

NEAR EAST UNIVERSITY INSTITUTE OF GRADUATE STUDIES DEPARTMENT OF EDUCATIONAL MANAGEMENT

MANAGING EDUCATION FOR SUSTAINABLE DEVELOPMENT THE ROLE OF INITIAL TEACHER EDUCATION

PhD THESIS

Kifah IMARA

Nicosia May 2022

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PhD THESIS

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Nicosia May 2022

Approval

We certify that we have read the thesis submitted by Kifah Imara titled **"MANAGING EDUCATION FOR SUSTAINABLE DEVELOPMENT: THE ROLE OF INITIAL TEACHER EDUCATION"** and that in our combined opinion it is fully adequate, in scope and in quality, as a thesis for the degree of PhD of Educational Sciences-Educational Administration, Planning, Economics and supervision

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Declaration

I hereby declare that all information, documents, analysis and results in this thesis have been collected and presented according to the academic rules and ethical guidelines of Institute of Graduate Studies, Near East University. I also declare that as required by these rules and conduct, I have fully cited and referenced information and data that are not original to this study.

> Kifah I.M Imara 24/5/2022

Acknowledgments

This work would not have been completed in this way without the support and cooperation I received from the various parties involved in the whole process of the research in one way or another.

First and foremost, I would like to express my heartfelt gratitude to my academic supervisor Prof. Dr. Fahriye Altinay whose encouragement and inspiration accompanied me throughout my study journey at Near East University, I am extremely thankful for her relentless and unparalleled support, advice and guidance.

My deepest thanks and appreciation go to the esteemed professors in thesis defence committee for their support and valuable comments, Prof. Dr. Mehmet Caglar, Prof. Dr Oytun Sozudogru, Prof. Dr. Gökmen DAĞLI and Assoc Prof Dr. Mert Bastas.

Gratefulness also extends to all of my professors in the Institute of Graduate Studies, and my gratefulness to the Scientific Research Ethics Committee for their support in facilitating my research mission and I am likewise thankful to the administrators in the Student Affairs Office at Near East University.

My sincere appreciation and gratitude to the Ministry of Education and the Ministry of Higher Education, and the Accreditation and Quality Assurance Commission, as well as the administration of Al Quds Open University, An Najah National University, and Birzeit University especially at the Faculties of educational sciences for facilitating my research mission.

I am deeply indebted to all of the professors who kindly agreed to participate in my research and gave their time to answer my questions, whether in interviews or focus group discussions. Their fruitful participation and rich experiences helped me in forming a comprehensive picture of the study's problem and coming up with results that may lead to developments.

Ultimately, my Ph.D. journey required a great deal of determination and patience, which would not have been possible without the unwavering and unconditional support of my family, particularly my husband. All my thanks and gratitude to him.

Kifah I.M. Imara

Abstract

Managing Education for Sustainable Development The Role of Initial Teacher Education Kifah Imara PhD, Department of Educational Management May 2022, 194 pages

The aim of this study is to investigate the integration of ESD into pre-service teacher education at policy and programmatic levels, in an endeavor to explore the status of reorienting initial teacher education towards sustainability in Palestine, from policy formulation to implementation and monitoring and evaluation.

For this purpose, the research employed a qualitative single case study with multiple units of analysis and a triangulation data-collection protocol, which included document analysis of key policy documents relevant to teacher education and interviews with representatives from the Ministry of Education, the Ministry of Higher Education, and the Accreditation and Quality Assurance Commission. In addition, interviews were held with heads of departments in three universities' faculties of educational sciences, as well as focus group discussions with educators from these faculties.

The findings of the study demonstrated that so far, education for sustainable development has not been addressed in policy documents related to teacher education and in the pre-service teacher education programs offered by higher education institutions, despite the fact that the national development plans and strategies clearly emphasize this goal. However, non-systematic integration of sustainable development elements may exist in teacher education policy documents and programmes, but they tend to focus more on specific professional competencies and the learning process with no connection to education for sustainable development

The significance of this study stems from the fact that it is, to the best of my knowledge, the first study of its kind in Palestine that examines how national policies, plans, and programs respond to international recommendations related to integrating education for sustainable development into teacher education programs.

The study concluded with a number of recommendations for policymakers and practitioners, along with prospects for future research.

Keywords: 2030 Agenda for sustainable development, SDG4.7, Education for sustainable development, initial teacher education, reorienting teacher education.

ÖZET

SÜRDÜRÜLEBİLİR KALKINMA İÇİN EĞİTİMİ YÖNETMEK BAŞLANGIÇ ÖĞRETMEN EĞİTİMİNİN ROLÜ Imara, Kifah Doktora, Anabilim Dalı eğitim yönetimi Mayıs 2022, 194 sayfalar

Bu çalışmanın amacı, politika oluşturma temelinde, uygulama,izleme ve değerlendirmede Filistin'de temel öğretmenlik eğitimini sürdürülebilirliğe doğru yeniden yönlendirme durumunu araştırmak amacıyla, politika ve program düzeylerinde ESD'nin hizmet öncesi öğretmen eğitimine entegrasyonunu araştırmaktır. Bu amaçla, araştırma, öğretmen eğitimi ile ilgili temel politika belgelerinin analizini ve, Milli Eğitim Bakanlığı temsilcileriyle yapılan görüşmeleri içeren, birden fazla analiz birimi ve üçgenleme veri toplama protokolü içeren nitel bir tek durum çalışması kullanmıştır. Yüksek Öğrenim ve Akreditasyon ve Kalite Güvence Komisyonu. Ayrıca, üç üniversitenin eğitim bilimleri fakültelerinde bölüm başkanları ile görüşmeler ve bu fakültelerdeki eğitimcilerle odak grup görüşmeleri yapılmıştır.

Araştırmanın bulguları, sürdürülebilir kalkınma için eğitimin, ulusal kalkınma plan ve stratejilerine rağmen, öğretmen eğitimi ile ilgili politika belgelerinde ve yükseköğretim kurumlarının sunduğu hizmet öncesi öğretmen yetiştirme programlarında bugüne kadar ele alınmadığını göstermiştir. Sürdürülebilir kalkınma unsurlarının sistematik olmayan entegrasyonu, öğretmen eğitimi politika belgelerinde ve programlarında mevcut olabilmektedir. Bu çalışmanın önemi, ulusal politikaların, planların ve programların sürdürülebilir kalkınma için eğitimi bütünleştirme ile ilgili uluslararası tavsiyelere nasıl yanıt verdiğini inceleyen Filistin'de ilk çalışması olması gerçeğinden kaynaklanmaktadır.

Keywords: Sürdürülebilir kalkınma için 2030 Gündemi, SDG 4.7, Sürdürülebilir kalkınma için eğitim, temel öğretmen eğitimi, öğretmen eğitimini yeniden yönlendirmek.

