P2, 37).

"So, the thing is, you can never be everything but at least you must have a basic understanding ((laughs)). At least you should have a basic understanding of English, you have a good understanding of Economics, bargaining, negotiation, and so on", (P22, 306).

Mavuru and Ramnarain (2018: 3) specified that teachers' knowledge of the teaching and learning context enables teachers to engage in multiple pedagogical and instructional strategies which make the learning activities more relevant to the learners. Whereas Lohmann et al. (2021: 4) asserted that teachers need both pedagogical and domain-general knowledge in order to shape the process of teaching. From the vantage point of the participants, teachers' knowledgeability cuts across the various dimensions of knowledge such as teachers' knowledge of the subject matter of their teaching subjects, knowledge of the concept of ESD and its related issues, pedagogical and technological knowledge, and also perspectives of ESD in other academic disciplines. This understanding of the participants is reflected precisely in the responses of some of the participants' statements:

"Teachers need to first understand ESD and why is it important, (…) then they will appreciate it because if they don't appreciate its importance, (.) they can teach it, but they will not do much … So, they need pedagogical skills, they need to know how to do it and how do you teach in such a way that supports SD attitudes, knowledge and skills", (P2, 37).

"One should be knowledgeable about their subjects but also broad-minded (.) and not just if you are a teacher of physics, you should not know only physics, (.) you need to know other things and you are open-minded and you are a kind of willing to learn, (…) you are a learner and you are willing to learn, you are willing to share other people your views", (P5, 87).

The aforementioned views of the participants correlate with the findings of Malandrakis et al. (2019: 32) who, in their study on education for sustainable development self-efficacy for primary pre-service teachers, found out that in order to become an effective ESD teacher, teachers need to develop the ability to combine knowledge and approaches deriving from different disciplines, that is, from both sciences and humanities. The participants were also cognizant with the possibility of teacher educators knowing ESD issues but might also fail to share them with colleagues or integrate them in teaching and learning activities. In this respect, they stressed the significance of effective communication. They asserted that effective communication takes on various forms such as being audible and articulate in delivering the subject matter to learners, knowledge production and sharing through writing and publishing. The ability to communicate effectively was also associated with other competences, such as teamworking, hardworking and leadership, because the ability to communicate is a key aspect of these competences as indicated in the statements of some of the participants:

"Okay, we can start from the communication or both orally and written ((laughs)). Here you don't want the message to be lost in the poor writing and the poor communication. (…) Secondly, the classes are increasing so one must be able to speak clearly but also logically and present the message from a simple to a complex way, to allow the learner to take up this (---). So, communication skills are VERY IMPORTANT that is why I said it; (…) then organization also in the presentation of material. It is similar to this arrangement. You have to be organized, you have to be on time, you have to prepare … So, if someone doesn't prepare and he is not on time, so the whole issue gets disorganized", (P9, 138).

"You must be a team player in order to transfer that knowledge of sustainable development. (…) You must be very good at communication ((laughs)). You must be a good communicator besides teamwork and you must be a hard worker also because you can't be lazy. Some of these things involve moving and also you yourself must be a leader. You must be having leadership skills if you are to direct learners ((laughs)", (P6, 97).

Fashiku (2017: 171) argued that effective communication is so central and indispensable in the teaching and learning process because it enhances complete and meaningful interaction between the teachers and the learners. In this case, effective communication is essential to the success of both the student and the teacher, (Duţă, 2015: 265). Some participants were, furthermore, abreast with the changing and multi-dimensional nature of ESD issues. They asserted that collaboration, tolerance, creativity, being visionary, and motivation of learners are very important competences and skills which teacher educators need to have in order to integrate ESD issues in teaching and learning activities. They attributed collaboration and tolerance to handling of various aspects of ESD by various teachers through networking. While student motivation was attributed to uplifting learners' interests and appreciation of

what they study. Whereas creativity and being visionary was attributed to finding alternatives where the shortage of resources exists or adjusting to what is practical according to the prevailing circumstances and being mindful of both the present and future generations. This might become clear in the following submissions of the participants:

"I sometimes borrow expertise, for example, when I was teaching communication skills and I was teaching citations and referencing. I borrowed the specialty of the library staff, (…) I borrowed from the library staff because they know how to index information, (.) those people, I borrow from them," (P1, 10).

"… Yes, the first approach of course to say that government must fund and prioritize putting up structures. I think issues like education should be number one on the government's priority list. However, we know how it operates and we cannot keep lamenting. So, this one calls for creativity. The educator must be creative enough and see that whatever course you have delivered what needs to be delivered (---). So, we have to do our own demonstrations, (…) we have to make our own models at least in the meantime, (.) a teacher must be creative as possible and take advantage of online free virtual learning environments … although these may not give us 100% of what we expect, we can still go a long way. So, (.) they have to do a model and take advantage of the online available material. There is a large amount of open source material that we can use but all these will not give us 100% until we have our own, in the meantime, we can use those ones", (P9, 144).

"So, you should have a level of tolerance (.) and if you are thinking about society, integration, working with society, (...) then elements of collaboration and respect for others come in but also for a teacher to successfully integrate ESD because when I think about ESD, (…) I think about the concept of gender. ESD is not a stand-alone being taught in teacher training colleges. So, now if you are to integrate ESD in your subject area, then you have to be highly creative and (.) if you are to motivate learners to be people who respect others, (.) who respect the environment, who treat their environment with honour and want to reserve it to the next generation, then you have got to be a visionary, (.) one keep on envisioning others", (P5, 86).

In this case, Biesta (2005: 58) augmented that teachers ought to be creative because teaching is about the construction of a social situation and the effects of teaching result from the activities of the students in and in response to this social situation created by the teacher. This implies that creativity can enable teacher educators to improvise and create a conducive social atmosphere for learning to take place. Besides the aforementioned competences, participants also mentioned competences such as evaluative skills, critical thinking, decision making, flexibility and versatility, and acting responsibly to be key components of teacher educators' competences. The ability to be evaluative deals with examining the worthiness of the information available and shared with the learners and community. On the other hand, flexibility and versatility pertain to being multitalented and skilled and at the same time being open-minded to oscillating issues of sustainability. Moreover, critical thinking relates to paying attention to even minute aspects which can be easily ignored, yet they are very important and contain serious repercussions if taken for granted. According to some

participants, critical thinking is one of the fundamental key competences for strategic planning and decision making:

"We need to be evaluative, but not judgmental (…) evaluative to mean, we need to have the competence of measuring the worth of the information provided. When new information comes, (.) how worth is it? What is its worth, what is its value, in other words TO ME, evaluation is attaching value to the information. A teacher ought to be multi-skilled, (---), you know computer, you know how to speak, (.) you know how to debate, (.) you know how to train, (…) you know how to dig, (.) you are multi-skilled, you are versatile", (P1, 6).

"Now critical thinking, FOR ME I think is probably the core because if you are a critical thinker, (…) there is a way you do your things, which of course others may not see or even understand, but for you, you are bit strategic … of course, you see critical thinking is very important because it touches on all aspects of life, (.) you try to pay attention to those details what others may not take seriously but for you, you try to give it an extra mile and an extra energy", (P15, 221).

Additionally, they associated exemplary living to sustainable use of resources, acting responsibly and the direct involvement in sustainable activities either at individual or community level. It is also connected to the aspect of being role models for both students and community. Participants asserted that what students or people see teachers doing, they are most likely to take it to be the right thing even if it may be against sustainability. This is made clear in the statements of some of the participants:

"So, when you don't live an exemplary life and you see, (.) let me tell the truth, people in the village see teachers to be really role models, (…) so when they see a teacher throwing a bottle outside there, (.) now what will they learn, they will say that may be that is good. So, to us teachers, I think we should first look for the way to help the community by doing what is good and what it is also good for them (…) we live just by example and I [think] that is a way we can achieve ESD", (13, 196).

"You come to the university, (.) we also have a culture, if you are a lecturer and you come and cough anyhow in class without covering your mouth, definitely there is a problem. (…) If you come with chalk, these broken ones and you just throw them down; you know there is a problem, (…) if you come with tissue paper for erasing the chock board there is a problem. (…) The learners will know that that is what is used for erasing but there is already something, you can see a duster, they are there and they make them for a chalk board or for a whiteboard … so, that means that you as a teacher, (.) you have to do your part well, what we call the dust bin, you can go ahead and say, some students come with bottles of water, bottles of soda and you tell them, for plastic ones you put there and for the biodegradable ones you put here. So, you separate them so that handling them becomes easy, (.) you as a teacher, you should play your role very well and this should begin right away from primary or nursery and so on. If they learn how to do it or when they say let us go and play or swim after they have been playing in the sun, (.) they go and swim, you talk about hygiene (.) so that they know something at every level. We do it a lot, like; you don't come with sandals to class. You have seen chewing gum they sometimes leave it there, or in the sink but you tell them this is bad. So, (.) you do it straight away from lower levels", (P6, 103).

The views of the participants presuppose that what teachers do has a lot of influence, either directly or indirectly, both in relation to their students and to the people in the community. This could be one of the reasons why many participants emphasized teachers' body of values and beliefs as key factors which might enhance or hinder teacher educators to integrate ESD issues. They argued that if teacher educators are interested and value sustainability issues, they can do their best to integrate them, but if they are not interested and they do not appreciate the importance of ESD issues, then it becomes harder for them to integrate such issues in their teaching and learning activities. One of the participants narrated how value for sustainability living was a motiving factor for taking the responsibility to switch off the security lights before going to office:

"… So, one of the things that I have done is for me I don't like to see wastage of resource. So, (.) there are things I decided to take it upon myself, (.) one day I found security light on, I think the people who were supposed to switch it off did not want to go an extra mile and the whole night was on 24 hours. So, I just one time decided that it will be my responsibility and every time I am walking to my office, I pass and switch off that light because if I don't do it, it will stay on for the entire month and so that is like a value that you cannot teach in class. (…) You don't, it is just art of how do we develop a culture that cares about not wasting resources (…) those are like underlying values that are part of what we call the hide curriculum. They are like something about you as a person", (P2, 37).

Christoforatou (2021: 11) substantiated that as long as teachers are not convinced of the idea, they will always find opportunities to withdraw. This implies that if a person, and in this case the teacher educator, values and appreciates sustainability aspects, they will even try to utilize well the available resources instead of wasting them because they know the values of sustainability. This intimates that unsustainability practices already strike a negative chord in their lives. This is clearly manifested in the narrative of one of the participants who had to show students practically what they should have done before the class began:

"… I remember one time we were supposed to have a meeting and I went into the conference room and found that on that day, (.) there was a group that had met from there, (.) they left their bottles on the tables and the room was not clean, so I said OKAY that is what went on, they said that the cleaner was sick. (…) Then I told them but if she is sick, we clean for ourselves by picking the bottles and put them in the rubbish bin and then I said bring the Grover and I started cleaning the carpet and the room and people were like professor, how can you a professor do this (.) but I said that if I clean the carpet and remove the bottles, does it take away my being a professor (…) and from then onwards people have learnt that at least when there is a meeting and I am part of that meeting, after the meeting we must collect the bottles and put right the chairs before they leave the room", (P5, 91).

This shows that sometimes, when teachers challenge their learners to live sustainably by themselves living exemplary, then learners can easily learn, adjust, and change their unsustainable practices. In this regard, Lohmann et al. (2021: 4) specified that values and beliefs are important for teaching practice. In this aspect, some participants stressed the value of respecting the rights of people and other creatures as vital for promotion of sustainability. This is perceptible in the statement made by one of the participants:

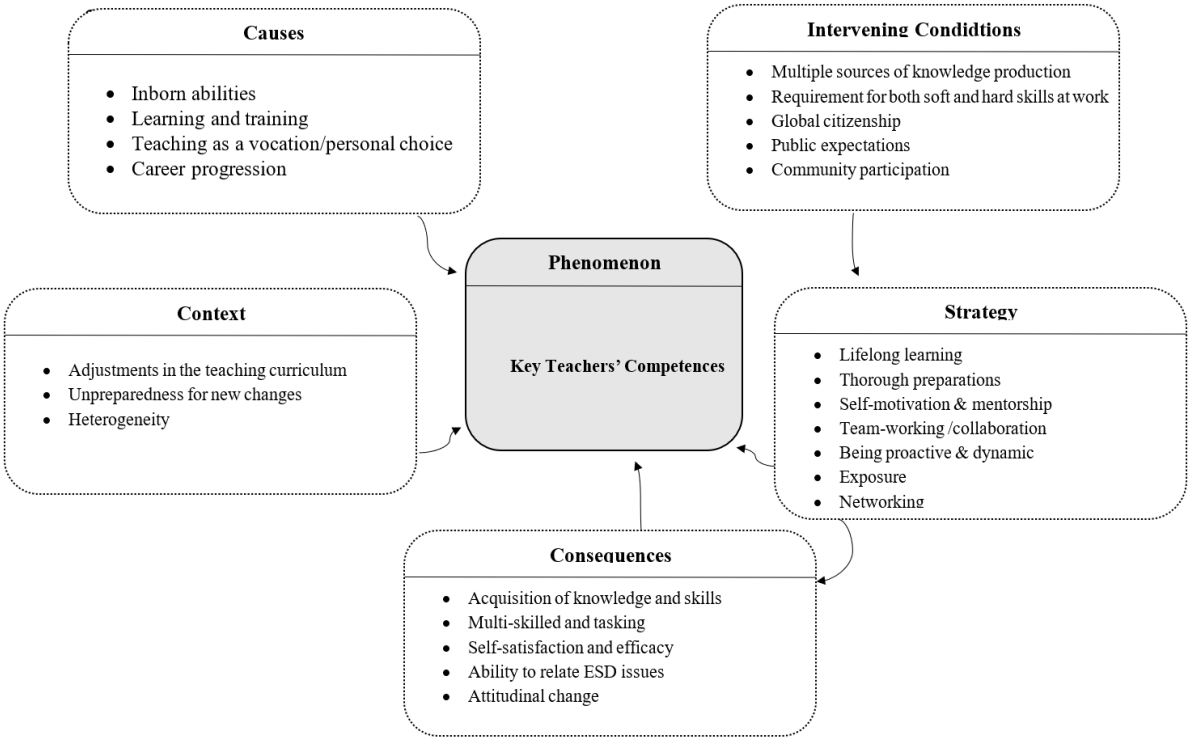
"Yes, (.) when you talk of values, for example, if you look at how do you value the idea of human rights, you have to change the way you treat people. (…) For examples, if someone is caught as a thief, (.) you kind of know that one has a right even if he is a thief, you have to give such a person respect. So, (.) there are some values that have to be maintained that this one has values [for] me, so I have to charge him through a process, (.) take him to police (.) for example, so these are the values which teachers and society should have, (…) the change of thinking like for example you meet and greet and say that now you have stolen my things and you have to pay me but subject the fellow to a legal process … so, these are some of the values we have to acquire. Human rights values are important", (P6, 93).

Akin to the value of respect of nature is the value of empathy. The participants stated that if teachers are empathetic, they can respond to the needs and challenges of the learners and address them accordingly. Some participants argued that it can be very difficult for teachers to address learners' needs appropriately if they do not have empathy for them. Besides addressing learners' needs, some participants stated that empathy can enable teachers to relate well with the learners and also remain mindful of the needs of society. This is clarified in the submission of some of the participants:

"… If you don't have empathy then it is very difficult to help learners or do for members of society what is good for them. So, you should be able to feel the pain, (.) or the problem (.) or suffering of the people and have that sympathy of trying to solve it. Someone who feels the problems that the people have (…) and he is concerned about the setbacks that he sees in society", (P18, 251).

At this point, it is increasingly becoming clear that the aforementioned teachers' competences can play a major role in enhancing teacher educators' ability to apply a relational teaching and learning process by considering multiple aspects, as they strive to integrate ESD issues in teacher education. Those competences can be possessed and exercised by individual teachers or working in teams. The crucial role which these competences play towards integration of ESD in teacher education is also well documented and underpinned in the existing literature. For example, a study was commissioned by the Eurupean Union (2022) on learning for sustainability. Some key competences such as critical thinking, problem solving, teamwork, communication and negotiation skills, analytical skills, creativity, and intercultural skills were

found to be important for integration of sustainability in education. On the other hand, Wiek et al. (2011) undertook a broad literature review of documents and articles on sustainability competences in higher education. They synthesized a set of five key competences which were deemed very important for integration of ESD. The synthesized set of competences are namely: systems thinking, anticipatory, normative, strategic, and interpersonal competences. They postulated that integration of ESD into teaching and learning is based on the interplay of these five key competences. Meanwhile, Albareda-Tiana et al. (2018) conducted a study on holistic approaches to develop sustainability and research competences in pre-service teacher training. The results of the study indicated that project-oriented learning approaches and the cross-disciplinary workshop on sustainability were appropriate tools for developing sustainability competences and research competences in pre-service teacher training. Finally, Rieckmann (2012) investigated a study conducted on future-oriented higher education that established 19 competencies necessary for integration of ESD. Rieckmann re-categorized the 19 key competences into 12 key competencies in order to provide a more concise set of competences. The twelve competences are systemic thinking and handling of complexity, anticipatory thinking, critical thinking, acting fairly and ecologically, cooperation in (heterogeneous) groups, participation, empathy and change of perspective, interdisciplinary work, communication and use of media, planning and realizing innovative projects, evaluation, and ambiguity and frustration tolerance. The findings of those previous studies reveal that the competencies which were suggested by the participants as essential for integration of ESD are also deemed elsewhere to be instrumental for ESD integration. The establishment of the same competences by varied previous studies in diverse contexts supports the generalizability and credibility of the competencies suggested by the participants. This augments, furthermore, the necessity for teacher educators to possess such competences to be able to integrate ESD in accordance with the core category. Consequently, the views of the participants and the established phenomenon “Key Teachers’ Competences” are in congruence with the existing literature on the abilities required by teacher educators in order to integrate ESD in teaching and learning activities. Having been acquainted with the meaning and properties of the phenomenon “Key Teachers’ Competences”, the central focus of the next section is to unveil the interactions and contextual explanation of the phenomenon. The subsequent elucidation of the phenomenon will follow the graphic below, which serves the purpose of illuminating the connections, relations, and interactions of the various dimensions of the phenomenon as previously pointed out in section 4.3.



The causal conditions, context, intervening conditions, strategies, and consequences of the phenomenon are based on the empirical data gathered from the participants for this study.

4.6.1 Causes

There are several factors which bring about the phenomenon "Teachers' Competences". Some of these competences are inborn and others are acquired through learning and practice. This can be associated therefore to the nature and nurture aspects of human development and behavior. In this regard, there are innate or natural and nurture or environmental factors which contribute to teachers' competences. The proper development of these two aspects of human reality requires constant improvement by the teachers because even natural abilities which are not well developed or utilized might have little importance in aiding teachers in their teaching and learning activities. These competences were identified during data analysis. In the course of the interviews, some participants mentioned some of their natural abilities and the abilities they had acquired through training and experience at work. They deemed these competences to be key in enabling teacher educators to integrate ESD issues. These competences are instrumental for teacher educators to conduct relational teaching and learning process by considering multiple aspects. For instance, some participants argued that they have inborn abilities such as intelligence which enables them to be creative and teach while taking care of the diverse needs of their learners. This is demonstrated in the statements of some of the participants:

"… It is that way because of the nurture and nature aspects (.) and what is nurtured in us (.) and we can take that because there are some things, we have just to accept rather than denying it", (P21, 300).

"… You may not be multi-talented because that is natural, but you must be multi-skilled", (P1, 6).

The statements of the participants bring out clearly the two aspects of human nature. In other words, human nature is a product of both nature and nurture factors which in the case of teachers interplay and contribute to the phenomenon. It can be deduced that for those competences which might not be innate can be acquired by teacher educators through training and personal effort due to the faculties and potentiality they have to develop and acquire such competences. These competences can aid teachers in finding and choosing what is appropriate for their learners as reflected in the views of some of the participants:

"So, (.) [in] this why, I was saying that the creativity of the teacher even though you are not naturally creative but once you have gone through training, (.) let me say you are teaching a crystal structure (…) can't you use stones and build one (…) so, the issue comes from training, (.) so of course some people are naturally creative but even those who are not, during the training, you can demonstrate out (.) they can use natural resources available to deliver their material ((laughs))", (P9, 144).

"I think, much as we say it is sustainable development (.) it means that there should be continuation of training and retraining, (…) so teachers should be exposed to more training, retraining, refresher courses, continuous professional training and studies and as they go for that, (.) they even change approach and they acquire the most relevant and most recent knowledge, (hmm), and then they will be able to move on with it" (P11, 168-167).

The participants' views indicate that teacher educators can acquire some of the key competences for ESD integration through rigors training and person endeavor. This implies that some of these competences can be acquired and nurtured through personal initiative by developing interest in the teaching profession. This may include viewing teaching as both a vocation and profession and not merely as a source of earning money, but as a form of rendering service to society. For example, some participants asserted that if someone undertakes the role of teaching as the last resort, a kind of work to be done after all other possibilities have failed, then they might not be committed to their work or even work very hard to develop their potentials. They may just teach for the sake of teaching, without aiming at improving their quality of teaching and the life of the learners. For instance, a participant stated:

"You see every teacher has an area of interest (.) whether in history or whatever, there is some area they know that can benefit society especially these ones [teachers] that come by vocation, they know that they can do something. But you know (.) there are some [teachers] who found themselves as teachers and if they do not develop the vocation in teaching, they still end up as not teachers. There are those [teachers] who have the

vocation of teaching and if they have not identified the vocation of teaching, it makes it very difficult because it is not very easy to teach a vocation ((laughs))", (P14, 202).

From the perspective of this participant, a teacher's perception of teaching as a vocation is very essential and it has to be identified, recognized, nurtured and appreciated by teachers individually in order to be effective at work. Viewing teaching as a vocation enhances teachers' resolve to work very hard to gain experience and persevere the challenges in the teaching profession, (Romero-Ramírez, Calles, 2020: 1; Mihaescu, 2019: 56; Ossa Cornejo et al., 2018: 31). Closely link to the aspect of teaching as a vocation are the aspects of career advancement and change of attitude which can inspire teachers to do more in their profession. Some participants stated that if teachers are mentored and motivated in terms of promotion, they can attain the skills they need to integrate ESD in teaching and learning activities. Through mentorship and motivation, teachers' attitudes which might not promote sustainability could be changed. This is manifested in the response of one of the participants:

"… Despite the fact that they have this negative attitude, (…) there should be approaches where such a person is mentored properly and exposed to more training, (hmm), and even more motivation in terms of promotion and walk together with the rest of people", (P11, 169).

Some of these factors which characterize the phenomenon have also been highlighted in various researcher endeavors. For example, Leicht et al. (2018: 139) conducted a study on issues and trends in education for sustainable development. The study reported that good teachers have certain innate abilities that cannot be taught. In the same study, some participants also stated that anyone can become an effective teacher by enrolling in training programs grounded in developing specific techniques that focus on building teacher expertise and teaching skills. Malikow (2006: 1) conducted a study that observed and compared teachers to be like athletes and artists. The study established that teachers like professional athletes and accomplished artists believed that they had a gift that drives them. Similarly, like athletes and artists, teachers have a gift that could be refined through training and performance. On the other hand, Nalipay et al. (2022: 23) conducted a study on whether good teachers are born or made and they found out that holding a growth teaching mindset positively predicted all the dimensions of well-being of teachers. In other words, teachers' abilities can be developed, nurtured and improved upon. This finding can be associated with the view that teachers' self-efficacy can determine teachers' quality of teaching, (Barni et al., 2019: 1; Cocca & Cocca, 2022: 40; Rezaull Karim et al., 2021: 24). Whilst Fives and Buehl (2008: 149) carried out a study on what do teachers believe. They found out that teaching was a function of both innate and learned abilities. All these previous studies substantiate,

therefore, the participants' views on the causes of teachers' competences. This suggests that both the innate and nurture factors influence teachers' abilities, success and performance. The factors that cause the phenomenon are multiple, however, all of them are related to nature and nurture causes. Consequently, especially concerning qualities that can be nurtured, examining the context in which teachers work is also very paramount because the context can either promote or frustrate the realization of teachers' competences. The following section address the context of the respective phenomenon.

4.6.2 Context

The contextual conditions of the phenomenon are situated within teachers' working environment. They are the aspects of the context of the investigated phenomenon. They emanate from the various tasks and expectations which exist at teachers' places of work. These conditions are also associated with the core duties of teachers especially in higher education institutions, which are teaching, research and community engagement. In Uganda, for example, the education curriculum especially at lower secondary school level was revised by the National Curriculum Development Centre (NCDC). It is currently in the implementation phase. Prior to its implementation some teacher educators went through rigorous training so that they could prepare in-/pre-service teachers who would implement the new curriculum, (National Curriculum Development Centre, 2018: 5; Olema et al., 2021: 54). To this effect teacher educators are expected to equip in-/pre-service teachers with the knowledge, skills and values required for proper curriculum implementation, (Olema et al., 2021: 49). The new curriculum is also embedded with various sustainability issues such as the development and promotion of leaners' sustainability competences. The new curriculum requires, therefore, teacher educators to be very innovative, creative, proactive, and practical in their teaching and learning activities. Many teacher educators have, however, not been accustomed to the new way of teaching learners. This is evidenced in the statement of one of the participants:

"… Recently they have reformed the lower secondary school curriculum (….) where we are shifting, (hmm), from knowledge-based curriculum to competence-based curriculum, (.) that should be the way to go (…) but now that is still a challenge for us", (P8, 132).

The challenge referred to by participant P8 highlights the urgency of teacher educators to have the essential competences which can empower them to adjust to the demands of the new curriculum and integration of ESD in teaching and learning activities. Many of these competences are constituents of this phenomenon which have already been highlighted in the

description of the phenomenon. In the course of the interviews, some participants hinted on the basic issues needed for the new curriculum, for instance, application of various pedagogical approaches, assessment procedures, being knowledgeable, exemplary living, and open-mindedness. All these competences are components of the phenomenon. In some instances, pondering about such issues elicited thoughts of restlessness among some participants. For instance, one participant said:

"We have what I shall call neophobia (---) is the irrational fear of the new, alright, because one time when I was still an undergraduate, (…) we studied, (.) our teachers taught us here, our teacher trainers, my senior now, taught us integrated approach to teaching English, IN FACT, (.) we had integrated approach, we integrate literature and English, we integrated environment … it has been called thematic curriculum, somewhere, somehow, so people, we fear the new, (…) so sustainable development as asked, demands open-mindedness, the ability [---], what I have defined as the ability to reconsider our position. OKAY, now we are going to be teaching competences, what can we do and note what the learners know. People have said, now, (.) how are we going to assess this, now we are going to have cumulative assessment. (…) Senior one, term one, record the learners scores, record year one term two, term three, and they will contribute to the final summative assessment. That is not easy", (P1, 6).

The anxiety could also be detected in the expressions and non-verbal communication of the participant. Besides, the anxiety of the existing new approaches to teaching, there are various academic disciplines offered in teacher education institutions, as a matter of policy, students have to specialize in at least two teaching subjects as elucidated in sections 2.4.2 and 4.10 of this study. Concurrently, there are professional courses which all students have to study, irrespective of their preferred teaching subjects of specialization. Some participants pointed out that such courses require teacher educators to have various competences and skills to handle students' diversity and ESD integration. This is evidenced by the elaboration of one of the participants:

"Now, you know in the university (.) or these teacher training institutions, now the challenge may be there, like here in the university, (…) yes you may be a teacher of physics, mathematics, science but still you are bound to do professional subjects which cut across (.) and there you are able to learn things which may not be really in your subject, so like now every person is supposed to study these subjects and I think that is very important because (.) now there is no arts and there is no science but everybody is just at the same level and you have to handle them at that level ((laughs))", (P15, 222).

The contextual conditions of the phenomenon reveal the delicate terrain in which teacher educators operate in teacher education institutions. At the same time, these conditions are indictors of what teacher educators have to do for their learners, at place of work, wield influence in their profession, and integrate ESD in teaching and learning activities. In order to

acquire the suggested requisite competences essential for teachers to integrate sustainability issues in teaching and learning activities, there are some actions and interaction strategies which were put forward by the participants. These strategies are presented in the following section.

4.6.3 Actions and interactional strategies

The actions and interactional strategies of the phenomenon denote the measures which can be applied by teacher educators in response to the prevailing circumstances as they attempt to integrate ESD in teaching and learning activities by considering multiple aspects. These measures pertain to both aspects which teachers can do individually or in teams. For example, all participants raised the issue of lifelong learning so that teacher educators keep on learning new things and updating what they already know. Actually, some participants speculated that lifelong learning or continuous learning is the identity and vocation of teachers because it is sine qua none of the teaching profession. It functions as a conduit through which teachers can learn new things and update their existing knowledge, skills and values about sustainability and life in general. They argued that it is only teachers who know what to teach who can share their knowledge with learners since no one can give what they do not have. This is clearly epitomized in the statements of some of the participants:

"So, if sustainable development demands integration, anyone who would like to do that among us teachers should understand the identity of teacher, (.) what is the identity of a teacher? The teacher's identity is continuous knowing. So, (.) if you have anything to tell the teacher bring it in that realm because that is our calling, that is our vocation. You want to change anything through a teacher, (…) teach the teacher, simple, for us anything, just teach the teacher, (.) teach the teacher, that continuous teaching of the teacher … when teachers fail to understand or do not embrace it, it is gone", (P1, 12).

"… You know when a teacher trains today and that one who has trained may be two years from now, they will not be the same, (.) we have to update ourselves in order to be in line with the current issues and whatever is going on at that moment. If not [we] will continue teaching the way we were taught and we have not (---), could I say upgraded like training, (.) to be given refresher training and so on and we will continue with the same. So, as time goes, we keep up with the world", (P23, 317).

In this regard, Zhou and Tu (2021: 268) remarked that university teachers need to be lifelong learners themselves in order to shoulder the heavy responsibilities entrusted to them and be capable of motivating to embrace sustainability. Whereas, Polz (2020: 2) stressed that acquiring teaching competences is pivotal in the teaching profession and requires a continuum of learning. This highlights furthermore that lifelong learning is paramount in enhancing teacher educators' ability to acquire essential competences that could enable them integrate

ESD in teaching and learning activities. Integral to the strategy of lifelong learning is teachers' ability to conduct research and whenever possible publish the research findings. According to the participants, this helps teachers to know the kind of knowledge already in existence, what is missing and how new knowledge can be generated. This is typified in the statement of one of the participants:

"The first thing a teacher must do [is] research. That is the beginning of education, (hmm), (.) research helps us to know what is there, what is not there, what has been done, (…) so research answers the question of what, how, when and who. (.) So, the teachers must do research if we are really going to integrate education for sustainable development", (P7, 110).

Stremmel (2007: 1) argued that when teachers conduct research, it helps them to reclaim inquiry as a legitimate means of gaining knowledge and insights about teaching and learning. In consideration of the country's development agenda, some participants contended that teachers' knowledgeability and integration of sustainability issues in teaching and learning activities ought to be in tandem with the national development frameworks and targets. The national development plan aims at promoting sustainable industrialization for inclusive growth, employment and wealth creation, (National Planning Authority, 2020: 1). This is specified in the declaration of one of the participants:

"A teacher educator should understand the SDGs (.) because that will guide them on even the kind of competences to develop and then realign SDGs to the national development goals what we refer to as the vision 2040 and then we look at the national development plan of a country and that is very important to teacher educator because when you are teaching these students, (.) you are teaching your content and integrate in all that", (P4, 72).

On the other hand, some participants suggested that participation in refresher courses could help them acquire knowledge about sustainability and life in general. They revealed that refresher courses offer them an opportunity to embrace and maintain the two-fold state of the teaching profession, that is, being a teacher and a perpetual learner at the same time. Participant P1, for instance, elucidated clearly that continuous learning puts teacher educators in a better position of being aware of what is taking place in the world. It also enables them to share the acquired knowledge with their learners and colleagues. One of the participants stated that when teachers do not know or misunderstand something, they are most likely also to misinform their learners and colleagues:

"A teacher should be a continuous learner and teachable, if ESD is to take course … you didn't know this, okay, there is a workshop, okay, rush for knowledge because that is our preoccupation, (.) that is our trade, we trade in knowledge, (.) a teacher should be a teacher and a continuous learner. Yes, show me a teacher who has stopped

being a student and I will show you one who stopped being a teacher ((laughs)). So, when we have those continuous refresher courses, they get us back and they get us sensitized again, keep us straight. A teacher trainer should be a teacher trainee all the time ((laughs)). I believe that … when I the teacher have understood then I can make others understand (…) and if I the teacher, when I have misunderstood, then I am ready also to make others misunderstand. You understand some Luganda? "Bwoba totegedde, toyinza kutegeza, ategedde yekka, yategeza," [if you have not understood, you cannot make others understand, it is only the one who has understood, who can make others understand]", (P1, 12).

In this regard, Duţă and Rafailă (2014: 802) stated that continuous learning can instill creativity, initiative and responsiveness in teachers, thereby enabling them to show adaptability to contemporary issues through enhancing skills. Whereas Dhaliwal (2015: 259) acknowledged that a lifelong learner teacher is strongly aware of the relationship between learning and real life, recognizes the need for lifelong learning and is highly motivated to engage in the process, and has the necessary confidence and learning skills. These previous studies continue to highlight the importance of lifelong learning already highlighted by the participants. Teacher educators also ought to thoroughly prepare the learning activity because teachers' preparation is central to the teaching profession and the functioning of an education system, (Kariuki, et al., 2019: 2). Correspondingly, some participants confirmed that thorough preparation before teaching was one of the techniques they were employing to improve on their existing knowledge and teaching skills. They argued that integration of ESD requires a lot of preparation because various issues have to be integrated in teaching and learning activities. This becomes clearer in the statement of the following participant:

"We need to be passionate about what we are doing because integration approach requires a lot of commitment in terms of preparation … if we are to prepare the students (.) and if we are to give them competences, we need to put aside enough time to prepare, to prepare for them because we shall need now more time for preparation, than the time for delivering. (…) So, as a teacher, (.) you have to prepare the assignment and the activities you can do with students so that you can prepare them in those certain skills such as communication skills which is very important, (.) then organization also in presentation of material. You have to be organized, (.) you have to be on time, you have to prepare. So, if someone doesn't prepare and he is not on time, so the whole issue gets disorganized", (P9, 138).

Iqbal et al. (2021: 1) asserted that adequate lesson preparation gives teachers the opportunity to set achievable lesson objectives, identify desirable learning tasks and select appropriate materials. Teachers' preparation affects not only the instruction but also the management of the learning activity, (Cicek & Tok, 2014: 11; Hejji Alanazi, 2019: 167). Another strategy which was profoundly and prominently stressed by almost all participants was self-motivation. They postulated that when teacher educators are passionate about their work, they

can endure all challenges in order to acquire, for instance, the necessary competences which can enable them to integrate ESD related issues in teaching and learning activities. One of the participants enthusiastically narrated that the passion for teaching students motivates them sometime to teach beyond what is prescribed in the curriculum by considering other aspects of life deemed beneficial to the students. One of the participants was a part-time employee at the university and sometimes could not get the salary on time, but this participant referred to passion for teaching as the major motivator for staying in the teaching profession up to now and does not work grudgingly or regret becoming a teacher:

"I am passionate about my work. (…) I have not yet got a job and when I do, I will be happy and as long as I have work, I enjoy. We are expected to only provide that which is assessed in the syllabus (…) some teachers go to lecture and provide what the syllabus says and that is all. Some of us who are passionate, (…) we go beyond that and we are happy to note that our students are happy with it ((laughs)) and when you ask them to choose, depending on lecturer a b c those who have taught you this semester, whom you think has not missed any class this semester, whom you think must attend to you, they will say, that one, ((laughs)) that one and all say that one and seldom do they say that only on academic grounds, (---). They do that also on other grounds", (P1, 23).

This portrays that motivation can be a key aspect for teacher educators in their attempt to integrate ESD in a relational teaching and learning process by considering multiple aspects and also improve on their performance and the performance of the students, (Malandrakis et al., 2019: 27). Although, motivation can be examined from two perspectives, that is, extrinsic motivation and intrinsic motivation, (Barman & Bhattacharyya, 2017: 82), the views of P1 correlate more with intrinsic motivation. Self-motivation can enhance the impetus of teacher educators to do their work even when conditions at their respective places of work are not conducive, as it was also categorically stated by one of the participants:

"So, I need to be motivated first internally and then external motivation will come automatically", P20, 275).