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List of Abbreviations

| UN: | United Nations |
|---------------|--|
| UNESCO: | United Nations Educational, Scientific and Cultural Organization |
| DESD: | Decade of Education for Sustainable Development |
| ESD: | Education for Sustainable Development |
| GCED: | Global Citizenship Education |
| SD: | Sustainable Development |
| SDGs: | Sustainable Development Goals |
| GAP: | Global Action Programme |
| UNECE: | United Nations Economic Commission for Europe |
| HEIs: | Higher Educational Institutions |
| TEIs: | Teacher Education Institutions |
| MoE: | Ministry of Education |
| MoHE: | Ministry of Higher Education |
| AQAC: | Accreditation and Quality Assurance Commission |
| TES: | Teacher Education Strategy |
| CDTP: | Commission for Developing Teaching Profession |
| PTPDI: | Palestinian Teacher Professional Development Index |
| PSNTP: | Professional Standards for New Teachers in Palestine |
| RTTI: | Readiness to Teach Index of competences |
| TEIP: | Teacher Education Improvement Project |
| LfS: | Learning for Sustainability |

CHAPTER I

Introduction

This chapter introduces the topic, elaborates the problem statement, aim, significance, limitations, and the research questions, in addition to defining the main terms of the study.

The UN decade of education for sustainable development (DESD) 2005-2014 has reinforced envisaging education as a powerful catalyst for achieving Agenda 21st adopted at the Rio summit conference on the Environment and Development 1992, by embedding the principles of sustainable development into national educational systems worldwide (Wals 2012).

Thus, the overall goal of the DESD is to integrate the principles, values, and practices of sustainable development into all aspects of education and learning (UNESCO 2014a). This does not mean merely adding some concepts to the curriculum but rather, applying a holistic approach that enable transforming knowledge, skills and attitudes towards sustainability (Sipos et al. 2008; Albareda-Tiana et al., 2018).

As a result, a global initiative has been advocated to rethink education from the lenses of ESD. This means that it is no longer possible to perceive education as behavioural adaptation; instead, education must be a process that leads individuals to assume personal responsibility for the development of society (Michelsen and Wells 2017)

Therefore, the Global Action Programme (GAP) on ESD, which has been endorsed as a follow-up of the Decade of ESD and pushing forward achieving the post-2015 agenda, aims at scaling up ESD actions at all levels and areas of education, training and learning (UNESCO 2017 P7).

One of the main goals of (GAP) is to achieve a holistic transformation in learning and training settings (UNESCO 2014b,P15), given that Sustainability is better learned through real life experiences (Molderez and Fonseca 2018; Branden 2015). Therefore, building capacities of educators and trainers is pivotal in order to enable them to become change agents (Leicht et al. 2018 P133).

From this point of view, ESD can be understood as an integral part of the universal quality education, the fourth goal of 2030 agenda "Ensure inclusive and

equitable quality education and promote lifelong learning opportunities for all" where SDG 4.7 explicitly stated that by 2030 all learners should be empowered in order to "acquire knowledge and skills needed to promote sustainable development" (UNESCO 2017).

Consequently, a shift in education systems is needed to allow for essential changes in teaching and learning paradigm in order to facilitate the acquisition of necessary competencies for ESD (Leicht et al. 2018).

With this in mind, teachers may considered as the most important enablers for sustainability, through their central role to the provision of quality education; therefore, it is crucial to equip them with the necessary competencies in order to be able to include sustainable development in their teaching (UNECE 2009, P16)Thus, more emphasis should be placed on teacher education, and how the prospective teachers are prepared in higher educational institutions (HEIs).

In Palestine where the pursuit of liberation is the ultimate goal of all Palestinians, education is seen as the cornerstone of their liberty and independence. Therefore, education reforms have been profoundly rooted into national policies and strategies that seek to achieve sustainable development and well-being for all citizens, as well as shaping a better future for the coming generations (Palestinian National Policy Agenda 2017-2022; Palestinian National development plan 2021-2023, 2014-2016, 2011-2013; Palestinian Reform and Development Plan 2008-2010).

Accordingly, the Ministry of Education (MoE) and the Ministry of Higher Education (MoHE), which were one ministry for many years (MoEHE) before being divided recently in 2019 into two separate Ministries; have reaffirmed in their strategic plans their commitment to sustainable development through education, in line with sustainable development goals (SDGs) (MoHE 2020-2023; MoEHE 2017-2022).

Teacher education is one of the most important pillars of education reform in Palestine, this is explicitly demonstrated in the Teacher Education Strategy (TES) 2008 that seeks among its objectives to improve learning opportunities for all Palestinian students by developing teacher education programs, as well as higher education institutions that provide them (TES 2008).

This aspiration was brought to light through various donor-funded projects, most prominently, the Teacher Education Improvement Project (TEIP) (20082019), sponsored by the World Bank, with the aim of supporting the implementation of the TES as a national policy-based plan for the initial preparation and continuing professional development of grade 1-4 Class Teachers (Burke et al. 2020, p8).

TES has stressed the need for clear and explicit policies for teacher education and for the continuing development of teachers, for this purpose, it promoted the establishment of the commission for developing the teaching profession (CDTP) in 2009, which was tasked with providing the ministry of education and higher education (MoEHE) and the accreditation and quality assurance commission (AQAC) with recommendations on a number of areas, one of which was developing standards for teacher education programmes (Teacher Education Strategy in Palestine 2008).

Except for the reports released by the MoEHE and its partners on the strategy's implementation and associated projects (Hashweh 2011; Burke et al. 2020), there are no comprehensive in-depth studies on the impact of these efforts on teacher education quality or on their contribution to reorienting teacher education programs toward education for sustainable development.

The current study is questioning the management of reorienting teacher education towards ESD in Palestine, exploring whether and how ESD is addressed in pre-service teacher education at policy and implementation levels.

To summarize, it is hoped that teacher education institutions (TEIs) in Palestine integrate principles, knowledge, and competencies related to education for sustainable development (ESD) into their programmes and prepare prospective teachers for ESD, reinforced by national policies and strategies. As such, it is critical to investigate teacher education programmes and policies to ascertain whether they are ESD-oriented, with the aim of boosting further policy improvements.

Problem Statement

SDG 4.7 advocates education for sustainable development and global citizenship education (GCED) as a means to enhancing learners' knowledge and skills, in order to promote sustainable development (UNESCO 2017). According to the global indicator framework, SDG 4.7 is assessed against four indicators

regarding mainstreaming ESD and GCED in policies, curriculum, teacher education and students' assessment (SDG Global Database).

The focus on teacher education is rooted in all global calls for integrating ESD in all forms of education, in order to address sustainability, this entails transforming institutional programmes, practices, and policies (UNESCO 2005; UNESCO 2014a, UNESCO 2019).

Thus, the UNECE (2005-2015) strategy emphasized the importance of preparing teachers for sustainability, as reflected in its objectives:

1) Ensure that policy, regulatory and operational frameworks support ESD;

2) Equip educators with the competence to include sustainable development in their teaching;

3) Promote research on and development of ESD.

However, many official reports have indicated that efforts to prepare teachers for ESD are still insufficient, and more work is needed to integrate ESD into teacher education in terms of content, teaching and learning methods (UNESCO 2014 a; Leicht et al., 2018).

In Palestine, despite implementing a number of projects and initiatives to improve the quality of pre service teacher education (Hashweh 2011; Burke et al. 2020); however, the impact of these projects is still ambiguous (SHINN 2012) particularly on enhancing education for sustainable development.

Examining relevant literature revealed that, with the exception of official reports and papers released by the MoEHE and some partners, there are no studies on how HEIs prepare student teachers for sustainability, and how teacher education at policy and strategy level is managed to be reoriented towards ESD. Therefore, it is unclear whether or not pre-service teacher education programs equip prospective teachers with the necessary knowledge and competencies to deliver education for sustainability.

Moreover, although a shift can be obviously seen in including sustainable development and SDGs in national policies, and strategic plans; nevertheless, managing and monitoring the reorientation of teacher education towards sustainability at policy and implementation level remains blurred.

Against this context, the current study aims at investigating teacher education policies and programmes in terms of their contribution to education for sustainable development (ESD), For this purpose, the case study technique is adopted in order to examine the management of ESD in initial teacher education in Palestine, in an attempt to explore whether ESD knowledge and ESD core competencies that stated in relevant UNESCO documents (UNESCO 2014; UNESCO 2017; Leichtet al., 2018), are incorporated into teacher preparation programmes, from the management perspective, as well as the views of educators.

Furthermore, the study will examine how far national teacher education policy and related strategies are oriented towards ESD by analysing key official documents, as well as exploring the perceptions of the MoE, MoHE and the (AQAC) representatives, in addition to inquiring their role in ensuring compliance with these policies in teacher education programmes provided by HEIs.

Aim of the study

The main purpose of this study is to investigate the management of reorienting teacher education towards sustainability in Palestine, through examining the status of integrating ESD in teacher education, at policy and implementation levels, exploring whether teacher education programmes provided by HEIs equip prospective teachers with relevant knowledge and key competencies for ESD, supported by national policies and strategies.

The assumption here is that ESD knowledge and key competencies are incorporated into national teacher policy and other official documents pertaining teacher education, and they are reflected in teacher preparation programmes offered by HEIs.

Research Questions

Based on the main purpose of the study, data collection and analysis will be guided by the following research questions:

RQ1: How is education for sustainable development (ESD) incorporated into relevant national teacher education policy documents?

RQ2: How is the reorientation of teacher education towards ESD in Palestine from the perspective of the ministry of education, the ministry of higher education, and accreditation and quality assurance commission?

RQ3: How Are ESD core competencies and ESD knowledge integrated into preservice teacher education programmes from the perspective of university administrators and instructors?

Significance of the Study

The role of higher education in promoting actions towards more sustainable future is indispensable (Myers 2012 P14; Eizaguirre et al., 2019). Thus, universities should assume their leading position in transforming practices and boosting the acquisition of sustainability competencies (Leal Filho et al. 2018; Wals, 2013), which requires innovative pedagogical approaches (Sanchez et al., 2018).

UNESCO (2014c) advocated, "More research, innovation, monitoring and evaluation to develop and prove the effectiveness of ESD good practices" (UNESCO 2014 a).

Evidence has indicated that the integration of ESD in different forms of education, including teacher education in the context of developing countries, is so far lagging behind (Garcia 2010; Pauw et al. 2015; Perello-Marín et al. 2018; Franco et al. 2018).

Reducing the gap towards the desired sustainable state has been examined in the literature in different ways, most significantly through assessing sustainability competencies (Lozano et al., 2015). It has been noted that despite the importance of integrating sustainability competencies into initial teacher education (Härkönen 2013; Chisingui and Costa 2020), little proof is available on the adaptation of higher education to promote sustainability (Kioupi and Voulvoulis 2019; Aleixo et al., 2020).

UNESCO as the custodian agency for the global indicator 4.7.1 of SDG 4.7 is committed to reinforce and monitor the progress towards reorienting national educational systems including teacher education to address ESD (UNESCO, 2020, P50). It is, therefore, imperative to investigate the extent to which teacher education of a country is reoriented towards ESD (Leal Filho and Pace 2016; Leicht et al. 2018).

Searching related literature demonstrated that so far, there is no studies concerning the status of integrating ESD in teacher education in Palestine. Hence, the findings of the current study might provide insights and valuable data to bridge this research gap, with the aim of contributing to the development and upscaling of teacher education policy and programmes towards more enhancement of sustainable development prospects in Palestine. Moreover, the emergent results and recommendations, which are expected to be derived from the experiences and perceptions of key people who are involved in developing, monitoring, or implementing teacher education policies and programmes, can be served as a basis for generating a contextualized model to manage and evaluate the integration of ESD in teacher education programmes, based on a set of standards and characteristics, which may contribute to the achievement of national and international aspiration of integrating principles, values, and practices of SD in all aspects of education, particularly in teacher education.

Therefore, this study can be considered as a foundation for future studies that may seek a comprehensive assessment of education for sustainable development in higher education institutions (HEIs) in Palestine and other similar contexts.

In addition, experiences from voluntary national reviews demonstrate that most countries extremely lack official data to measure the progress of their SDG indicators in general. (Grageda & Zougbede, 2019) where measuring progress towards SDG4.7 has been recommended to involve various stakeholders and viewpoints rather than relying exclusively on statisticians. (Helin, 2021)

Further, it has been argued that research on integrating ESD into teacher education focuses on the implementation of a package of measures, without investigating the extent to which educational realities at educational institutions are changing at all. (Christoforatou, 2021)

Accordingly, the current study contributes critical qualitative evidence to understand the nature of the transformations required in teacher education to attain SDG4.7 of the 2030 Agenda for Sustainable Development. Given the paucity of research on ESD in teacher education in Palestine, this study has the potential to inform policy development and strengthen national SDG management. It is expected to assist policymakers, HEIs managers, educators and practitioners in reimagining teacher competencies and redefining what it means to be a fully qualified teacher.

This study advocates for rethinking teacher education management in Palestine in order to be more aligned with national priorities and adaptable to current and future challenges.

Limitations of the Study

The research will take place in three universities in the west bank\ Palestine, which may limit the results of the study based on the context of those three universities on one hand, on the other hand, Gaza strip universities will not be included in the sample; because of the restrictions on movement between west bank and Gaza, and the difficulty of communicating with universities there, due to political constraints.

In addition, in spite of the potential implications of the research results in improving ESD implementation in teacher education at policy and programmatic level in Palestine, However, these results may not be generalized to other countries; as the research's procedures will be developed according to Palestinian context. Simultaneously, this study will remain valid as a catalyst for similar research in other contexts of developing countries.

Definition of Terms

Sustainable Development (SD): "sustainable development seeks to meet the needs and aspirations of the present without compromising the ability to meet those of the future". It is a process of change to ensure efficient exploitation of resources, along with effective steering of investments, technological development, and institutional change towards fulfilling the needs of the present, while ensuring their sustainability and prosperity in the future (UN 1987).

Sustainability: Sustainability and sustainable development may be used interchangeably; with focusing on the three pillars – environment, economy, and society (Ajao 2018), it can be defined as a way of thinking about the future in which environmental, social, and economic factors are all taken into account. Long-term goals are typically associated with the phrase "sustainability" in the quest for a better quality of life UNESCO 2005b; UNESCO 2009).