This implies that self-efficacy significantly contributes to teacher educators' ability to focus on the integration of ESD, (Akça 2019: 1). Collaboration among teachers is also a force that can positively influence the whole educational institution community because by working collaboratively, teachers can create communities that can positively change the culture and instruction of their entire teaching approaches, (Mora-Ruano et al., 2019: 2). Similarly, several participants postulated that collaboration among teachers increases their teaching effectiveness and improves their instructional quality. They pointed out that teamwork helps them to present the various aspects of ESD in their teaching and learning activities. They stated for instance that collaboration enables them to consult one another on various aspects and where possible, they even co-teach especially when they want their learners to understand

certain issues from various perspectives. Through collaboration, they also encourage their learners to work in teams and cooperate with their colleagues. This is depicted well in the statement of one of the participants:

"When you talk of teamwork, first of all, you look at it on the side of teachers because you work as a team to develop the child. It takes more than one person to train a child or a learner so how do you coordinate because some of these things are linked, (.) like when you talk of mathematics and physics, they are linked. What level can I reach so that I cover this, so now you must also be able to (---) because you know the value of teamwork, you must be able to tell the learners, (.) you actually need to work with your friends in order to get this concept on something you have to solve, you must be able to create teamwork among yourselves. (…) For example, who knows the method of doing this and who can do it and that creates teamwork", (P6, 97).

Collaborations among teacher educators for ESD integration is very crucial due to the multifaceted nature of ESD issues which cannot be easily handled by one individual. Collaboration helps teacher educators to relate to one another and combine their collective ideas to develop new ideas to handle and integrate the multidimensional aspects of ESD in teaching and learning activities, (Marquis, 2019: 226; Khawam et al., 2017: 269). In this regard, teamwork fosters deep learning through creativity, innovation, interaction, problem solving, and dialogue, (Tarricone & Luca, 2010: 640). Concretely, one of the participants provided an example as to how teacher educators might collaborate when preparing student teachers for their internship:

"We organize workshops and seminars, (.) so for example, during our preparation for school practice all teachers come together and then we begin sensitizing each other [about something] we need to have [the same] for our sustainable education. You find a chemistry teacher comes in front to help other, (.) you will find a physics teacher comes in front to help others, from foundations of education comes in front to help others and then at the end (.) we integrate that knowledge together to see how we can best help our student teachers when it comes to school practice", (P13, 195).

This suggests that when teachers cooperate and work as a team, they learn from each other and develop their various abilities which can enhance their performance at work and possibly accelerate their ability to integrate ESD issues in teaching and learning activities by considering multiple aspects. This happens when individual team members bring their unique abilities and experiences in handling a particular issue, but from their diverse perspectives. Possibly, this can also give a good example to their students who ought to work together in order to excel together in their studies. Rudhumbu et al. (2017: 13) substantiated that contemporary sustainable development challenges, complex as they are, demand cooperation between specialists and social actors with diverse backgrounds of knowledge and experiences

to be able to effectively track the challenges and come up with practical and contextualized solutions. Some participants propounded that collaboration is not only good for teachers but also for students as evidenced in the following statement:

"As teacher educators, we are aware that there is very much relevant knowledge elsewhere (.) and I don't call myself an expert in every area. (…) There could be areas that I may not be knowledgeable but the students are very well aware of them, so I use one of them, students' experience, alright, (.) they give me more ideas and share with the colleagues and that takes me to teaching strategies where in many cases we put students in their small groups (.) and they have their discussion and when they finish discussing whatever the task they have been given, they present and from there, there will be discussion generated, (.) whereby those ones who don't know or those who don't have a lot of knowledge, (.) they will continue adding on and meanwhile for me the best thing is, (…) in order to get the right thing is also to carry out research and add on what the students have done, yes, that helps me to overcome such kind of problems in class" (P11, 168).

This also suggests that integration of ESD might require creation and promotion of a culture of interdisciplinary inquiry and collaboration that enables intellectual and social processes, information sharing, knowledge generation, integration and evaluation in teacher education institutions, (Hoidn, 2018: 294). Some participants also suggested that being innovative, creative, and proactive helps them to improvise especially teaching and learning aids when resources are inadequate so that their learners can grasp and have a better understanding of what they are learning. This is exemplified in the following statement of one of the participants:

"A teacher has to be creative at all times, (…) without being creative you cannot go far. There are cases where resources are there (.) and we can use those resources (.) but there are also cases when resources are not there and we have to find ways of being creative (.) and try to find those resources, like we try to get those videos otherwise it is creativity", (P23, 323).

Mentorship is another strategy which the participants pointed out. They asserted that mentorship offers an opportunity to those who are new in the field of teacher education to learn from their experienced colleagues. The participants noted furthermore that mentorship can increase the overall job performance and satisfaction of teachers because it exposes them to various perspectives and opportunities available in the field of teacher education. It can also expose them to the various teachers' competences needed to integrate ESD in teaching and learning activities. This is made clear in the words of one of the participants:

"… If you bring in the component of mentorship in teaching (.) then we would be there, (.) because you are now a mentor and you are supposed to bring this person to a level even better than you but not just to blame, (…) you have failed, go, no, (.) we are supposed to bring up this person in education to a level that is better than you, (.) so if you are not able to manage this trash, (.) I should give you reasons why trash should be managed. (…)

Therefore, you need to have mentors, people who can mentor you, (.) they have gone through it, they know all the downs and ups, may be on that particular issue you are handling and you need it", (P12, 182).

The views of participant P12 are consistent with the study findings of some scholars. For instance, Bowman (2014: 47) carried out a study on teacher mentoring as a means to improve teachers' performance. The findings showed that Mentoring helps new teachers with job expectations, increases job satisfaction and productivity. This implies that instead of educators working in isolation, they need to collaborate, critically assess and share knowledge with one another. Lofthouse et al. (2018: 1) also studied re-imagining mentoring as a dynamic hub in the transformation of initial teacher education. The study established that mentoring enhances individual professional learning and institutional growth because it allows mentors, trainees, and the supporting staff to contribute to the transformation of professional learning practices and educational contexts. Whilst, Petrovska et al. (2018: 48) conducted a study on mentoring in the teaching profession. The study findings indicated that mentoring improves professional and vocational performance not only among novice teachers, but also among experienced teachers. They added that generally, the experienced teachers and those who are new perceived mentoring processes as inevitable to strengthen and retain quality staff because it helped newly qualified teachers to transit from studies to practice. It also helped them to turn the potential failure into success, and on the other hand, this process provided students with quality teaching. Whereas Duse et al. (2017: 2) examined the importance of mentoring in education. The findings of the study revealed that mentoring plays a nurturing role in guiding new teachers through the first critical years and in providing them with tools and skills needed in actual practice. The findings of the previous studies, as well as the views of the participants, highlight the importance of teamwork, lifelong learning, and willingness to collaborate, share knowledge and experience among teacher educators. As much as mentorship is very important for teachers, especially those who are still neophytes in the teaching profession, some participants pointed out the major challenges encountered in mentorship. One of the major challenges pointed out by some of the participants was the unpreparedness of some teacher educators who ought to help teacher trainees and colleagues who are still new in the field of teacher education. They stated that sometimes the would-be mentors lack or have little knowledge about ESD integration in teacher education which renders them incapable of being mentors. This is clarified in the following statement:

"Mentorship is very important, (.) but we cannot mentor if we have what we have just said, students look at you like a fool because you don't understand some of those issues. You don't have the content, (.) it becomes too difficult", (P22, 305).

Exposure is another strategy which many participants pointed out. They reflected and shared passionately the benefits for teacher educators to get exposed to various situations. Many participants shared their own experiences on the aspect of exposure. They revealed that exposure transformed their lives and changed their attitudes towards certain things, and also stopped doing unsustainable practices. For example, one of the participants shared how teachers can improve their teaching effectiveness by visiting various places where they can get exposed to new ways of doing things, open their minds and possibly also change their attitudes:

"You [may] not need a lot of books (…) what I may call a resource which is required (…) it is in one small word called exposure. For instance, if I am a teacher of history and I visit the agricultural trade fair twice and I have an idea of doing business (.) and I will start now relating the history of bananas and the trends in banana production in my history class, you see, (…) so exposure, me I see it as the main source of (---), it gives you insights, (.) it opens up your mind, yes. If I am an agriculture teacher and I attend an ICT workshop, (.) I will start seeing what tools of the internet I can use, (.) but if I am in agriculture and I always go to agricultural shows only, (.) I will not have enough, I will not believe that ICT can be incorporated. So, we need exposure as the main resource, (.) teachers should be exposed and the learners should be (---) but mainly the teachers need exposure. The more they get exposed to other areas outside their discipline (.) and not exposure within the discipline (---) now because that is part of their training but for sustainable development, (.) we need exposure outside there, yes, (…) you go and see and get involved in the workshop, carpentry workshop and see what is happening there (.) and then at the end of the day, (.) you start seeing what happens with colors, staining the wood, the timber and you say, okay, you see ((laughs)). So, I think that is the best word I can use for now, yes, (.) if we have our educated people, our teachers, in teacher education, we increase the time for exposure. To reduce it a bit, (.) these would be excursions, yes but when you say excursions, normally [we] prepare excursions which are within our disciplines, yes", (P12, 182).

Another participant shared a personal experience of how exposure is important and can transform and influence one's life:

"… When I came back to Uganda after those three months of being out of the country, up to now in my home I can't imagine mixing paper and polythene bags, (.) so it is like that practice got implanted into me (…) and all my relatives keep on laughing at me. Exemplary living I can't imagine mixing food leftovers and a polythene bag. So, I sort my rubbish, (.) I have the plastic and all those none whatever (---), biodegradable [I] separate and then I have a small garden (.) and I have a garbage collector who stops at my garbage to collect polythene bags. So, I also became a player. So, I am telling you something that got ingrained in me, (…) someone could have preached to me the importance of sorting garbage in the classroom but I don't think, it would have been implanted in me, but when I experienced it, (.) it remained in me. For me when I move, I always come back with my rubbish and they laugh at me, yes ((laughs)), it is me and my rubbish whether it is paper or what for me I say no, I put it in the car because I know that when I reach home, I will put it in its proper place", (P2, 41).

Additionally, Bowman et al. (2022: 188) conducted a study on teachers' exposure, they remarked that teachers' exposure plays an important role in translating teachers' experiences into actual classroom practices. Some participants also argued that when teachers lack exposure, they can easily succumb to only supporting the status quo without striving to become better because they get used to such environment. This is reflected in the submission of one of the participants:

"If you are not exposed, you don't see challenges, (…) you are stuck in the mud, you are satisfied with the status quo and because of that (.) you may not know that you are capable of doing many things", (P22, 307).

Another strategy that was clearly articulated by the participants was professional networking. They disclosed that through professional networking, teacher educators can acquire and enhance the various abilities required to integrate ESD in teaching and learning activities. This is exemplified in the following views of one of the participants:

"… You must know that I am a specialist in this, I don't know this and I don't know that (.) but you must have a good network like I am very good at this (.) and I am not very good at this but I know X and S who are very good at that. So, it is like you form atrium okay. So, that goes back to teachers who must be taught how to create a rapport among themselves (.) and also with other disciplines like engineers, lawyers, doctors, and so on. You create that network", (P22, 306).

Prenger et al. (2021: 18) stressed that professional networking among teacher educators offers both professional and personal growth to teachers. They argued that through networking, teachers can share the curricula, support and learn from each other, improve their skills and knowledge such as teaching strategies, and acquisition of valuable resources from their fellow teachers. This highlights the benefits which accrue from professional networking. These strategies clearly indicate that teacher educators need to work very hard both individually and collectively in order to integrate ESD issues into teaching and learning activities. This is premised on the account that the acquisition of those various competences may not be a simple task because the conditions which influence the acquisition of such competences transcend the confines of teacher education institutions to include both national and global issues. Therefore, it is contingent on teacher educators to contrive appropriate avenues to develop and acquire those competences which commensurate with ESD integration. Those conditions which originate from outside the confines of teacher education institutions and influence the phenomenon are presented in the following section.

4.6.4 Intervening Conditions

The intervening conditions which relate to the phenomenon "Key Teachers' Competences" influence either directly or indirectly the activities of teacher educators in teacher education institutions. For instance, there exist currently various sources of knowledge production in the world. Some of these sources are authentic and offer information which can be empirically verified, (Starkey et al., 2022: 3). Some sources seem, however, to offer anecdote information without empirical evidence, (Starkey et al., 2022: 11). In this regard, the participants stressed that it is incumbent upon teacher educators to solicit credible information from reliable and relevant sources which can enable them to remain relevant at their places of work, in the academia, and also appropriately help their learners. From the participants' point of view, this is not an easy task, but unavoidable for teacher educators, and it requires them to possess various skills in order to handle aptly their various tasks. This is clearly expressed in the declaration of one of the participants:

"You know this is a changing world (.) and just like a proverb goes, (.) "If grass grows and dries fire will come and burn it off but if it gets burnt, it will be a very rigid kind of dry old grass among the fresh ones (.) and if the wind blows this way, this one will continue remaining [standing], when it blows this way, eventually you will find it breaking". So, it means that the most relevant recent knowledge should be acquired by the teachers because in the world of technology (.) changes are occurring, alright, (…) so that if you don't cope with the new knowledge, which is more recent, (.) it means that the way you are going to teach will not be elaborate that may not match the interest of the students of the 21st century, (.) so you will not be relevant anymore", (P11, 167).

In this respect, Morgan (2023: 2) asserted that teachers need to have a certain amount of knowledge about checking the credibility of the information they teach so that they can instill in students the skill of rechecking information found on the Internet, as well as using only verified sources. Morgan emphasized that if the teacher does not show the children that not all the information is correct, then they will create problems associated with the assimilation of false information. In this case, teacher educators ought to learn and know how to search for, identify, critically evaluate, interpret, use, and re-use information sources, (Francke & Sundin, 2012: 2). Additionally, teacher's experience and reflection, and exchanges with colleagues are the most important sources of teachers' knowledge development because they offer concrete paths to teachers' professional development in practice., (Zhao & Fan, 2022: 1375). Besides the multiple sources of knowledge production, some participants also specified that currently, there is a special attention given to particular skills such as soft skills at places of work and in day-to-day life. Some of these skills among others are critical thinking, communication skills, problem-solving, creativity, technological skills, and digital literacy. Teacher educators are

expected by the general public to equip their learners with such skills that could make them fit for the demands of the teaching profession in the 21st century. This is plainly stated by one of the participants:

"The 21st century has unique challenges, (.) where even in the market, employers want people who can team players, (.) so you have to instill that in students and make them work. Therefore, a 21st century educator must have knowledge of the 21st century skills which most of them don't have unfortunately, hmm. What are the 21st century skills, critical thinking, problem solving, problem identification, etc. We need those [skills] because for us to achieve development, (.) we need people who can identify problems, maneuver it and solve the problem in a practical way. So, that can only happen when you have critical thinking (.) and we also need 21st skills like team-working because now where the world is, (…) you cannot work in isolation and then the skills of IT and that is why for us, we send them [students] to do research using internet, do their research and they come (---) and we are introducing them to the ICT component (.) and then also give them the skills of communication", (P4, 71).

The special emphasis on such skills in education portrays a slight shift in focus of educational aims, goals, and objectives globally, because previously some of these skills had not been so much emphasized. However due to advancements in technology, for instance, there is now a special focus on the integration of ICT into education. All these changes have a global origin, but they have an impact on what teacher educators do in educational institutions since they have to adjust and embrace such new innovations and interventions in education. This presents a great task for teacher educators. In this regard, some participants stressed that teachers ought to be creative and innovative in order to produce graduates who are not only academically sound and job seekers, but also critical thinkers and job creators. In fact, one of the participants stated categorically that since Uganda is at the very basic level of needs, teachers have to find innovative ways of teaching in order to equip learners with innovative and entrepreneurial skills that could make them ready to meet their own needs and prepare learners for the demands of society:

"… Uganda is at the very basic level of needs and right now attention is towards production and job creation and so on (…) and for you to do that (.) okay, you need innovative ways of doing it … so, you have to teach in a way that makes your competence very practical and very enterprising, to me that is the first thing", (P22, 315).

In the regard, Žydžiūnaitė and Arce (2021: 125) postulated that innovation and creativity are two separate but related key concepts, and each is required for a teacher's success and both are related to teachers' ethical, moral, professional, intellectual, social, institutional, individual, and processual needs. Creativity and innovation improve the pedagogical competence of teachers in developing innovative learning models and teaching approaches, (Suharyatia et al., 2019: 919). Schreiber and Danz (2018: 8) highlighted that creativity and

innovation are crucial for ESD because it goes beyond the acquisition of knowledge and targets the development of competences that focus on action and participation in society. On the other hand, some participants highlighted the task teacher educators have of training and producing teachers who are global citizens. This refers to graduates who have the requisite skills to live and stay anywhere in the world. Graduates who are not only academically sound but also well integrated with other aspects of life. A case in point, one of the participants asserted that the world is becoming a global village, so teacher educators need to train teachers who can become competitive in the world of work:

"You know the world is becoming a global village, (.) so if we train these learners very well, they can be competitive in the world of work (.) because these days you cannot, for instance, go to apply for a job while you cannot say you apply technological skills, ICT. So, all these (.) should be imbedded in order for one to come out useful and not just at the local level but internationally. I think that should be a compounding factor, (.) to promote ESD", (P8, 125).

This indicates that the main focus of a teacher is not only on delivering the subject content to enable students get promoted to another level of education, but also expose and equip learners with essential skills which can enable them to value global issues, live and work anywhere in the world. In this respect, Damiani (2020: 25) stressed that teacher educators have a task to prepare students to live and act in a context of global change, interdependence, and diversity. In a similar vein, some participants acknowledged that teachers are often perceived as opinion leaders and role models in their respective communities. They wield a lot of influence, especially when they utilize their knowledge and skills to benefit not only their students, but also their respective communities where they stay and work. In this case, teachers are respected and considered to be change agents in their communities. This perception stretches, however, the work of teachers beyond the precincts of the educational institutions to participate in the affairs of their respective communities which cause a surge in the scope of their work even though community participant is part of it. This is illuminated in the statement of one of the participants:

"Well, really, I think that teachers are change agents because they don't only pass on the information during school but sometimes, they also participate in community activities. Sometimes they educate people among them, (.) they are role models, and people look at them. They see what teachers are doing and people are more likely to follow a teacher. They may live within a certain community and people look at them, (…) they are more likely to model what the teacher is doing, yes, (…) they are not just in school but even in the community around them looks at them as a model. (…) They want to do what the teacher is doing and they listen to what the teacher is saying. For instance, one time I was the patron of the mathematics society (.) here and we would do some kind of outreach. We could go out to primary and secondary schools around. It was a kind of community outreach,

sharing knowledge with others (.) and there is a bit of community outreach but now this is outside class as a club or society. We do it with students outside of school. (…) We seem to do so much for the environment using resources sustainably", (P3, 50).

In this regard, van der Heijden et al. (2018: 348) remarked that today teachers are expected to cope with high demands of a complex teaching environment which requires them to exercise their professional agency for professionally developing themselves continuously and for exerting their positive influences on education in order to change teaching practices inside and outside their own teaching environment. Whereas Min et al. (2022) conducted a study on what empowers teachers to become social justice-oriented change agents. They established that through community outreach teacher educators and preservice teachers played the role of social change agents and role models. They also cultivated solidarity with local communities and organizations. In this conceptualization, Lillo and Aponte-Safe (2019: 2) asserted that learning to teach is not merely a technocratic endeavor, but an evolving commitment to action and service to community. In this regard, some participants acknowledged that when teachers do not demonstrate to their communities that they possess knowledge and skills which are beneficial to them, their communities tend to disregard them and opt for people from other professions for advice. Yet, a teacher might be more competent and qualified to handle such contentious issue in their communities. This becomes very clear in the statement of one of the participants:

"You find a lot of teachers, for example, a teacher who teaches Christian Religious Education (CRE) would not be called on the village to do counseling (.) yet he has all the capacity, (…) yes, he is a good social worker because he has those things related to management of society, yes, but that teacher would not be looked upon as such, (.) but they take somebody who has done some course diploma at law development [centre], in community development, (…) yes, that one, we are going to take this one. (…) You may find a teacher of accounts and economics, (.) even at degree level would not be consulted at macro-finance issues, yes, (.) but they will call for somebody who has done a diploma in accounting and he is associated with a certain NGO, and they say, hey, now we are going to have a teacher on financing and (.) you know, and they will respect the other person more than the teacher because the teacher does not have that comfort to go out and tell people what he does (…) and yet that I think to me would be helpful in pushing the sustainable development agenda (.) and also the recognition of their knowledge and skills and the level of support that the teacher can offer", P 184.

The conditions underpinning the phenomenon demonstrate the various factors that influence the overall work of teachers in teacher education institutions. Nevertheless, these conditions illuminate the required competences and the uphill task teacher educators have to face if they are to ably handle the various tasks required by the nature of their work and in particular the integration of ESD in a relational teaching and learning process by considering multiple

aspects in teaching and learning activities. The actions and interactions employed by teachers in view of the realization of the phenomenon produce some consequences and these consequences constitute the central focus of the following section.

4.6.5 Consequences

The strategies advanced by the participants with respect to the prevailing situations circumferential to the phenomenon bear some concrete and probable consequences. In some instances, the participants categorically stated the exact outcomes of their actions and interactions and in other instances, they stated what they thought would probably happen if the strategies are deployed. For instance, some participants articulated that one of the main aims of education is to acquire knowledge, skills, and values which can be beneficial to both individuals and society. This is typified in a description of one of the participants:

"So, the main aim of education (.) involves acquiring skills and knowledge and after acquiring knowledge and skills, (…) then attitude will change. These skills, knowledge and attitude will impart some particular values in someone who has undergone education, yes", (P6, 94).

Related to the acquisition of knowledge and skills, some participants also revealed that there are observable tasks which they give learners to assess their understanding and acquisition of the expected knowledge and skills. This is externalized in the account of one of the participants:

"When I am teaching for instance managerial skills, (…) I make sure that the learners develop some of these skills. [For instance] how can they manage their society and I can measure this when I look at them, maybe organizing their friends through teamwork. I can develop some of these skills (.) which can help them to be normal citizens", (P8, 124).

In addition to knowledge acquisition and skills, there are other tangible and intangible benefits that teacher educators and their students can obtain as a result of their participation in sustainability activities. For example, one of the participants communicated:

"Sometimes we go to competitions and sometimes we have won those competitions. For example, some students have won quizzes, (.) like in biotechnology club there was a lady who won a writing competition, (.) she wrote a very good essay, a biotechnology essay and she had to go and get gifts with one of the professors. She won a gift of mainstreaming youth in wildlife conservation ((laughs))", (P24, 325).

The acquired reward out of competition highlights the aspect of social return on investment in education, whereby the educated get income and also benefit the community, (UNESCO, 2021a) (UNESCO, 2021: 13). Furthermore, some participants specified that the acquisition of

knowledge and skills helped them to find jobs and also have a good future. They postulated that their learners will also have a bright future through education and also solve some of societal problems. They associate having a bright future to things like getting a job, being enterprising, a problem solver, and being able to meet day-to-day needs as vocalized in the statements of some of the participants:

"The sole reason why people go to school (.) ideally is to make sure that they have a bright future, YES, they have a bright future. In other words, getting a job (.) or working out something, at least, yes, we have some genius people who can have this knowledge and skills without knowing how to read and write (…) but at least when you have this training. It is an added advantage, (.) so what I mean is self-reliance. You know, if your parents have managed to give you school fees to learn something, (.) then automatically after gaining that knowledge and the skills from the learned knowledge (.) you can be able to make sure that you get your basic needs, okay, from maybe from your earnings", (P13, 188).

"When you teach the students problem-based learning, (.) a topic is believed to have a problem and the students must be able to identify a problem out of the topic (.) and then work towards solving it. Then you work towards solving it (.) and as a result of that when the student goes out, he is able to relate and comprehend, this is how it is (…) and so in such and such a topic we were taught and this is how we went about it and we related it in this manner to this real-life problem (.) and that is why some of them are problem solvers at the workplace. They are change agents in their workplace ((laughs))", (P4, 73).

Affiliated to the issue of knowledge and skills acquisition is multitasking. Some participants highlighted that knowledge, skills, and values enable both teachers and students to be multitaskers in life so that they could address the various complex challenges they encounter in life. For example, one of the participants stated:

"I believe lifelong skills are very important in life … if you teach a student to synthesize and examine issues (.) he is going to use it in very many things, as a politician, as a police officer, as a teacher, all those things, a student must use lifelong skills not only the knowledge related to their subject matter (…) but the knowledge related to the problems that are there in society, hmm. (…) For example, I teach history but students come and thank me for having helped them to keep time ((laughs)) and they say that has helped me and not the history you have taught. [they] say, you really helped me, you were a strict person, so principled. That is a lifelong skill, if somebody is principled ((laughs))", (P7, 109).

The acquired knowledge, skills, and values also empower teachers to relate their subjects of specialization to other academic disciplines and any other related ESD issues. Some participants argued that possession of knowledge and skills of various sustainability aspects enable teacher educators to explain and relate the various aspects of sustainability to the learners as illustrated by one of the participants:

"If teachers have basic knowledge about various things like law, faith, religion and society issues, in that way, they will be free to relate their subject area to law, (.) relate their subject area to finances and economy, (.) relate their subject area to societal issues, faith issues, cultural issues (…) but when you are just there, (.) relating only to your subject area (.) then you cannot integrate knowledge (.) and more so ESD issues to real-life situations. I think we should go beyond that in teacher education", (12, 182).

It was also stressed by some participants that knowledge, skills, and values about sustainability can help both teachers and their learners to change their attitudes by avoiding actions that promote unsustainability and embrace sustainability practices. A case in point, one of the participants explained how education without a change of attitudes and ways of doing things may not be considered worthwhile education:

"Yes, you can go to school and have all the structures of organic chemistry in the head but if these don't translate into certain values, don't improve the ability to make decisions. (…) I don't think that equals education because there should be a change from poor ways of doing things to better ways of doing things. If for example, I go to school (.) and learn, for example, that this poorly ventilated kitchen contributes to various chest infections, (…) and in fact, there is evidence that shows that. If you see old women in the villages, (.) they are always coughing and now you build the same kind of kitchen, is that education [really]? I would like to see a change, an improvement, and not just a change, but a positive change, and if people were spending the whole day collecting firewood and now [they] have been educated. You may have an efficient way of providing energy", (P12, 180).

Some participants postulated furthermore that when teacher educators apply various approaches in teaching and learning such as giving group work to students and then present it in class, it also enhances their communication skills, confidence, and self-esteem. This is emphatically discernible in the following statement of one of the participants:

"When tasks are given, time should be created at least for them to make presentations (.) because as they present, they will develop self-esteem and confidence and the communication abilities", (P8, 129).

Self-esteem and confidence play an important role in students' personal development and performance because students' self-esteem and confidence affect their learning in aspects like participation, seeking goals, developing interest in lessons, and decreasing their anxiety, (Gamar et al., 2019: 152; Akbari & Sahibzada, 2020: 1; Blegur et al., 2021: 58). In this case, competences and skills are acquired through practice. It was also disclosed by some participants that when they use their various competences to effectively teach the learners, their learners appreciate them. Consequently, the feelings of being appreciated make them happy and satisfied with their work. This can be conceived in the declaration of one of the participants:

"Some of us who are passionate about our work, we go beyond just teaching what is stipulated in the syllabus and we are happy to note that our students appreciate it and that makes us happy and also satisfied", (P1, 23).

Li and Yu, (2022: 2) and Sahito (2017: 13) conducted studies on job satisfaction of teachers. The findings of their studies highlighted that it was very important for teachers to feel satisfied with their work and profession because it motivates them and improves their performance both in the classroom and in the entire development of educational institutions. The participants also claimed that refresher courses enable teacher educators to acquire new knowledge and skills. Consequently, the absence of opportunities for refresher courses can be associated with the inability of some teacher educators to participate actively in writing and publications as explained in the statement of one of the participants:

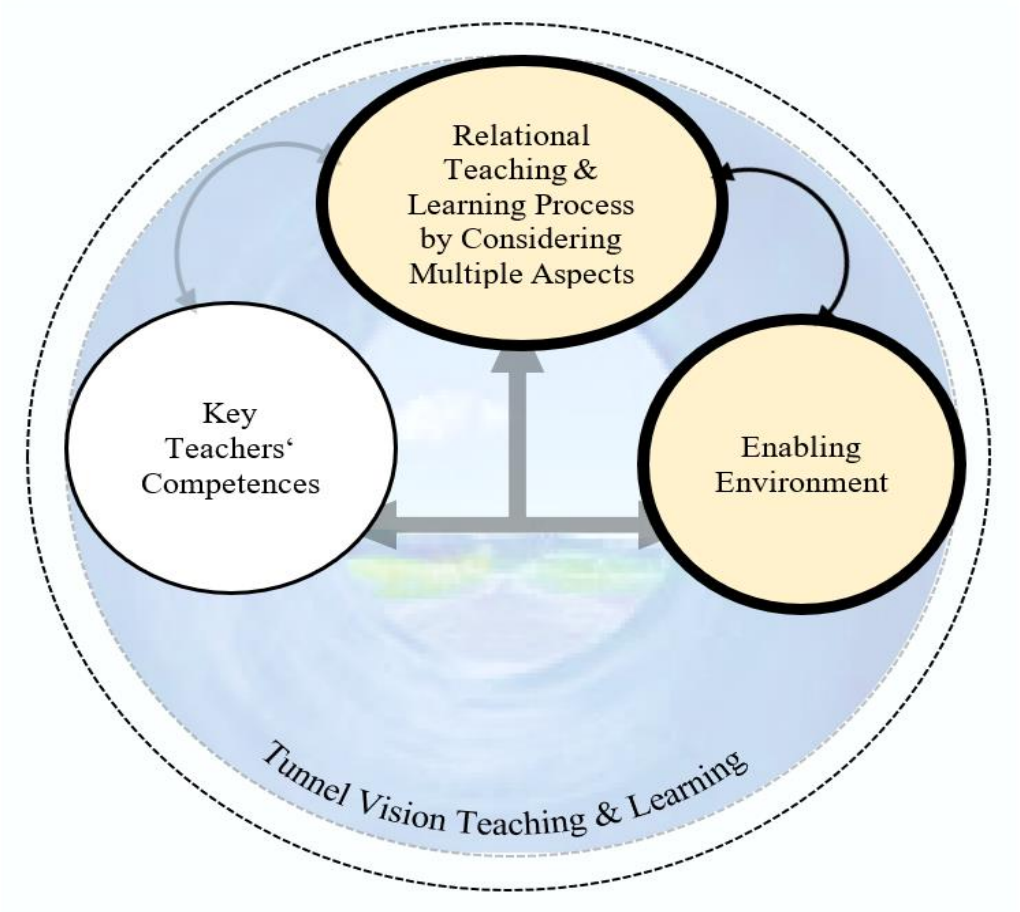
"The competence to write is also very relevant for teacher educators. [However] people do not want to write, you find teachers for 20 years, [when] he has never published any paper because that doesn't come to him as a professional requirement. They think they are not professional ((laughs)). You have to remind them that they are professionals (.) and they have to contribute to knowledge. There are lecturers who have never ever published a single paper, apart from their dissertation ((laugh)) so that means that skill is not there. So, you look at them (.) and after their time has gone then they go away ", (P14, 204).

In a nutshell, the explication of the phenomenon "Teachers' Competences" and its various dimensions have highlighted that they are instrumental in enhancing teachers' abilities to apply relational teaching and learning process by considering multiple aspects. The phenomenon has highlighted the various competences, skills, beliefs, and values which can enhance teacher educators' ability to integrate ESD in accordance with the core category in teacher education. Nevertheless, further analysis of data revealed that as much as teacher educators may have the requisite competences which can empower them to integrate ESD in line with the core category, the environment in which teacher educators live and work plays equally a very crucial role in enabling them to effectively and efficiently do their work. The environment ought to be conducive to enable teacher educators to effectively apply both their natural and acquired abilities in a way that commensurate with the prescriptions of the core category. In this regard, the next section focuses on the working environment that can enhance, facilitate, and support teacher educators to integrate ESD in teacher education.

4.7 Nexus between Integration of ESD as a Relational Teaching and Learning Process by Considering Multiple Aspects and Enabling Environment

In this subsection, the connection between the phenomenon "Enabling Environment" and the core category will be unveiled. The nexus between the core category and the phenomenon

emerged from the analysis of data. It is also magnanimously supported by the existing literature. This will be illuminated in the subsequent sections concerning the phenomenon.



The work environment in which teacher educators operate is key to their ability to exercise effectively their professional roles, experience job satisfaction and to ensure that the best possible teaching and learning outcomes are achieved, (ILO, 2012: 115). This signifies that the work environment in which teacher educators operate, is just as important in contributing to or impeding the process of their performance. ILO stressed that teachers are more likely to provide a high level of professional service when they are able to work in a supportive working environment. Factors such as political, institutional, economic, cultural, and other factors also play a critical role in contributing to the success or failure of teacher educators' performance in teacher education institutions (Singh, 2021: 7). This is also pertinent to the integration of ESD in in teacher education. According to Leal Filho and Londero Brandli (2016: 335), the complexity, deepness and versatility of ESD issues require the involvement of a large variety of educational stakeholders. In this study, the integration of ESD as specified by the core category requires a collective and unified effort from a wide array of stakeholders besides teacher educators. Specifically, teacher educators require adequate

facilitation and support from various educational stakeholders to integrate ESD in teaching and learning activities. The nexus between the core category and the phenomenon is, therefore, a relation of support, facilitation and reinforcement of teacher educator by various stakeholders of education at various levels towards the integration ESD in teacher education. In the course of the interviews, all participants raised issues concerning their work environment and they vehemently expressed the desire and yearning to be facilitated and supported to integrate ESD issues in teaching and learning activities. This will be specified in the presentation and elucidation of the phenomenon. It is in the daily operations of teacher educators in teacher education institutions that the demands of their occupation as well as the resources available to them can be observed, (Edo & Nwosu, 2018: 40; Gomendio, 2017: 46). The aspect of the lack of adequate essential resources in teacher education institutions was one of the main issues raised by the participants. Several participants took the researcher and interviewer around their education institutions in order to concretize their assertions and indeed most of the issues they raised were clearly and distinctly observable. The participants claimed that in order to get an accurate picture of their working environment in relation to ESD integration, it would be misleading to focus on just what exists and takes place in teacher education institutions. They stressed that the overall environment influences, supports, facilitates and reinforces their efforts to integrate ESD in teaching and learning activities. This will also be delineated in the presentation of the phenomenon and illuminated by citations of the participants views in the following subsection.

4.8 The phenomenon “Enabling Environment”

In this study, the phenomenon “Enabling Environment” refers to all requirements that ought to be in place to support, facilitate, and reinforce teacher educators to integrate ESD in a relational teaching and learning process by considering multiple aspects in their teaching and learning activities. In this respect, the phenomenon stands for the ambiance in which the integration of ESD in teacher education takes place. This phenomenon like the previously discussed phenomena (4.3 & 4.6) emerged from the analysis of the collected data. During the interviews, the participants vehemently expressed their excessive desire, wish, longing, and yearning for the existence of an environment that supports, facilitates and reinforces their effort to integrate ESD into teaching and learning activities. They postulated that the work of integrating ESD in teacher education cannot be done single-handedly by teacher educators alone without assistance from other stakeholders of teacher education. They asserted that they would wish so much to integrate ESD issues in teaching and learning activities, however, if

other stakeholders of teacher education do not provide essential requirements that could support and facilitate them to integrate ESD, then the integration agenda of ESD into teacher education would remain a great challenge and a daunting task for teacher educators. This becomes evident in the imperative and conditional language used by the participants during the interviews such as “You must”, “They should”, and many “IF” statements such as “If they want”, “If they don’t”, “If there is”, and “If there isn’t” as epitomized in the following statements of the participants:

“You must bring in the stakeholders who are supposed to play their part (.) because if they do not play their part, (…) you do not expect much from teachers only”, (P15, 218).

“… So, if they want the education sector to be the pioneers of sustainable development (.) then they should make the area attractive (.) so that people who go there, they don't go there as the last resort (.) but they go there because they have passed and they have the will to teach”, (P10, 158).

“If there is no main-streaming and no deliberate effort to main-stream ESD (.) it will remain on paper”, (P5, 92).

“If there is a way parents can interact with the teachers and support the training”, (P6, 105).

“If there is no law? (…) How am I going to convince my students that littering is bad because they see big things being done illegally (.) and no arm of the law touches them?”. (P20, 280).

These conditional statements of the participants, on one hand, clearly portray both the inner and outward desire, wish, and yearning to have an environment that supports, facilitates, and reinforces them to integrate ESD in their teaching and learning activities. On the other hand, they reflect the disappointment which many participants had because of the unconducive work environment. The participants’ statements reveal furthermore that the elements which constitute the enabling environment for teacher educators exist both within and outside the context of teacher education institutions. This was also reiterated by Whitby & Wandel (2019: 16) who asserted that the support and benefits of the adoption of ESD policies, approaches, and pedagogies stretch far beyond the classrooms. This means that on one hand, there are requirements which teacher education institutions on their own can offer teacher educators to integrate ESD into teaching and learning activities. On the other hand, there are also some requirements that the external stakeholders of teacher education can provide to support and facilitate teacher educators to integrate ESD issues into teaching and learning activities. The requirements which support and facilitate teacher educators to integrate ESD in teaching and learning activities, which will be highlighted in this study as raised by the participants might be considered as general requirements for good teaching and learning environment, however, in the context of this study are related to the integration of ESD. In relation to the external

stakeholders, they can offer support either directly or indirectly to educators. They can, for instance, finance sustainability activities of teacher educators like the provision of transport facilities for fieldwork activities or by promoting sustainability actions in their respective capacities within their localities. According to the participants, such actions of the stakeholders could support and facilitate their effort to integrate ESD issues in their teaching and learning activities in teacher education. This can be depicted by the statement of some of the participants:

"I think our education and our work as teachers are impacted by many factors. (.) Other factors come from outside the class environment or outside the school environment (.) so that by the time students come to school (.) say in the university (…) they have already learned a lot, they have already seen a lot and (.) they have also heard a lot. Students emulate a lot of what others do to the extent that by the time they come to school, they have already learned a lot from their parents (.) they have already learned a lot from society (.) from the environment as they move around, in their villages, their cities, (hmm) their towns, they see certain things, so those things influence their behavior, impact their ideas and impart everything actually about them. So, (.) the school environment may have some change, but it is also influenced by what happens outside school. It is true the educated person behaves somehow different, but he is not very different from other members of the society (.) in which he/she lives because already by the time of going to school, society has already changed somebody and it is very difficult to remove those ones", (P 254).

"So, we need mobility, okay, not everything needs to be taught in class, you need an encouraging environment where practical comprehension of things is really enhanced. Say, we are teaching about land use management and land use conflict in physics in the remote sense and you predict maybe there is a drastic land change over ten years, (…) there has been a lot of change in land use pattern from N to C, D to H and so on. Now, that is in the remote sense and you know this maybe you have done the study over in Mukono [district], so what did you do, so you have taken these people [students], you need mobility, you have to take these people [students] to see themselves. We have used land conflict, does it really exist, they go and see it and they go and learn more from there, so we need to see it and … and I said we need mobility and so on", (P22, 312).

This implies that teacher educators in teacher education institutions might play their role of integrating ESD issues in teaching and learning activities very well, but the prior experiences of the learners and the surrounding environment of educational institutions might frustrate and impede their effort to integrate ESD. In this regard, integration of ESD in a relational teaching and learning process requires a supportive environment that enables teachers do effectively their work, (Reeves & Le Mare, 2017: 85). Ljungblad (2021: 867) also noted that students belong to different micro and macro systems and their relationships within the family, and the surroundings influence them and they are also part of their experiences while participating in education. In the same vein, Jančius Gavenauskas, and Usas (2021: 1) studied the influence of values and the social environment on the environmental attitudes of students. They

established that families, friends and society play a more important role than educational institutions in influencing students' outdoor behavior. This presupposes therefore that both the internal and external environment of teacher education institutions play a crucial role in influencing students' practices. It is from this vantage point of view that the participants expressed their desire and yearning for a supportive environment both within and outside teacher education institutions that could reinforce, support, and facilitate them to integrate ESD issues in their teaching and learning activities as explicated by one of the participants:

"There must be a supportive environment not just in school but also generally in society. So that all these values are demonstrated, promoted, and supported. So, (.) it is not just a curriculum thing putting it in the documents and then you are happy that oh, it is there (…) but if you are teaching me to be very respectful or sort my garbage, I should also see it happening in society … so, what I am saying is that all these things we are saying should be reinforced not just in the school but all around us (.) be it in the institution, be it in homes, churches, or mosques. So, the entire society should support the values we want to promote. The whole society should be made aware and incorporate them not only in ways of learning but also in habits (---) [such as] how to control garbage, toilet, plastics", (P2, 45).

The aforementioned statement of the participant indicates and augments strongly the desire, yearning and emphasis that all participants placed on the need for a supporting and enabling environment within and outside teacher education institutions during the interviews. In the opinion of the participants, the availability or absence of an enabling environment such as the provision of essential teaching facilities has a huge impact on what teachers can do and achieve or not do and consequently not achieve in their effort to integrate ESD in teacher education. The phenomenon "Enabling Environment" can be classified into four categories, which were distilled, developed, and identified during data analysis. These are the educational institutions, the local community, the central government, and the international community. This implies that the phenomenon is multilayered, with enabling factors at local, national, regional and global levels. The four categories highlight areas where teacher educators can receive support and facilitation to integrate ESD in teaching and learning activities.

In the case of educational institutions, for example, participants raised issues to do with the integration of ESD issues in all activities and strategic areas of teacher education institutions such as institutional strategic plans, vision, and mission. They also suggested mainstreaming of ESD issues in institutional policies, teaching curriculum, research, and community engagement and in many other activities. The participants postulated that if ESD issues are incorporated into such areas of teacher educational institutions, then, teacher educators could easily know that they are obliged and reinforced to integrate ESD in their teaching and

learning activities. Similarly, it could make all workers in teacher educational institutions to find it necessary to offer support and provide enabling environment for teacher educators to integrate ESD in teacher education. This becomes apparently clear in the statement of one of the participants:

"… if ESD could be reflected in almost every aspect of study (.) but now if here ESD is really that important, which I think it is, then it should be reflected in university policies, university mission and the like (.) such that this is also reflected in the agenda, every academic agenda and not only academic agenda but every agenda of the university. So, (.) they usually say that when you are going to develop a curriculum, a curriculum must reflect the university's mission hmm. So, even SD issues should be reflected in the mission and if it was there then one would say, yes, I have to teach about this and that and my teaching and activities will be guided by what the university promotes (.) you know it upholds. So, as much as we may talk about it, if it is not there (.) then it is as if it is something that is not important", (P21, 291).

In this case, Solís-Espallargas, et al. (2019: 2) also remarked that the integration of sustainability in teacher education is conditioned by some important factors such as integrating it in the curriculum, training of teachers, and the conceptions teacher educators have about sustainability itself. Whereas, Moore (2014: 326) studied creating sustainability education at university level. The study stressed that ESD ought to be infused into all university plans, decision-making structures and evaluative measures and also in research, service and teaching components of the university. These previous studies highlight what teacher education institutions could do to support and enable teacher educators focus on ESD integration. The participants expressed, furthermore, the desire for teacher education institutions to have strict sustainability rules and regulations that could consolidate their effort to integrate ESD in teaching and learning activities. This is substantiated by the statement of one of the participants:

"Schools need to be strict to what is correct and stick to their words because you never know these children are missing the nurturing at home. So, schools are second homes for them (…) so if they miss it at first home, (hmm) they can get it at the second home. I think that at times within the school environment (.) there is that lack of strictness (…) there is some laxity, you find that if the school environment doesn't provide that security (.) you know administration where the students are monitored, your conduct is monitored, people assess you and there are always eyes on you … so some of these things happen because the students know that even when they do that nothing happens (…) nobody reminds them of this and that. So, carelessness comes in because there is no effective monitoring of what the students do, that could be one of the problems. Therefore, if it is an institution which doesn't care (.) and leaves it to whom it may concern and there is no form of responsibility (…) there is nothing that you can do", (P18, 254).

In a similar way, Schreiber and Siege (2016: 393) augmented that sustainability regulations provide minimum standards, which cannot be ignored by members of an institution if training and sustainability values are to be cultivated. Whereas Müller, et al. (2021: 1) stressed that leadership in an education institutions is crucial for the implementation of ESD in the institutions. On the contrary, many participants reported instances when institutional administrators did not support and facilitate them to conduct certain educational tasks. They stated for example that when they want to take students to fieldwork activities or even invite experts in certain fields to talk to their learners, they usually get a negative reply that there is no money. In the opinion of the participants, the technical people have a lot of expertise and experience on certain issues and sharing their knowledge with the learners is very essential for the understanding of ESD issues as expressed in the statement of one of the participants:

"We don't know everything (.) but sometimes we know that this one is good in this and this one is good in the other. So, let me do this one and then I bring him or her to do this one and also bring him in to teach that to the students. I think it can help. I think we can bring in people who are guest speaker (.) and then they talk and try to teach but the aspect of funding! They always tell us there is no money", (P23, 321).

This implies that lack of support might not only frustrate teacher educators' effort and enthusiasm to integrate ESD but also deny students a chance to get direct information from experts or field studies on various issues of sustainable development. In this respect, Edo and Nwosu (2018: 40) remarked that the work environment can affect teachers' morale, productivity and engagement. They stressed that the management of educational institutions ought to create a working environment that attracts and motives teachers to enjoy what they do, feel that they have a purpose, and reach and attain their potential in the teaching profession. Whereas Firomumwe (2019: 16) asserted that fieldwork is important in developing observable skills and learner's cognitive understanding of the subject matter. Just like what participant 23 stated, the study found out that lack of finance and cooperation from the administration hindered effective implementation of fieldwork. Yet, field work helps to integrate theory and practice in ways that bring the field into the classroom as well as take the classroom into the field, (Wrenn & Wrenn, 2009: 261). Additionally, field studies enhance both teacher educators' and students' experience and understanding of ESD issues because it prepares them for the complexities of ESD, (Leicht, et al., 2018: 139). Whilst Ponzelar (2020: 29) and Corpuz et al., 2022. 135) conducted a study on teachers' narratives on the implementation of ESD in teacher education. They also found that lack of financial support for teachers' training, conferences and lectures on the topic of SD were a great challenge for teacher educators in many institutions. Ponzelar highlighted furthermore that lack of funding

could even lead to inaction of teacher educators and also widen the gap between education institutions and the reality outside them in case educators and their students fail to go for field activities. UNESCO (2019: 40) also ascertained that financial resources and expertise are among significant limiting factors towards achieving the goals of ESD implementation in the education curriculum. These previous studies continue to indicate that lack of financial support can indeed frustrate teacher educators' efforts to integrated ESD in teacher education.

Oyo, et al. (2017: 121) conducted a study on MOOCs for in-service teachers in Uganda. They found out that, teachers can improve their digital literacy and subsequently engage in online life-long learning when they were adequately supported by their educational institutions. In this same line of thought, the participants expressed their desire to have sufficient teaching and learning facilities, such as classrooms, library, laboratory, ICT facilities and other facilities for instance litter bins where waste materials can be disposed. The desire for essential teaching and learning facilities is clearly epitomized in the narratives of some of the participants:

"Definitely, there is also the issue of resources because if you are going to teach (.) you need the resources right from literature and other issues (.) and some of these issues are of concern, like laboratories for example you want a laboratory to deal with the environment. Recently, (.) I was given a soil sample and soil sample results from the laboratories but I couldn't interpret it without apparatus (.) and I am looking for someone who can interpret it for me. (…) So, those ones are very important to know because what I saw, we were dealing with things to do with petroleum but someone was telling me about these petrol stations and what they do, once they are put there, those fumes leak into the environment and they go into the soil (.) and the grass around there die and then I started researching, wherever there is petrol station there is something like that (.) just any petrol station (---) now how do these people know that soil there is being degraded. It all starts with these examples. You don't have these labs, so resources are not there (.) and facilities are not there to teach and show the actual dangers so that one can become aware of soil or even environmental degradation. We need again sustainability before development comes up and many other things that would come up (…) if we look at even knowing soil profiles and I tell you what kind of vegetation would come up. So, I think facilities and resources also need to be availed in learning institutions so that it is properly understood (.) because even especially where you have laboratories for example because teaching science goes with having experiments. Those people who are there like social sciences would have books but we don't have them (…) then on top of that, resourceful people who are technical now who are conversant about them. I think after all that is said, then we need even the financial resources would be among those in order to have it attain sustainability … if for example, you brought out resources (.) some of them are consumables, can you maintain their supply and preserve them or even suppose you go to experts (.) you know this information and all that has to be done (.) and the resources have to be there. Now if society studies are not there, then we are dead", (P21, 292).

"There are certain things which are meant to be taught, hands on but because facilities are not there, then theory will thrive over practice (.) and you might not blame the learners and you might not blame the instructors and it

goes up to the system. But I don't know which example I can give you (…) the example I can give (…) yes, for instance, we train our geography teachers, but I think the simplest example I can give you is like we don't have a weather station (.) even in the school of education, so you keep on telling them how weather elements can be measured and recorded, yes, you do it and they seem to know but without having the opportunity to do it hands on and you know some of these things really. For instance, (.) if you go to some of these primary schools which are well facilitated (.) because they are private, you will find that there kids are at least experiencing certain things. For instance, germination in these containers (.) and then they do this and do that and I thought that is the way to go (.) which would also be in higher institutions of learning and everything will be okay", (P8, 127).

So, actually what we have talked about littering. I teach in a very dirty environment in our school. So, one day I told the dean about it but the dean didn't care at all, it was like as if not important", (P20, 280).

The absence of essential teaching and learning facilities impedes the teaching and learning progress, (Martínez-Ramos, et al., 2021: 6; Ordu, 2021: 210). In this regard, Bagonza et al. (2021: 69) also suggested that universities in Uganda need to provide a conducive environment with good facilities in order to enable lecturers achieve those functions and provide university education which is necessary for socio-economic development. The aforementioned views of the participants signify the passionate desire and yearning for support and facilitation which teacher educators wish to get from teacher education institutions in order to integrate ESD in teaching and learning activities.

In regard to the local community, participants raised issues to do with, for instance, the urgency of parents and guardians to take the mantle of teaching their children the basic ESD issues right at homes so that by the time they join education institutions, they have already acquired some sustainability values such as segregating garbage and cleaning their home surroundings. They postulated furthermore that ESD is not confined to educational institutions but applies to all levels of formal, non-formal and informal education as an integral part of lifelong learning. They emphasized that only education and learning at all levels and in all social contexts could bring about a critical change towards sustainability. The participants maintained that not everything about sustainability should be studied in educational institutions because there are various and essential aspects of sustainability which learners could learn right from childhood at home. This is well elaborated in the statement of one of the participants:

"And even home, (…) let us not leave it to the school because even taking care of the environment. So, we need to begin with these young ones because even before they get to school (.) what are we teaching them (.) even before they begin to talk (.) what are we teaching them, what are they seeing, what are the parenting practicing, what are the parents practicing for the children to copy? If we are at home and we are preparing food there, after preparing, have we cleaned the place so that even our children know what to do? I told you that I have a three-

year-old girl in the house (.) so, one time I was like getting ready to cook the matooke [Bananas] and I was in a hurry. I just started peeling on the floor and she came and said, no mummy and she brought the thing I use for peeling and she put it there and put what I had put on the floor in it (.) so, she had already noticed, we don't just peel on the ground, so you see. So, even at home, are we taking good care of the environment? When children dump rubbish, do you tell them, don't dump careless, please pick up your rubbish (…) your food remains and go and put them in the waste bin, are we doing that? So, let us start at home and then also at school. Otherwise, you look at people ((laughs)) and ask, where did these ones grow up from? Just dump something, even on the road, someone finishes drinking their water in their car and they just throw out ((laughs)) so at home, we need training, (---) do we care for the environment, are we clean, are we mindful of this tree we have grown up seeing, are we just going to cut it because we need charcoal or (.) you get a few branches and let it sprout out, but we are not mindful. (…) So, the training needs to start at home. People have to be trained in order to change", (P3, 63).

The arguments of P3 regarding parents' role to teach their children at home basic sustainability issues were raised by all participants. They acknowledged that parents should teach sustainability values to their children long before they join education institutions. This highlights the fact that learning does not take place only within schools, colleges and universities, the traditional sites of formal education, but in many other circumstances and settings, (Guilherme & Morgan, 2009: 571). Francis (2016: 156) augmented that children first learn, for instance, how to show love and respect for life, proper use of things, order and cleanliness, respect for the local ecosystem and care for all creatures at home. Whereas, Borg (2019: 72) conducted a study on caring for people and the planet. The study established both home and preschool environment might well be ideal places for children, for instance, to learn how to separate different items and to develop sorting habits. Whilst the study also indicated that learning sustainability at an early age is effective in developing children's attitudes and behaviors. In this case, learning during the early stages of life is considered to be important because individuals tend to carry within themselves patterns of feeling, thinking and acting that they learned when they were still young. When such patterns have been established in people's minds, it is difficult to unlearn them. These study findings are also consistent with the findings of Boyd and McLeod (2021: 6) who studied early childhood education development goals and STEM that embeds sustainability resource into pedagogical practice. They found out that the influence of early home learning environment goes right through primary, secondary education, and late in one's life. This implies that parents can initiate their children to sustainability values and practices so that by the time they join formal education, they already know some things about sustainability. This enables educators to build on pre-existing knowledge of the learners rather than expecting teachers to teach learners everything about sustainability when they join education institutions.

The participants also expressed their aspiration to get support from foundation bodies of teacher educational institutions such as the government, religious institutions, and community-based initiatives. They claimed that foundation bodies of education institutions could establish policies, for instance, which enable sustainability issues to be part of their institutional strategic planning and agenda. They insisted that if any aspect of sustainability is not supported by the foundation body, it could become very hard to implement it in their established institutions. This is also well captured in the expression of one of the participants:

"One of the factors that could hinder proper integration of ESD is the key players, founder bodies such as churches, mosques and kingdoms. Therefore, if the government, cultural leaders, and the founder bodies are not involved, then it is unlikely that teachers can do it alone. If the religious people say no, for us we don't do that … so, that also can discourage and you get poor quality attitude towards integration of ESD in teacher education", (P6, 99).

In this regard, Müller, et al. (2020: 4) illuminated that institutional proprietors could create and sustain practices of ESD because they interact with a multitude of constituencies both inside and outside the institutional environment. They asserted that the current deteriorating condition of the global environment highlights the moral imperative for educational institution proprietors to become active proponents of ESD. Leal Filho, et al. (2021: 1) stressed that institutional governance is an important factor in supporting efforts by education institutions to include considerations on sustainable development as part of their strategies.

Besides the desired support from foundation bodies, the participants also expressed the desire for support from the local leaders such as the local politicians and opinion leaders who can mobilize the local populace to embrace sustainability values and practices. The participants highlighted that local leaders could sensitize and create awareness on sustainability issues in their communities and even put in place rules, guidelines and regulations that reinforce sustainability practices in their areas of jurisdictions. Francis (2016: 132) stressed that existence of such ordinances in communities could nurture people into valuing and accepting sustainable living in their locality. The participants articulated for instance that when communities have policies for sustainability such as garbage collection facilities and disposal procedures, learners get exposed to issues of sustainability early enough in their life so that by the time they join educational institutions they already know how to use such facilities and something about sustainability. The desire and yearning for supportive and enabling environment by the participants from the local community is exemplified in the following statements of the participants:

"Now for example, (…) if I took you there nearby where the whole city now dumps garbage ((laughs)) you would run away … for sure how garbage is dumped there, trucks and trucks come and dump there, (.) they dump there, I don't know how many acres are being wasted. Now that is one example but we can even look at water, rivers and many (---), you just go across near there, there is a river that goes by and this river is the one supplying water to the whole city. I grew up in this place, earlier on that river could raise and the water is fresh (.) but nowadays the whole place is smelling (.) and the supply is increasing because there are many homes now that are sharing tap water and the whole of it is coming from there … that means that there are many people depending on it be it is being degraded more", (P21, 286).

"We need also political support (…) for of course they are the ones who decide what should be taught. Yes, (.) it is needed and mostly these political leaders if they get involved, like the RDCs and they put like programs on radios, then on TVs that would be good. In a country like Uganda where we listen so much to politicians, (.) if the politicians made it their talk (.) if they understood it and as they talk to people, they bring in an issue and may be make sure that people follow it up … the other avenue, although now close are the religious leaders and then the cultural leaders. I think those three are key, if they talked about these issues, may be our people would pick. The politicians, the religious and cultural leaders, they could be also other change agents to help the teachers. Those ones would deal with the elders and old people and the teachers would deal with the young ones but the information or communication should properly packaged (…) because sometimes the terminologies are hard. Even if you don't tell me that it is education for sustainable development but you pick a few things that I need to do. May be two and you tell me that you need to clean your environment every morning, the house, the toilet etc., hmm. You need to clean (-) your body every day. Now when you talk of the politics there, then you need the strong arm of the politicians because they are going to talk about these things", (P3, 66).

The views of the participants highlight clearly what the local leaders can contribute towards integration of ESD in their locality. On this point, Whitby and Wandel (2019: 17) postulated that when support exists among policymakers and politicians, other key success factors, such as the provision of funding, the creation of institutions and mechanisms to organize and coordinate ESD efforts, and the provision of training for teachers and other key stakeholders at different levels, become more likely. In the regard, Francis (2016: 156) augmented that political institutions and various social groups are instrumental in raising people's awareness. In the opinion of the participants therefore when integration of sustainability is left alone to teacher educators and the community continues with unsustainable practices such as poor garbage disposal or deforestation, learners would most likely perceive sustainability as something that belongs to educational institutions and not for all people at all levels. In this case, learners may also fear to be labeled societal outcasts by their communities when they do what is contrary to what is commonly practiced in the community, (Mugambi, 2017: 92).

The participants also expressed the desire to be supported more by the central government on issues especially to do with funding, timely supervision and assessment, curriculum reviews,

enactment of national policies and inclusion of sustainability issues in the entire education systems, willingness to prioritize ESD issues at the national level in all national policy frameworks, mission and vision. The wishes of the participants are well elaborated and clearly reflected in the statements of some of the participants:

"… yes, I am talking about mainstream sustainable development issues in the curriculum. (…) Yes, may be in terms of curriculum at all levels, curriculum say from primary, secondary to university all the curriculum that is developed should be geared towards SD. Then the priorities of government should be towards sustainable development. Then priorities of our educational institutions should be towards SD, (.) then the activities that we engage even outside educational institutions, what are activities which politicians for instance engage in, (.) what are the things members of parliament engage in, (.) what are the laws which they are making emphasize, what about the cabinet, what about the government. What is that at that level of government being done (.) because if they do what is contrary to SDGs, then it also becomes difficult for the learners in the universities to pick from there. If for instance a lot of emphasis is put on politics like when elections will take place, how to hold power, how to subdue people and then you find that learners, these young brains may think that what the government is doing, what their leaders are doing, what their politicians are doing (.) is more important than what their teachers are telling them, hmm. So, (.) there should be (.) some kind of synchronized kind of activities, what the teachers are doing for them. What teachers are emphasizing at school should also be emphasized by the local leaders and should also be emphasized by the government and should also be emphasized by the judiciary and also be the legislature and these parliamentarians are important in SDGs. So, what they talk about, what they legislate on and the acts they come out with (.) the parliamentary acts should be tuned towards SDGs so that the students hear from school what they see happening outside and then they know that this is important. For instance, we teach about the environment that there should be no environmental degradation and teach them at school but at the local level, people are allowed to cut trees and burn charcoal and so on. So, they see that there is a mismatch between what the teachers say and what is happening on the ground. So, our activities should be synchronized with the entire society towards sustainable development", (P18, 258).

Another participant specified clearly how lack of funding for example frustrates their effort to teach, do research and engage with the community:

"Yes, at our level because you see for us as lecturers (.) you know we are employed full time but not all the time we are supposed to be in office. We are required to carry out research but we are not given funds. Our research is not funded. So, the issue of finance is very critical in all these. For example, if you are doing this kind of research and you don't have a computer, (.) it is going to be difficult for you, however good you can be at speaking but you will not be able to give that information if you are not enabled to do research, (.) so the teacher needs to be enabled. The teacher needs to be assisted by being equipped both in knowledge and facilities and resources. For example, we are now talking about, a government teacher getting very little money. Uganda is not a rich country, but our resources are diverted depending on the government and political will so it doesn't come to fund us (…) but a nation cannot grow and develop without research, (.) without consultants in the key areas. So, if we cannot do research to inform policy then we cannot develop or have good policies to guide practice. I think when the government wanted our university to be in agreement with whatever they are doing, they released

a lot of funds which they call relief money. So, when the government is interested, it gives funds. So, the government will should be number one because if the government is willing, it will put these programs in education (…) they will give them money and also not only giving funds but to supervise and if the money [is] swindled then the law gets into action, YES, that is what I think. I don't think we can ever integrate SDGs in our education system if the government doesn't want us to do it", (P, 278).

Christoforatou (2021: 11) asserted that failure to offer educators needs-based offers of support and services is a great obstacle within the individual teacher education institutions towards ESD integration. In this regard, UNESCO (2020: 61) suggested that ESD must be integrated in global, regional and national policies related to education and sustainable development so that these policies can create an enabling environment for pedagogies that support individual empowerment and provide skills for socio-political engagement. The prioritization and willingness of the central government to integrate ESD, therefore, could play a big role in state owned or state supported educational institutions because these institutions tend to implement what is focused on by the government, (Marginson, 2007: 309). Besides the central government prioritizing ESD issues and enacting policies, which could enhance its integration in teacher education, the participants also articulated their yearning for good remuneration so that they are able to meet their personal and family needs. They argued that this would motivate them to do their work and remain committed to it. In Uganda, teacher educators in government owned and aided institutions are paid by the central government and all participants strongly expressed their dissatisfaction with their remunerations. Some participants even attributed teacher absenteeism sometimes to poor remuneration because teacher educators are sometimes compelled by circumstances to look for extra sources of income to subsidize their meager salary from the central government in order to be able to survive together with their families. The dissatisfaction of teacher educators is typified by the statement of one of the participants:

"Now generally, (.) … teacher have needs, they say teachers are key, they are central, but do you think our government and even key stakeholder really put teachers at the centre of their decision making process? I mean you look at the terms and conditions of service (…) they are always complaining, on sit-down strike, they need salary, they say little salary, even where they sleep, (hmm), so I think teachers have also not been taken serious. Now, government want teachers to be like (…) to be like volunteers. They want teachers to do charity work (.) but they forget that things have changed like I am telling you (…) you find a school like these Nabisusa's, Namilyango's [famous and good performing], if they are charging like two millions or three millions and you are paying teachers 670,000/= (…) do you think teachers can take their children to these good schools? And yet they are also human beings (.) they are just like any other person who can take their children there. (…) So, it ends up demotivating them", (P15, 226).

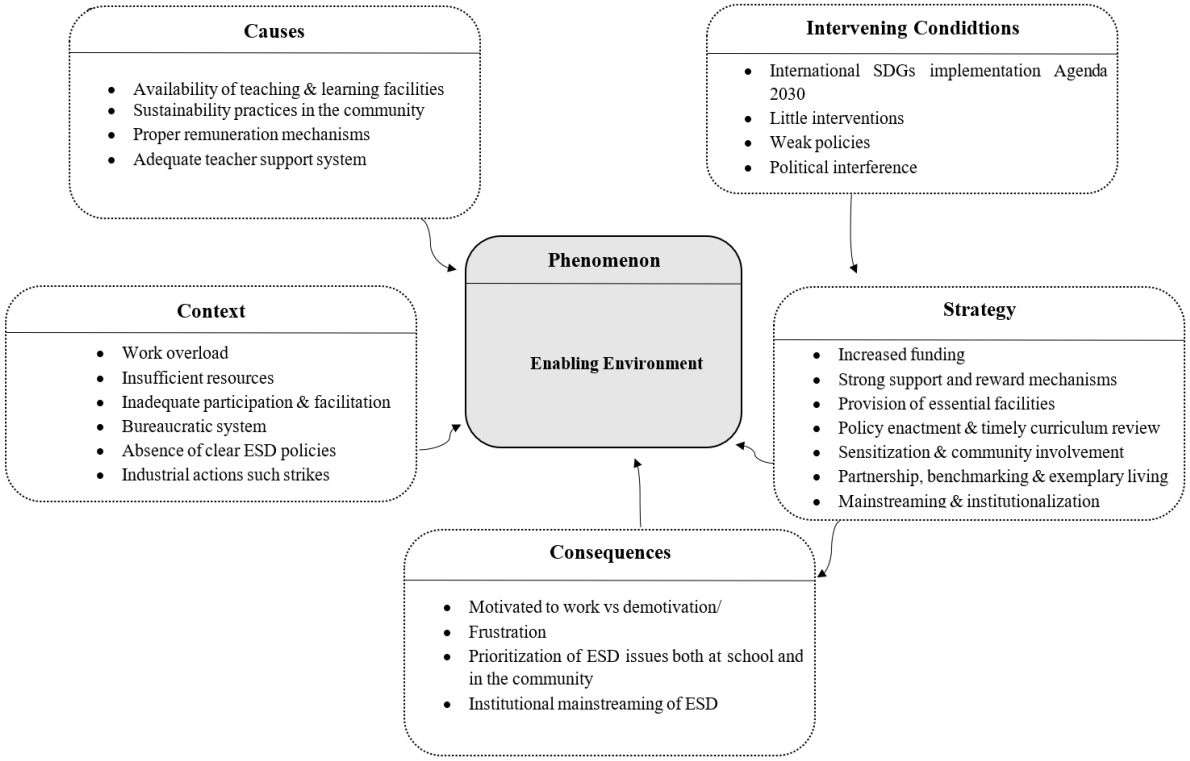
The expressions of P15 reflect the dissatisfaction and disappointment of many participants due to the meager remuneration which they receive. Ubogu (2020: 141) studied perception of rate of absenteeism among teachers. The study established that poor salaries, benefits and working conditions were more acceptable causes of teachers' absenteeism because poor remunerations distract teachers' concentration, focus, and commitment to work. This implies that inadequate remuneration demotivates and frustrates teachers' effort to work harder. Whereas, adequate remunerations motivate teacher educators to work harder and enhance their performance, (Arain, et al., 2014: 1674; Britton & Propper, 2016: 86; Johnston, 2021: 1; Mukomana, 2021: 216).

Corpuz et al. (2022: 136) observed that environmental problems are global phenomena and require world leaders to work together in addressing such interconnected global challenges. Additionally, ESD is one of the key aspects of the global agenda 2030 spearheaded by UNESCO, (UNESCO, 2017: 1). In this regard, the role played by the international community, cannot be underrated. In this respect, many participants stressed the important role the international community could play towards the integration of ESD in teacher education. They postulated that the international community through international organizations such as the United Nations, IMF, and the World Bank could give aid to the ministry of education to facilitate the integration of ESD in teacher education. They claimed that such assistance could be used to build infrastructure, enhance capacity development of teacher educators, and even improve on teacher educators' remunerations. They stressed for instance that if the United Nations is serious and wants ESD to be integrated in teacher education, then they could facilitate them with the resources they need to integrate ESD in teaching and learning activities. This becomes clearer in the statement of one of participants:

"So, if the UN is serious about it, (.) it needs to help us to mainstream and integrate sustainable development issues across all fields in teacher education. For example, some institutions lack equipment for some of the subject. They lack equipment to teach properly (…) like if you are teaching agriculture then you may not have a demonstration farm. If you are teaching history, then you may not have places for field work/trips or excavation. You may want to visit certain things and see (.) but you are inhibited because some of those historical places are not accessible [entrance is not free], hmm. So, you cannot go there and that means that you teach theoretically in class (.) but learners are not able to travel and see for themselves what you are talking about. (…) You may lack the capital to do certain things (.) like taking children out for demonstration to learn more and also to make them interact with others because linkages are important. If teachers and the students are aligned may be to other universities even within here in Uganda, or in the region or all over the world. So, (…) international collaboration will be good for the teachers, it will be good for students but we may not have the facilities for that kind of collaboration. We are talking of zoom meeting but not very many can afford that, not very many have

internet for the zoom meeting, and you may not be even in a position to send an email to somebody abroad. So, it becomes difficult, you don't have the internet, you don't have a laptop, you don't have even a smartphone. So, lack of facilities may inhibit your desire to interact, integrate and cooperate with people worldwide. So, we need the assistance of the international community such as the rich countries helping us in developing countries", (P18, 254).

This indicates that the international community can also play a big role in enabling teachers integrate ESD in teacher education because teacher educators need the resources and facilities, to integrate ESD in teaching and learning activities, (Price, et al., 2021: 10). In a nutshell, the aforementioned submissions of the participants regarding the four categories of the phenomenon "Enabling Environment" clearly indicate the yearning, wish and desire for support, facilitation, and reinforcement of teacher educators to integrated ESD in teacher education. The statements of the participants continue to portray the multifaceted nature of ESD issues, which require an interface of various stakeholders of education at varied levels in order to integrate ESD in teacher education. In the opinion of the participants, their operating and surrounding environment ought to be supportive and facilitate them to integrate ESD into teaching and learning activities. They declared that the absence of support and facilitation from other stakeholders would make the integration of ESD in their teaching and learning activities extremely difficult. The focal point of the participants was, therefore, on transformation of their working environment so that integration of ESD could be expedited. At this point, having examined the meaning and properties of the phenomenon enabling environment, the following subsection presents the interaction and contextual explanation of the phenomenon. The explanation of the phenomenon will follow the graphic below, which serves the purpose of illuminating the connections, relations, and interactions of the various dimensions of the phenomenon as previously pointed out in sections (4.3 & 4.6).



The causal conditions, context, intervening conditions, strategies, and consequences of the phenomenon are also based on the empirical data gathered from the participants for this study.

4.8.1 Causes

The causes of the phenomenon "Enabling Environment" emanate from the multifaceted and multivariate nature of ESD issues which cannot be considered from one perspective or handled independently by teacher educators. The causes of the phenomenon exist both within and outside the precincts of teacher education institutions. During the interviews, participants pointed out key areas where they could be supported and facilitated by educational institutions and other educational stakeholders outside the educational institutions to integrate ESD into teaching and learning activities. For instance, several participants emphasized the necessity of having adequate essential teaching and learning amenities such as well-stocked libraries, internet equipment, laboratories, and information, communication and technology (ICT) materials. They asserted that these resources are indispensable for the integration of ESD in teacher education institutions because they constitute part of the basic resources, which teachers use regularly in their teaching and learning activities. This is clearly epitomized in the statement of one of the participants:

"Yes, if teacher education institutions are well equipped that would be good (.) because one of the problems, we have here is the library which is not well equipped. For instance, if we are going to give course work and we want learners to write course work in two days or one week or two weeks but the learners don't have the

reference materials, (.) then it becomes a challenge. You may tell them to go and read these books and the students will tell you we have checked the library and the texts are not there and you know that the learners will get something on the internet but the internet services are not good enough and they may even lack laptops to do the searching (…) they may lack smartphones to do the searching even if they get them, (.) they may not have MBs of the internet to do the searching, hmm. So, in the end, you may say you need a projector in the classroom to project something but the projector is not available or power may not be there on that day of the lesson. So, (.) you are let down. Some of our classrooms are too small. They may admit 500 students but the classroom is not enough and they end up squeezed (.) and others are not comfortable enough to take notes as you teach because they are squeezed in that one small room and (.) then the voice projection also is not strong enough because you are just here at the podium and the students are far away and you are supposed to use a microphone but you don't have it or maybe power has let you down. So, you find that (.) it becomes difficult to teach because the students behind are not hearing you because the voice projection is not strong enough. You may want the learners to see something but you don't have the mechanism for projecting for them to see what you are teaching and that impends lesson development and effective learning", (P18, 255).