The 2030 Agenda for Sustainable Development: is a plan of action to promote peace and prosperity for people and the planet, adopted by all United Nations Member States in 2015. It aims to accelerate efforts to eradicate poverty and inequalities by 2030, by promoting the achievement of the 17 Sustainable Development Goals (SDGs), which are an urgent call to action for all countries - developed and developing - working in partnership. (United Nations, 2015)

The Sustainable Development Goals (SDGs): Present an ambitious and transformative vision for a world free of poverty, hunger, disease, and violence, a world with equitable and universal access to quality education at all levels, health care, and social protection, and a world where physical, mental, and social well-being is guaranteed. They handle global issues such as poverty, inequality, climate change, environmental degradation, peace, and justice. (United Nations, 2015)

Learning for sustainability. A lifetime process that comprises obtaining knowledge and cultivating the skills, attitudes, values, and motivation necessary to alter one's lifestyle and participate in activities and projects that promote sustainable development. (UNESCO 2018a)

Education for Sustainable Development (ESD): refers to educational reforms that aim to empowering learners and equipping them with knowledge, skills, values and attitudes to bear responsibility for "environmental integrity, economic viability and a just society" to make it possible for people of all ages to improve their living conditions as well as shaping a better future. (UNESCO 2005; UNESCO 2014a, P.12)

Teacher education: Formal teacher training (pre-service or in-service) designed to equip teachers with the knowledge, attitude, behaviour and skills required for teaching at the relevant level (UNESCO Glossary).

Initial Teacher education: Refers to programme, training, policy and procedures to prepare prospective teachers with required skills, knowledge to undertake teaching related activities in their respective educational institutions (Ferreira et al. 2006), it can be regarded as pre-service teacher education that prepare graduates to become quality teachers by equipping them with the needed pedagogical practices (Mergler and Spooner-Lane 2012).

Mainstreaming: is the process of incorporating the content and practice of a particular idea into the policies and activities of an organization, institution, or system to become an integral part of them. (Ferreira et al. 2006)

ESD Integration\ **Mainstreaming:** Integrating knowledge, skills, and values, as well as situating knowledge, skills, and practices in specific social, cultural, and historical contexts. it is a holistic approach focused on knowledge, methods, and curriculum change, typically manifesting itself through the addition of a new ESD subject or the development of ESD as a cross-cutting curriculum topic. A genuinely holistic strategy would incorporate changes to both the curriculum and

the institutional structure, in other words, ESD integration includes adopting ESD ideas and practices into the institution's operational processes, curriculum, research (innovation), and community engagement. (UNESCO 2018a).

Reorienting educational programs towards sustainability:

The process of directing educational content and methods toward sustainable development goals, it requires changing the curricula and learning content from kindergarten through university, to explicitly integrate issues relating to social, economic, environmental, and cultural sustainability, while emphasizing transdisciplinary methods (UNESCO 2005 c).

Reorienting teacher education towards sustainable development: Reforming and modifying visions, policies, and methods to ensure that ESD concepts, knowledge, skills, perspectives, and values are ingrained or addressed in all facets of teacher education. (UNESCO 2018 b)

CHAPTER II

Literature Review

Theoretical Framework

1. Education for Sustainable Development (ESD):

1.1 Defining sustainability and Education for sustainable development

Since the United Nations General Assembly declared the period 2005–2014 as a UN Decade of Education for Sustainable Development in Resolution 57/254, ESD has become one of the most prominent research areas; in order to emphasize the critical role of education in moving towards a more sustainable world, Recalling chapter 36 of Agenda 21st, on promoting education, public awareness and training, adopted at the United Nations Conference on Environment and Development, held in Rio de Janeiro, Brazil, in 1992.

According to (UNESCO 2002) ESD is defined as 'an emerging but dynamic concept that encompasses a new vision of education that seeks to empower people of all ages to assume responsibility for creating a sustainable future'. Thus, ESD has been viewed as a means to transform values, behaviours and lifestyles of people to ensure a sustainable future for all (UNESCO, 2005b). Although the importance of ESD has been reiterated in literature, however, there is no consensus on what constitutes ESD (Kalsoom et al., 2019). To doing so, we need to understand sustainable development, Wiek et al. (2015) viewed sustainability as a "collective willingness and ability of a society to reach or maintain its viability, vitality, and integrity over long periods of time, while allowing other societies to reach or maintain their own viability, vitality, and integrity."

Hence, sustainability can be considered as a process of learning (UNESCO 2002) that requires a shift in the mindset in order to think and act differently with respect to our resources and preserve a balanced ecological, economic and social development (UNESCO 2005b; UNESCO 2009). Therefore, education for sustainable development is about improving the quality of life in the present without destroying the planet for the future (Aceska and Nikoloski 2017). Such understanding provides the foundation for ESD efforts, and urges more concrete actions towards sustainable development (Tilbury, 2011).

Therefore, ESD is intended to empower 'learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity. It is about lifelong learning, and is an integral part of quality education. ESD is holistic and transformational education which addresses learning content, outcomes, pedagogy and the learning environment. It achieves its purpose by transform-ing the society' (UNESCO (2014a, p.12).

This comprehensive definition of ESD indicates that the concept connotes three key dimensions of sustainable development: society, economy and environment (Sachs 2012) which should be integrated in education at all levels, thus, ESD necessitates the acquisition of key competences in accordance with the concept of transformational learning, in addition to other general and context-specific capabilities. (Giangrande et al., 2019).

Similarly, (Mogensen & Schnak, 2010) pinpointed that ESD should be seen as a process of learning competencies that may be applied and taught across all disciplines, giving that ESD is regarded as integral part of quality education, and it can be served as an enabler for all sustainable development goals.(Leicht et al., 2018 p26). Consequently, SDG 4.7 has expressed an ambitious vision to be realized by 2030 through ESD to ensure that *"all learners acquire the knowledge and skills needed to promote sustainable development."* (UNESCO 2016)

1.2 ESD for 2030 and Sustainable Development Goal 4.7

In 2015, the international community adopted 17 Sustainable Development Goals (SDGs) to address poverty, hunger, health, education, energy, work, industry, inequality, cities, consumption, climate change, ocean life, ecosystems, peace, and collaboration. Reaching these goals will require a substantial shift in the way we live, think, and act, and the critical role of education in achieving all 17 SDGs has been underlined (UNITED NATIONS, 2015).

ESD is universally acknowledged as a critical component of Agenda 2030, primarily Sustainable Development Goal 4 (SDG 4), and as a critical driver of the other SDGs (ESD 2015). Accordingly, ESD for 2030 builds on the lessons learned from the Global Action Programme on Education for Sustainable Development (GAP, 2015–2019), in response to the increased emphasis on ESD as a means of enhancing the contribution of educational content to humanity's survival and prosperity. ESD 2030 places a premium on education's role in accomplishing the Sustainable Development Goals, and urging policymakers to foster an enabling environment conducive to the effective scaling up of ESD in educational institutions, communities, and other settings. (UNESCO 2020, P26).