Overcrowding of learners due to insufficient learning space significantly affects teachers' ability to interact with the learners, assess and enforce discipline during teaching and learning activities, (Ahmad, et al., 2018: 112; Chinasa & Okechukwu, 2021: 111; Khan & Iqbal, 2012: 10162). All participants raised the issue of the increasing number of students as compared to the available institutional resources. They highlighted that as much as the number of students is constantly increasing, the available resources for teaching and learning activities have almost remained the same. This has created not only a huge disparity in the student and teacher ratio, but also widens the ratio of the physical space to the population of students in the institution. This makes the teaching and learning environment of both the learners and teacher educators unconducive because the teacher educators cannot adequately attend to the individual needs of their learners and the learners cannot have adequate attention to teaching and learning activities in a crowded place, (Ayub et al., 2018: 64). This is also well elucidated in the statement of one of the participants:

"If the United Nations says that teachers are at the centre of implementing sustainable development but they don't look into other conditions which make teachers get discouraged, (…) then they are not serious on issues of sustainable development. For instance, look at the enrollment, (.) then now look at the ratio of the teacher to student, there is no standard, (.) this country has no standard, but in other countries, you can find that a class can hardly go beyond 30 students but here you find 150, 200 students, hmm. The class is full and there is no space and I wonder, how can now teachers do their best? It is not possible, (-). So, those are things which the government and donors are not looking at but they end up impacting on that lack (---) now of making education to promote sustainable development, yeah, like this class, we are teaching a class of 1700 students, hmm, (.) really, we tried even to divide the class into three or four but you still find the class is heavy. How can you teach 700 students, are you teaching really? So, there are certain things you cannot enforce, like issues of attendance,

issues of discipline, it is very hard. So, at the end of the day, those are some of the issues which must be looked at seriously", (P15, 226).

This indicates that inadequate educational infrastructure greatly hinders relational teaching and learning processes suggested by the core category of this study. UNESCO (2020: 28) substantiated that educators need facilities and operations which enable them embed sustainability principles in teaching and learning activities. In this regard, UNESCO (2019b: 62) illuminated that educational infrastructure is a major factor in educational outcomes, teacher satisfaction, motivation and social status. UNESCO (2019: 40) stressed that lack of infrastructure to support ESD skills in teaching and learning affects the teaching processes and educators' ability to integrate sustainability. On the other hand, the expansion of teaching amenities relieves overcrowded classrooms and reduces on teachers' workload, (Fedorchenko, 2021: 4). Some participants postulated furthermore that teacher educators may teach issues of sustainability but if such issues are not supported and reinforced in communities from where learners come, learners might consider them to be irrelevant to their life outside the educational institutions. The learners might think that what people do at home and in the communities is the right thing rather than what they learn in educational institutions. This is well illuminated in the statement of one of the participants:

"People will go to school and come back the way they are because in the community where they have been brought up, (.) where they have been raised, (.) they have not learned these issues and they completely see nothing wrong for instance to just throw rubbish on the streets. So, these sustainability issues are not just in the school. They should be in all public places. You see someone litter anywhere and leave it there. I think that is why it is important that we do get educated and not just go to school and cram all the material but what we learn should be supported by where we go, hmm. I think the issue here goes back to the community. A student will come here at school and discuss the dangers of plastics in terms of productivity and they will reach home (.) and they might actually be the ones to throw the polythene bags in the plantations (.) because that is what they do at home and in the community", (P9, 145).

Whereas another participant narrated:

"So for me, (.) it is a more to do with the values … and so (.) the development of values is something which cannot just be done by the school (…) because if I experience something of respect in the school and then (.) I go back home and see my father shouting at my mother, beating her, then this whole aspect of respect will not make sense to me. If you are talking about tolerance and then a situation whereby some of this is not supported by the home, by the school, by even the community, the leaders (---). If you are talking about honesty and we are seeing corruption around us and then you are trying to say that we should respect and we should have responsibility but again seeing all around us only bad examples of respect and tolerance, hmm", (P2, 45).

The aforementioned views of the participants highlight, furthermore, the assumption that people are most likely to continue doing what they grow up seeing other people doing. This suggests that the implementation of sustainability issues is not just for teacher educators and education institutions but a responsibility of all concerned citizens in society. All stakeholders in education and training need to work together in synergy to ensure that sustainability is anchored firmly in the entire student learning and life experience, (European Union, 2022: 2; Gibb, 2016: 5). Abdul Rahman (2020: 86) augmented that efficient integration of sustainability does not depend on the responsibility of a single person or adoption of technology, but also cooperation between government and community, education and law-making. According to the participants, the teaching of sustainability aspects such as being smart, clean and tidy is quite often frustrated and hampered by the lack of waste management mechanisms, for instance, where refuse such as domestic and industrial byproducts are disposed. They cited instances like when students and even sometimes teacher educators have waste to dispose but they lack such resources both in educational institutions and in their communities. This is well explained in the statement of one of the participants:

"Now, people can blame [us] but sometimes we are overwhelmed. If we have waste but there are no provisions for garbage disposal, (.) what should we do? There is no provision, (hmm), I told you that I am a resident but for some of us who are residents, there is no provision for us to dump our refuse. (…) We eat things like Matooke [Bananas], potatoes, (.) you pill them, you eat things like sugarcanes, jackfruits and there is nowhere to dump, (hmm), so we dump anywhere. So, you find the classroom at least if you found mud you know students have been walking in the mud, (.) but when they have bought maize, eaten, bought water, drunk and they leave everything there because they do not have proper places to dump them", (P3, 63).

The scarcity of such essential sanitary services leaves people in the institution with no option but to throw waste wherever they find and this is not a sustainable practice, (Chen, Xuandong, Hifza, Yuanhao, Ifra & Tebyetekerwa, 2021: 1; Whitmarsh Haggar, Thomas, 2018: 1; Yukalang, Clarke, & Ross, 2017: 1). This stresses the urgency of teacher education institutions to provide ample infrastructure, facilitate green activities and also initiate more opportunities for students to get involved in green campus initiatives, (Leal Filho and Brandli 2016: 47). Badea, et al., (2020: 10) observed that the sustainability of a university is closely linked to its ability to provide the necessary infrastructure to separate waste collection, water and electricity savings. On the same issue, another participant also enumerated how the lack of most essential sanitary services in the educational institutions makes these institutions inhabitable and the working environment unconducive for both students and their educators:

"Now we are here saying Covid, Covid, where did you wash your hands? (…) Where is the sanitizer? This university has a population of 20000 students, but where are the water points? You have just come when there are no students, (.) you come here when there are students, and we can even tour after this interview. The population of this university I said is 20000 students. Now, let us inspect how many operational toilets are on campus, (hmm), number one. Number two, (.) how appropriate are the facilities? Hmm! Number three, how adequate are they? Physically, you look and count them, one, two, three, (.) level one, level two, the standard, the appropriateness, that is, sanitation, that is gender, that is persons with disabilities, space, how spacious are they, (.) how adequate, how sufficient are they? Okay, (---) [then] we look at every lecture block, we look at the lecture blocks and toilet facilities in a public university like this one are completely not adequate", (P1, 16).

Meanwhile, the participants who were especially part-time employees raised the issue of lack of proper and prompt remuneration for their services in the institutions. They testified that according to their contracts, they are supposed to be paid for what they have done per day or per hour, however, quite often they are not paid promptly yet they depend on what the educational institutions pay them for their livelihood. They remarked that this practice stifles and suffocates their desire to teach the learners:

"Now, (.) regarding teacher ratio, many of us who are part-timers are frustrated, okay, if not frustrated, (.) we work struggling. We struggle to work, okay, sometimes, (.) for example, as I speak now, this is 2020 and today is 4th July 2020. We were only paid two weeks of January to date, we have never been paid and we are part-timers and even every other source has been stifled, (.) we do not have any other source of survival. So, (.) a teacher who was paid two weeks of January a month ago and not [the whole] January, okay, now this is July we have never seen anything, (…) remember I part-time and what I do is what you pay. So, I did my work in January, I did my work in February, I did the three weeks of March. I have only been paid for two weeks of January and I was paid last month, in June. Now, that hardens, in fact, that stifles, suffocates that spirit to work. Somebody would really like as I said at the beginning of this interview, I SAID FACILITATION, somebody is not facilitated, you would like to present a paper but you are not facilitated, you would like to do a research, you have a research problem but you are stifled, you are suffocated, not forgetting what I have said, teacher ratio, 1220 students, and how many are we, one full time and one part-timer. We are only two, and what is the ratio? It is unimaginable", (P1, 9).

The expressions of participant P1 reveal the deep seated frustration and disappointment with the milieu in which teacher educators conduct their duties. The causes of the phenomenon "Enabling Environment" continue to highlight the dire situation in which teacher educators operate. According to the participants this situation should change by being supported and facilitated to integrate ESD in relation to the core category in teacher education. The causes of the phenomenon also indicate that ESD integration is a confluence of many participants rather than teacher educators alone. In order to comprehend the complexity of the phenomenon, the contextual conditions are examined in the following section.

4.8.2 Context

The contextual conditions of the phenomenon are associated with the environment in which teacher educators work. According to the participants, there are conditions within and outside teacher education institutions which greatly affect their ability to integrate ESD in teaching and learning activities. For instance, some participants stated that their working environment does not permit them to employ authentic learning strategies such as assigning individual tasks to learners or participate in voluntary community activities because the curriculum is overloaded and they have a huge number of students. They do not get enough time to engage in relational teaching and learning activities which are instrumental in integrating ESD in line with the core category. They reported that when the curriculum is overloaded then it becomes very difficult for them to employ such teaching and learning strategies. This is well elaborated in the submission of some of the participants:

"So, (.) there are so many factors like the institutional environment, you know (.) you may want to do all these activities [but] if the curriculum is overcrowded and one has to complete the syllabus (.) and there are all these topics. So, (.) who has the time to start teaching authentic learning activities like taking students may be to just take a stroll around the institution and see the fields and just take them around your local council area and see the fields and then ask them, isn't there anything you can do about this? (…) For instance, clearing bushy places, collecting polythene bags", (P2, 44).

"We have challenges because numbers are increasing and [the] staff is not increasing at the same rate. So, if I have hundred scripts to mark (.) I don't know where I am going to get time and say this student which brings me again on this issues I talked about mentorship. If you know that in the faculty there are 100 students and two are assigned to you and you also know that there is an issue with the students, can you help them out. So, we need this thing of assigning mentors so that (…) if I as a teacher I don't have that time, I can ask a colleague whom I know that he is responsible for that, what is challenging now is the number that we have", (P9, 142).

In relation to the huge number of students, participants lamented that teacher educators are not enough to teach and adequately attend to their individual needs. In this case, the shortage of teacher educators cripples the ability of teacher educators to prepare the next generation of educators due to their overwhelming numbers. The shortage of teacher educators in relation to the number of students was a recurring narrative which all participants reported during the interviews as depicted in the statement of one of the participants:

"There is a human resource problem (.) and many of our universities are actually like that because you find that the department maybe it is 40% filled, or 50% filled. So, they lack the personnel, hmm", (P18, 254).

The shortage of teacher educators was somehow attributed to the shortage of experts due to the academic qualification required to teach in a university. Many universities recruit only

teacher educators at the PhD level and those who were recruited in the past without PhDs are given a minimum number of years to enroll and complete their doctoral studies. This was presented as a great challenge to teacher educators especially those who do not have financial means to support and sustain their doctoral studies. This is clearly reflected in the submission of one of the participants:

"There is a shortage of experts in teacher education institutions … people [who] engage the learners, people who have the knowledge to train the students, (.) to impart this important knowledge to other people. One thing in the university, whatever you say even if you are reporting that idea and you want to include it say in mathematics, one thing you have to be asked by NCHE is, do you have expert in that area? That is one reason why higher education would be looking at issues of coming out to that trend (.) (---) is beginning with the curriculum (.) but one thing they will ask at one point is to list those who are going to teach and if the qualification are not good they will say, no, no, (hmm), yet at university you want to teach only undergraduate and postgraduate do research and you need to have somebody who is really capable of conducting and guiding academic activities. So, that one is lacking, we don't have staff who have expertise to teach ESD. We might have expertise in (---), I don't know in expulsion but SD per se, those are not already there and I think you might be in that direction and it is very good and at one point I was the only person with a PhD in mathematics education and (.) I saw recently there are some. So, that bit is still lacking", (P21, 297).

Some participants reported that sometimes teaching staff and the study have industrial actions and such actions disrupts all activities in the institutions and sometimes they end up closed for a long time. This is captured in the statement of one of the participants:

"In some of our universities, there is always strikes and even the strikes alone can let you down because the environment itself is not conducive for the execution of the lessons, WE ARE LET DOWN", (P18, 255).

The participants also expressed their dissatisfaction with the administration of teacher education institutions and the central government. They asserted that quite often they were neither consulted nor considered when making serious decisions which affect them. Some of the participants even gave an example of what happened when educators and other stakeholders were not involved in planning for curriculum review in the education sector:

"I think our government ignores the academia and research. They bypass us (.) they know that universities are there but they don't want to consult professors. I remember when I was still teaching in primary teachers' college, one thing that happened, (.) there was a primary school curriculum which was produced by National Curriculum Development Centre (NCDC) but they had not actually contacted some stakeholders like the religious group and they rejected the curriculum (.) which means that their voices should also be heard so that they own that curriculum, and some of them own these education institutions", (P11, 170).

"Our environment doesn't give us the opportunity to think, (.) teachers can never influence any government policy. We are not given that opportunity yet we are teachers, but we don't participate in decision making. We are not engaged in planning. They plan and they say now here it is, but we can put in our thoughts (...) we can

think and be part of the plan and the strategies and the decision making processes and even lobbying but we are not allowed to do that, we are not motivated to do that. So, it becomes tricky for us teachers where we are to contribute. We are ignored every day, you know, (.) you carry out research, you come out with recommendation and you cannot give them to anybody but you just put it on the shelf and that is a big problem. But if government is interested in these goals, then they would give us an opportunity to carry out research and find out how can we achieve these goals? Of course, you cannot take away education if you want to achieve these goals, YOU CANNOT", (P20, 276).

In this same line of argument, Waltner, et al., (2020: 9) asserted that when educators are not consulted on the formulation of ESD goals, proposals, demands, and recommendations in the policy programs, they are most likely to resist such measures. Whereas Proston (2017: 33) pointed out that in education systems, policies are typically not easily accepted by public opinion, if they are not carefully developed and implemented in collaboration with key stakeholder groups, such as social partners and parents. The participants also reported that there are some teachers who undertake the path of professional career development, but after the completion of their studies, they are not promoted and their salary scale remains the same. In the opinion of the participant, lack of promotion or salary increment after career advancement is an unfair and frustrates their effort to become experts in their profession and interferes with the integration of ESD issues in teaching and learning activities. This becomes clearer in the statements of one of the participants:

"The government is not bothered, yeh no, but if the government was bothered, (.) I think things will be different (…) teachers who upgrade, is it reflected in their salary? I know some teachers who even I upgraded with them way back in 2002 there (.) but some of them up to now they are still earning a diploma salary, can you imagine that level of injustice! (.) Yet when you move to other countries, once you upgrade automatically it is seen on your pay slip, automatically, but here that is not the case and then you are telling me that I am at the centre of promoting sustainable development (.) when even in my home, they are not seeing it, ((laughs)). So, it cannot work, so I think they are just politicizing it but in terms of actions speaking for themselves, I think there, (hmm), the government has not done well there", (P15, 226).

Initiatives like increase in salary and promotion enhance educators' job performance and satisfaction, (Khaliq, 2018: 1; Lestari, Lian & Putra, 2021: 1414; Tristan McCowan, 20217). The lack of such initiatives frustrates not only those who have gone for further studies but also discourages neophytes in the teaching profession to seek professional development, (Müller et al., 2021: 4). Nevertheless, some participants pointed out that sometimes when they want to go for refresher courses in order to enhance their skills and abilities, share their experiences and also learn from one another, the administrators do not facilitate them. They stated that such practices deter them from updating their current knowledge and also know the

current trends in the teaching profession so that they can respond appropriately to the needs of the learners as expressed by some of the participants:

"We live in a changing world, possibly what was taught ten years ago might be stale and obsolete today. So, if we don't refresh this teacher and even change the curriculum, (.) this teacher will still teach the same things and that is very disadvantageous (.) if we are to achieve the SDGs (.) when we are teaching old things because our teachers are ignorant of new trends in teaching. When we have not provided in-service teacher training programs and refreshment courses, (…) I don't think we are going to achieve any SDGs because even illiteracy itself (.) as a problem will not go away. The learners will come to class, the teacher will come but effective learning will not take place", (P20, 275).

Continuous professional development of teacher educators helps them to develop better interaction with students and improve on the learning skills of the learners, (Saleem, 2021: 53). Singh (2021: 35) conducted a study on continuous professional development for teachers and found out that professional efficiency could be attained by inducing individual teachers into collaborative efforts through participation in refresher courses, short intensive courses in concerned subjects, workshops, professional seminars and conferences. The participants vehemently expressed, furthermore, the desire to have decent and modern teaching facilities which correspond to the current state of affairs. They cited examples of some lower educational institutions which already use such modern teaching facilities like whiteboards, projectors and PowerPoint facilities which are nonexistent in many teacher education institutions, yet some of the learners come from institutions which have them. They argued that when teacher education institutions do not have such facilities, their learners equally miss an opportunity to learn how to use them during their training and it becomes a serious challenge after their training when they go to teach in such institutions. This aspect is well expounded in the statement of some of the participants:

"Aah, like now online training (.) because even currently we are also being trained and maybe after being trained also the students will be trained and then also technology … the use of technology because now the use of the blackboard all the time is outdated. At least I know international schools within, you could say well to do schools. They are now using a whiteboard and that is a primary school. Training up (.) you find them using the whiteboard … so that is it, technology (---). They have to be abreast with technology and also to keep updated with technology … so, that is keeping with the current standards and then also (…) I think internet because we need to get information which is current when we are teaching and so on", (P23, 317).

"Then for us at a university, the university cannot support or give us infrastructural support as far as ICT is concerned. Yes, (.) we have the internet but it is embarrassing to tell you that we only have 40MBs, which is not enough. We are supposed to have 700MBs but ours is only 40MBs and that means it is just like you are giving a tea spoon or a grain and (.) that is why there is scarcity. (…) At least now you feel that there is internet but at times it disappear but still we do not have facilitates especially ICT facilities to help us promote that

interdisciplinary teaching so that you are able to get knowledge from various areas (.) and when you are teaching, you teach and you can do research, so that it is like a research based teaching, yes", (P4, 76).

Teachers and learners who use digital devices become competent in using them, have easy access to new knowledge and dissemination of information, and this reduces the level of academic load on teacher educators, (Borisenkov, et al., 2021: 1; Mitrofanova, 2020: 335; Norozpour, 2022: 1226; Pongsakdi, et al., 2021: 5042; Yildiz, 2022: 196). Iyer-Raniga et al. (2016: 174) illuminated that availability of essential teaching facilities such as ICT facilities and academic buildings play a big role in improving sustainability outcomes and integration of sustainability into teaching, learning, research and university governance. The availability of such services are, therefore, key enablers for teacher educators to integrate ESD in their teaching and learning activities. Some participants also reported that teacher education institutions lacked clear and strong policies which focus on ESD integration. They argued that the existing educational policies lack focus on the integration of ESD issues into teaching and learning activities, which might make teacher educator also to feel obliged to fulfill only what is stated in the existing policies. This is clearly indicated in the statement of one of the participants:

"Policies in education, what policy education say about this and then you can see if you can fit it there and if you cannot fit in that policy, (.) you adjust so that you can get something which can fit in the policy (.) because policies are guidelines and they should not be avoided because (.) the policy is there in order to help you develop something workable. Therefore, one thing still lacking is that policy bit of it, the university policies (.) ESD issues don't come up clearly, then even in the departments (…) if there is a policy, for instance, a carbon policy, then I can teach in order to meet or realize that policy", (P1, 15).

In relation to policies, Waltner et al., (2020: 10) strongly stressed that ESD integration policies should be directly linked to the classroom level, that is, the level where those policies are supposed to be put into practice. Bedawy (2014: 477) conducted a study on embedding sustainable development into higher education. The study found out that lecturers had a belief that stronger support for sustainable development in university policies and practice would have a positive impact on their ability to include it in teaching. Similarly, Leal Filho, et al. (2018: 107) studied sustainable development policies as indicators and pre-conditions for sustainability efforts at universities. They established that teacher education sustainability policies were valuable tools in showing institutional commitment to sustainability and assisted in the implementation of sustainability training efforts. They also discovered that absence of a SD policy at a given university does not necessarily mean that it would perform poorly in dealing with environmental or social issues. This study finding does not nullify the

important role sustainability policies play in integrating ESD in education institutions, however, it signifies that besides sustainability polices, there are other contributing factors that ought to be considered as already established by this study.

This reflects also the multidimensional character of ESD integration into teacher education, (Shawe et al., 2019: 80). Such challenges require teacher education institutions and the government to support and facilitate teacher educators to be ready to integrate ESD and also handle the current demands of society. Precisely, the diverse contextual aspects expressed by the participants in relation to the phenomenon enabling environment portray a broad spectrum from which teacher educators can get support and facilitation to integrate ESD in teaching and learning activities. Some of the aspects raised by the participants, however, transcend the capacity of teacher education institutions alone to execute without reinforcement from other stakeholders of teacher education. These broader aspects which transcend the capacity of teacher education institutions constitute the intervening conditions of the phenomenon which are examined in the following section.

4.8.3 Intervening Conditions

The intervening conditions are exogenous factors which influence the phenomenon "Enabling environment". These factors are instrumental in facilitating and offering support to teacher educators and their absence affects either directly or indirect their ability to integrate ESD in teaching and learning activities. According to participants, aspects such as political will, sensitization and ministerial policy formulation by the local, national and international communities could greatly reinforce the integration of ESD in teacher education institutions. Some participants, for instance, stated that if the government was interested in achieving sustainable development goals, then they would prioritize and facilitate activities such as the integration of ESD into teacher education. This is clearly stipulated in the statement of one of the participants:

"So, I think it goes back to political will. Is really the government interested in having Ugandans achieve the SDGs? If they are interested then they will finance all activities which support SDGs. But lack of government goodwill (…) lack of political will, we are doing things the other way round, yes. That is one of the things that government bypasses researchers and (.) the government interest lies elsewhere but about development, about achieving those SDGs, it is giving it a blind eye, yes and that is why we see inequalities in distributing resources. They go to different people. Therefore, I am saying at the top of it, there should be government will so that they support us (.) and deliberately invest in creating awareness, especially in the education sector", (P20, 274).

Whitby and Wandel (2019: 14) also reiterated that the political will is very crucial for integration of ESD. They suggested that since ESD covers a wide range of issues, it could be linked to the various fundamental political priorities of the country. In an attempt to emphasize the lack of political will, participants cited instances when they expressed their concerns to the elected local and national political leaders, but their concerns were not addressed. They expressed disappointment and loss of confidence in the political leaders. This is highlighted in the submission of one of the participants:

"I think it is part of SDGs, democracy, to choose our own leaders (.) but when we choose our leaders and then they don't voice our thoughts and decisions (.) then how are we going to improve welfare in our communities? So, you see there is a lot that is going [on] not only in education but I think everywhere that you really make it very hard for Uganda to achieve the SDGs, yes. We also need political stability (.) if we are to achieve the SDGs and some of these things are not visible but they are there and they are affecting whatever we do", (P20, 279).

The aforementioned views of the participant imply that lack of political will to support ESD activities could affect also the capacity of teacher education institutions to acquire basic facilities needed by teacher educators to integrate ESD into teaching and learning activities. In this regard, OECD (2006: 17) highlighted that strategic planning frameworks are more likely to be successful when they are based on a long-term vision backed by a strong and lasting political commitment. The participants also decried the absence of strong policies enforcing sustainability practices in their communities. According to the participants, such inadequacies give liberty to people to litter anywhere or encroach on areas that are not meant for human activities. They also stated that without such measures, people are not nurtured into the culture of living sustainably. This is illuminated in the submission of some of the participants:

"If policies were there guiding them on what to do, (.) then they would say here, we are not allowed. So, some of the things are not there. And on top of that, if for example social, political, and economic issues were reoriented towards sustainable development. They would have already warned us and those people dealing with environmental issues would just be going there to emphasize what is already known. In schools, (.) we would already be knowing it … because of what I was telling you about the quality of water, along the river. Of late they have demarcated some meters about over ten or five to fifty meters away from the river and they were telling everybody to get out but it is not more than three years back. So, if the policy had gone to this extent even people who had lived earlier on, I think we wouldn't be about that (---). We would not need even enforcement. So, policies have to be in institutions of learning and not only that but even national and divisional levels, you know bodies are either weak or they have not been looked at", (P21, 293).

"… these are part of very important things that we should give them even if it is not (---), … even if it is ten or five minutes, it is very important that they do things in turns (.) like if it is sweeping and so on but these days some schools, they hire workers and now the role of these children is only to read, hmm. So, that is where things are going because all the people are result oriented and (.) they are not looking at the other part that this part will

also help these children in future and even in the home and even as a nation. They can help their nation because they say, that is why you find that people, it is hard, when they say please mask, people are not wearing masks, ((laughs)), but if we put these rules and regulations right from the start then it becomes easy to follow. You find it hard not to (---), like when they tell please do this, (.) you find it not weird and you can do it", (P23, 322).

In this regard, Leicht et al., (2018: 8) postulated that building the capacity of educators and policy support at international, regional, national and local levels would enhance the integration of ESD in learning institutions. Additionally, participants raised the issue of the lack of regular inspection and monitoring of activities of educational institutions by quality assurance bodies mandated to supervise higher education institutions. They professed that sometimes inspectors are driven by vested interests rather than concentrating on improving the standards of education institutions. Some participants made allegations that sometimes inspectors solicit unjustifiable incentives from those they are supposed to supervise instead of focusing on improving quality in educational institutions. They contended that these practices contravene and compromise their mandate of promoting quality assurance as narrated by one of the participants:

"You know that school inspection is visually collapsing, there isn't (…), but you know again, assessment now, assessment changed, people who go to assess, they only go to intimidate school administrators and so on. Inspection is about going to find out how the school is fairing, (.) is everything going on well, what are the areas to be improved? What are the problem areas? … then the inspectors should sit together with teachers, schools and so on and discuss a solution to the problem (.) but if an inspector goes to schools and expects that before he leaves the school gate, there should be a goat at the back of his car. So, they are not doing what they are supposed to do, so it means that also that schools, even school inspection need to be improved, aligned to (---), you know, so that they actually monitor schools in view of seeing that what the syllabi, what the curriculum, you know, intend to impart are actually being imparted, so that assessment activities are being done", (P16, 233).

According to Singer-Brodowski, et al. (2019: 504) regular monitoring of sustainability activities in education enhances evidence-based approaches to ESD integration and formulation of educational policies. In this case, monitoring becomes supportive when it is aligned towards applicability and educators' needs, (Holst, et al., 2020: 2). Devising suitable monitoring and evaluation frameworks of ESD progress is, however, not easy because ESD processes are complex, dynamic, emergent and contextual in nature, (Ofei-Manu 2014: 10). In relation to the curriculum, some participants also reported that some of the content in the teaching curriculum is obsolete. They attributed it to a lack of regular review and integration of current issues pertinent to the learners and society into the teaching curriculum. Some participants reported that some teacher education institutions duplicate and adopt the teaching curriculum of other educational institutions in the country which they consider to be flagship.

They argued that since institutions have diverse strategic objectives and philosophies, replication of a curriculum of another institution might be incompatible with the contextual and learners' needs in that particular institution and region. This is highlighted in the submission of one of the participants:

"So, there are some challenges we have, (.) our curriculum has a problem, it is still the old colonial curriculum but at least it is now undergoing review so that it can fit in our current situation. Another challenge has been with some institutions which just pick a teaching curriculum of another university (.) and just roll it over to their students", (P4, 76).

This practice could pose, therefore, a great challenge, especially to educators who would like to integrate ESD issues in teaching and learning activities in case the adopted curriculum is not ESD driven. Furthermore, such a curriculum might not incorporate specific contextual learning experiences that engage students in promoting sustainability values that are of personal interest and have relevance for them in relation to their individual goals and aspirations, (OCED, 2020: 32). According to UNESCO (2017: 51), a review of the curriculum facilitates the development of ESD competences in teacher education, changes in the content and structure of pre-service and in-service teacher education. Whereas, Stark and Lattuca (2009: 269) remarked that curriculum review prevents uncoordinated programs that would serve isolated interests and fail to achieve the goals of colleges, programs, or students. In addition, the participants also raised the issue of political interference in the activities of teacher education institutions. They asserted that instead of the government carrying out the supervisory role, offer support and facilitation to teacher education institutions, sometimes the politicians want to dictate what should be taught in the institutions. The participants also gave an example of the current trend in the country whereby the government is promoting and putting more emphasis on the teaching of science disciplines as compared to arts disciplines, yet, in the opinion of the participants all disciplines contribute to national development. In favor of promoting science disciplines, the government has gone ahead to implement salary discrimination between Science teachers and Arts teachers. Currently, Science teachers earn more money in terms of salary and other benefits than their counterparts who teach Arts disciplines. This has affected the morale of Arts teachers to effectively teach their learners because they feel not appreciated. This is clearly highlighted in the statements of some of the participants:

"Education should not be over-politicized. You know politics spoil so many things (.) where people want things done according to their will. So, there should be harmony, politics should be separated from technical issues", (P8, 133).

"Now the government is biased toward science subjects by thinking that it is only science subjects that will change the country and will lead to SD and surely ESD will be affected. It will be affected because once you don't do this and you cannot manage to do the other, then sustainability will not be there. When you segregate subjects, you're arts, you are science, you are this, (.) I think it doesn't give a true picture of what is in the world. We need to have like a holistic approach, so that they should really (---), okay, you can have the humanities, the sciences, the arts but there should be a linkage by not saying that this one is independent, like for us arts, scientists as if you know that scientist should be able to handle all aspects of society. I think that is not fair and we end up missing the point because when people finish, they end up saying, (.) me I am an expert in this, and other things, they are totally green, and yet life is complementary, even human beings, you have spiritual aspects, economic, physical, the cultural so you can see that all these must work together, hmm. I see that is being a challenge, now the president is presenting sciences but scientists cannot work alone because even when they have done experiment (.) and they have come up with innovations, (.) then the social scientists will come in to implement and make something relevant. They have to evaluate it, is it having the impact we had intended? Is it transforming society?", (P15, 217).

In this case, political interference in the affairs of an educational institution affects teachers' academic freedom and education quality, (John, Egunsola & Bashir, 2019: 55; Siyum & Gebremedhin, 2015: 223). Hickey and Hossain (2019: 31) acknowledged that politicians and political actors, informed by party manifestos, quite often and ultimately drive policy formulation processes in the education sector. They remarked however that politicization has more or less developmental consequences, for example, too little politicization can lead a policy domain to become marginalized when it comes to budgetary allocations and prioritization regarding implementation, whereas too much can generate problems such as political interference and elite capture. Nwafor and Joseph (2021: 31) claimed furthermore that if freedom in education and institutional autonomy are debased, the possible results would be inability of education institutions to pursue their core functions. In this regard, UNESCO (2017: 52) noted that it is crucial for the educational institution to have the necessary structural conditions as well as the freedom to engage in institutional learning processes. In response to the complex issues related to the phenomenon, there are some actions and interaction strategies, which the participants reported and proposed to target the phenomenon. These strategies are discussed in the following section.

4.8.4 Actions and interactional strategies

In the course of the interviews, there are certain aspects identified by the participants which education institutions, the local, national and international communities could either do individually or through collaboration at different levels to support and facilitate teacher educators to integrate ESD in teacher education. In this regard, the interactional component is related to the self of the acting person as well as to other interactions. The participants raised

issues such as increased funding of activities of teacher education institutions. They reported that the government underfunds teacher education institutions, yet teacher educators need facilities, like infrastructure, which can be used by teachers and learners to integrate ESD issues. This is emphatically stressed in the declaration of one of the participants:

"There must be a conscious effort … by the government to offer structural requirements for things that we need. If you don't have demonstration farms, you don't have tractors, how will you demonstrate even if in the head you know as a lecturer, (.) I am supposed to take these students out and see those things. If I am teaching water treatment (.) I want the students actually to do it but where I am going to take them? The labs are not there, so those are the systemic issues I am talking about", (P9, 143).

Li and Wong (2018: 82) illuminated that classroom experiments, for instance, give students the opportunities to think deeper about the subject matter and discover new things for themselves because students engage with the subject matter and apply theoretical knowledge to find solutions to real-life problems. The use of illustrational materials such as pictures, internet facilities, clips, objects, video, for instance, help the students to have a real-life imagination and experience of what they are learning, (Haddar & Azmi, 2020: 137; Ordu, 2021: 210; Shana & Abulibdeh, 2020: 199; Snětinová & Kácovský, 2019: 57). This reinforces learning because what is only heard can be forgotten but what is seen can be remembered and what is done can be easily understood, (Ordu, 2021: 210). This indicates that absence of such amenities makes it extremely difficult for teacher educators to integrate ESD in teaching and learning activities. On the other hand, some participants also suggested that establishment of incentives by the government and teacher education institutions to subsidize their meager remunerations is paramount. They claimed that incentives such as subsiding the cost of essential services in educational institutions and rewards for better performance could motivate teacher educators to persevere while working amidst the challenges they experience while executing their duties. This is embodied in the statement of one of the participants:

"So, it becomes hard, (.) for example, using the current situation, the Covid situation, you like it or not, online teaching is the way to go and the government would find it prudent to make the internet available free of charge or with minimal costs (…) subside electricity tariffs instead of procuring a unit almost at 1500/= would bring it back to 500 okay, 700, why so that quite a larger number could access power. We only ask our leaders to facilitate us. You may not increase my salary but just facilitate my children to go to school, (.) say every teacher or every government work; we shall cater for two children or three children. We shall cater for two children, we shall feed them, their medical insurance until they finish the first degree, every teacher or every schoolteacher … after serving for ten years, we shall construct a permanent house, a moderate house for you. Then you will be facilitating [us], when you say, you are giving 900,000/= shillings, we shall jubilate. A teacher should have at least a yard where to grow maize. You get it, what are you doing, FACILITATING, (hmm), you are facilitating me. Our vocation cannot be knowledge or knowing and we afford a luxury of worrying. Worrying and knowing

cannot go together. You are looking for knowledge (.) and then you worry how to survive. No, facilitate me, even when I am not aware of it. So, instead of paying me seven million shillings as an assistant lecturer, give me a million, yes, (.) get two of my children, give them medical and school fees, my wife, okay, medical covered and amenities and I will be committed to my work for the rest of my life. That is it! When my turn comes for retirement, don't give me money, as I work, be preparing my retirement.", (P1, 17).

The views of the aforementioned participant imply that teacher educators are aware that the government may not be in position give them lucrative salaries, however, the government could at least facilitate them in several ways as suggested by the participant. The provision of incentives is a trigger tool to improve and develop teachers' performance and service, (Balakrishnan, et al., 2022; Makruf, et al., 2020: 1002). In this respect, Bello & Jakada (2017: 1) conducted a study on monetary reward and teachers' performance and found that monetary rewards were the strongest incentive in Africa, especially salary increase or performance based rewards. This could be attributed to the meager wages which teachers receive in most countries in Africa. Therefore, any additional mount would be highly appreciated by the teachers. Besides the provision of incentives, participants also called upon the authorities in government and educational institutions to put in place policies which prioritize the integration of ESD in the education system. The participants illuminated that such policies would reinforce the existing policies and also remind teacher educators that they have a duty to integrate ESD issues in all teaching and learning activities. This is well elaborated in the narrative of some of the participants:

"There must be deliberate effort and a policy push which says you must have this in your curriculum, (.) you must integrate this in your activities (.) you must do ABCD because if it is not monitored and enforced, it becomes difficult for you to expect somebody to suddenly kind of say, Wahoo, I am going to do it. But if it is a requirement (---) because not everybody fully understands what ESD is about. We hear about it but what is it? So, there is a need for orientation to it and we need orientation on how best to integrate it into the curriculum, in the context of teaching, in the methodology, in the learning materials, and in the assessment. There has to be an effort in giving orientation and training, (…) you know ESD never stops, ABCD, then we should be doing CDEF for this but when that doesn't happen then that won't help us", (P5, 89).

Whereas another participant stressed that policies facilitate ESD integration, but if the existing policies do not focus on the integration, then that might as well frustrate their effort.

"So, policy in that direction has to be there, if it is reflected in there, it would be just like a mission, and some would say to produce scientists, therefore, the laboratory must be there. The books in the library have at least to have some science content. If the emphasis is there, (.) books even related to SD would be there. The central government is one of the key players in education but if the government policies are kind of not good for education, definitely, it will affect the integration of ESD. Government policies could either frustrate or facilitate us. For example, (.) if you check up on what we use every day like chalk (.) is not there, so we tell them to buy

chalk but they would say no, no, they say we cannot buy it because there is no vote for it. They would rather stop something else which is going to be consumed now and leave out this for teaching material because those are somehow petty, this policy is not good. The policy to teach SD needs to be there like in university. If for instance, say our mission is to become outstanding in sustainability. That will work for sustainable development (.) and that only will be important because every activity in the university would reflect that. If we have designed a curriculum and the curriculum actually reflects the university mission (---) but now sustainability is not there, then what will happen? You can't say I am responsible for not including it in my teaching because if it was there, then automatically we would teach it. So, policy in that direction has to be there", (P21, 293).

Bamber (2019: 154) asserted that unless ESD becomes an approach firmly embedded in educational policies, plans and curricular guidelines, it will be difficult to integrate it in the education system. He also highlighted that change of policies and curricular guidelines were more likely to be translated into practice if the impetus for change comes from the bottom up, rather than the top down. This relates to involvement of teacher educators in the decision making process as suggested by the participants. Relatedly, Leal Filho and Brandli (2016: 72) suggested that both bottom-up and top-down strategies ought to be combined in order to engage decision makers to establish new policies, regulations, internal and external structures so that a greater and more sustainable impact is realized. Some participants also observed that quite often integration of ESD in teacher education institutions is just talked about and not well institutionalized. Yet, institutionalization of ESD could refocus all the resources, core component of all decision-making processes, institutional policies and practices towards the realization of sustainability, (Leal Filho, et al., 2022: 27; Uppsala University, 2017: 33). The participants also revealed that there was a general lack of proper understanding of ESD issues and clarity on whose mandate to integrate it in teacher education as indicated in the statement of one of the participants:

"Issues of ESD are just talked about and left there (.) and may be taught and if it is within a project kind of context, you know with a project (.) there is funding around it and then those activities would be there. So, the whole thing is not well institutionalized into teacher education and (.) there are also people who kind of associate it more with environmental degradation and those kinds of things. So, they look at the thing and they think it is for the environmentalist or geographers and maybe when there is development and they say maybe it is for economics. So, there is that kind of techno-tutorial kind of fragmented manner", (P2. 41).

Whilst some participants expressed their desire for the educational institutions in which they work to find avenues of networking and collaborations with other institutions. The participants suggested that various key stakeholders of education can collaborate to offer support and facilitation of teacher educators. They argued that integration of ESD into teacher education cannot be an individual initiative rather a synergy of various stakeholders at different levels who could support and facilitate educators to integrate sustainability issues in

teaching and learning activities. The participants proposed that networking and collaboration between institutions could be in form of benchmarking and exchange programs for students and staff. They recommended that where possible institutions which might have more resources could support those with meager resources, for instance, financial and other forms of support. This would enable lower and middle income countries where a lot of investment is still required for overall infrastructure development in education systems to receive assistance, (Didham & Ofei-Manu 2015: 108). This is also well stipulated in the statements of some of the participants:

"So, if they could source for collaborations and get some group to support us because this one cannot be a one man's work. Institutions could source for collaborations, (hmm), and get some partner institutions. If they can source for funding from other institutions and they form up a group, a project. These people may be there with you (.) to offer some assistance. Of course, I know it is not always there but you just put it there and look for a way to assist fellow Ugandans", (P13, 197).

"We need research, (.) research should be done very well, whereby benchmarking should even be done in some countries where ESD has succeeded so that we borrow a leaf from there. We also involve those who have already started implementing [it in] learning, how they are doing, the problems they are getting, and how they are solving them. Such things but generally (.) I don't see any other easy way", (P8, 133).

Purcell, et al. (2019: 1344) asserted that partnerships among universities could help accelerate delivery of the SDGs, which could enable higher education to make a fuller contribution to sustaining the economic, environmental, cultural and intellectual well-being of communities. This indicates that collaborations between universities are excellent vehicles to generate long-term commitments and achieve complex goals, (Leal Filho, et al., 2017: 97). Higher education institutions could also use their infrastructure and expertise to achieve sustainable support in collaboration with educational institutes and centers of research, (Boca & Saraçli, 2019: 14). Moore (2014: 332) noted that institutional collaborations might sometimes be affected by competition among institutions, however, teacher education institutions ought to consider methods for creating more collaborative working and learning environments. There are also some participants who emphasized the need for mainstreaming ESD issues in the entire education system so that the sustainability agenda is supported by the entire education system right from the nursery level up to the university level. In the opinion of the participants, if integration of ESD starts right from the lower levels of education, teachers and learners get nurtured into a culture of sustainability consciousness and responsiveness. This is well illustrated in the proclamation of one of the participants:

"There should be a deliberate effort to mainstream ESD in all programs so that we can say that these are the key elements of ESD and (.) if we ask which aspects of ESD can I integrate within my subject (---). For instance, if I am teaching students which aspects of ESD can I best mainstream? Are they integrated into the curriculum, in the course description, in the teaching resource, in the identification of methods, in the assessment, and is it integrated right across the curriculum? Therefore, sustainable development goals and objectives should be fussed in all curricula (.) and after fussing it, re-tooling the trainer of teacher trainees. That is from university up to teacher training on sustainable development issues", (P5, 87).

Some participants extended the discussion of integration up to the family level. They stressed that the integration of ESD issues should begin right from home and then at all levels of education such that learners get exposed to sustainability issues right from childhood before they even join education institutions. This is personified by the statement of one of the participants:

"Integration should be supported right from the lower levels of the education system (.) so that the entire education system supports sustainability issues. There is what we call role modeling, and it is not necessarily only in class but even outside class. These things start right away from home, (.) then you go to primary, teachers at that level must train a child that you know what, you must bathe. For example, you will smell if you don't bathe so that by the time they go to secondary [they already know it] … now you learn it and you do it and it becomes part of you. So, role modeling should begin right away in primary (.) so that in the future when they become parents, they can also be role models for their children. It is a continuous process (.) and you cannot do it in one day, hmm. So, we teachers also need systems that support role modeling as we are doing it. So, they start imparting straight away from home and the nursery level and so on and it becomes a culture, so correcting it becomes easy", (P6, 103).

UNESCO (2018: 45) acknowledged that successful ESD integration requires intentional, strategic and continuous integration in the curriculum and mainstreaming in the entire education system. Whereas Leicht et al. (2018: 35) suggested that sustainable development concepts, actions and principles should be integrated into all levels of education, in order to promote education as a key agent for change. The participants also emphasized the need for timely review of the curriculum of the entire education system so that sustainability issues are well integrated at every level of education. They stated that such attempts would aid teachers on what issues of ESD to teach and emphasize as expressed in the statements below:

"We really want these development goals to come out and it goes back to the national curriculum but the kind of curriculum we have. We need to in fact overhaul our curriculum every year and that is what we have just done for the masters. We could not go for the undergraduates. Our curriculum in its present state, do not provide for integration of sustainable development. So, we need as teachers to be enabled by reviewing or revising our curriculum, (.) maybe every after four years (.) a given period or every after five years because now we are talking about SDGs but before the SDGs, there was something else. I think the millennium development goals. So, they keep on shifting and I said knowledge can become stale. So, we need to revise the curriculum maybe

after every five years and we need to identify that yes, we have the SDGs maybe they are 17 (.) but we need also to focus on which ones are very distinct in our country Uganda. Maybe there are some which are distinctive to all African nations, African countries but (.) you also need to bring out, particularly the ones which are so distinctive in our country especially illiteracy, poverty and health. So, as we develop curriculum or review our curriculum, (.) we make sure that SDGs are covered within the curriculum", (P20, 278).

The integration of ESD in curricula programs enhances environmental knowledge, skills and attitude among students, Corpuz, et al. (2022: 136). In relation to curriculum review, the participants expressed the desire for more concrete teaching materials, illustrations, and more information on ESD. In this regard, the participants highlighted that curriculum designers should collaborate with other stakeholders so that what is integrated into the curriculum reflects the expectations of all stakeholders. They demanded that the curriculum developers ought to specify some of the essential tasks and aspects of ESD issues in the curriculum and give them examples of how to teach them in curricula so that they know how to integrate them and do not omit them as they interact with the learners. This is well elaborated in the statement of one of the participants:

"I think let us begin with the curriculum designers. The way they design the curriculum, how do they put in these elements of sustainable development, (.) as they are designing my Mathematics, do they put in such issues? Are they making it clear to me that I should talk about this issue which relates to my Mathematics and sustainable development and sometimes when they put it, (.) are they giving me examples? I usually complain a lot about the curriculum. You find that even at a university level. I am employed as a lecturer and I am given this content, sometimes it is very brief. There is no explanation, no examples and no one to ask. Sometimes you ask the senior people and they say just teach the way you understand it. So, the problem begins with curriculum design. When these issues are brought in, are they clear? Do they have examples? Hmm, do they have resources to refer to? Because if a teacher says, this one is telling me that as I teach division and if I am to bring in issues of environmental protection, (.) then I should talk about why we should not divide up the land into smaller pieces. Do I really need this? Can't I just teach children numbers and division? Then I go to check, maybe I read some books, but no book refers to that at all, no book integrates your ESD with my Mathematics. So, I also put it away. (…) And then most of us are aged. We have been through the system now without ESD, so we prefer to teach without it. So, curriculum design, I think is where we have to begin. Who are the people doing it first of all, are they able to integrate these issues or if we are not able to integrate it, I have heard about ESD, (.) I am going to invite a specialist and say please we are reviewing our curriculum, can you help us? Where do we fit in your ESD in Mathematics, which example do you want us to use, and which resources, do you want us to use? Otherwise, if we still work as independent units, usually when we are designing the curriculum, and we don't bring in the stakeholders and we forget about them that is why we end up teaching the same old way, yes. It begins at curriculum design, let the curriculum have a bit of detail, yes, if you had a chance, you look at them and see, they are so brief", (P3, 57).

Holmgren (2020: 13) also conducted a study on teachers' narratives on the implementation of ESD and found out that many teachers complained about the curriculum not indicating

explicitly ESD learning tasks to be implemented. This reflects a concern for many educators. On the other hand, Corpuz, et al. (2022: 136) pointed out that the involvement of all stakeholders in curriculum formulation, especially the family and the community can ensure application beyond education institution or classrooms levels. In order to mobilize support and extend application of ESD beyond educational institutions, the participants stated that the government and teacher education institutions ought to establish a strong relationship and cooperation mechanisms with other centres of learning and practice such as industries and agricultural farms. The cooperation and interactions between education institutions and other learning centres might include graduate training and development, placement, and capacity building. The participants contended that such centers could provide sharing of physical facilities, consultancy, training which offers learners the opportunity to see and practice what they theoretically learn in class and it could also enable educators to update and acquire new knowledge. This is well elaborated in the statement of one of the participants:

"University basically has to be integrated with industries, and then need not be stand-alone. These are assemblies, where knowledge is practically generated and tested. So, we need those things very realistic and strong collaboration between industries and universities. So, as I said remember I talked about fabricating something, making something tangible, (.) so, how can you use physics to make a bicycle? So, you just look at that bicycle (…) what materials are we going to need in order to make that bicycle? So, we need a lot of massive equipment and massive collaboration with industries. There are very many industries. These can be real mechanical industries, factories and so on and what about animal industries, farms and all those things? So, we need all of them at work and connect with some. Just, I don't know whether the government can come up with a policy, part of it may be teaching might be done in collaboration with industries (.) like let us say, you are teaching agriculture and so on, part of it must be done in an agricultural farm", (P22, 312).

In this regard, Leicht et al. (2018: 109) asserted that integration of ESD at all levels should be underpinned by clearly defined ESD strategies and policies. These policies could facilitate proper collaboration between education institutions and the wider society such as teacher education institutions collaborating with industries, (Francis, 2016 131; Leal Filho & Brandli, 2016: 84; Ursić, Baldacchino, Bašićet al., 2022: 1). Leal Filho and Brandli (2016: 107) highlighted that if universities were at least in part to be financially supported by the state and by the communities which hosts them in various ways, including employers, they should be civically minded to develop capacity building for sustainable development at local, national, and international communities through these partnership models. Whitby and Wandel (2019: 6) stated that ESD partnerships could be instrumental at all stages of the policy cycle, helping to build coalitions and political will, assisting the drafting of legislation, supporting delivery and monitoring progress. Whereas Bahl, et al. (2019: 5) observed that collaboration between

education institutions and industries offers an opportunity to trainees as members of an institution's workforce, to gradually familiarize themselves with the world of work by not only acquiring practical skills and abilities but also get socialized into the working life. Besides partnership between education institutions and other centres of learning, some participants suggested that sustainability issues should be fussed into all legal frameworks in the country and fully embedded in the national development plans so that all people know that it is mandatory to promote sustainability in all their activities. They argued furthermore that it would also help learners to perceive the relevance of what they study in class regarding ESD issues with the general purpose and philosophy of education and development agenda in the country. This is well explained in the submissions of some of the participants:

"So, this sustainable development needs to be internalized. In other words, to be fussed into the national planning system and becomes a priority and a national law, (.) because the government is us but we need leadership. So, unless it is infused into the leadership, it might probably not be possible. What we are talking about is implementation, but that implementation must come from somewhere. So, there is a need to re-orientate ourselves right from the top throughout. So, just as these days we are talking of gender mainstreaming, we need also to mainstream ESD. So, we need to streamline the whole sustainability into all our activities, whether in agriculture or education, okay? So, we are talking about the education part, what do we do to mainstream sustainable development [in other sectors]?", (P10, 163).

"As we are training teachers, at times we look at what they are going to need in their future and if those things are already there … some of them you look at the curriculum (.) and if they are not included in some of these government policy documents, then they won't take them as important (.) but I think all those outcomes of ESD have to be included in such policies", (P21, 292).

The fusion of sustainability in both national and local frameworks is a crucial strategy for integration of sustainability because it serves as a guide, (Bertelsmann Stiftung, 2015: 18). Leal Filho, et al. (2018: 7) studied planning and implementing sustainability in higher education institutions and established that at the macro level, an important obstacle was connected to a lack of government policy to encourage investments in SD, and also recognize the results achieved by the universities that do it. This shows that government policies facilitate the integration of ESD. In this regard, UNESCO (2020: 34) suggested that it is crucial to collaborate with existing networks of education institutions and communities to integrate ESD at all levels of learning in local communities and align national and local level actions, and support global platforms for local communities to enhance partnership and collaboration for ESD. Related to integration of ESD in national frameworks, some participants also suggested that the integration of ESD issues can be transformed into a national ideology so that it is emphasized everywhere in society. According to the

participants, the national ideology on sustainability ought to be anchored on both the regional and international agenda for sustainability. In their opinion, this would link the institutional sustainability agenda to the national and international agenda for ESD. They postulated that the interconnections and linkages might create an opportunity for teacher education institutions to receive comprehensive support and facilitation which could offer enabling environment for them to integrate ESD in teaching and learning activities. This is also reflected in the statements of some of the participants:

"So, our education needs to be reconstructed to promote that sustainability. The integration of ESD should be more on national ideology. The national ideology should also be based on regional concepts and regional concepts which are also based on international [agenda]. For example, now we have sustainable development goals (.) whereby now national goals must feed in even now universities making plans, they should put in national goals and national goals fit into sustainable development goals. So, here you find that there is harmony (.) and that is what the government has now realized. … therefore, it should tickle down up to primary (.) so that we have a common thing", (P10, 155).

"Having a national focus is very important (.) because some of these issues would come in because even then, the children or students in schools must be taught and informed of these things … when they go out there, after school to seek livelihood, they would confront some of these issues (…) and they need a whole set of awareness but it is a complicated issue and it needs a real way, let me say a national decision at a national stance that says that this must happen. Things like polythene bags, I think our policies here in Uganda are horrible because this issue is complex", (P21, 286).

Harmonization of sustainability policy focus at different levels enhances coordination and collaboration among various stakeholders toward the integration of sustainability issues, (Francis, 2016: 156; Christoforatou, 2021: 12). On the other hand, Dernbach and Mintz, (2011: 533) stipulated that if sustainability focus at a higher level of government is completely separate from the relevant legal rules at a lower level of government, the lower level of government could make decisions that frustrate or impede sustainability goals and vice versa. This indicates that sustainability requires mutual collaboration and support on the ground, local, county, national, and international levels. Some participants stated further that when sustainability issues are internalized and appreciated by all stakeholders, it will lead to a change of attitude of some of the stakeholders such as parents who do not want, for instance, their children to do extracurricular activities in educational institutions such as farming. For instance, one of the participants reported that some parents confront educators when they see their children go to work in educational institution gardens where they learn about issues of agriculture. One of the participants informed that parents think that since their children dig at home, they do not have to do the same work in education institutions:

"It is not only the teachers who need re-orientation but also other stakeholders, like the parents of the students. We also need to change our agriculture because like it is common for parents to say, (.) my child is digging at home and again (...) why should he go and dig at school simply because they seem not to see any change between what they do at home and what their children do at school. You know, what the child is taught at school is different from what they do at home, but a parent cannot appreciate that what is produced in schools is really good. So, are we doing anything (.) and trying to reorient the thinking of the parents and all those people who are involved like educational officers, inspectors of schools, and so on?", (P16, 232).

UNESCO (2020: 62) postulated that clear understanding and appreciation of sustainability issues by stakeholders is very crucial because it is in the community where meaningful transformation and transformative actions are most likely to take place. In this regard, the participants also demanded for provision of sanitary tools both in educational institutions and in society. Some participants who had visited countries where sustainability issues are regularly emphasized shared their experiences of what they found in the host countries. For instance, they reported that in such countries people segregate refuse and sanitation appliances such as garbage containers are placed everywhere in the communities and educational institutions. They asserted that such practices encourage people to segregate refuse and not dump it anywhere they see. This is summarized in an account of one of the participants:

"I have been in some areas. I have ever been to Indonesia on an Island called Bali as far back as in the 1980s. They had already designed every area of recreational places to have dumbing places for recycling, metal and so on. So, such an environment encourages somebody not just to throw rubbish (.) but if he doesn't have it there, what do you expect him to do? So, some of these things, even if there is a will down there and if up there, there is no will just from Kampala City Council Authority (KCCA) (.) come to divisions and come to units like this one. Now, you can have a place like a university like this but they have not gazetted anywhere rubbish should be put. But if there were points (.) that bottles will be thrown here, papers will be thrown here. I think I can't carry those things and throw them on the floor, even if I have them in the car, I would come (.) and then put them in a right place", (P10, 162).

The availability of sanitation appliances in education institutions play a critical role in reducing diseases, enhance quality services and work performance, (UNOPS 2019: 9). In this regard, Jaglan, et al., (2022: 15) recommended that universities must invest in trash collection infrastructure that allows source-segregated waste to be collected separately and transported to waste treatment facilities. Whereas Parvez, et al. (2019: 19) recommended that a carefully chalked out system of waste segregation, collection, disposal, transport, recycling, and so on is essentially required to be able to upgrade the esteemed campus to a 'zero-waste campus'. They pointed out that in order to achieve this goal, awareness must be spread regarding the reduction of waste production, reuse, sanitary habits and careful handling of waste, by inculcating the value of waste as a resource, into the minds of all. Besides the provision of

sanitation appliances, participants also suggested that education institutions should strictly enforce sustainability rules and regulations so that learners can observe them right from lower levels of educational institutions. Many participants narrated their experiences as students that educational institutions were very strict at enforcing sustainability policies to the extent that students who were found breaking them were punished by the administration. They argued that such measures helped many students at that time to remain decent and even observe such rules throughout their life. This is clearly reflected in the statements of some of the participants:

"For me when I was still in school, (.) even sharpening your pencil on the floor was punishable. You either do it in your pocket or in your mathematical set, somewhere and not just sharpen and leave your refuse there (.) and then that [you] don't just cross the compound anyhow. [You had to] find the right pass or they would tell us (.) if you were to move on the grass, do not follow one another because (.) if I follow you, we are going to create a pass. We grew up used to such rules (.) so even today education institutions should emphasize sustainability rules and regulations", (P3, 63).

"What I grew up seeing in the early and late 1990s (…) was that discipline in schools was not just a priority. It was a standard, LET ME SAY THAT AGAIN. When I grew up in the late 1990s, discipline was not just a priority. Whenever they said that the school had standards, (.) in the mind of those saying, they were saying discipline took precedence. It took precedence. When I was still growing up again, you could be suspended for running through the grass on the school compound, there were even posts saying keep off the grass. Littering was punishable … but now we can be here in the office and somebody switches on music, (.) in an office and you look at them and they are unfettered. You look at them and they are fine with it. They are not even aware that it is wrong. It is inappropriate. It may not be wrong but it is inappropriate in such a place. So, what are we lacking? Discipline is no longer a standard, (-) we swopped discipline with what we call academic excellence that is it, okay, hmm. So, what is lacking? We lack discipline. We need the value of discipline. A kind of discipline inculcated not under punishment. We need to leave this level of looking at discipline at a punitive level (.) and look at discipline at a value level and it should be strictly emphasized in schools", (P1, 13).

Enforcing discipline in education institutions without subjecting learners to harsh punishment shapes learners' attitude towards right use of available resources and nurtures in them a sense of respect and responsibility. In this respect, UNEP (2014: 3) remarked that for any sustainability legislation or regulation to be effective it requires to be adequately enforced, otherwise, weak enforcement renders the sustainability laws and regulations sometimes ineffective in deterring violations. The participants also reported that issues of ESD are not well known by both teacher educators and people in the community. They suggested that promotion of awareness about the benefits of sustainable living and practice is inescapable. They argued that sensitization of the public on issues of sustainability should be conducted at all levels of society so that a sense of sustainability consciousness is created among the

populace. Some participants also proposed that the creation of sustainability awareness ought to be complemented by the enforcement of punitive measures geared towards the deterrence of unsustainable practices. This is clearly expounded in the submissions of some of the participants:

"Allow me to pick the most important to me and I will continue to insist on sensitization and this time (.) not the public but policymakers because if we sensitize the policymakers, they will get to know the importance of ESD and they will back it up. That is when it will not be hard for the implementer to look for support in terms of funding (.) so, sensitizing the policymakers", (P13, 196).

"… ensure that there is a proper use of things to do with those bins and toilets, you litter here, you are fined. If [sustainability] is enforced (.) people will not do it. I think enforcement is lacking … we need to take responsibility and enforcement. We have all the temptations of the newcomers and I don't think that garbage handling and environmental protection even within the community are ever talked about during orientations of new students. At least I went to one orientation and nothing was talked about it and they toured the whole first week. They were touring one place to another, one place to another and I don't know whether one tells them. (…) You know every garbage of yours, throw it there. Awareness might be there, people are aware now but who cares to ensure that they are separated, enforcement is not there", (P21, 298).

This implies that raising public awareness about ESD is a critical prerequisite for its integration, (Guan, et al., 2019: 1). Sensitization of policy makers is vital because they should make policies which enable citizens perceive the general discourse for sustainability, (Kern, Rogge & Howlett, 2019: 10). In addition to sensitization and raising awareness about sustainability, some participants also suggested that it would be realistic if leaders especially those in higher authority and wield a lot of influence in society lived as agents of sustainability. They argued that influential people in educational institutions and community leaders should live by example and also initiate concrete sustainability projects. They also ought to illustrate how such projects benefit learners and people in communities. The participants suggested that sustainability projects could be, for instance, tree planting and preservation of endangered species. According to the participant, such projects could help many people appreciate the importance of sustainable living. This is manifested by the remarks of some of the participants:

"So for ESD, it is not just something we can just put in the curriculum because if we don't put in that specific learning kind of situation where students begin to appreciate, for example, in areas of deforestation (.) you plant trees and you also put some fruit trees around and when they begin benefiting, (.) they start appreciating the change even just a shade which trees provide, so after walking on a hot day in Kampala, (.) they have somewhere where you can sit. That could help", (P2, 41).

"So, if we cannot enforce these things ourselves, then how are we going to teach them to our children? Big things are happening. They see on TV, this money has been stolen, so many billions have been taken and nothing

happens. How do you expect them to grow up morally upright (.) when the entire society has really decayed morally? It all goes back maybe the way we are programmed and it becomes very hard to teach our children to be organized (.) when we are not, to behave well and when we are not … we have to show a good example", (P20, 280).

In this regard, Emmanuel and Valley (2022: 261) highlighted that exemplary leaders model the way, inspire a shared vision through evidence-based information, challenge the process, enable others to act by creating a compelling image of the future, and fostering professional growth. This implies that exemplary leadership has a lot of influence on sustainable performance of an institution, (Iqbal, et al., 2020: 12). In this respect, UNESCO (2020: 28) advices that leaders of learning institutions should make sure their governance and culture are aligned with sustainable development principles. Some participants also called for existence of a harmonious and symbiotic relationship between the various levels of education and among all stakeholders of education. They argued that each level of education has a direct influence on another level of education and stakeholders of these various levels also influence one another as clearly highlighted by one of the participants:

"… there should be a strong linkage between stakeholders and levels of education so that if there is something being done at the lower level, (.) it should now be directly linked to higher institutions of learning because the training process is likely that (.) what is done here will affect the lower levels and vice versa", (P8, 132).

UNESCO (2020: 61) also suggested that all education institutions, at all levels from early nursery to higher education should work together. UNESCO suggests furthermore that there should be strategic policies and measures to reinforce the interaction and cooperation of the formal, non-formal and informal educational settings. The existence of systematic integration of ESD between education levels, therefore, is very crucial. All participants also suggested that the government ought to remunerate them well by increasing their salaries. They argued that good remuneration would make the teaching profession very active and motivate many young people to join the teaching profession and solve the problem of shortage of manpower. This is exemplified by the statement of one of the participants:

"So, the recruitment for teacher training also matters a lot. So, we need to make teacher training or teaching as an attractive field such that it is well remunerated (.) so that it attracts good manpower to go into the training of becoming teachers (.) but if we leave it as a last resort, and then it is likely to constrain the attainment of sustainable development goals in the teaching profession", (P10, 159).

In this regard, initiatives that aim at improving the conditions of the teaching profession such as offering bursaries and scholarships, loan forgiveness, paid internships, incentive payments for teaching in remote regions play a big role in making the teaching profession attractive to

the young people, (Gorard et al., 2022: 2; OCED, 2011: 9). The underlying strategies of the phenomenon depict the various factors that could support, facilitate and influence the activities of teacher educators in teacher education institutions. These strategies illuminate in particular the responsibilities which the various stakeholders of teacher education have toward the integration of sustainability issues in teacher education, but as well as in society. These responsibilities can be fulfilled by individuals and also through cooperation between multiple stakeholders of education at various levels. The conditions and strategies of the phenomenon also continue to highlight the complexity, interdependence, and interlinkages required for ESD integration in teacher education and in society. The consequences of the action and interaction strategies are presented in the following section.

4.8.5 Consequences

On one hand, the participants clearly stated actual instances resulting from the actions and interactions of the various stakeholder. On the other hand, they also expressed the potential consequences which can result from the actions and interaction strategies of the various stakeholders. Some participants testified for example that if they are not well paid, they cannot work hard whereas good remuneration motivates them to work harder in order to achieve better results including integration of ESD issues in their teaching and learning activities. This is exemplified in the testimony of some of the participants:

> You know these things are kind of spiral, if I am poorly paid, for example**,** I get like 200,000/= (.) like I told you, then nothing is going to motivate my heart (.) but if I know very well that my take home is pleasant, [it] is big enough then I will motivate myself to come the following day, yes. So, (.) I think motivation is both but you know like me I really love my job, I am a teacher trainer but when you increase the salary for a professor and you didn't increase mine, I am like anyway, after all, let the professors do everything, yes. So, lack of that, we might not achieve much but it all goes back to the government's will, yes. (…) They have so many millions and billions for campaigns, for Covid but they have never found money to pay teachers well", (P20, 274).

> "So if you are saying that teachers are central, (.) then speak it in a language which they can also understand it (.) but when you are just talking, talking that they are important but your actions are not speaking it, I think it is not fair and that is when you find that (.) there is this syndrome of teacher absenteeism in schools because teachers are busy trying to make ends meet", (P15, 226).

This indicates that, on one hand, poor remuneration demotivates teacher educators which makes them to lose interest in teaching, preparation of lessons, classroom management and leads to poor students' academic performance, (Khanal, et al., 2020: 82; Katete & Nyangarika, 2020: 1291; Mohammed, 2022: 211; Taqi, et al., 2017: 41). On the other hand, good remuneration motivates teacher educators to get engaged in using desirable classroom

practices, ensure high level of student academic performance, and completion of syllabus, (Zikanga, et al., 2021: 10; Katete & Nyangarika, 2020: 1300; Laxmi, 2021: 83; Mohammed, 2022: 213; Nantale, et al., 2022: 7). This indicates that poor remuneration definitely affects the integration of ESD in teaching and learning activities, whereas good remuneration enhances ESD integration. In this regard, the participants also pointed out that if the government does not support, prioritize and fund the integration of ESD in teacher education, then teacher educators will continue to be incapacitated by the shortage of essential facilities to integrate ESD issues in teaching and learning activities. Consequently, teacher educators might get frustrated and lose interest to effectively execute their work. This is augmented by the statement of one of the participants:

"Of course, money is one of the drivers of the integration of ESD in teacher training. If money is not there or sacrificed into the project, I can tell you, (.) you cannot move anymore, yes. So, at that level (.) it will not develop and the curriculum itself, it will not develop even if you have the interest, motivation will make it very low, and issues like research, intent and many others, (.) will definitely be affected. So, that is what will happen", (P6, 99).

Additionally, teacher educators might be demotivated, frustrated and disappointed, when their suggestions are not respected by those in authority. For instance, one of the participants also narrated how frustrating and disappointing it could be to conduct research and the recommendations are disregarded by policy formulators and implementors:

"I pray before you switch off, that your recommendations, (…) you don't die with them because I am very sure that nobody is going to look at them. Nobody is going to use them for policy making, no, anyway let me pray maybe a miracle will happen. I hope you will not be frustrated like me and many others who have conducted research, studies and put in a lot of time like that (.) and then it is thrown on the shelves and then that ends the chapter there, hmm. Even model because when I did my PhD, I came out with a model but I don't think whether anybody has every looked at it", (P21, 283).

Whilst some participants postulated that if teacher education is not well funded, it will continue be unattractive to best brains and competent people in the country, unless the government makes the remuneration of teachers very lucrative so that the teaching profession is not undermined by people in society. They stated that without good remuneration, the profession will attract people who have failed to be admitted in other professions. In this case, teacher education will become a last resort for those who have failed to be admitted in other fields as clearly put forward by one of the participants:

"Yes, of course teaching profession ceased to be an attractive field and it ended up taking the last resort. People who had failed, in other words (.) … whoever … has no combination to go to A Level and then he says let me go and be a teacher as a last resort to the extent that he is training but his heart is not there. Many children now say,

no, no, education leave me with that one. So, education is only done by those people who have nothing to do. They are really incapacitated and they say now go and do education. You have seen even us parents (.) we are bad. That the child who has failed is the one (.) they take to NTC [National Teachers' College] and say maybe that one will go to NTC and you see Africa is funny, NTC and Nursing is the one that takes the poorest but look at them, are they not the most important?", (P10, 159).

According to Mainoma and Maikudi (2018: 37) low funding of teacher education has multiplier effects such as curtailment of laboratory and practical classes, limited number of field trips, curtailment in the attendance of academic conferences, inadequate and obsolete infrastructures and equipment, reduction in research grants and so on. Whereas Baker, Sciarra and Farrie, (2018: 1) asserted that increased funding leads to greater and more fairly distributed education resources. This implies therefore that inadequate funding of teacher education not only affects ESD integration but also other activities and operations of teacher education institutions, (Leal Filho & Brandli, 2016: 210). Limited financial resources also lead to lack of infrastructure to support ESD skills in teaching and learning, (UNESCO 2020: 65). Furthermore, little remuneration of teacher educators makes them to be underrated in society and at the same time also discourages young people who would like to join the teaching profession to shun away from it. The participants also narrated that since teachers are not well remunerated, some teachers lack confidence to present themselves as teachers because they are perceived by society as poor people who cannot meet adequately their needs even when they are educated. This is clearly reflected in the statement of one of the participants:

"Now we are also having a challenge in that (.) the conditions in teacher education are seen as very rough in society. A teacher is one who earns very little, a teacher is one who didn't pass very well, so society does not take teachers as very serious people so even the learners when they come to learn to teach [as] student teachers, they don't believe in themselves (…) so that is why they cannot market themselves, yes. It would be very difficult to find a teacher who would comfortably be in church (.) and say I am a teacher, no, you will see the other people are the ones who come up and say, hey, brethren (.) I am talking to you, my brothers and sisters I work with bank of Uganda, yes, but somebody to come up and say, (hmm), you see I am a school teacher in in such and such a school, no, ((laughs)), you find somebody who has a small kiosk, (.) a small shop in a trading centre, coming up and say, yes, you see I am so and so, yes I am a business man and I do business and you ask which business (---)", (P12, 181).

Regarding the enactment of strong policies and availability of sanitation facilities which can promote sustainability issues both in educational institutions and communities, participants postulated that if these policies are not well formulated and implemented, then the integration of the ESD agenda will lack the capacity to be enforced and it might end in failure. This is clearly highlighted in the submission of some of the participants:

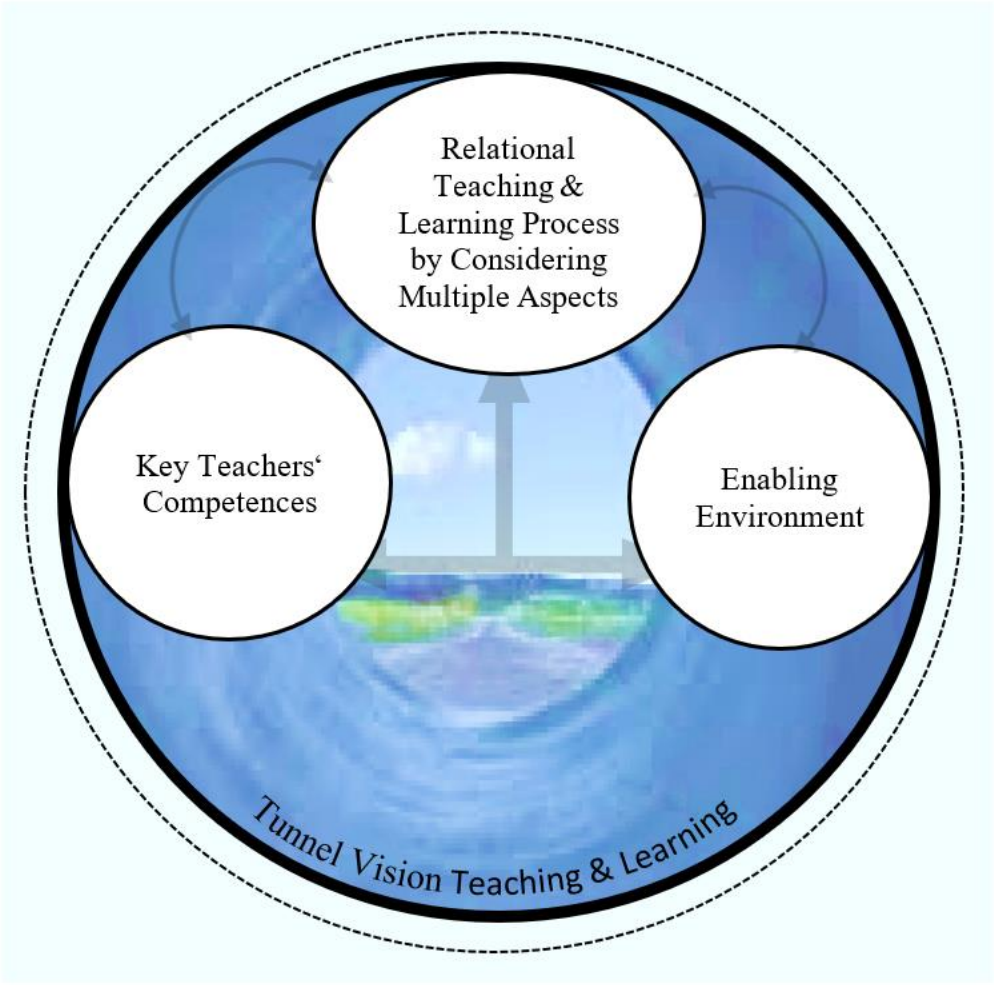
"So, we need a lot to be done and this should go back to the policymakers, yes. Otherwise, this ESD we have it here. The concept is clear, it is very good but if the enforcement is not implemented, then it will be very hard, hmm", (P10, 153).