In the global agenda for SDGs, ESD and global citizenship education (GCED) are incorporated into SDG4, as the seventh target, which strive to reorient education so that students at any age can contribute to solving today's most serious environmental, economic, and social problems (UNESCO 2016). Target 4.7 places a premium on ESD and sustainable lifestyles, as well as on human rights, gender equality, and the development of a culture of peace and nonviolence, global citizenship, and a respect for cultural variety (UNESCO 2019). (Figure1)

Figure (1) Sustainable Development Goal 4.7 and Global Indicator



Source: UNESCO (2016) Education 2030 Framework for Action. Image created by the researcher

To promote ESD and GCED, it is believed that the three interrelated components of learning - cognitive, social and emotional, and behavioral - are crucial for developing a value-based, holistic, and really transformational approach to learning (UNESCO 2019b, P7).

Therefore, advancing policy is essential first step towards realizing the rest priority areas as encapsulated in ESD for 2030 roadmap, to transform learning environment, along with building educators' capabilities, and empowering youth, as well as expediting local level actions (UNESCO 2020). It has been increasingly understood that education is not only an instrument to sustainable development but instead, from an emancipatory viewpoint, ESD focuses on building capacities and nurturing key competencies to enable individuals to lead sustainable development as agents of change (Leicht et al. 2018, P.32).

Ultimately, it is vital for every country to understand their accomplishment and shortfalls in the last period, as well as to seek the best way to enhance incorporating ESD in the decade 2020-2030; consequently, it is not enough to be aware of international or regional ESD frameworks; it is also critical to establish and execute monitoring methods that serve as a vehicle for identifying how ESD is applied in national and regional settings (Goad and Kitaev, 2020, P8)

1.3 Key Competencies for Sustainability

The term competencies in the educational literature associating with some ambiguity, as it has been correlated with skills, abilities, capabilities, capacities, qualifications and other concepts (Wiek et al. 2011; Barth et al. 2007).

However, According to the EU (Skills for Lifelong Learning); competency is defined as a combination of knowledge, skills, and attitudes (EU 2006). Aceska and Nikoloski (2017) argued that SD competencies have been identified in ESD literature as a set of knowledge, skills, values, fundamental to ensure that students are capable to adapt to the complexity and uncertainty of sustainability issues (Aceska and Nikoloski 2017).

Therefore, ESD intends to enable students and educators to acquire the necessary competencies, and empower them to contribute to sustainable development (UNESCO, 2014 c: 33), which means that specific competencies are required including theoretical background, methodological capabilities within a discipline or area of practice, as well as values that controlling behaviors and influence decision-making (Dlouhá et al. 2019).

There has been a long-standing discussion in the field of ESD about which critical competencies should be cultivated and integrated into educational programs. (Rieckmann 2012; Naji 2015; Lozano et al. 2017; Wilhelm et al. 2019; Leal Filho et al. 2021). Numerous frameworks for defining ESD's core competencies have been proposed in the literature, for instance, the frameworks

offered by Wiek et al. 2011 & Wiek 2016, Rieckmann 2012; Lambrechts et al. (2013), Wals 2013; and Lozano et al. 2017 (table 1). In addition to (UNECE 2012) and (UNESCO 2017) competency frameworks that have guided many studies in the field (Garcia et.al 2017; Vare 2018; Dlouhá et.al 2019).

 Table (1) Key Competencies for Sustainability (Authors' own elaboration based
 on the literature)

-

| Reference | Sustainability Competencies | |
|-------------------|---|--|
| Wiek et al.(2011; | Systems thinking competence; anticipatory competence; normative competence; | |
| 2016) | strategic thinking or action-oriented competence; interpersonal competence and | |
| | integrated problem-solving competence. | |
| Rieckmann | Systemic thinking and handling of complexity; anticipatory thinking; critical | |
| (2012) | 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; ambiguity and frustration tolerance. | |
| Lambrechts et al. | Responsibility (values, ethics, reflection); Emotional intelligence (transcul | |
| (2013) | understanding, empathy, solidarity, compassion); System orientation (inter- | |
| | disciplinarity); Future orientation; Personal involvement (self-motivation, | |
| | motivating others, learning); and Ability to take action (participatory skills). | |
| Wals (2013) | work in an interdisciplinary environment; acquire interconnections, | |
| | interdependence and partnerships; flexible visions, cross-cultural understanding | |
| | and cooperation; participatory competence; planning and implementation; | |
| | empathy, sympathy and solidarity; personal motivation and among others; and | |
| | understanding competence of distinct behaviour and cultural vision | |
| Lozano et al. | Systems thinking; interdisciplinary work; anticipatory thinking; justice, | |
| (2017) | responsibility, and ethics, critical thinking and analysis; interpersonal relations and | |
| | collaboration; empathy and change of perspective; strategic action, personal | |
| | involvement; tolerance for ambiguity and uncertainty | |

The UNECE Competences for educators in education for sustainable development aim at inspiring the improvement at all levels in order to equip educators with the fundamental competences to act as change agents (UNECE 2012), These competences are categorized under four learning domains:(learning to know; learning to do; learning to live together; learning to be), and express three dimensions of learning: a holistic approach, envisioning change, and achieving transformation (Farioli et al., 2017).

Additionally, there is a wide consensus in ESD rhetoric that UNESCO (2017) key competencies (Table 2) are particularly essential for sustainability education (Leicht et al., 2018), as they consolidate other competencies in the literature (e.g. OECD 2005; de Haan 2010; Wiek et al. 2011; Rieckmann 2012) and can be considered as a combination of them (Rosén et al. 2019).

| Competency | Ability to |
|--------------------------------|--|
| Systems thinking competency | Recognize and understand relationships; analyze complex systems; think how systems are embedded within different domains and different scales; deal with uncertainty. |
| Anticipatory competency | Understand and evaluate multiple futures – possible, probable and desirable; create one's own visions for the future; apply the precautionary principle; assess the consequences of actions; deal with risks and changes. |
| Normative competency | Understand and reflect on the norms and values that underlie one's actions; negotiate sustainability values, principles, goals, and targets, in a context of conflicts of interests and trade-offs, uncertain knowledge and contradictions |
| Strategic competency | Collectively develop and implement innovative actions that further sustainability at the local level and further afield. |
| Collaboration competency | Learn from others; understand and respect the needs, perspectives and actions of others (empathy); understand, relate to and be sensitive to others (empathic leadership); deal with conflicts in a group; facilitate collaborative and participatory problem solving. |
| Critical thinking competency | Question norms, practices and opinions; reflect on own one's values, perceptions and actions; take a position in the sustainability discourse. |

 Table (2) UNESCO 2017 key competencies for sustainability

| Self-awareness competency | reflect on one's own role in the local community and (global) society; continually evaluate and further motivate one's actions; deal with one's feelings and desires |
|---|--|
| Integrated problem-solving competency | Apply different problem-solving frameworks to complex sustainability problems and develop viable, inclusive and equitable solution options that promote sustainable development, integrating the abovementioned competences |

2. Competency Based Education

UNECE strategy in line with UNDESD reaffirmed that formal, non-formal and informal education should foster the development of key crosscutting competencies related to sustainability (UNECE 2009 P16; Leicht et al., 2018, P39), which emphasizes the intrinsic role of education in developing adaptable self-motivated lifelong learners (López-Alcarria et al. 2019) and fostering the creation of sustainable societies (Cars and West 2015; Naji 2015; Kioupi and Voulvoulis 2019).