This implies that unsustainable practices might continue to flourish both in educational institutions and communities, when the sustainability policies are not enforced, (Hudson, et al., 2019: 7; Mawere, et al., 2012: 262; Taylor & van der Velden, 2019: 9). In this case, urgent policy measures against unsustainable practices are required. In a nutshell, the above mentioned conditions and aspects which generate the phenomenon enabling environment continue to highlight the complexity of integrating ESD in teacher education. They reveal that ESD integration cannot be handled and accomplished by a single individual or just a group of few stakeholders. The integration of ESD involves a conglomeration and amalgamation of various factors and stakeholders in order to consolidate the effort to integrate it in teacher education. This implies that the internal and external stakeholders of teacher education should equally play their respective roles of promoting sustainability actions that facilitate and support teacher educators' efforts. The phenomenon "Enabling Environment" highlights furthermore that the environment in which teachers live and work has a lot of influence on their performance and success because the environment can either support and facilitate or constrain and frustrate their effort to integrate ESD, (Scott & Davis, 2016: 31). At this juncture, it can be postulated that when all stakeholders in the education sector fulfill their respective duties; provide enabling environment and also teacher educators possess the key competences discussed in section 4.6, then teacher educators could integrate ESD issues as stipulated by the core category in teaching and learning activities.

4.9 Incompatibility between Integration of ESD as a Relational Teaching and Learning Process by Considering Multiple Aspects and Tunnel Vision Teaching and Learning

In this subsection, the incompatibility between the phenomenon "Tunnel Vision Teaching and Learning" and the core category will be explicated. Unlike the phenomena "Teachers' Competences" and "Enabling Environment" which reinforce the core category, the phenomenon "Tunnel Vision Teaching and Learning" disrupts the core category due to its constricted view of reality. In this regard, "Teachers' Competences" and "Enabling Environment" are augmentative phenomena of the core category while "Tunnel Vision Teaching and Learning" is a disturbing phenomenon of the core category because it obstructs the consideration of the multiple aspects of ESD in teaching and learning activities. The graphic below reflects the incompatibility of the phenomenon with the rest of the phenomena

as it has no connection to any of the phenomena but stays independently in the background. This will also become clearer in the subsequent presentations and it will be supported by both participants' views and the existing literature.



The phenomenon "Tunnel Vision Teaching and Learning" is incompatible with the core category "Integration of ESD is a Relational Teaching and Learning Process by Considering Multiple Aspects". The incompatibility between the core category and the phenomenon is caused by the complexity and multifaceted nature of ESD issues which require teacher educators to consider multiple aspects in teaching and learning activities as opposed to the bounded view of tunnel vision teaching and learning. Tunnel vision teaching and learning incapacitates teacher educators to focus on the complexity and multidimensionality of ESD issues embedded in other academic disciplines because of its unidimensional focus on a particular discipline or aspect. In the tunnel vision bounded approach to teaching and learning, teacher educators cannot ably know and explain more about ESD issues outside their domain knowledge in teaching and learning activities, (Gare, 2018: 14; Blake et al., 2013: 44; Granados, 2011: 204). Yet, in order to integrate ESD in teaching and learning activities,

teacher educators are expected to master their domain knowledge and also be able to interrelate and explain the multiple elements of ESD issues, which might be in other disciplines but related and relevant to the teaching and learning tasks. This enables them and their learners to uncover the hidden connections of ESD issues from different disciplines and perspectives, (Madni, 2010: 44). In this case, integration of ESD does not, therefore, disregard the importance of individual academic disciplines, but it stresses that disciplines independently are insufficient to address the complexity of ESD issues. ESD issues are deeply complex and entangled in all academic disciplines and they cannot be comprehended by just a single discipline, (Guimarães et al., 2019: 2; Holmberg & Samuelsson, 2006: 16). In other words, ESD is integrative and transdisciplinary and no discipline can claim it as its own, but all disciplines contribute to it, (Leicht, 2018: 35; Hoidn, 2018: 288; Fisher & McAdams, 2015: 419; McGregor, 2022: 7; Herweg et al., 2021: 10; Bedawy, 2014: 466; Kanyimba, et al., 2014: 250; Rudhumbu, et al., 2017: 18; McKeown & Hopkins, 2002: 25; UNESCO, 2017: 25). An investigation of a particular aspect of ESD from the perspective of only a single discipline can only perpetuate tunnel vision teaching and learning, which hinders teacher educators to consider the multiple aspects of ESD in teaching and learning activities, (UNESCO, 2020b: 7). In this respect, the phenomenon "Tunnel Vision Teaching and Learning" is incompatible with the core category. The next subchapter presents the nature, components, conditions and interactions of the phenomenon. This will also be illuminated by the participants' views and the existing literature.

4.10 The phenomenon "Tunnel Vision Teaching and Learning"

In this study, the phenomenon "Tunnel Vision Teaching and Learning" is used metaphorically to denote the disinclination of teacher educators to consider and employ multiple aspects in teaching and learning activities. The phenomenon signifies the tendency of teacher educators to merely teach the content of their domain knowledge with little or no attention and consideration of the relevant and interlinked knowledge of other academic disciplines in teaching and learning activities. Just like the phenomena already discussed (4.3, 4.6 & 4.8), the phenomenon "Tunnel Vision Teaching and Learning" emanated from data analysis. The phenomenon is also fairly supported by the existing literature. The phenomenon postulates that specialization creates a kind of "Tunnel" that provides the "Lens" or "Filter" "Funnel" through which teacher educators perceive and interpret the content of teaching and learning activities. The tendency of teachers to favor and concentrate on teaching exclusively their domain knowledge as opposed to other academic disciplines is referred to in literature by various scholars as academic tribalism, (Becher, 1989: 150; Bazerman, 1990: 265; Clark,

1987: 25; Krishnan, 2009: 9; Musselin, Amaral, Bleiklie, 2008 118; Neumann, Sharon & Becher, 2002: 405; Tight, 2015: 278; P. Trowler, Saunders, Bamber, 2012: 5; Becher & Trowler, 2001: 4; Ylijoki, 2000: 339). In the case of this study, it is because of the tendency of teacher educators to get inclined toward their specialized academic fields that this phenomenon is metaphorically dubbed tunnel vision teaching and learning. Just as tunnel vision obstructs people from seeing things that are not straight in front of them, so could subject specialization obstruct teacher educators from considering multiple aspects in teaching and learning activities if it is not subjugated. According to Co, et al. (2021: 619) and Kovačević (2022: 1), specialization entices teacher educators to focus on teaching the content of their domain knowledge without considering the relevant and momentous information in other academic disciplines. Knowledge domains are, however, intrinsically interrelated and interdependent, (Graff, 2017: 2; Rudall, 2012: 5; Shahapur, Shashikala & Souza, 2018: 82). It is due to this constricted nature of the phenomenon that it is considered a disturbing phenomenon in this study. In other words, the phenomenon does not support the core category. Some participants specified for instance that the practice of specialization not only limits but could also disorient teacher educators to simply consider their specialized academic fields and disregard other knowledge domains. This is apparent in the submission of one of the participants:

"You realize that specialization narrows your knowledge (.) narrows your skills to that subject area and as a result, it also limits your skills and knowledge you give to the learners from one particular area. So, specialization does not only limit (.) but even disorients teachers. They become disoriented. A person instead of being a general person (.) now, they are restricting him to only physics and even physics sometimes they are only teaching about kinetics and at the end of the day (.) really limits him and also disorients them", (P7, 112).

This indicates that as much as subject specialization gives teachers opportunity to master their domain knowledge, the scope of their focus is narrowed. It constricts teachers' optimal utilization of their abilities and focus, (Knecht & Spurná, 2022: 242; Poland, et al., 2017: 12; Tournier, 2015: 40). The phenomenon "Tunnel Vision Teaching and Learning" is classified into two categories. These categories are rote and subject-content-abstract teaching and learning. The category subject-content-abstract teaching and learning refers to the tendency which teacher educators have towards teaching learners, barely the subject matter of their domain knowledge without integrating it with relevant aspects of other academic disciplines related to learners' life situation and issues in society. The teaching and learning activities are abstract in the sense that the teaching and learning activities are taught theoretically without or with minimal use of teaching and learning aids. The teaching and learning process is

geared towards understanding and mastery of the subject matter. The existence of this kind of teaching in teacher education institutions was a matter of great concern for many participants. They reported that some teacher educators teach as if what they teach has nothing to do with the life situations of the learner and issues in society. This is epitomized in the statement of some of the participants:

"Some teachers fail to relate their subject content. They are just teaching theory (.) yet actually even in class there, there are some everyday life things they can give as examples. When you don't relate your content to society then you will never know the value when you are teaching it, (hmm), and it will not stay with you … you know, so we have been taken up so much into closing ourselves in our areas (.) and they think that it is not a big problem in teacher education. So, if you only want to teach physics (.) physics student will learn because they want it but at the end, they will remain or gain nothing [or very little]", (P12, 183).

"And also, some of the things we teach are kind of theoretical. It doesn't usually apply. It may apply in another environment like the research we do. We do a lot of work and you have seen in the college, these things are too abstract", (P6, 99).

According to the participants this kind of teaching approach brings disparity and inconsistency between what is learnt in education institutions, the learners' life experiences, and what happens in the society. It decontextualizes class teaching and learning from learners' life situations and societal issues. It also renders what is taught and learnt in class to appear as if it is irrelevant and not useful to everyday and future life of the learners. This becomes also clear in the submission of one of the participants:

"If teaching is theoretical without connecting it to the life outside the classroom and it just remains an abstract concept, students cannot even relate to it (…) for instance, if we are talking about deforestation, (.) does it just remain a concept in a geography or environment class or can we use those skills and be able to identify different questions in our environment practically and do something about it. So, like building these skills, building these values, building this knowledge, it happens only if we do it in authentic learning context so that the knowledge, the skills, the values are applied and not just so remain in the abstract form as something that I learnt at the university (.) and it remained there. So, it doesn't matter how much they have learnt in the classroom and that will still be considered as classroom knowledge for passing examination and they will not appreciate that this is supposed to be applicable in everyday life and not just for passing examinations and leave it there, hmm", (P2, 41).

On the other hand, the category rote teaching refers to teacher educators' tendency to focus on teaching students examinable topics of study and how to pass exams, rather than focusing on the integral development of the learners. The main emphasis of teaching and learning activities is not geared towards the development of the cognitive, affective, and psycho-motor abilities of the learners but to enable them excel in examinations. During the interviews, all the participants revealed that the education system in the country is still examination oriented.

Some participants sadly reported that when teaching and learning activities are centred on passing of examinations, the students also concentrate more on cramming the subject matter without internalizing it, so that they can regurgitate it in examinations in order to pass examinations. This is also well elaborated in the statement of some of the participants:

"The school system we have is grade oriented. The competition is on memorization and notes, notes, notes, tests, tests, tests, canes, tests, canes, tests, tests again, notes, notes, coaching, coaching, grades (…) because of that we no longer have time to say tuck-in. We don't have that time. (.) Why? (.) because should the academic dean or DOS find out that you are lagging behind in coverage, you are losing your job. So, time for debates is dead. The spirit of debating is gone, (.) you cannot, and the spirit of debating in schools cannot even be found in "hell", even in hell, ((laughs)). YOU CANNOT FIND IT. Discipline is dead. Don't litter is not emphasized at all. So, what is lacking? What is the problem? This baby, this girl, this woman, this man has been memorizing all their life. They have not been living in society. Let me say it again, THEY HAVE NOT BEEN LIVING IN SOCIETY. They have been academicized with coverage, coverage, coverage, notes, notes, notes, notes, tests, tests, tests, tests, tests, from P.1 to P.7, S.1 to S.4 to S.6 and finally they land in university. The goal we have now is to pass and get very good grades and one goes to the next level. So, our education system is geared to evaluating the ability to reproduce the work (.) but limited on the practical part of the evaluation", (P1, 13).

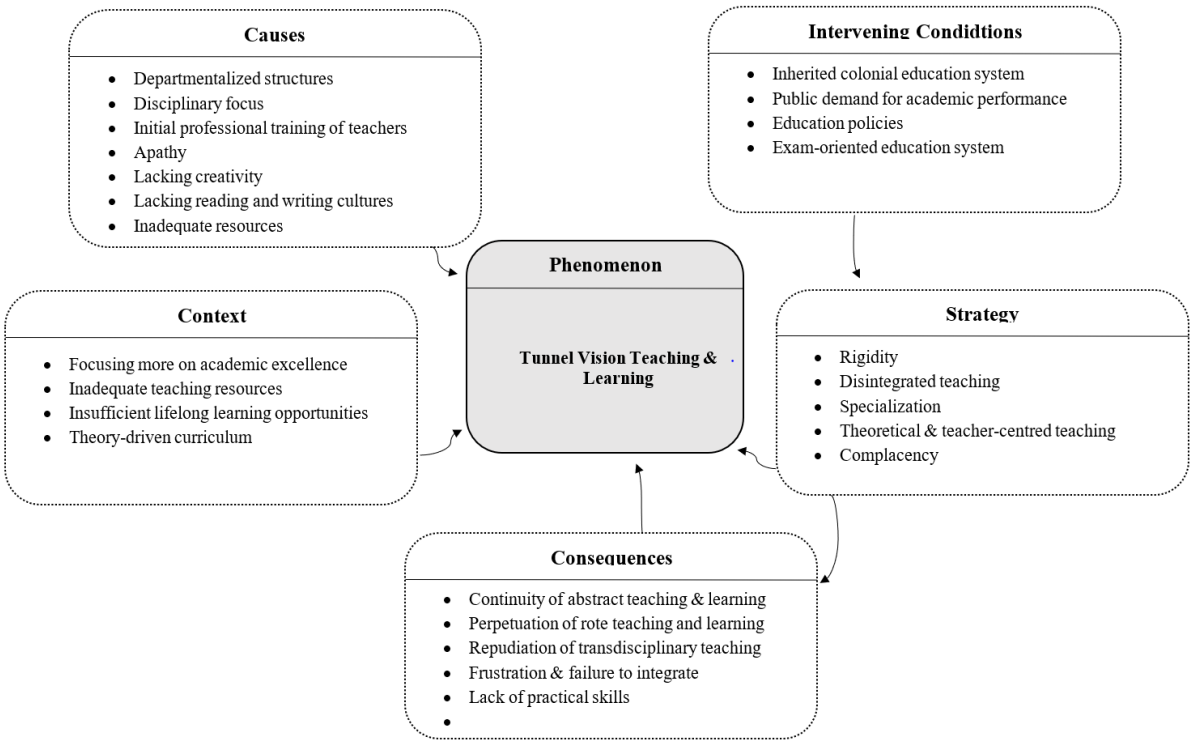
"You see in our subjects many of the things we are doing are about passing exams. So, we are encouraging rote learning, encouraging just memorization of facts, so in other words, we are producing people who are like robots", (P15, 216).

The examination oriented teaching and learning approach can stifle students' imagination, creativity, and sense of self, yet, these qualities are crucial for students' ultimate success in life both in and out of education institutions, (Adam, et al., 2019: 1; Ntwiga & Mwangi, 2018: 26; Singh & Chand, 2022: 57; Kirkpatrick & Zang, 2011: 36; Meng, et al., 2021: 325; Nganchi & Charlotte, 2020: 55; Rind & Mari, 2019: 1). Wachiuri, et al. (2017: 62) asserted that examination oriented teaching approach fails to inculcate practical skills, knowledge, desired values, beliefs and attitudes in learners. Scholars (such as Allen, et al., 2016: 3; Eton, et al., 2018: 38; Mitana, et al., 2018: 58; Mitana, et al., 2019: 472; Odama, 2018: 94) conducted research which aimed at assessing Uganda's education system. The research findings confirmed the existence and despicability of examination oriented teaching and learning in the education system of the country. For instance, Eton, et al. (2018: 38) conducted a study on exam and knowledge-based education in Uganda. They found out that many learners and instructors viewed education as merely passing examinations. In their view, instructors taught only what was related to examinations, leaving out the core concepts that would build on knowledge and life skills that are required in the workplace. They asserted that giving much attention to examinations and the nature of examination had underscored the role of teaching. The study recommended that universities and higher

education institutions should collaborate with employers and curriculum developers to ensure that whichever knowledge and skills universities and higher education institutions provide are in direct line with what employers need from employees. National Council for Higher Education (NCHE), the organ responsible for accreditation of university and other tertiary institutions' academic programs, should collaborate with stakeholders, particularly employers before approving institutions and university programs. They reemphasized that it was high time that universities and higher education institutions designed programs that are demand-driven rather than academic-driven. They stressed furthermore that national examination boards should stop recycling questions, a practice that has made students and learners to correctly hypothesize what is likely to appear in an external examination. They also suggested that education institutions should shift from handouts that promote cram work to handouts that promote understanding.

On the other hand, Allen et al. (2016: 3) carried out a study on Uganda's assessment system and found out that in practice, little priority was given in classrooms to matters that were not closely aligned to the demands of examinations. Similar to the observations of Eton, et al., they also highlighted that much of the knowledge and skills learners need today and for their futures had little or no role in formal tests and examinations. Mitana et al. (2019: 472) studied the influence of national examinations on classroom practice. They established that teachers' selection of teaching methods was directly influenced by assessment, particularly public examinations. The methods used in teaching were those that encourage rote learning and memorization of facts. Similar to the previous studies, they also observed that little or no effort was dedicated to teaching and learning methodologies that could foster the acquisition of high order thinking skills like critical thinking or problem-solving. The trio Mitana, et al. (2018: 58) also conducted a study on a holistic and relevant educational assessment in Uganda. The study revealed that the current educational assessment in Uganda especially in primary schools was mainly in the form of the traditional pen and paper tests, measuring rote learning of few bits of intelligence at the expense of high order thinking skills. They considered this practice to be unfair to learners who possess high levels of intelligence that are not tested by the currently used assessment measures. They found out that some learners were unfairly judged as weak or even "failures" when in reality, they were very strong in certain intelligences which were not tested. The study proposed the use of multiple assessments such as observations, group projects, journal reports, peer rating and teacher rating to measure learners' multiple intelligences. They suggested furthermore that learner-friendly assessment tools and processes which clearly differentiate among learner differences, skills and

experiences should be used. Whilst the study recommended the assessment of non-cognitive skills and intelligence such as socio-emotional skills in both educational institutions and national levels. This would encourage teachers to intentionally include them in their daily pedagogical work including educational institution-based continuous assessments. Whereas Odama (2018: 94) conducted a study on the impact of examination ridden system of education on democracy in education in Uganda. The study established that to a large extent, there was no democracy in education systems because, centrally, all learners were forced to take examinable subjects compulsorily and the emphasis was on students passing examinations. The study recommended that schools should create a democratic environment where students in schools in the whole country can achieve equal performances in examinations and School Performance Index (SPI). All these previous studies and their findings strongly highlight what the participants stated that the education system is generally examination oriented. They also confirmed that this form of teaching and learning constricts both teachers and learners abilities to see beyond the ambit of examinations. This augments the claim of this study that the phenomenon "Tunnel Vision Teaching and Learning" is a disturbing phenomenon of the core category which specifies that integration of ESD involves consideration of multiple aspects beyond any single academic discipline and teacher educator. Hitherto, having explored the meaning and properties of the phenomenon, the following sections of the study focus on the interaction and contextual explanation of the phenomenon. The ensuing explication of the phenomenon will follow the graphic below, which serves the purpose of elucidating the connections, relations, and interactions of the various dimensions of the phenomenon as previously designated in sections 4.3, 4.6 and 4.8.



The causal conditions, context, intervening conditions, strategies, and consequences of the phenomenon are also anchored on the empirical data gathered from the participants for this study. The participants vehemently pointed out a lot of issues surrounding the teaching and learning practices of teacher educators and the learners. The constricted teaching and learning based on teacher educators' disciplines of specialization, which tantamount to tunnel vision teaching and learning was emphatically expressed.

4.10.1 Causes

The causes of the phenomenon "Tunnel Vision Teaching and Learning" majorly arise from the education system orientation in the country and the teacher educators' teaching and learning experiences and practices. In the course of the interviews, the participants pointed out, for instance, the systemic and conventional teaching and learning practices of teacher educators which might thwart their ability to integrate ESD in relational teaching and learning process by considering multiple aspects. These aspects become even conspicuously distinct during data analysis. These aspects are considered to be catalyst for tunnel vision teaching and learning. During the interviews, the participants identified, perceived and associated themselves, for instance, according to their subjects of specialization. The participants used frequently a differentiating phrase "for us in this … subject" and not inclusive phrase such as "we as teacher educators". This is clearly evident in the statements of some of the participants:

"For us in Physics, like a carpenter you should know, I need not make it like this or less than this but within this range and if I make this range and this, then it can fit", (P22, 309).

"For us in sports, we may talk of sports and may be how can you make use of the environment", (P24, 329).

"They have no idea of what they learnt because for us in science courses we teach practical but there is no translation from the classroom to the community", (P9, 136).

The perception of teacher educators as "us" and not "we" could stifle communication between different disciplines and research communities, (Daenekindt & Huisman, 2020: 572). The phrase "for us" can also be attributed to the structure of teacher education institutions. Teacher education institutions like most higher education institutions are structured according to academic disciplines with specified faculties, institutes and departments. Teacher educators also are employed and promoted according to their domain knowledge in the existing defined institutional structures. This constellation possibly gives teacher educators the impression to perceive themselves as independent, autonomous and different entities from other faculty members and departments of teacher education institutions. This setting also entices and captivates teacher educators to focus on teaching their domain knowledge. In this regard, teacher educators are most likely to ignore the relevant knowledge of other academic disciplines related to their domain knowledge in teaching and learning activities. In other words, they tend to teach as if their specialized academic disciplines are not interrelated and interlinked with other academic disciplines. This can be detected in the statement of one of the participants:

"Most departments have not yet integrated sustainable development issues in their teaching because (.) they are pronouncements that are somewhere. There is no effort done to engage (.) but for us like now who are from geography, it is important but there is no deliberate effort done to make sure that it is deliberate to become part of education. I don't know whether you have seen some from education. But for us as far as Geography is concerned is part and parcel of our training", (P10, 164).

The submission of the aforementioned participants portrays little consideration of other departments but Geography as reflected in the phrase "for us from Geography … as far as Geography is concerned". In this regard, UNESCO MGIEP (2017: 70) stated that it is a grave mistake for teacher educators to think that knowledge of academic disciplines is not interconnected. Hoidn (2018: 293) conducted a study on conducting interdisciplinary research in higher education. The study established that the infrastructure of the modern university discipline-boundedness hampers interaction among different disciplines. Discipline-oriented departments constitute a functional authority structure in charge of degree programs, teaching, faculty recruitment, and promotion posing a major barrier to interdisciplinary research

collaboration. The study revealed furthermore that institutional policies regarding the allocation of laboratory space, hiring, and promotion policies were managed by disciplinary departments with colleges and departments competing for resources. In this regard, the inclination of teacher educators to focus merely on teaching their specialized academic disciplines could also be traced right from their initial training in teacher education institutions as pre/in-service teachers. Teacher educators are trained in disciplinary programs with specific majors and departmental affiliations. This aspect was raised by many participants during the interviews. They stated that initial professional training of teachers requires them to specialize in at least two teaching subjects as explained in the statements of some of the participants:

"You know one thing, (-) hey, … teacher trainees again because of specialization (.) could you know (.) people are just bend to teaching the subject matter traditionally and they don't care about relating and indicating the relevancy of what they teach to development. So, I think that to some extent is (---) (…) and the fact that is perhaps related to it. They have received no orientation towards integration and even may be the training of the trainers perhaps have not been oriented to help them towards integration of sustainable development", (P16, 240).

"My teaching subject is Mathematics (.) but I was trained to teach mathematics and physics and at this level we specialize in only one and I am specializing now in mathematics. The issue now is perhaps, how are teachers prepared? If teachers are prepared to say that yes, we are teaching physic but in physics you can add human values, valuing others, respect for others and respect of environment and so on and so forth. If teachers are not given that training (.) and orientation, then people will end up being narrow minded. They will have a skewed view of ESD. They will say ESD is for environmentalists and it has nothing to do with me (.) and those environmental activists that is their work. Teachers of environment, that is, their work and not mine and (.) when the teachers, students and the parents are also focusing on examinations and grades and in ESD aspects are not examined. So, they will just focus on drilling and preparing learners to pass examinations", (P5, 88).

This indicates that the disinclination of educators to consider alternative knowledge embedded in various academic disciplines can be attributed to the practice of subject specialization deeply entrenched in teacher education institutions during teacher training, (Kakembo & Barymak, 2017: 85; Mamdani, 2009: 99; Nabayego, et al., 2015: 18; Ssentamu, 2014: 138; Ssozi, 2012: 8). Pre-service and in-service teachers are obliged as a matter of policy to specialize in at least two teaching subjects during their teacher training, (Arinaitwe, et al., 2019: 13; Jeschke, et al., 2021: 1; Nzarirwehi & Atuhumuze, 2019: 29; TISSA, 2013: 143). In the initial training stages, student teacher trainees are expected to be grounded in their teaching subjects, (Opiyo, 2022: 35). As a result of academic disciplinary training and orientations, teacher educators tend to explicitly teach their academic disciplines as if they are not interrelated, interconnected, and interdependent with other academic disciplines, (Kasozi,

2016: 229; Månsson & Mukanya, 2015: 60; Agbedahin, 2016: 139; Aguti, 2013: 24; Borg, et al., 2014: 1; Kizza & Tumwebaze, 2018: 33; Krause, 2014: 6; Leal Filho et al., 2017: 100; Lotz-Sisitka, et al., 2015: 139; Mamdani, 2009: 98; Ssozi, 2012: 8). One of the participant ably expressed how early specialization narrows the focus of educators to focus on their domain knowledge instead of integrating diverse aspects in their teaching and learning activities:

"Yes, the main challenge we have or which I would consider, is too early specialization. Even when you go to these PTTCs primary teachers' training colleges, the specialization is right from there. Those who are supposed to teach lower primary, upper primary. Now you can see already that even the subjects they are taking. You are starting too early, so now if I finish and for me, I have done lower primary, it means that I am only focusing there. So if there is need in upper, (.) I may not be very relevant because for me my mind is down here, (…) so you feel that I may not be really very good because us as teachers like in primary you should be able to teach all classes without subject specialization and may be if they are to specialize, it could be at a higher level, (.) that is when you have become like more of an expert but imagine you begin specializing at certificate level. I think that makes you think in a limited way. Some teacher educators think that if I am doing my subject, I am in my subject, I am not bothered about what is happening there", (P15, 217).

According to OECD (2009: 89) teachers' beliefs, practices and attitudes are important for understanding and improving educational processes such as teachers' strategies for coping with challenges in their daily professional life and to their general well-being. In this respect, some participants insinuated that initial training of teachers possibly creates in them an attitude of focusing on their domain knowledge and disdain other academic disciplines. According to the participants this is also exacerbated by the popular perception of people in society that people who have acquired formal education are not supposed to do certain things. This makes educators also to underlook some key aspects in life which are not in direct line with their area of specialization as narrated by one of the participants:

"So, looking where we came from in the past, kind of education remains theoretical (.) the perception that old people had if you are able to speak English that means you are educated (.) but education is more than that. So, education probably, what we have called education has not been yet designed, structured to begin with reality of everyday life. It is up there, it is in the abstract. In fact an educated person in such a society, you are educated if you have that mass of the abstract. If you speak in the abstract (.) then you are educated. So, we are detached from reality. Those who just go to school would shun their activities in the villages. They say we are educated (.) so we cannot do that kind of work. So, with that manner, you cannot cause positive values because you have to be part of development if development has to be sustained", (P11, 168).

In connection to teacher educators' puplic perception, many participants attributed subject content centred teaching and learning to apathy among some teacher educators. They reported that there exists a general unsubstantiated fear among teacher educators to divert from the

traditional teaching approaches, which they learnt during their training in teacher education institutions. They asserted that some teacher educators find it comfortable not to deviate from the way they were trained to teach. They prefer, therefore, to preserve the status quo and tradition. This is clearly manifested in the submissions of some of the participants:

"I think it is the training. It is a cycle. I was taught that way and I am teaching that way. So even this teacher is going to teach that way. It is a cycle. We fear change, we have a cycle of fearing change (.) fearing to divert. And then that example of oriented kind of teaching and if I am going to do this and that (.) and the other people are running ahead and then the exams. No practical, no project, so people say why bother with project. The student will get them when the need arises, hmm", (P3, 58).

"The biggest challenge we have is [that] most of teacher educators (…) are those trained in the old system in the 20th century and they are stuck into it and that generation gap. They are stuck into it and then they also bring these same things today to students (….) and teacher educators who are not ICT skilled. You know when you have ICT knowledge and skills, you have access to new knowledge (.) but because they don't have access to ICT, they are not interested due to attitude, due to rigidity. They cannot access new knowledge. Then for us as a university, the university cannot support or give us infrastructural support as ICT is concerned", (P4, 76).

In the 20th century teaching was mainly conducted using the traditional methods of teaching such as chalk, talk and paper exercises, but in the 21st century, teachers have a possibility of using individualized active learning programs like ICT, multimedia and Networks as learning instruments, (Demirel, 2009: 1712; Erdem et al., 2019: 2). This implies that teachers who were trained during the 20th century when modern teaching aids were not easily accessible still find many challenges using, for instance, ICT facilities in teaching and learning activities as stated by P4. Kamba, et al., (2019: 253) conducted a study on lack of availability of science teaching facilities on students teaching and learning science. They discovered that some teachers indeed could not use instructional materials to bring about effective learning in the classroom because they lacked the required knowledge on how to use appropriately the instructional materials. They reported that as a result of low knowledge by some of the teachers, they preferred not to make use of these facilities because they feared to damage them. Closely related to lack of required knowledge to use ICT resources among educators is the lack of innovation in teaching and learning practices. The participants argued that during teaching and learning activities most of the teachers do not seek to discover alternative information but stick to what is provided in the textbooks of their teaching subjects. Consequently, they fail to consider multiple aspects of ESD embedded in other disciplines because most of the books do not offer integrated approaches to teaching and learning. In this case, tunnel vision teaching and learning is perpetuated. This is exemplified in the statement of one of the participants:

"Okay, you know, our problem today is that people don't think outside the box. You know, innovation is still an issue, (-) many times we restrict ourselves to what the textbook says (.) and we cannot think of doing other things which can add value to what we know (.) what the textbook tells. For instance, I thought that if you go to the laboratory, you should now go to practice but because of one incompetent teacher, a teacher is not very innovative … I asked a student who was teaching about matter. He was just explaining and said sir, (.) I don't have (---), for example, now I don't have something to form gas and I said, no, supposing you burn a paper and cover it in a thing like this, (.) won't smoke be there and show learners that this is gas? So, lack of innovation from the teacher keeps him in theory but also lack of equipment because as I told you earlier, education is under-resourced", (P7, 115).

The prioritization of selected textbooks and sticking to their content reduce teacher educators' capabilities to engage with diverse knowledge resources and adapt it to students' needs, (Ahmadi & Derakhshan, 2016: 262; Scott & Husain, 2021: 237). Sometimes even the books which are available are outdated, even the most authoritative textbook quickly becomes out of date because the understanding of the natural world is always being refined, (Segarra and Tanner (2015: 90; Fan, et al., 2021: 1328; Lyimo, et al., 2017: 103; Mangwaya, et al., 2012: 249; Makori & Onderi, 2014: 77). This was also raised by some of the participants that most of the textbooks used by educators to set assessment tasks are outdated. They contain information which cannot address the current learners' needs. The participants also stated that textbooks were not sufficient. Some participants attributed the shortage of textbooks to teacher educators' inability to write their own textbooks which address the learners' needs and the demands of the contemporary society. This is illuminated by the communication of one of the participants:

"You know, the preparation of resource materials like writing books is still a big problem in the country. So, the writing, (.) you know in biology the main book is Taylor and Stout, McKean and they are from Europe. There is another one in A level called Roberts and (.) I think that one is American. These are books curriculum has seen to be the most relevant in teaching biology, (.) why because there are no alternatives by our own biologists to use as reference. So, the skill to write is very important, to write what is relevant. You find very few teachers who have written textbooks and if they are there (…) maybe there is only one Kaddu for biology. For example, he is now retired professor. He has written a book for teaching biology. He is a local person and there would be more if we get people who can do that and write. We would have Kaddu, Okello and so many others, so the skill to write (---)", (P14, 204).

Scott and Husain (2021: 233) stated that a state-mandated textbook-driven curriculum that prioritizes test-taking strategies as it has already been highlighted by the participants only escalate the previously mentioned educational deficiencies. In some cases, these textbooks lack multidimensional presentation of issues which address the complexities of ESD and learners' lived experiences. In this case, because the teacher educators do not have appropriate

tools or skills to adapt the teaching and learning activities to the current situations of the learners, classes devolve into simple rote-learning of textbook content, (Fan et al., 2021: 1313; Scott & Husain, 2021: 233). In examination oriented systems of education, there is also a tendency of narrowing down reading to only textbooks which provide questions for examination and after examination reading is especially terminated by students, (Oyewole, 2017: 88). Oyewole argued that a reading culture to be nurtured, reading must be part of all aspects of life. It requires reading widely beyond one's domain knowledge. Many participants reported however that there was a general lack of a reading culture among some teacher educators. This is testified by one of the participants:

"… traditionally, we find ourselves rooted in our subjects and we do not even read widely, general reading to get information about other areas of learning would help a lot (…) (---), what else [if] not for integration?", (P16, 240).

Poor reading culture affects both educators and learners not only because of the insufficient information learners can receive from their educators but also gives a bad example to the learners, (Khalid et al., 2021: 2; Otache, 2020: 25; Kamba, et al., 2019: 253). On the other hand, good reading culture among teacher educators could be a panacea to improved quality of teaching and research activities and acquisition of knowledge of various aspects which they could integrate into teaching and learning activities, (Adewale Akinola, 2021: 4; Alex-Nmecha & Horsfall, 2019: 1; Ahiauzu & Oladipupo, 2018: 159; Olasehinde, et al., 2015: 194). Closely linked to poor reading culture among teacher educators is the insufficient teaching and learning materials in teacher education institutions. Moreover, teaching and learning resources such as library, ICT and teaching structures play a major role of enabling teacher educators and learners to have a conducive learning environment where they can test, experience, and learn new things, (Adewale Akinola, 2021: 5; Ahiauzu & Oladipupo, 2018: 160; Danladi, et al., 2018; Olasehinde et al., 2015: 197; Omolara & Victoria, 2019: 687). The absence of adequate teaching and learning infrastructure affects therefore the teaching and learning process especially in academic disciplines which require a lot of experiments and practice, (Kamba, et al., 2019: 254). The availability of teaching and learning facilities for professional practice offers an enabling environment that provides more extensive and diverse information to both teacher educators and learners than when teaching and learning takes place theoretically in class alone, (Alex-Nmecha & Horsfall, 2019: 6; Kamba et al., 2019: 255; Khalid et al., 2021: 2; Mokoro, 2020: 148; Oyewole, 2017: 95). Without such infrastructure, teachers face a lot of difficulties when conducting activities which require experimentation, (Pareek, 2018: 75). As a matter of fact, academic disciplines which require

concrete experience cannot be meaningful to students without worthwhile practical experiences, (Burns, 2011: 1; Kamba et al., 2019: 256; Mokoro, 2020: 146; Pareek, 2018: 80). In this regard, participants expressed vehemently their disappointment due to insufficient teaching and learning infrastructure especially for practical activities with the learners. This teaching and learning environment perpetuate theoretical teaching and learning, a recipe for rote and abstract teaching practices as clearly pointed out in the submissions of some of the participants:

"I think resources in institutions are somehow failing us to expose learners to hold these issues (.) because you cannot in real time take your learners to places (.) where they are going to feel the impact", (P21, 299).

"So, okay (.) if I look at the facilities available so let us say, now (.) the instructors are already skilled (.), then the structures are not there for all the practical work because you are running a practical and (.) there are a hundred students how many are going to see the demonstration. In the head, you know what you want to do but materials are not available. So, that is why I said that (.) some of the challenges are structural and systemic factors and (.) even the government must consciously provide these institutions with the physical infrastructures and requirements. When you look at funding now in education, (…) education is exactly not well-funded and (.) capital development is limited. So, if you look around the entire country, how many universities for example have laboratories built by the state? You have to apply for a grant from African Development Bank or elsewhere and even there, (.) things are sluggish and bureaucratic", (P9, 143.

The aforementioned statements of the participants indicate that without such resources, teacher educators especially those who teach practical disciplines have no concrete alternatives but to continue to teach theoretically even aspects which require empirical experience with the learners. Facilities for practical activities are particularly sine qua non for scientific investigation, practical and intellectual interactions between teachers and the learners. Some participants also highlighted that some educators instead of facilitating learners to understand and interpret what they are learning for themselves, they just dictate notes to them. In the opinion of the participants, this method compromises learners' abilities to write what they consider to be important in teaching and learning engagements. It does not also give learners an opportunity to think on their own what they consider to be important and worthy writing. This is exemplified in the statement of one of the participants:

"May be now because I am now single (.) I try to see things differently (.) but even when you come to the school of education, you will still find professor reading notes for students to write. So, how are they developing the skill and the competence to critically think about their situations? … I think they cannot. I think I am so negative but that is the way I am seeing things", (P20, 292).

The dictation of notes by teachers in class is a traditional teacher-centred method which positions a teacher as the sole author of knowledge and renders learners passive receivers of

knowledge and spectators of the teaching and learning activities, (Agustiani & Yulia, 2020: 82; Benmostefa, 2018: 22; Asilo & Abadiano, 2022: 9086; Suwartono et al., 2022; 112). Gültekin and Aktay (2015: 21) observed that dictation method of teaching limits the study outcomes to what is contained in the scope of the dictated notes and teachers in this case attach more importance to notebook use than other sources of information. According to Buber this form of teacher-centred teaching affects the relationship between the teacher and the learner because it makes it difficult for an I–Thou relation to arise, (Ljungblad, 2021: 861). Consequently, the teacher and learner become trapped in an I–It relation where the teacher provides students with facts and information, where the teacher funnels information into students, but does not encourage their creative minds, (Biesta, 2012: 568). In this regard, Boudersa (2016: 1) suggested that teachers ought to receive adequate educational and professional training in order to possess adequate knowledge and teaching skills that could enable them to dedicate themselves to the teaching profession. The participants reported however that there are even some teacher educators who are recruited based on their good academic performance without prior and adequate training to teach in teacher education. They argued that teacher educators recruited without a background of teacher training might not have the appropriate and technical skills, strategies and practices to prepare teacher trainees. This is well explained in the testimony of one of the participants:

"There are people who have been recruited on the ticket that they have excelled in that area of specialization (.) but they don't have the strategies in terms of teaching. Their background is not teaching, but they are recruited (…) such people are put there and they need training to become better teachers, (.) alright better lecturers and as they normally say that we have two types of lecturers. We have those who are recruited as a result of their area of specialization and then teacher educators. Well, such people are recruited and should be trained (…) and become better people to do the work. For example, somebody who has not gone to class to teach (.) but he is now teaching. He does not have the skills of delivery. He doesn't have the skill of preparation. He doesn't have a skill of planning despite the fact that he has the content but the strategy is not there", (P11, 169).

This implies that teacher educators recruited based on their good academic performance need professional training as a mechanism to improve their teaching and learning practices because lack of training for teacher educators could lead to inappropriate teaching and learning practices, (Yariv, 2011: 88; Mupa & Chinooneka, 2015: 129; Assey & Babyegeya, 2022: 1). Yet, quality teaching is highly associated with training in the use of effective pedagogical techniques that engage learners in teaching and learning activities, (Assey & Babyegeya, 2022: 2; Biku et al., 2018: 894; Eroglu & Kaya, 2021: 1897). The quality of teacher trainers is therefore as important as an effective professional development program in order for pre/in-service training programs to be successful, (Eroglu & Kaya, 2021: 1912). In a related manner,

some participants contended that teacher educators always aspire to become experts and competent in their domain knowledge through professional development. Teachers' advancement in their respective fields makes them to some extent to be contented, complacent and focus just about their domain knowledge and disregard other fields. This can be depicted in the statements of some of the participants:

"In every area there must be people competent enough to deal with those areas and that is why specialization comes into effect (…) that is where you can best use the knowledge of that subject. I can use my subject of specialization to make money. I can tell you that. I can use it to explain how someone can be very rich and then teaches others. I can do that. It is because I am specialized. If I am not, I will not be able to do it", (P14, 205).

The aforementioned views of the participants not only indicate the benefits of specialization but also a self-glorifying attitude towards one's domain knowledge. This attitude can make teacher educators to look contemptuously at other academic disciplines. The causes of the phenomenon as expressed by the participants and underpinned by the existing literature portray the systemic, initial instruction, and habitual practices which influence teacher educators in teaching and learning activities. The following section explores the contextual conditions of the phenomenon.

4.10.2 Context

The contextual composition of the phenomenon "Tunnel Vision Teaching and Learning" as already mentioned emanates from the structural, tutelage and habitual practices of teacher educators in teaching and learning activities. These conditions are linked to the teaching and learning conditions and practices of teacher educators in teacher education institutions. According to participants, there are circumstantial conditions within teacher education institutions that compel them to focus on teaching the content of their domain knowledge. In the course of the interviews, for instance, many participants cited instances when their superintendents reprimanded and urged them to teach and follow what is stipulated in the teaching syllabi. This is clearly designated in the statement of one of the participants:

"I am a teacher (.) I teach in as much as the curriculum or syllabus that this university follows. Of course, it says what it says (.) but a teacher I think needs to look at the syllabus and interpret it in the context of need, and honestly (.) that is what I do and I have been at variance with most of my boss. They say, you are teaching outside the syllabus and (.) I have argued that I am employed not to teach the syllabus but interpret it, hmm. That is always my argument because things change. For example, before we were teaching [in] groups, where you bring learners together but now in the Covid era (.) may not allow that liberty again where children can come in numbers. Alright, for example, in communication skills (.) we have been teaching paper presentation. We train how to present a speech, interviews but little did we incorporate Zoom (…) but now you don't expect me to teach it because the syllabus says, meeting, minutes and I don't teach Zoom. We are expected to only provide that

which is assessed ((laughs)). That which is assessed is what we teach. When you go to lecture, (.) please provide what the syllabus says and that is all", (P1, 3).

One of the factors which the participants pointed out on why they are urged to follow the teaching syllabi is contest for academic excellence. As already specified that the education system in the country is still examination oriented, the superintendents and teacher educators strive ferociously to see that learners in their sphere efficiently excel in assessment activities. Some participants stated that when many learners fail the assessment tasks, it dents the status of the academic unit and people start wondering and inquiring why learners in that unit fail assessment tasks. This compels teacher educators to focus on what is examinable as elaborated by some of the participants:

"… if you are an educator and you want to integrate ESD in teaching, you have to go an extra mile of knowing how to manage time yourself because time management is a key issue of each and everything. Otherwise, you will find that you want to talk about things (---). Of course, sustainability is needed but you have to talk about things and now the time will get you. Remember at the end of the day, they will not ask you (.) how many tips you gave learners because you will have to weigh the learned knowledge(.) depending on the way they perform in their final exam. So, if we could remove these exams oriented studying and we introduce may be competence based, hmm. I don't know how we shall measure the competences but I think through practical skills. I think it is possible. Exam oriented and competence based are totally different (…) although in this current setting it is hard to change. In the outside world you will find that someone goes to S.1 or Junior when the person has almost over 99 things to learn but at the end someone comes up with one. That is specialization, which is not good, but a person will almost be having a dose on each and everything", (P13, 194).

"A teacher will tell you; (…) it is not my attitude but my boss and maybe you had even heard on radio ministers saying, the teachers, the headteacher whose schools do not perform will be demoted. So, everyone is looking at performance, who wants to be demoted? So, make sure that you pump the children to pass the exams, the other issues will come later. So, that is the problem", (P3, 62).

In the course of the interviews, the participants also said that teacher educators are supposed to meet certain criteria in order to advance in their career in teacher education institutions. In teacher education institutions, for instance, teacher educators are required to engage in research. Many participants pointed out that quite often, they are pressurized to publish their research and it must be strictly in their domain knowledge in order to be promoted. They asserted that even when they have articles published outside their specialized fields, such publications are not considered. They said that such pressure makes them stressed and frustrated because they cannot be promoted without publication. This is well explained in the submission of one of the participants:

"… we carry out research as professors and doctors but don't count. For me I applied for being a senior lecturer and they said, (.) you must have three publications and now (.) I wrote the three and they said even if you write how many, we will only recognize the three and I said then why should I write another, (…) then why should I go ahead and carry out research if they are not going to be counted. I did my PhD research and I came out with a model (.) but I don't think whether anybody has every looked at it and when I tried to publish it, they told me that you are teaching religious education and we are not going to allow those articles outside your area. You see all that knowledge, hmm. So, if you are going to write an article that is going to contribute to career or to professionalism, it has to be strictly in your area, yes, elsewhere there is diversity and they encourage departments to work together but here in this university no. So, they want me only to write about religious education, yes and anything outside it is not acceptable (.) and so that is how frustrated we are", (P20, 283).

The views of the aforementioned participant indicate that research-based publications have become a decisive criterion of academic survival and promotion in teacher education institutions, (Smith 2021: 49). The practice of publishing only in teachers domain knowledge impedes the successful exchange of knowledge, skills and resources across disciplinary boundaries and confines teacher educators within their domain knowledge, a great danger to ESD integration, (Gläser, et al., 2022: 106; Hoidn, 2018: 293; MacLeod, 2018: 698). It is not surprising therefore that many participants reported that there are many challenges related to transdisciplinary teaching in teacher education. They reported that teacher educators rarely practice interdisciplinary teaching because they seem to be engrossed in their domain knowledge. This is highlighted in the submissions of some of the participants:

"I am trying very much to have art, for example, these students studying art so that they can be able to teach arts and biology (.) but I have got a lot of resistance but the pictures which we draw if I have seen a bird, (.) I will need to be an artist to do that, that is a crow and I have to be an arts to draw it but I don't have art myself. So, (.) I have only to rely on my camera but even to take an actual photography of an organism, it is not easy, you need that (---), our colleagues in fine art department have said no arts, art has to be a double main. I said no, I want someone to study biology and arts but they refused," (P14, 205).

In order to solve such challenges, therefore, teachers of various academic disciplines have to embrace the principle of dialogue, quest for cooperation and coexistence such that the complexity of disciplines is demystified and the scope of their understanding of disciplines is expanded, (Kidron & Kali, 2015: 750; Evans, 2015: 72; Vanasupa et al., 2012: 172; Lenoir & Hasni, 2016: 2441). In this regard, Kubisch et al., (2021: 3) asserted that transdisciplinary teaching enables students and teachers to collaborate with scientists and partners in other fields, for example, politics, economy, ecology, and civil society within the community that the educational institution is located. This requires, however, teachers to be trained in transdisciplinary teaching because when neither students nor teachers are trained in transdisciplinary teaching and learning, it becomes a significant barrier to transdisciplinary

collaboration and ESD integration, (Singh, 2021: 171). Teacher educators ought to master the art of cooperation and teamwork, although, it requires also a lot of efforts to achieve it, (Wahyuningsih, 2018: 21). This could be in form of professional development of teacher educators by giving them an opportunity to participate in refresher courses. In this case, the participants reported however that they rarely have refresher courses which could enable them to upskill and reskill their professional knowledge and skills. They argued that most of them were trained many decades ago and since then a lot has changed both in the education system and society. They need, therefore, refresher courses to adapt and address the current teaching demands as elaborated in the submission of one of the participants:

"The university knows that most of us were trained a long time ago and do not have really 21st century skills (.) and new things have come and we need retooling as teacher educators. We need retooling but that is not there (…) now we are in the 21st century and we are teaching digital natives (.) and some of us are digital migrants and some of us are digital aliens and we are away from the digital world. You will be surprised that some of us in the faculty of education cannot manipulate computer use. We were trained in 20th century and so we still use the traditional methods and not know that we have crossed over to another century and more modern century, (…) where people talk of internet of things, 5Gs and some of us are still stuck in 3Gs and that is a very big challenge. We are in a liberal knowledge economy (.) where you really need knowledge and for you to teach without having knowledge, it becomes a challenge. You cannot teach and prepare that graduate for the world", (P4, 76).

Some of the 21st century skills which the participants talked about were critical thinking, problem solving, problem identification, communication proficiency, creativity, perseverance, collaboration, ICT skills, among others. These skills especially the application of ICT in teaching and learning activities were not common in the 20th century. Teacher educators who were trained during that time face, therefore, challenges using modern teaching and learning instruments. The acquisition of such skills requires additional training in teaching and learning approaches that could enable teacher educators to acquire such skills and approaches, (Anyanwu & Reuben, 2016: 63; Azmanm, et al., 2018: 3116; Kazu & Demiralp, 2016: 205; Mockler & Sachs, 2011: 158; Opiyo, 2022: 36). Another issue which the participants raised was resistance to change in teacher education institutions. They accentuated that resistance to change affects transformation of teacher education system including training and teaching practices as elucidated by one of the participants:

"Many people within the university itself are conservative, and they don't want to change. This I think that is what it is. … other factors coming from outside would be seen as interference from outside (.) especially when you want to do something. You need to do something realistic but they may say no and that can affect our teaching or unless we teachers begin to take actions (.) like say that cannot be like that (.) but it should be like this correct and that is how we can change", (P19, 264).

In this regard, Hodgins, et al. (2022: 1) also remarked that attempts to transform the structures and cultures of higher education institutions have had limited success. Resistance to change in higher education can be attributed to several factors such as the nature of faculty culture, a sense of territory, friction between functional divisions, resource allocation, traditions, leadership, communication, the power of unions and individual idiosyncrasies, (Saleem & Naveed, 2017: 63; Arieli, Sagiv & Roccas, 2020: 247; Caruth & Caruth, 2013: 12; Chandler, 2013: 243; Pannewick & Strohmaier, 2021: 176; Yılmaz & Kılıçoğlu, 2013: 14). All these contextual conditions present a significant barrier to the adoption of teaching and learning paradigms that are flexible, compatible, and responsive to teaching and learning circumstances, (Andrade, 2016: 85). In the context of this study, these contextual conditions greatly affect the integration of ESD in a relational teaching and learning process by considering multiple aspects. This is because integration of ESD as per the core category requires teacher educators and institutions to adjust and adapt to the approach suggested by the core category and also provide an enabling environment that enables them to consider the complexities and multiple aspects of ESD issues in teaching and learning activities. Besides the contextual conditions, there are also exogenous conditions which greatly affect the training, teaching and learning approaches of teacher educators in teacher education institutions. These intervening conditions of the phenomenon are addressed in the next section.

4.10.3 Intervening Conditions

The intervening conditions of the phenomenon "Tunnel Vision Teaching and Learning" originate from outside the precincts of teacher education institutions but influence either explicitly or implicitly the training, teaching and learning practices of teacher educators. The reactions of the participants portrayed a wide range of issues that influence their teaching and learning approaches. For instance, all participants highlighted that the entire education system of the country has not been fully emancipated from its colonial patrimony. The main purpose of the colonial system of education was to establish their control over the colonized, to produce not just loyal subjects or intelligent humans, but skilled workers who could serve the narrow and specialized labor needs of the colonizers, (Mart, 2011: 190; Matasci, Jerónimo, Dores, 2020: 147). Higher education equally aimed at training white-collar elites who would oversee semiskilled workers in the colony, (Ngohengo, 2021: 90). According to several scholars, the traits of the colonial education legacy exist up to date in the Uganda's education system, (Holmberg, 2016: 96; Kisitu & Ssebunya, 2017: 259; Muleke, Ezati & Tamale, 2017: 18). This could explain why many participants attributed the theoretical and examination

oriented system of education also in teacher education to colonial legacy. This is clearly reflected in the submission of one of the participants:

"The education system that we have inherited, it is the education system (.) which just trains people to only be proficient in one area. We inherited colonial education systems which aimed at creating jobseekers rather than jobmakers. So, the system of education that we have continuously followed is not an education that was aimed to develop Africa or develop Uganda in this case. This education was to help somebody to become a good servant of the colonialists and we have kept on that (…) and we think that the education system that China has used or England can also help Uganda to achieve the same thing. Yet we are aware that these countries have different challenges (.) so that the education system should be a system that is geared towards the challenges of that particular country. For example, even Uganda you would not need an education system for the whole country because each part of our country has different challenges. Karamoja has different from the ones in Kasese and the ones in Buganda also different from the ones in Acholi. So, education system is not a good one. It is not well thought thing and that becomes the biggest problem of integrating developmental issues into education (.) because you may integrate them, yes, but developmental issues for Karamoja are different from developmental issues in Bundibugyo and that has been one of our major problem. That is why you see in America. They began universities geared towards geographical locations. For example, (.) if you go to northern part of northern America, (.) there are more places which have estates and big farms. So, there people learn about those ones and when you come to New York is more about tourism and something like that, (.) for us here, (…) you find somebody doing tourism but where there is no tourist thing. So, the system of education is a challenge", (P7, 113).

Still in relation to the education system, the participants pointed out the aspect of the teaching curricula. They asserted that the teaching curriculum is not regularly reviewed and updated by the ministry of education and teacher education institutions. The participants reported that the current teaching curriculum is not an integrated curriculum which consolidates the various interdisciplinary aspects. This is well expounded in the remarks of one of the participants:

"Yes, right now, we have been basing our education on the old teaching curriculum [and] syllabus and this was not integrated. They designed it actually as if subjects were individuals in one line, one line, one line. It is a motivation (.) if they are integrated. So, lack of regular review and update of the teaching and (.) learning materials in the curriculum hampers integration of ESD issues in the curriculum. Our education and curriculum problem is teaching like in the old system where each subject is on its own (.) and there is no relationship with others. So, we want to bring them together, as I said earlier. One would be teaching history and should know the subject and use may be geography examples because that would be integrated teaching. That is a good thing which would improve our teaching", (P19, 263).

This presupposes that the review of the curriculum would improve the teaching and learning practices and experiences of both the learners and teacher educators, (Dyjur & Kalu, 2016: 8; Emeh, et al., 2011: 33; Green, 2010: 28; Stark, 2009: xiv). The learners get an opportunity to acquire the desired knowledge, skills and abilities, when the curriculum integrates aspects of

diverse disciplines, (Dyjur & Kalu, 2016: 5; Stark, 2009: 27). Besides the education system, the participants also highlighted the element of stakeholders' attitudes. They asserted that some stakeholders like parents are more interested in seeing that their children excel academically even when they lack the required skills for life. They reported that such soft skills quite often are neglected because they are rarely examined. Yet, some officials in the education ministry and examination boards are ambivalent to the idea of changing the teaching materials and learning practices. This is well elaborated in the declarations of some of the participants:

"Even the parents want to see their children like these three year old's, they tell you that they should not write. They should not do work but the parents think that their children should be learning how to write. Teach them in the local language and they say no, where are you going to use the local language (.) teach my child English. I have already taught them local language. So, society also, the way we look at education is narrow. It is still very narrow. We think that you do the examinations and you pass the exams highly and you get to the next level, pass highly and that is all. So, we are not looking at the majority who are falling off and yet they might be the ones (.) who are doing education now, who are doing the unsustainable development. They are the ones who are destroying the forests by burning charcoal", (P3, 62).

"Yes, we have a person in UNEB there, whom I have been told that he is an examiner in biology. He is the one who decides. He is a chief examiner and he has failed all students and you might think that in Uganda there is no biology teacher (.) but because of his own thinking (.) he causes people to think that biology should be something else and if you bring a graph of A level to be interpreted. A graph is interdisciplinary statistical aspect that has been brought to allow a learner to assess something but he brings as a main question. You know and as having nothing to do with an organism and then say, hey, students must do it. That is not biology. So, everybody gets confused and there are so many other areas that we can assess that kind of thing which is not the subject itself. Or you bring it as a subsidiary (.) and not as a main question and he is there (…) year in and year out ((laugh)), yes, he is there. He is the one who decides and everybody believes him (.) but he is killing the country", (P14, 203).

This indicates that the perception of parents, educational institutions' superintendents and examination boards can determine and exert a lot of influence on the performance of teacher educators. In this case, educators become susceptible to focus and teach what is considered by other stakeholders to be important, (Cheng, 2011: 12; Elmurabet, 2015: 70; Klein, 2016: 36; Lattuca & Stark, 2009: 196). In addition to the attitudes of some stakeholders, government educational policies and priorities can affect and prevent the integration of ESD in teaching and learning activities, (Conrads, et al., 2017: 43; Rosalinda & Silva, 2016: 150; Proston, 2017: 40; UNESCO, 2019b: 106). Some participants stated for instance that long before teacher trainees specialize in teacher education institutions, the general policies and practices of the education system are geared toward specialization. They asserted that specialization

starts right from senior secondary schools and by the time students join teacher education institutions, they have already specialized as reflected in the statement of one of the participants:

"Okay, other factors could be there because we can look at things like the educational background (.) because some people might have been taken through that right from primary and with our education system, the policy tells us that we should go back to the issues of specialization. Okay, somebody starts her general education and moves to low secondary with general education but when she comes to A level specialization begins, (hmm), alright and yet that is where more blended knowledge should be given to the learners in order to have more ideas. I think policies are one of those issues, yes, educational policies are one of them. For example, the bias the government has of only thinking that science subjects are the ones that will change the country (.) that will lead to SD now that is why we are seeing most students offering sciences. They are specializing in sciences. … you will find that there are only studying sciences but in reality, they don't have the science in their minds (.) but for sure we are training graduates who are jobseekers rather than job-creators", (P11, 168).

The aforementioned views of the participant show that such policies introduce students to only focus on subjects of their specialization, (Harvie, 2022: 2; Jones, 2009: 78; Lawson, 2015: 11; McGregor, 2022: 11). In this regard McGregor (2022: 1) admonished that teacher education programs should shift from preparing teachers who are consumers and perpetuators of grand narrative knowledge to teachers who are creators and knowers of transdisciplinary knowledge and perpetuators of a transdisciplinary narrative. Whereas OECD (2018: 30) observed that policies that affect teachers and teaching are not only critical for delivering better results but also lowering the costs of education. In regard to the contextual and intervening conditions of the phenomenon, there are some actions and interactional strategies expressed by the participants which address the phenomenon. These strategies are scrutinized in the following section.

4.10.4 Actions and interactional strategies

In the course of the interviews, the participants expressed seemingly perennial practices which teacher educators executed in relation to the phenomenon. The participants pointed out issues such as examination oriented, complacency, abstract, disintegrated teaching and learning practices. For instance, the participants revealed that many teacher educators use disintegrated approach in teaching and learning activities. They asserted that many teacher educators teach their academic disciplines in isolation of other academic disciplines. This practice disintegrates the information given to the learners because they do not incorporate it with other academic disciplines. This becomes clearer in the statements of some of the participants:

"We teach in isolation, ((laughs)). We have issues with integration … the issue goes back to who is teaching, (.) was I taught in an integrated way or I was taught subjects in isolation? People teach their strand, their strand, their strand, (…) I don't know. So, you bring old people who have learnt these things in isolation and you want them to integrate. You tell them integrate but somehow you don't prepare them on how they are going to do [the] integration. So, they continue teaching them in isolation", (P3, 61).

"Yes, that takes us back to issues of (.) what is called (.) when you teach and specialize, (.) we give knowledge which is fragmented, which may not have any relevancy in terms of the most recent needed knowledge. So, (.) if it is fragmented, it becomes inadequate for the learners to get more knowledge because in order to make sure that learners learn well all the skills should be integrated. I may be called a specialist with little or limited knowledge. So, it affects my area of work but somebody who has got all this integrated or has gone through integrated approach will be able to sustain him/herself very well, yes (.) because the skills, the knowledge he/she will have acquired will be greater than the one I have and that is why I say the fragmentation gives very limited ideas to a person who is supposed to get the knowledge, yes", (P11, 167).

According to Al Musawi et al. (2022: 7) disintegrated teaching splits a lot of coherent patterns which exist between academic disciplines. Whereas Suwartono et al. (2022: 112) postulated that when teachers use the disintegrated approach to teaching, learners are initiated and might be encouraged to use the same approach later in their own teaching and learning activities. Byrne (2002: 56) suggested that in order to accommodate the demands of the integrated approach to teaching and learning, teacher education programs should be designed to include cross-curricular themes and issues, and the teaching and learning approaches should be flexible and interactive. In this regard, some participants submitted that teaching based on semester system which exists in teacher education institutions does not also facilitate continuation and integration of knowledge of academic disciplines from one semester to another. They narrated that at the end of every semesters learners are assessed according to semester coverage. They reported that in this case, many teacher educators do not connect and integrate what students learnt in the previous semester with the content of the academic disciplines taught in the next semester. According to them, this approach disconnects the network that exists among various academic disciplines which in turn perpetuates tunnel vision teaching as elaborated by one of the participants:

"We have narrowed our teaching actually. We have narrowed it so much and for me I complain about the semester system (.) because with the annual system (.) we used to read and keep practicing and now with the semester for 14 weeks of teaching which maybe usually end up being 10 week because of so many other issues and so much cramming into those so many course units in those 10 weeks. So, one knows that once I am done with these 10 weeks. I have done the lectures. I have done the coursework. I have done the exams and that is gone (.) and most of the work doesn't reoccur. We never build on by the time you are in third year, (.) you don't really build on first semester's work or even second semester. You don't build. Our courses are not all that related (.) you don't build on last semester. So, someone can throw away all that work. People are more focused on

exams. I think that we need a system of evaluation that encompasses both the ability to recall and the ability actually to do something. We do have that but not much attention is paid, so we have practical like I mentioned, most of the science subjects but someone will do it and there is a limited community and there is limited role-playing. Even on the actual field itself, there is that limited part of the practice", (P3, 55).

The views of the participant P3 are consistent with the findings of several studies such as Awan and Munnawar (2019: 827) who investigated the problems of semester system in public sector universities. They established that semester system restricted teachers and students to their specific contents. They also recognized that co-curricular activities were mostly neglected, rote learning was encouraged and frequent examinations created anxiety among students. Whereas Neog (2020: 1574) instigated the effectiveness of semester system at undergraduate degree level and found out that semester system had increased the workload for the students as the evaluation process was conducted twice a year. The students became examination oriented in a semester system; they could not study thoroughly the content; the students did not get enough time for participating in co-curricular activities due to lots of academic works in a semester system. On the other hand, Singh and Kumar (2016: 91) conducted a study on the challenges in implementation of semester system in globalized world and found out that in semester system, examinations had become part and parcel of the daily routine and the system produced a lot of stress and strain among the students and teachers. The hectic examination activities were simply geared towards passing the examination and nothing else. On the part of Patgiri (2019: 794) studied the relevance of semester system in higher education and discovered that semester system blocks the long term memory because the students developed a tendency of forgetting and not carrying the knowledge gained in the former semester. The semester system also limited the work of teachers due to work overload. Lastly, Akhtar and Hashmi (2021: 564) explored the problems faced by university students regarding semester system and found out that teaching in semester system was delivered quickly and students were unable to learn everything. They just recalled and focused on the items that would help them get good grades. Whilst some participants argued that departmentalization and compartmentalization of academic disciplines give teacher educators latitude to focus merely on their domain knowledge. They reported that there are even academic disciplines which are split into several sub-divisions which might make teacher educators to concentrate just on their particular minute specialty. This is epitomized in the submission of one of the participants:

"Yes, as a department (.) usually it is very difficult (.) at this level because we are at a level again where we specialize so much. You find that even within agriculture (.) as one subject but even within crop science alone, you find this one does pathology, this one doesn't, this one does that, this one does (---) so we are again split so

much so that splitting in academia especially in higher education institutions, it tends to pull people away", (P12, 185).

Warkentien (2022: 2) agreed that compartmentalization of knowledge is artificially constructed and can impede teachers' and students' holistic understanding of the world. In the course of the interviews, many participants also reported that quite often teacher educators do not use teaching and learning aids which could make learners connect and relate what they learn theoretically with reality in and outside the learning environment. Consequently, educators teach theoretically and learners end up grasping abstract concepts which they cannot easily relate to and apply in their daily life. This is well explained in the pronouncement of one of the participants:

"To me any good teacher in any form must use tools. I call them tools or teaching learning aids that will first of all (.) attract learners, sustain their interests and motivate them to come up and participate in any form. Instruction materials are very many, more especially in practical subjects. We cannot do without instruction materials. Generally, I would say that we cannot do without them in order to bring this learner home to understand exactly the situation. You have exposed such a learner to the use of different tools (.) alright such that they will be able to have hand-on, alright. There are many things that really need practice and one another. Unfortunate in some institutions, it is not there, when I came here in some department I started to teach and then when it came to time of school practice. Somebody, a lecturer who had not gone through teacher education (.) they were saying that some subjects do not really need teaching and learning aids and it was not until we brought out the benefits of those teaching learning aids that is when some of them started realizing them. There was something they were missing. So, in that case there are so many that we cannot do without, alright, okay, because this is what is going to expose this learner to real life situation (.) that will engage this learner in using the skills that they have acquired. If a student is being taught theoretically, what do you expect of that student. So, you realize that the tools help the learners alright to learn better and that is a way of sustaining a learner's skills, creativity, innovativeness and that is how they can even develop to become much better teacher or let me say better citizens because he is the person who has the skills. Unfortunately, some of our colleagues do not want to use them. So, that is it as far as I am concerned, I cherish the use of teaching and learning aids very much. It is important, yes", (P11, 171).

The findings of several scholars concur with the views of the participant. For instance, Kija and Msangya (2019: 65) conducted a study on the role of teaching and learning aids in learning science subjects. They found out that the use of teaching and learning aids/models had high influence on students' performance. Teaching and learning aids helped learners by arousing their interests, motivation to learn, create attention, improve motor performance and improve retention of memory. The findings revealed furthermore that the use of teaching and learning aids by teachers in teaching science subjects enabled them to teach systematically, explain difficult concepts clearly and saved time when teaching overcrowded classes. On the

other hand, Devi (2022: 41) carried out a study on the use of teaching aids with special reference to blackboard in classroom. The study established that teaching and learning became interesting and successful when teaching aids were used. The students showed more interest in learning when the black board was used. All students who participated in the study agreed that the use of the black board was very essential in clarifying their doubts, made the subject interesting, learning effective and drew their attention to important points. Whereas Islomovna and Sharafovna (2021: 93) studied the importance of visual aids in learning and teaching. They discovered that using visuals aids as a teaching method stimulated thinking and improved learning environment. They established that effective use of visual aids substituted monotonous teaching and learning environments. The students developed and increased personal understanding of the areas of teaching and learning. The students also found visual aids sessions useful and relevant when they had some direct relation to the course content. It can be postulated therefore that to some extent teacher educators could overcome content abstract teaching by using teaching and learning materials to aid the teaching and learning activities. Closely related to disregard of using teaching and learning aids is educators' complacency. In this respect, some participants reported that some teacher educators monotonously use the same teaching and learning approaches and materials. This practice is typical of tunnel vision teaching and learning through which educators frame and compress teaching and learning activities as illuminated by the one of the participants:

"You know the idea of yellow notes, (.) have you heard about it? A teacher prepares notes, twenty years ago (.) and each year he is bringing out the same notes and some students have already got the notes and so they even know the next sentence (.) they are going to read, ((laughs)). We still have lecturers here who are still working like that, for me I have pictures. My notes are pictures and I keep on adding, adding, adding and students make their own notes. Such teachers, when you call upon them to go and teach, (…) they are all the time ready, they are ready, but they have not prepared well. So, teacher preparation is very important", (P14, 211).

This implies that the students learn the same things for decades. This quashes their motivation to follow and participate in the learning activities. Husna et al. (2019: 1) asserted that this practice affects the teachers' and students' stimulation to be creative and have good learning outcomes. The monotonous use of the same teaching and learning approaches and materials generates also boredom and perceived pointlessness of the teaching and learning activity, (Derakhshan et al., 2021: 1; Husna et al., 2019: 2; Indrayati, 2018: 48; Putra, 2021: 35; Radeljić et al., 2020: 145; Xie, 2021: 3). The action and interaction strategies of the phenomenon portray the various mechanisms through which constricted teaching and learning practices are perpetuated by teacher educators. The strategies adopted by teacher educators in

relation to the phenomenon have some implications. These consequences are presented in the following section.

4.10.5 Consequences

The action and interactional strategies proposed by the participants in connection with the phenomenon generate both probable and real consequences. In the deliberations of the participants some actual and potential outcomes were expressed. Some participants articulated for example that narrowing down to a specific area of study could result into a linear and unidimensional delivery of the teaching and learning activities. They argued that through specialization, teacher educators might invest all their time, energy and efforts in mastering and teaching their specialized academic fields which could constrict them from having a broader view of their teaching and learning activities. This is illuminated by the testimony of some of the participants:

"Yes, narrowing down to a particular area or discipline leads to a shallow mind and thinking. In short, it negatively affects, (.) why? (.) Because when somebody specializes, they have invested all that they have and what they are in one area, (.) such that at a certain time, they and their area are inseparable. They are inextricably interwoven so much that when you see me (.) you see in me the subject I teach. So, in other words, (.) they become what they do and what they do becomes them ((laughs)). So, you remember (.) when we said, flexibility and versatility (…) those two competences are affected because of that threshold and that is the mindset we have been nurtured in. We have been nurtured that we specialize. In fact, (.) even in this course we call English language and literature we have what we call majoring and minoring, so at a certain point our learners will major in English and at a certain point, they will become minors in literature (.) or majors in literature and minors in English", (P1, 8).

"Yes, that is true. You realize that specialization narrows your knowledge, narrows your skills to that subject area (.) and as a result it also limits your skills and knowledge you give to the learners in one particular area. A historian will not know how to handle issues of climate change. A historian will not know how to handle gender issues. A scientist will not know how to handle gender issues, (.) while from religious studies will handle that and somebody from development studies will handle that, so it narrows one's knowledge of what happens around in the community, nationally and even in the world, (hmm), because you are focusing so much on your area of specialization", (P4, 74).

This reveals that narrowing down to a particular field of inquiry might help teachers to become experts in that field of study, however, they will have limited knowledge of other branches of knowledge, (McGregor, 2022: 7; Mitchell & Stones, 2022: 6; Tovar-Gálvez, 2022: 5; van Dijk et al., 2022: 10). Horn et al. (2022: 515) also postulated that a major challenge for interdisciplinary teamwork on complex sustainability issues is the often-conflicting disciplinary perspectives and underlying values and assumptions among

collaborators. In this case, some participants also confirmed that focusing on one's specialized academic field might influence teacher educators to get biased towards other disciplines outside their specialized sphere. This is exemplified in the submission of one of the participants:

"I go to school. They want me to teach at least two subjects (.) but my major subject will be history and then (.) my second subject is CRE but I would rather contribute 50% so that you don't get biased on one side as it is today. So, I think the teaching profession should look at it that way. If you are doing science, you are doing basics but you have also done something on chemistry or you have done something on biology (.) and you should be going in details of the subject but if you don't go into others too, you may get biased", (P19, 263).