Meanwhile, the integration of these competencies within educational programmes requires transforming teaching and learning practices (Wiek et al., 2011); in order to shift from knowledge-based Education to competency-based Education (Laurie et al. 2016; Farioli and IASS 2017; Eizaguirre et al. 2019). Therefore, exploring pedagogical innovative approaches and curriculum developments to promote ESD competencies within various education sittings have become increased interest within the research field of ESD (Cebrián et al.2019), the argument is that sustainable development rely on cognitive, normative and motivational factors as a fundamental pre-condition for making informed decisions, planning and precautionary interventions (Dlouhá et al. 2019).

From this point of view, teachers should no longer be mere the transmitters of knowledge, but rather, they have to act as a catalyst for the

acquisition of ESD competencies (Leicht et al., 2018; Wiek et al. 2011). For this end, teacher training should address the critical dimensions of sustainability education including complex vision of the world and social and environmental issues, understanding the concept of sustainability (Borg et al., 2014), as well as training in methods that promote the inclusion of sustainability in everyday teaching practice (García-Gonzalez et al. 2020).

Moreover, teacher education should address ESD key competencies in line with notions of transformational learning, in addition to other generic and context specific competencies (Giangrande et al. 2019), which can be facilitated by embracing new approaches to teaching and learning (Albareda-Tiana et al. 2018a) focusing on experiential learning, reflective learning, participative learning, active learning, creativity, collaboration, problem solving, practice based learning, transdisciplinary approach and self-regulation (Lambrechts et al. (2013); Aceska and Nikoloski (2017); Leicht et al., 2018).

Additionally, research has indicated that adopting active learning-teaching strategies in teacher education such as problem-based learning, project-oriented learning in interdisciplinary and cross-disciplinary sittings; can promote the acquisition of ESD competencies (Albareda-Tiana et al. b 2018; Camacho et al., 2019). While others emphasized the significant impact of real-life learning opportunities on the development of ESD competencies (Lozano, et al 2017; Bürgener and Barth 2018; Evans 2019).

Sjögren (2019) attempted to analyze the formations of teacher students through education for sustainable development; he argued that educators who engaging in preparing prospective teachers for ESD should critically think about how to form the characteristics of student teachers.

Some researchers distinguished between two aspects of ESD teacher competencies: motivation and volition, in addition to knowledge and ability, thus, addressing them within teacher education requires innovative and appropriate teaching and learning approaches (Brandt et al. 2019). Similarly, Dlouhá et al. (2019) asserted the importance of promoting competencies that address the cognitive, socioemotional and behavioural domains in fostering transformative action for sustainability (Dlouhá et al. 2019).

In this sense, ESD competencies are not reducible to cognitive dimension, but they also include social and behavioral components (Sleurs, 2008 P39; Waltner et al. 2019) such as abilities, emotions, values and motivations, therefore, they are learnable but not teachable (Barth et al (2007); Adomßent and Hoffmann 2013), consequently, ESD calls for a shift from teaching to learning (UNESCO 2017; LAURIE et al. 2016).

Furthermore, although considerable progress has been achieved towards addressing, defining and measuring the impact of ESD (Michelsen and Wells 2017), particularly in pre-service teacher education (Flaherty & Liddy 2018), however, evidence shows that prospective teachers lack the necessary competencies to incorporate ESD into their future teaching work (Kieu et al., 2016; Kalsoom et al. 2017), and the same deficit was observed within the university teachers in regard with adapting their teaching practices and content to be competence oriented (Mulà et al. 2017; Wilhelm et al. 2019).

Therefore, more work is still needed to reorient teacher education towards ESD in content and learning methods (UNESCO 2014a P32), this requires that the research to be focused on operationalizing sustainability competencies and designing appropriate measures to evaluate the development of ESD competencies for students and educators alike (Wiek et al. 2016; Glasser and Hirsh 2016; Garcia et al. 2017; Wilhelm, Förster and Zimmermann 2019; Cebrián et al. 2020).

3. Reorienting Teacher Education towards ESD

3.1 ESD Competencies in Teacher Education (Figure 2)

While it is pivotal to identify the core competencies needed to enhance the capabilities of learners and educators to act as change agents towards sustainability (UNESCO 2014 c; Cebrián and Junyent 2015; Glasser and Hirsh, 2016), however, it is also crucial to explore and discuss how these competencies can be delivered and integrated in different educational settings (Pacis and Wynsberghe 2020, Bianchi 2020), particularly in teacher education programmes, as to date, the extent to which these programmes are reoriented towards sustainability remains a question (Cebrián and Junyent 2015; Brandt et al. 2019; Wilhelm et al. 2019; Cebrián et al 2019; Leal Filho et al. 2021).

According to the final report of the implementation of the UNDESD; efforts to reorient teacher education towards ESD are still insufficient (UNESCO 2014a P32); consequently, a comprehensive educational transformation is still needed in order to prepare professionals to handle sustainability challenges (Wiek et al. 2016; UNESCO 2019a), and further emphasis on educators' competencies is needed (Pacis and Wynsberghe 2020), to enable them embedding ESD in their teaching practices effectively.

In recent years, there has been an increased focus on educators' competencies (Leal Filho et al. 2021), and a variety of competence models have been created and evaluated (Bürgener and Barth 2018). Dlouhá et al. (2019) analyzed the UNESCO (2017) competence framework using the normative and transformational features of UNECE (2012) in order to determine constituents of the eight competences.

Vare (2018) reported on the (Rounder Sense of Purpose RSP), a smallscale action research project in the United Kingdom in which the UNECE 2012 and other frameworks were used to develop a concise set of twelve competences for educators in education for sustainable development, with learning outcomes distributed across three dimensions (thinking holistically, envisioning change, and achieving transformation) (Integration, involvement, practice and reflection).

Garcia et al. (2017) introduced the (CESC) competence framework in Education for Sustainability from the Perspective of Complexity, as well as a methodological approach to assessing these competencies based on (Sleurs, 2008) and UNECE 2012 domains. These areas were utilized in the work of (Biasutti et al 2016) to construct an evaluation instrument to evaluate the incorporation of ESD principles into the curriculum, and thus to measure their existence as general competencies in students' results.

The (core competencies in sustainability presented and accepted by the Conference of Rectors of Spanish Universities) formed the basis of a rubric or what is known as a competence map for education degrees and postgraduate studies, which was produced under the EDINSOST research project (Albareda-Tiana et.al 2018a). Based on Miller's pyramid, the rubric specified three degrees of competency acquisition (knows, knows how, shows, or does) (Albareda-Tiana et.al 2019).

The EDINSOST competency map has been deployed in a number of studies, some of which focused on specific teaching approaches (e.g., project-based learning, problem-based learning) to assess their suitability for boosting students' acquisition of sustainability skills (Albareda-Tiana et.al 2018a; Albareda-Tiana et.al 2019).

Tejedor et al. (2019) attempted to connect each CRUE-sustainability competency with the pedagogies of the EDINSOST project, along with suggesting and elaborating a specific instructional approach to deliver each one, whereas (Cebrián et al., 2019) developed a questionnaire by defining the different levels and units of sustainability competencies based on CRUE's sustainability competencies' framework, and used it as a self-evaluation. Furthermore, the EDINSOST assessment method was used to examine the presence of sustainability in the curricula of sixteen Spanish higher education institutions. (Sánchez-Carracedo and Sureda 2020; Sánchez-Carracedo et.al 2021).

Bertschy et al. (2013) presented an ESD-specific professional action competence model for teachers in kindergarten and primary schools, which differentiates two aspects of competency that should be taken into account when designing teacher education programs: knowledge and ability, that includes content knowledge and pedagogical content knowledge, and motivation and volition, which refers to convictions/values, motivation, and self-regulation.

Brandt et.al (2019) aimed to operationalize Bertschy et al. framework by viewing competencies as learning outcomes and framing them from a didactic standpoint as actions required from the teacher (Brandt et.al 2019; Brandt et.al 2020).

Wiek et al. (2011) is one of the most frequently mentioned frameworks in the literature (Galleli 2020), as it not only influenced UNESCO's (2017) eight competences for sustainable development (Varea, 2018), but also laid the groundwork for a number of subsequent frameworks. (Evans 2019).

Warren et al. (2014) converted broad key competencies into modes of thought that can assist students in thinking deeply about information from a variety of viewpoints, imagining potential future possibilities, and understanding systems in order to strategize how to effect change in society.

Similarly, Giangrande et al. (2019) offered a competency framework based on Wiek et al. (2011) but included seven more interpersonal competencies, as well as a method for assessing these competencies through the use of a range of evaluation questions.

Based on the literature and policy research, Bentham (2013) offered an action competence framework as an educational strategy that may enhance ESD.

The author emphasized the major parts of ESD education by categorizing competences into the four areas: teaching and learning approaches, skills, knowledge, and values, and then identifying themes and competencies within each area.

Moreover, the KOM-BiNE competence model, which was developed as part of a large-scale EU project, offers a set of competencies pertaining to individual aspects within four fields of action: "knowing and acting," which refers to subject-matter knowledge, methodological knowledge "know-how," and "valuing and feeling," as well as both externally oriented activities and more individual areas (Rauch and Steiner 2013).

In light of a theoretical framework of professional competences in ESD proposed by (Cebrián and Junyent 2014), Cebrián and Junyent (2015) proposed a theoretical framework to investigate the capabilities that student teachers would value in a school project. The findings revealed a considerable gap between these theoretical frameworks and student teachers' awareness, indicating a critical need for increased integration of ESD abilities in teacher education.

This idea may motivated many scholars to focus on how to assess the development of sustainability competencies (Leal Filho et al. 2021), The DAP (Dispositions, Abilities, and Behaviours) framework was developed as a guide to measure learners' sustainability competencies in higher education, where learners' dispositions refer to their sustainability competencies in "Learning to be" and "Learning to Live Together," and their abilities to engage with sustainability relevant to their sustainability competencies in learning to know and to do, while learners' behaviors to improve sustainability can be linked to their sustainability competencies in "learning to transform oneself and society" (Besong and Holland 2015).

Marcote et al. (2015) identified five critical competencies (systems thinking, anticipatory competence, normative competence, strategic competence,

and interpersonal competence) and examined the impact of an experimental educational model on the development of sustainability competencies. Their results showed that students' active participation in seeking solutions to socioenvironmental problems can significantly nourish students' teachers' competencies.

Finally, Ghorbani et.al (2018) designed a framework with fourteen professional competencies for (learning to be) approach based on the literature and findings of the interviews with a number of experts and in-service teachers. They asserted that teachers' abilities such as the ability to promote students' selfesteem, self-confidence, self-awareness and self-belief, as well as supporting them to set valuable goals for their lives, are critical for achieving "learning to be" and should be mainstreamed in teacher education programs

Figure 2. ESD Competencies in Teacher education (created by author based on the literature)

| ESD Content Knowledge & Pedagogy | Acquiring general knowledge of the content of SD&ESD Connect and contextualize society, economy, ecological environment, local and global problems Understanding interdisciplinarity and transdisciplinarity of ESD Ability to apply SD knowledge and develop methods for this application Ability to develop and provide efficient learning opportunities |
|-------------------------------------|---|
| Core Life Skills | Critical and creative thinking Systemic thinking, Future thinking Work and live with complexity; Interpersonal competence, communicating and networking Strategic competence Collaboration in decision making and problem solving Self-awareness, manage emotions and concerns |
| Values & Behaviours | Promote sustainable use of natural resources promote social tolerance and equity Optimism towards contributing to ESD Responsibility for environmental problems Acknowledgment of SD as a task for society Acknowledgement of the role of education in tackling this societal task. Application of ethical principles related to the values of sustainability |
3.2 Approaches to integrate ESD Competencies into Teacher Education

In the literature, there are a variety of proposed techniques to integrating ESD competences into teacher education, which can take various forms, whether interdisciplinary (Sims & Falkenberg 2013; Andñi and Vorkapi 2017), transdisciplinary (Bürgener and Barth 2018; Tejedor et al. 2019; García-Gonzalez et al. 2020), or as cross-curricular competencies (Dumitru 2017; Albareda-Tiana et al. 2018), through a holistic (Besong and Holland 2015) and transformational education (Bentham 2013; Giangrande et al. (2019) approach, which attests to the approaches stated in the preceding literature and by international bodies (Shephard et al. 2018; UNESCO 2018; González-Salamanca et al. 2020).

The most common way is to provide specialized courses that address ESD knowledge and competencies, together with relevant pedagogies. (Biasutti and Surian 2012; Bertschy et al. 2013; Besong and Holland 2015; Cebrián and Junyent 2015; Andñi and Vorkapi 2017; Bürgener and Barth 2018; Brandt et al. 2019; Dlouhá et al. 2019; Brandt et al. 2021).

Whereas many suggestions repeatedly highlighted that ESD competencies are learnable rather than teachable (Barth et al. 2007; Sleurs 2008 (P39); Leal Filho et al. 2021), this stresses the importance of teaching methods to provide diverse learning opportunities for students to develop their competencies, thus partaking students teachers through creative pedagogical approaches (Cebrián et al. 2019; Ssossé et al. 2021) in an interactive and open learning environment (Albareda-Tiana et al. 2018; Giangrande et al. 2019;Tejedor et al. 2019) with appropriate assessment methods can foster the development of their ESD competencies (Ghorbani et al. 2018; García-Gonzalez et al. 2020).