The common focus on disciplinary knowledge is a challenge to ESD integration due to the biases that teacher educations might have and make them fail to appreciate the contributions of other academic disciplines in teaching and learning activities, (Bernstein, 2014: 241; Horn et al., 2022: 528; Lawrence et al., 2022; 58; Rogga & Zscheischler, 2021: 140). As a remedy, McGregor (2022: 7) suggested that educators ought to know that disciplines cannot address complex issues in isolation because all disciplines have something to contribute, so learning them is worthwhile. According to the participants, the examination oriented education system and subject content abstract teaching and learning practices which encourage rote teaching and learning have dare consequences. For example, the participants stated that it promotes and encourages surface learning such that learners memorize the studied materials in order to regurgitate it during examination time but teaching and learning remains shallow and narrow not only in coverage but also in outcomes. This is well expressed in the submission of some of the participants:

"You know, surface learning is basically talked about when low order questions are asked. I don't know, if you did something on Blooms taxonomy, low level learning, (….) when you just consider memorization of facts, you are now at the low level bit of knowledge (.) but if you go deeper and provoke the aspect of may be comprehension, application, analysis, synthesis, then you would now call for deeper learning (.) which basically help in creating and developing critical thinking abilities. But memorization of facts for the sake of exams promotes surface learning", (P8, 128).

"You know the category of our learner, if you are teaching something that doesn't count for the final grade, someone will not take it seriously. They will say after all that one is wasting our time", (P13, 196).

On one hand, this may presuppose that teachers place a lot of emphasis on the importance of students passing examinations without deep learning, whereas on the other hand, students concentrate on surface learning by remembering the subject matter taught in classrooms with the aim of replicating it in examinations, (Chand, 2022: 10012). In this case, students

memorize facts as a substitute for understanding and finding practical application to life and society, (Howie & Bagnall, 2013: 2; Desierto et al., 2018: 2; Dolmans et al., 2016: 3; Nieminen et al., 2021: 1306). This practice metamorphoses learners into passive recipients of knowledge rather than active participants in the teaching and learning processes, (Chand, 2022: 10004). In this regard, some participants stated that memorization of facts for the sake of passing examination compromises the learners ability to put in practice what is learnt in class. This practice reduces the education process to just passing exams. This is epitomized by the statements of some of the participants:

"You find that instead of someone teaching a topic, someone teaches from the beginning to the end, they look for question along that line, ((laughs)). So, some are used to that style of teaching, questions and answers approach. Actually, we experience it. In a way, I was saying that students are also used to it. They ask for pamphlets. They say past papers, do you have any past paper (.) and I ask them, past papers for what? We are just beginning which means that as you teach, someone already has their compilation of past papers, so they instead of paying attention, they are now asking (.) which question is related to what (.) because there are people who teach that way. We were commenting the other day that students leave notes outside their lecture room after the exams, meaning that they don't need those notes anymore. But is it true that they don't need those notes? Instead, they think it is for passing exams. Once the exams are done, I can get rid of the notes, which is very bad, yes. There is that mentality. People think of passing exams and one colleague had commented that supposing before the graduation tent, we would put a desk that before you go in for graduation, can you answer these questions? Will these people we are saying are graduating with first class degree still answer to first class degree level. So, there is that problem of people thinking of passing exams. So, as you teach them, they will still ask you (.) will this come in the exams, will this appear in the exams, some examples, some questions. So, that thinking of passing exams is one of the things that is killing our creativity and our thinking. Now even when you talk of ESD issues, someone would be asking will it help me to pass, will it help me to get first grade, yes (…) they look at it and they want to sieve out those elements which will make them stars. Will it help me get a first-class? So, there is that problem because in a way we have put those high stakes of the exams and I think even the way we model our exams, we don't want to divert from what we have taught. So, it is easy for someone to know that the exam will be along this line. So, the teachers are not thinking and the students are also not thinking because we have a small target of just passing exams", (P3, 54).

In this regard, Siagian (2022: 55) conducted a study on the impact of cramming on students. The study established that cramming academic materials for the sake of examination has a profound impact on the mental organization of the learners. For instance, it essentially prohibits the formation of long-term memory of the material in the learners. Consequently, cramming might make learners fail to perform even simple practical tasks, (Hoque 2018: 3). It is for this reason that Siagian (2022: 53) regarded cramming as not learning. In this respect, the participants remarked that it might even frustrate the integration of ESD in teaching and learning activities due to strong emphasis on academic excellence. According to the

participants teaching and learning based on single disciplinary knowledge makes it even worse because all disciplines have something to contribute to sustainable development as reiterated by McGregor in the study on transdisciplinary teacher education, (McGregor, 2022: 7). This becomes clearer in the submission of some of the participants:

"So, those who have gone to school may even be worse. I think the education we teach doesn't bring out these issues very well. They might be educated (.) [they] have [passed] exams but they may not put it in practice. And it goes with responsibility which indeed if we were educated, we would transform our homes. A community comes from a home, (…) if my house stops littering and the neighbor's house stops littering (.) then we shall have a clean community", (P21, 298).

"You see, if you are going to start locating yourself only in your discipline, then it becomes difficult to integrate sustainable development issues. In fact, if you are to start applying the knowledge (.) then definitely you will mention the culture, you will mention economics, you will mention the environment, everything will be there. It is only when we detach ourselves due to specialization (.) our knowledge during teaching, when we detach it from application then we are closed. So, it is important that the subject fits into the day to day activities of the society. Looking at agriculture, for example, you will find that the teaching of agriculture up to now in schools is still largely theoretical and very little practical being done (…) and that means that even that learner you are producing will not come out to be an effective farmer, so because we have a situation where, if you, for example, you trained this guy well and equipped him with knowledge, skills and the right attitude (.) then the guy comes out motivated and ready to go into farming to engage all those who practices [agriculture]", (P12, 175).

In this case, Jamian et al. (2020: 61) stated that the role of a teacher in the 21st century has been diversified. They claimed that the role of a teacher in the 21st century ranges from teaching to extra-curricular activities and non-academic matters. In this regard, being multitasking is sine qua non for teacher educators whose roles are diverse especially when interacting with learners from multicultural contexts, (An et al., 2017: 1460; Gonzáles-Gutierrez et al., 2022: 573; Jamian et al., 2020; 62; Kirschner & De Bruyckere, 2017: 140). As a result, the participant postulated that teacher education graduates would get frustrated when they fail to adhere to the multifaceted demands at their workplace. This is well elaborated by one of the participants:

"So, you may need self-reliant products but of course due to specialization, that one, a person will only concentrate on one thing and if that thing you have concentrated on no longer works, then you end up having failures in life. So, instead of doing what will earn a living, when this one is not working, you go to another, you diversify but now when you specialize, surely sustainability will be affected. It will be affected because (.) once you don't do this and you cannot manage to do the other, then sustainability will not be there. So, to me I don't think that specialization is really good. Much as you cannot be everywhere all the time (.) but we would look for a way of training the whole person (…) if it comes to engineering, someone is there, if it comes to mechanics, someone is there and if it comes the way we have talked about poverty eradication, someone is there, we come to

climate change, someone is there who can be there to offer some guidance. So, specialization surely would hinder development and sustainability", (P13, 191).

Similar to the findings of several scholars (e.g., Allen et al., 2016: 38; Eton et al., 2018: 3) on examination oriented teaching and learning, the participants also remarked that it could cause a mismatch between the knowledge and skills obtained in education institutions and the required practical knowledge and skills at places of work. They argued that there is always unemployability of the graduates, when the skills of the graduate are not in tandem with the available jobs in the labor market. This is well narrated in the statement of one of the participants:

"If you cannot address a problem in the community, if you cannot even identify problems (.) then you are just like any other person. There is no difference between you and other people who have not gone to school. Yes, we need education to be practical. Up to this time, for some, learning is being in class but education remains there (.) and we cannot use it anywhere and that is why (.) we find many of our graduates just walking round. Why? (.) Because they don't have practical skills to apply in order to get what to do. Then with education, you can start anything that can generate money and money generates money and then you are able to live and that is why (.) I think education should be integrated into development. When you talk of development, we look at those aspects of human life and anything that surrounds human life (…) development of course should be positive but before development becomes positive, it should be generated or achieved through education", (P261).

In this regard, Bagonza et al. (2021: 67) suggested that universities and teacher educators need to focus also on those factors which enhance employability of the graduates in the labor market such as teaching both hard and soft skills to students. The participants remarked furthermore that lack of practical skills does not only lead to unemployment but also failure of the graduates to be practical in life. In this case, the available jobs might even not be enough for the graduates as claimed by Kiranda, et al., (2017: 8) that graduate unemployment could be attributed to limited labor demand growth in the country. Nevertheless, the graduates might also fail to engage actively in sustainability activities. This is expounded in the declaration of one of the participants:

"You see, now we have our own traditional education system, where you pump students with a lot of content and (.) they reproduce the content and pass the exams and that is the end of the story. In fact, I think of it, if you ask a student even one week after the exams, they have no idea of what they learnt. For me what I see, a student can graduate, get a very good degree and actually they are smart (.) but they are unable to translate it to the community that information on the lower level. If you sent them for example in a local council to solve a challenge, they are unable to (---), (.) but if you came to class and ask for example a question that such as a pollution challenge, management of waste, they can write a very good proposal but if you brought that same

student and say now in this town, what should we do, then they are stuck. Yet, you find someone with less qualification trying to address it", (P9, 136).

In this regard, Muhamad (2012: 884) suggested that graduates should have a variety of skills, personal and intellectual qualities, rather than relying on specialist subject knowledge. Those various skills are significant determinant factors for the future career success of the learners, Alam et al. (2022: 1). They also postulated that university graduates are well-aware of the skill development requirements for their future employability, however, they face many obstacles in acquiring these necessary skill development opportunities. The provision of opportunities for the development of graduate skills will, therefore, increase their capabilities for self-regulation and development appropriate skills, (Mather et al., 2011: 195; Suleman, 2016: 173). These skills represent graduate work readiness, (Muhamad, 2012: 882). In short, the phenomenon "Tunnel Vision Teaching and Learning" and its various dimensions exhibit the barriers to integration of ESD in teacher education due to teacher educators' training, teaching and learning practices. It should also be noted that the phenomenon and its various dimensions are a counterbalance to the other phenomena developed in this study. It is, therefore, very important for teacher educators to observe careful, be always aware, and conscious that their teaching and learning activities are not reduced to tunnel vision teaching and learning. In this regard, this study postulates that the barriers caused by the phenomenon "Tunnel Vision Teaching and Learning" and its dimensions towards the integration of ESD in teaching and learning activities in teacher education can be overcome by teacher educators. Teacher educators overcome these barriers by possessing the appropriate teachers' attribute (4.6) and having enabling environment (4.8). Consequently, this would enable teacher educators to integrate ESD in relation teaching and learning process by considering multiple aspects as suggested by the core category (4.1) and (4.3) respectively. It should be noted that most of the time many participants talked about the incompetence of their colleagues and the education system in the country rather than their individual inadequacies. This might be interpreted as a smart way of putting a better light on themselves, in order maybe, to find people to blame for not being able to get ESD fully integrated in teacher education. Nevertheless, there are also many participants who accepted their own inadequacies and expressed their readiness to overcome such individual shortcomings and integrate ESD in teaching and learning activities. It should be noted that the issues raised by the participants refer in particular to teacher education but they can also be associated to what takes place in the entire education system in the country. Issues such as examination oriented teaching, even though it might happen in teacher education institutions, it is predominantly in pre-tertiary

education levels. This can, however, be attributed to the participants' general view and assessment of education as a system, such that what affects the lower level of education system is most likely to affect other levels of education and vice versa (cf. participants 6, 7, and 8). The next chapter presents the conclusion, recommendation and the way forward of this study.

Chapter5 Conclusion, Contributions, Recommendations, and Way forward

The main purpose of this study was to investigate and explore ways in which education for sustainable development could be integrated into teacher education in Uganda. In which ways could ESD be integrated into teacher education was the corresponding main research question. Following the deliberation already presented in the previous chapters of this study, this chapter presents the summary of the research findings about the emergent grounded theory, recommendations, and the way forward of this study.

5.1 The General Conclusion

The findings of the study have revealed that the integration of ESD in teaching and learning activities is a very complex venture because it involves an amalgamation and consideration of multiple aspects. The findings of the study can be summarized as follows: Amidst the complexity of ESD integration, the research findings indicated that teacher educators play a core role in integrating ESD into teacher education. This was attributed to the regular and direct engagement which teacher educators have with teacher trainees. It was also established that teacher education is very crucial, not only for the integration of ESD in teacher education institutions but also in the entire education system due to the potential, multiplier, and ripple effects teacher education has on the entire education system. It has also been discovered that society, teachers' teaching practices as well as the entire structure of the education system right from nursery schools up to university levels have either a direct or indirect influence on the successful integration of ESD in teacher education due to the interconnectedness and interdependence between teacher education, other levels of education, and the wide society. It was established that there were some teacher educators' practices and systemic issues in teacher education and the education system in general which were inconsistent with the integration of ESD. Some of these issues are, for instance, theoretical and rote teaching characterized by aspects such as focusing on teaching only the subject matter of teacher educators' domain knowledge without consideration of relevant information in other knowledge domains, disciplinary-oriented initial professional training of teachers, lack of creativity, reading and writing cultures among teacher educators and inadequate resources in teacher education institutions. The absence of such essential components of ESD integration greatly contributes to tunnel vision teaching and learning among teacher educators. According to this study, tunnel vision teaching and learning plays a counterproductive role when it comes to the integration of ESD in teaching and learning activities. This was attributed to the

unidimensional focus of tunnel vision on a particular learning aspect without establishing the linkages that exist between theory and practice, the interconnectedness between the various knowledge domains, and the interdependence between what takes place in educational institutions in particular and society in general. This is premised on the understanding that issues of ESD can neither be confined in educational institutions nor handled by single academic disciplines. This revelation makes tunnel vision teaching and learning a disturbing phenomenon because it neither supports nor facilitates the integration of ESD but rather derails and frustrates teachers' efforts and commitment to integrate it into teaching and learning activities in teacher education.

The research findings indicated that teacher educators could integrate ESD in teacher education in a relational teaching and learning process by considering multiple aspects in teaching and learning activities. This research finding constitutes the core category of the study which connects and holds together all other phenomena and categories developed in the course of data analysis. This core category answers the main research question, in which ways can ESD be integrated into teacher education? According to the core category, teacher educators can integrate ESD in teaching and learning activities by considering multiple aspects. The multiple aspects are related to the multidimensional, multifaceted, and multivariate nature of ESD issues which are found in all academic disciplines, and also, in and outside the precincts of teacher education institutions. In this regard, teacher educators, first of all, ought to relate well with their students in order to foster confidence and a good learning environment that permits effective learning to take place. Besides teacher-student relationships, teacher educators also ought to relate well and cooperate with people both in the teaching profession and other stakeholders of teacher education. The findings indicated furthermore that teacher educators ought to relate their subject matter with other academic disciplines since all disciplines contribute to ESD. In this case, the integration of ESD flourishes when integrated knowledge is offered to the learners in teaching and learning activities. Whilst the findings indicated that teacher educators ought to relate their teaching and learning activities to the various ESD issues existing both in and outside teacher education institutions. This practice creates a connection between the acquired knowledge obtained through the education processes and what exists in and outside the educational institutions.

The results of the study also indicated that in order for relational teaching and learning processes to be implemented by teacher educators, teacher educators ought to possess key teachers' competences that enhance teacher educators' abilities to integrate ESD. These key

competences are comprised of competences, skills, and values such as teacher educators being knowledgeable, open-minded, empathetic, hardworking, cooperative and teamworking, meticulous, creative, transdisciplinary teaching, acting responsibly, self-motivated and many other key competences (cf. 4.6). These competences are very crucial in empowering and enabling teacher educators in their individual and collegial capacities to integrate ESD in a relational process by considering the multiple aspects of ESD in teaching and learning activities. The study findings revealed furthermore that teacher educators might possess these key competences but when their working environment does not support and facilitate ESD integration, it remains a great challenge for teacher educators to effectively execute their duties. In this case, teacher educators require an enabling environment that supports and facilitates the integration of ESD in teaching and learning activities. The enabling environment is comprised of the support, facilitation, and reinforcement which teacher educators can receive from educational institutions and local, national, regional, and international communities. The support and facilitation could be, for instance, in the form of sufficient teachers' remuneration, availability of teaching and learning infrastructure, career development opportunities, the existence of community sustainability practices, policies that focus on mainstreaming and institutionalization of ESD in the entire education systems and any other support and facilitation that enhance ESD integration. These requirements as already highlighted in section 4.8 might be considered as general requirements for good teaching and learning environment, however, in the context of this study are related to the integration of ESD. The findings of this study revealed once more that the integration of ESD is quite complex and it requires all stakeholders to embrace it to the extent that no one ought to be left behind. Just as all academic disciplines contribute to the integration of ESD, all stakeholders have a contribution to make for the proper integration of ESD in teacher education. In this case, the actual integration of ESD in teaching and learning activities is done by the teacher educators, whereas the supporting and facilitating roles are played by all other stakeholders of teacher education in their various respective capacities.

5.2 Recommendations in relation to practice

The findings of this study have various implications for all stakeholders of teacher education. These implications are presented following the key findings embedded in the emergent grounded theory. In relation to the relational teaching and learning process by considering multiple aspects, it is recommended that teacher educators should ensure that they have a good working relationship with their learners. Teachers ought to do their best to ensure that a cordial but not intimate relationship exists between them and their students, although a good

working relationship may not be ensured solely by teachers but also by their students. It has been established in this study that the relationship between teacher educators and teacher trainees is at the core of relational teaching and learning. Teacher educators ought to create, therefore, a learning environment that nurtures and fosters a good relationship with their students because a poor relationship affects not only the academic performance of the students but also their self-esteem and social life. Whereas a good relationship is an effective medium through which effective teaching and learning can occur and enhance students' academic performance. It motivates and enhances the active participation of students in teaching and learning activities. It is also very essential for the integration of ESD in teaching and learning activities.

This study has also established that all academic disciplines contribute to the integration of ESD in teacher education. It is important therefore that teacher educators teach beyond single disciplinary aspects and focus on broader transdisciplinary perspectives which address the complex challenges of ESD in a more holistic approach. This requires that teacher educators systematically consider all possible and relevant applications of what they teach not only related to their domain knowledge but where applicable also from other disciplines so that the impact of their teaching goes beyond a single disciplinary sphere to a transdisciplinary level. This demands that teacher educators reorient their teaching and learning practices, cooperate with other stakeholders, expand their sources of knowledge, and include other ways of knowing that might be relevant to address the complex issues of ESD in teaching and learning activities. They might also consider other important sources of information, for instance, indigenous knowledge by giving examples of how the indigenous people used to coexist and preserve nature. So that whatever topic, course unit and program, they teach could look at how it could be applied in day-to-day life of the learners and the entire society. They ought to see what is happening in their immediate environment and what are the global trends, for instance, so that when they are teaching, they are able to relate the topic to what is happening in society rather than theoretically teach and just rely on what is written in books of their academic disciplines. They also ought to consider and explain to their learners the significant relationship between the environment, economy, and society as the main pillars of sustainability.

In this regard, teacher educators ought to be flexible and willing to collaborate with other people, not only in the teaching profession but with all people from whom they can get useful information. Collaboration in knowledge production and sharing could enable teacher

educators to learn from one another and possibly be in a position to consider the multiple aspects of ESD embedded not only in academic disciplines but also in the heritage of society. Teacher educators could even through collaboration with fellow teachers from various disciplines initiate co-planning and co-teaching activities. They could work together by presenting diverse perspectives of ESD on a particular teaching activity so that the learners get an opportunity to learn the same issue from multiple perspectives. Teaching and research collaborations address the challenge which many participants raised concerning teacher educators working in isolation along disciplinary and departmental levels without regular interaction with their colleagues in the same institution or the teaching profession.

In relation to key teachers' competences, teacher educators ought to utilize every opportunity they have to regularly update their knowledge, skills, and values by learning new things so that they acquire the necessary competences that would enable them to integrate ESD in a relational teaching and learning process by considering multiple aspects. Lifelong learning could enormously empower teacher educators. It has been established by this study that some teacher educators were trained a long time ago and they find challenges in using, for instance, modern teaching and learning aids. Participation in refresher courses would, therefore, equip them with the necessary competences for integrating ESD. Teachers ought to know when and how to integrate ideas associated with sustainable development into lessons and units, how to model practices associated with sustainability, and how to link sustainable development ideas to other aspects of teaching and learning, (Chinedu et al., 2018: 119). Equally important, teachers need to learn how to convert sustainability-based pedagogical content knowledge into practical teaching and learning environments, (McKeown & Nolet, 2013: 53; Mohanty & Dash, 2018: 2245). Central to the integration of ESD is the ability of teacher educators to effectively equip teacher trainees with the required professional skills and competences that enable them to effectively teach knowledge, skills, and values needed to promote ESD.

In relation to enabling environment, teacher educational institution administrators ought to offer career development opportunities and proper job performance appraisals for teacher educators. It has been established by this study that career development opportunities are not readily available to teacher educators, yet many of them require professional development. The availability of professional development opportunities enhances not only teacher educators' competences but also institutional capacity and performance. Many participants in this study reported that they experience challenges in handling ESD issues, therefore, offering them opportunities for professional development is very crucial. Teacher educators should be

trained and oriented on how to integrate ESD in teaching and learning activities. Teacher education institutions need to prepare teachers to approach ESD both in terms of content, teaching, and learning methods. Teachers can also be encouraged to develop a culture of reading and writing books that could be used in teaching ESD.

Teacher education management ought also to provide a conducive organizational learning culture and environment for ESD integration. For instance, mainstreaming, prioritization, and institutionalization of ESD issues in all activities of teacher education institutions. The mainstreaming of ESD in teacher education requires a systematic integration of aspects of ESD issues into a wide range of disciplines, departments, programs, and courses as well as policies, management practices, and student activities, (UNESCO, 2014b: 7, 2018c: 93; Wolff et al., 2017: 4; Wedell, 2017: 13). Such measures offer a clear focus for integration of ESD. Some of the challenges established by this study were associated with the absence of institutional policies related to ESD. They should also ensure that these measures do not remain in policy documents but are put into practice. In this case, teachers' relational practices and professionality ought to be considered in these policies. Besides institutional policies, there is a need for transformative policies that are cross-sectoral and not just designed for teacher education institutions but for the entire education sector and possibly other sectors. This could be done at local and national levels.

Integration of ESD in teacher education also requires a consideration of power relationships among stakeholders. This means that various stakeholders of teacher education ought to work together to ensure that ESD is integrated into teacher education. This study established that sometimes teacher educators are not consulted by the administration or government on issues that affect them. This practice creates discontentment and dissatisfaction among teacher educators and demotivates them to do well in their duties. Teacher educators are key implementers of ESD in teaching and learning activities, so involving them directly in planning equips them with necessary information on how to execute the integration and it gives them confidence that the role they play is recognized by other stakeholders. In relation to cooperation with other stakeholders, administrators of teacher education institutions ought to create a more conducive organizational working culture with other institutions and private sector partners for mutual support.

The government should increase funding of teacher education institutions so that teacher educators are well remunerated, adequate teaching facilities are available, and teachers and students are facilitated to go to fieldwork activities. It is evident from this study that the lack

of adequate funding for teacher education and the entire education sector is a major setback in ensuring the effective integration of ESD in teacher education and the entire education system. The absence of teaching and learning facilities and materials is an impediment to the proper integration of ESD. It has been revealed by this study that teachers and students can hardly conduct fieldwork activities which are very crucial for connecting theory and practice. It becomes hard for learners to establish a connection between what is learned and what should be practiced, when learners do not have the opportunity to learn by doing.

There is also a need for massive sensitization of communities right from homes about sustainable living so that they know for instance that to destroy the environment is to destroy their own existence. This study proposes that sensitization should begin right from home where the learners come so that by the time they join educational institutions, they are already aware of some of the sustainability issues. Even in the communities where they stay, they need to see that what they learn in educational institutions is not for just passing exams but for practice in their communities because that is what they would be seeing practiced by their community members. Sustainability issues are broad and require the participation of all stakeholders at local, national, regional, and international levels. Monitoring and supervision should also be put in place at all levels.

In relation to the challenges of tunnel vision teaching and learning, teacher educators ought to continuously reflect on their disciplinary orientation so that it does not limit them but act as points of departure that empower them to locate themselves in order to relate their domain knowledge with other disciplines in teaching and learning activities. Secondly, on the issue of theoretical and rote teaching, teacher educators need to employ teaching approaches that integrate theory with practice. Specifically, they need to possess appropriate teachers' competences discussed in sections 4.6 which are very paramount in enhancing teacher educators' abilities to integrate ESD in relational teaching and learning process by considering multiple aspects as reflected in section 4.3 of this study.

Curriculum developers should regularly review, update and reorient the curriculum of all levels of education in general but in particular of teacher education institutions so that aspects of ESD are well integrated in the curriculum. It is also important that the curriculum developers explicitly and clearly indicate pedagogical practices and the teaching and learning materials that might be required by teachers to teach particular ESD issues. Besides, concrete and realistic assessment tasks and procedures should be explicitly designed to help teachers in integrating ESD into teaching and learning activities. It was established by this study that

teachers tend to teach what has been explicitly stipulated in the curriculum and issues that are not clearly indicated in the curriculum are either not considered or given very little attention.

5.3 Implications for Future Research as a Way Forward

There are some aspects of ESD integration in teacher education which require more investigation, although several aspects have been explored and presented by this study. Given the complexity of ESD issues, for instance, it would be worth investigating how the curriculum of teacher education could be developed in order to integrate all aspects of ESD. ESD is transdisciplinary because all disciplines contribute to the integration of ESD, therefore, exploring how such a transdisciplinary curriculum could be developed and implemented in teacher education would be very important. Secondly, there is also a need to explore how the various stakeholders of teacher education at all levels from teacher education institutions up to international levels be in a position to cooperate for ESD integration without exerting undue influence on teacher education institutions. Undue influence such as political interference whereby the politicians want to decide what should be taught or not be taught in teacher education can affect the quality and the academic freedom of teacher educators. Future research could, therefore, focus on examining the power relations among the stakeholders of teacher education at various levels.

This study focused basically on the integration of ESD in teacher education. Research could be conducted on the possibilities of integrating ESD at all levels of education. This study established that for the proper integration of ESD in teacher education, it is important that the integration begins right from the nursery level and other lower levels of education. The integration of ESD at lower levels of education prepares and precipitates the integration of ESD in teacher education. This study employed grounded theory research methodology and like any research methodology, the grounded theory approach has some limitations as examined in section 5.5, therefore, other studies could be undertaken using other research methodologies to examine if they would yield different research results. The study also focused on teacher educators and research data were collected only from teacher educators, therefore, further research could be conducted focusing on other stakeholders of teacher educators, for example, teacher education administrators and people working in the private sector, local and national government ministries so that the views of all the stakeholders are captured and represented in the research about ESD integration in teacher education or other levels of education. A study could also be conducted to find ways in which other stakeholders could be empowered such as parents and local leaders so that children are nurtured into the

culture of valuing sustainable development so that education about sustainability is not only conducted in formal education institutions but in informal, non-formal education, and at all levels of society. The traditional divisions based on academic disciplinary orientations in teacher education institutions reflect general fragmentation of learning, research, and community engagement which might make whole institution approach to integration of ESD quite hard, (Leal Filho et al. 2018: 288). A study could, therefore, be conducted on how teachers of various disciplines could easily cooperate and work together for the integration of ESD in teacher education. Finally, some participants stated that when they visited countries which emphasized sustainability practices, their attitudes changed and they embraced sustainable practices in their own lives and encouraged other people also to do the same. In this case, a comparative study could be conducted to compare the approaches to ESD integration in such countries and the lessons which teacher educators could learning from them.

5.4 Relevance, Rationale and Significance of the Study

The relevance and significance of this research project lies in the anticipated contributions most likely to accrue from it. For instance, theoretically it is anticipated that this research project will contribute to the discourse of reorienting teacher education for sustainable development and integration of education for sustainable development into teacher education not only in Uganda but also worldwide. Practically, it is hoped that this study will enable educators, students and other stakeholders, to reflect on their own lifestyle regarding sustainability issues, acquire problem solving skills, values and perspectives necessary to champion the course of sustainable development, resource use and other related issues of sustainable development through advocacy and participation. Secondly, it is anticipated that this research will be an important resource for students, academics, curriculum and educational developers and practitioners, policy makers, senior managers, support staff and other stakeholders in education who might want to know more about ESD and its integration into teacher education. University teachers are often neglected in teacher education initiatives. This research project will, therefore, offer university teacher trainers an opportunity to reorient their teacher training programs to reflect SD principles and integrate important SD concepts into the curriculum, so as to enable teacher trainees to pass on the same ideals of SD to their learners. Nationally and internationally, this research study is in line with UN Global Agenda 2030, African aspirations as reflected in African Agenda 2063 focusing on issues of sustainable development such as sustainable use and management of resources for the benefit of people, aspirations of East African agenda 2050, Uganda´s Vision 2040 and other country´s

development plans. Additionally, it is also envisaged that the findings of this study will go far beyond mere integration of ESD into teacher education to offering a change strategy that could enlighten citizens and organizations to move towards sustainability. Therefore, it is postulated that the findings of this study will be of great use to a wide range of stakeholders. The application of the relational teaching and learning process by considering multiple aspects offers the development of a teaching model that focuses on the relational dynamic between teacher educators, teacher trainees, the academic disciplines, and the wider community. In this case, the relational teaching and learning offer a holistic approach to teaching and learning processes. This study offers, therefore, an alternative to the traditional and teacher-centred forms of teaching, where teaching and learning are sometimes considered as separate entities.

5.5 Limitations of the study

The study encountered some challenges, for instance, the collection of data was conducted during the lockdown period due to Covid-19 pandemic. This period did not only make it very hard for the researcher to find the participants but also formed a challenge to interact freely with the participants since both the researcher and the participants were in fear of either contracting or spreading the virus. This implied that a relaxed, free atmosphere, and active interaction between the researcher and the participants, which should exist during the interviews, was consciously undertaken with some bit of anxiety due to unusual circumstances. Besides, the Covid-19 pandemic lockdown forced the researcher to spend much time on data collection. This study employed grounded theory methodology and as it is the case with all research methods, grounded theory methodology has a number of shortcomings. For instance, the methodology is complex, time consuming, exhaustive, and difficult to conduct, especially conducting in-depth interviews, memo writing, and the process of open coding which are very tiring and laborious processes, (Mohajan & Mohajan, 2022: 19; Creswell, 2014: 245). The open-ended questions asked during the interviews attract a lot of information from the participants which can overwhelm the researcher. In order to remain as close as possible to the participants' words during the open coding process, hundreds of overlapping initial-codes can be created which makes the coding process very complex, (Bytheway, 2018: 252). In this study, in order to avoid getting overwhelmed and confused by the data, the researcher created and maintained a robust audit trail of the collected data, coding, and analysis. The information about the participants, the date, time of data collection, the codes and quotes extracted from data were recorded. Coding in grounded theory could be influenced by the researchers' bias and experience, however, in this study the researcher

minimized individual biases and preconceived ideas as already explained in section 3.7.5 of this study. According to Chong and Yeo, (2015: 264), writing grounded theory in traditional format of literature review, findings and discussions might lead to a problematic situation because this linear format does not reflect how the actual grounded theory was developed. The reviewed literature in the second chapter of this study served only the purpose of being a point of departure and sensitizing concepts for this study. The emergent grounded theory was presented and explained as the research findings for this study in the fourth chapter and it was integrated with the existing literature to signify an advancement and a contribution to the existing body of knowledge. The findings of grounded theory like any qualitative study findings cannot be generalized on the studied population because the study does not aim at generalization of the study result. In this study, the researcher presented a systematic way in which data were collected and analyzed as hinted upon in section 3.7.3. The applicability of this study is left upon those who are interested in applying the study findings to their particular and localized contexts. Another challenge is that human behavior and actions are never static but regularly oscillate which makes the study findings sometimes not to be easily translated into practice. In the case of this study, all participants vehemently expressed the desire to integrate ESD in their teaching and learning activities, although their views might not be consistently evident in their teaching and learning practices. This can be associated by the way they were quicker to blame others for not considering sustainability issues in teaching practices than to acknowledge their own shortcomings. The reluctance in grounded theory to use established theories might also lead to a loss of already established knowledge, (Shava et al., 2022: 817). In grounded theory research approach, there is no way to know ahead of time how much data a researcher will need to collect. This was experienced by the researcher of this study, but the researcher remained flexible and adjusted accordingly until theoretical saturation of data was attained. In particular to Straussian grounded theory approach, the axial coding paradigm suggested by Strauss and Corbin may appear to undermine an open-minded, framework-free orientation of the researcher, leading to forcing of concepts and categories on the data and deter the emergence of new concepts and categories that do not fit into the pre-existing coding framework. This occurs if the researcher codes and analyses data following only and strictly the dimensions of the coding paradigm. In this study, the researcher avoided this hiccup by remaining as open as possible to whatever the empirical data revealed as explained in sections 3.5.4 and 3.7.3. Finally, the theoretical coding and sampling techniques of GTM focus more on data collection for the purpose of elaborating and saturating the categories, properties and dimensions of the emergent grounded theory in the

best way possible. In this regard, theoretical sampling helps to progress the analysis towards higher levels of conceptual abstraction, core emergence, and theoretical integration in order to offer a conceptually abstract explanation underlying the researched phenomenon (Strauss & Corbin, 2015: 87; Hulton 2019: 272). However, it gives little consideration to context-sensitive aspects such as the contextualized meaning of concepts in secondary data because at the level of advanced theoretical sampling the focus is more on conceptual abstraction of the emergent theory than focusing on contextual meaning-making of the concepts, yet understanding by whom and against what background the concept is used is very important in understanding the researched phenomena in a social setting. This remains a methodological challenge of grounded theory method.

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Appendixes

Research Instrument

Thank you very much for accepting to participate in this study. I am a PhD student. I am studying education for sustainable development (ESD) and I want to find out ways in which ESD can be integrated into teacher education. At the moment, I am trying to understand what teacher educators in their opinions say about ESD and how it can be integrated into teacher education.

It is for this reason that I have come to you to seek your opinions over this issue. Your responses to what I am going to share with you will be very helpful. In fact, the information that you are going to provide will contribute a lot to the existing body of knowledge of ESD and how it can be integrated in teacher education.

I request you to read this consent form and sign it as a proof that you have accepted to participate in this study. The interview will be audio-taped with your consent and the tapes will be destroyed after the study has been completed.

Before we begin do you have any question you would like to ask me?

Prior to your participation in this study, I would like to confirm with you the following information:

What is your name:

Name of the University, school/faculty or department:

Your teaching subjects and other responsibilities at university:

Teaching Experience:

What is your Highest Level of Qualification?

Contact email (for follow up clarification if needed, not to be shared):

Date:

Time:

Some Questions Asked

What is your understanding of ESD?

In which ways can ESD be integrated into teaching and learning activities in teacher education?

What could affect teacher educators' abilities to integrate ESD in teacher education?

Which competences do you consider to be important for integration of ESD in teacher education?

Could you please explain more why you consider such competences to be very important for integration of ESD in teacher education?

Among the competences you have just mentioned which competences do you emphasize most in your teaching and learning activities?

What should be done by stakeholders of teacher education to enhance teacher educators' abilities to integrate ESD in teaching and learning activities?

Which issues of ESD do you normally share with your students in teaching and learning activities?

What should be done in general in order to integrate ESD in teacher education?

Before we conclude, do you have any question you would like to ask me?

Thank you very much for participating in this study.

NB: Many other probing questions were used in order to get more information from the participants.

Statement of consent

The researcher has described to me what is going to be done, the benefits involved and my rights as a participant in this study. I understand that my decision to participate in this study will not affect me in any way. In the use of this information, my identity will be concealed. I am aware that I may withdraw at any time. I am voluntarily agreeing to participate in this study.

Name …… Signature/thumb print of the participant…… Date ……

Name…… Signature of interviewer…….. Date……