Additionally, other researchers have argued that ESD competencies can serve as standards for curriculum development (Bertschy et al. 2013) and can be incorporated into program descriptors (Cebrián and Junyent 2015), whether as educational goals (Dlouhá et al. 2019) or learning outcomes (Biasutti et al. 2016; Sánchez-Carracedo et al (2021). Further, ESD competency can be incorporated into the existing teacher competency paradigm as a new indication. (Weng et al. 2020). Table (3) elaborates the proposed approaches in the literature to integrate ESD key competencies in teacher education

 Table (3) Approaches to Integrate ESD Competencies into Teacher Education

 (author's own elaboration based on the literature)

| Integration Approach | Example references |
|--|--|
| Training courses in ESD with appropriate | Biasutti and Surian 2012; Bertschy et al. 2013; |
| teaching methods | Cebrián and Junyent 2015; Andñi and Vorkapi |
| | 2017; Schulera et al. 2018 Brandt et al. 2021 |
| Cross curricular competencies using a | Dumitru 2017; Albareda-Tiana et al. 2018; |
| holistic approach in an interactive and open | Ghorbani et al. 2018; Tejedor et al. 2019; |
| learning environment | Garcia-Gonzalez et al. 2020. |
| Integrating ESD as a theme in teacher | Marcote et al. 2015; Kalsoom et al. 2019 |
| education curriculum through content and | |
| process | |
| Inclusion of sustainability competencies in | Cebrian and Junyent (2015) |
| degrees | |
| Incorporate FSD competency into existing | Wang at $a1$ (2020) |
| teacher competency model as a new indicator | weng et al. (2020) |
| Competencies as standards with appropriate | Bertschy et al. (2013) |
| pedagogical approaches | Densely et al. (2013) |
| Competencies as educational goals | Dlouhá et al. (2019) |
| F Bomp | |
| Competencies as learning outcomes | Biasutti et al. (2016); Sánchez-Carracedo et al. |
| | (2021) |

4. Teacher Education in Palestine

The development of higher education in Palestine is relatively new, since the 1950s, two-year colleges with a focus on teacher education and technical education have existed, whereas universities were established in the 1970s as a communal effort to preserve the Palestinian identity and provide a better future for young people, especially when it became increasingly difficult for young Palestinians to pursue higher education abroad, After the Oslo Accords of 1994, when education was handed from Israeli to Palestinian control, this sector began to flourish significantly. (RecoNow, 2016)

The HE law distinguishes three distinct types of higher education institutions: governmental, private, and public (RecoNow, 2016), the majority of universities in Palestine are public, originally created and owned by local charity associations and NGOs, they depend on fundraising and receive partial government funding. Most of these universities were established during the period of Israeli occupation of the West Bank and the Gaza Strip (Tempus 2012).

There are different types of HEIs in Palestine, traditional universities, open universities, university colleges, and community colleges (MoHE 2020-2023). Figure 3 Distribution of higher education institutions by type



Source: Palestinian Central Bureau of Statistics based on scholastic year 2020\2021. (*Figure created by the researcher*)

The Higher Education Council is responsible for the adoption of higher education policies, deciding on governance standards of institutions, enacting relevant legislation, and monitoring their implementation (HE Law 2018).

The Palestinian Ministry of Education and Higher Education (MoEHE) was established following the establishment of the Palestinian National Authority in 1994; in 1996, the Ministry of Higher Education and Scientific Research (MoHE) was created and legislated through law No (11)/1998; and in 2002, the MoHE was merged with the MoE into one Ministry. The two ministries have been united and separated multiple times; nevertheless, they remain two different ministries as of 2019 (MoHE Website).

The MoEHE from the early years of this century prioritized reforming teacher education and developing a clear roadmap for progression within the teaching profession. To this end, a Teacher Education Strategy (TES) was developed in 2008, in order to establish new parameters for teacher education and new requirements for teacher recognition/certification (Burke et al. 2020).

The Teacher Education Strategy is one of the most important policy documents in teacher education in Palestine; it came as a fruit of the joint efforts and support from national and international partners, it aims to develop the quality of teachers through developing:

1. Teacher education programs and the higher education institutions that provide them.

2. Programs of in-service education and of continuing professional development.

3. The teaching profession.

4. The management of the teacher education system. (Teacher Education Strategy 2008)

The strategy set a vision for teachers, and outlined the main objectives and targets in pre and in-service teacher training. It advocated that only graduates of higher education institutions' teacher qualification programs to be appointed as teachers in Palestinian schools (Romahi and Issa 2010)

The implementation of the strategy and its recommendations was strengthened through several projects supported by international partners (Hashweh 2011).

Accordingly, the MoEHE, established the Teaching Profession Development Commission (CDTP) with the support from UNESCO and EU, the (CDTP) was tasked to develop professional standards for teachers at all levels (new teacher, teacher, senior teacher, expert teacher), as well as setting minimum standards for teacher education. Consequently, the CDTP developed professional standards for new teachers to be one of the series of successive circles and to be a reference for describing the profession of the teacher (Teacher Professional Standards 2012).

However, CDTP has not set minimum standards for teacher education programmes, as indicated in the review of implementation status report of TES, which concluded that there is a need to develop and formally endorse standards for teacher education programmes, and ensure that all relevant bodies abide by them (Hashweh 2011, p38).

Another milestone in implementing TES was the development of teacher professional development index, through the World Bank- supported project (Teacher Education Improvement Project) (TEIP) (2011-2018); where the Readiness to Teach Index (RTTI) of competences was formulated at the first phase based on the Professional Standards for New Teachers, to specify the competences required for student teachers upon graduation and before entering the profession (PTPDI 2018).

The implementation of the strategy through several projects, and enacting teacher professional standards, contributed to raising the percentage of fully qualified teachers from 54 percent in 2011 to 92 percent in 2018 (Burke et al. 2020).

Furthermore, most universities started developing their programmes (Romahi and Issa 2010), and the MoEHE announced that only qualified teachers with Bachelor degree will be appointed as of 2014\2015, and thus stop hiring teachers with associate degrees (Hashweh 2011, P.154), consequently, teacher education is offered currently as undergraduate degree at universities and university colleges.

Related Research

ESD for 2030 framework called education policy-makers at local, national, regional and global levels to mainstream ESD into education policies, curricula, teacher education and student assessment, as well as embedding ESD in education quality assurance criteria (UNESCO 2020).

Benavot's study (2014) examined, from a global perspective, developments related to ESD in primary and secondary education during the DESD (2005–2014). The results indicated that policy attention to ESD has strengthened in many countries, while many other countries lack either an ESD policy or a viable one. In addition, several obstacles have been found to hinder the implementation of national ESD policies. Financial constraints and a weak global economy were among the factors. Thus, the support provided by international donors and initiatives conducted by NGOs and the private sector can be considered paramount for the successful ESD implementation.

Based on a study on the research carried out in eighteen countries, Laurie et al. (2016) sought to provide evidence on the contributions of ESD to quality education. They concluded that ESD pedagogies have contributed in many ways to quality education in primary and secondary schools, more than ESD content, which underlines the need to integrate ESD across all subjects and to provide professional development for teachers in order to ensure ESD policy implementation.

The final report of the UN DESD demonstrated that although many countries have included goals related to sustainability and/or environmental education, and incorporate relevant themes in their curriculum, there is still a need to prepare teachers to deliver these objectives, and to "reorient teacher education to approach ESD in content and learning methods" (UNESCO 2014a).

Reviewing the related research revealed that exploring the status of reorienting teacher education towards sustainability has motivated many researchers worldwide; whereas the topic has been addressed in several ways and from different perspectives.

Sims & Falkenberg (2013) discussed the promising practices and initiatives toward the reorientation of teacher education for sustainability at four Canadian universities, highlighting challenges and enablers to do so. The results of the case study clarified that these initiatives were aligned with Hopkins and McKeown's (2005), and they allowed for successful integration of ESD in teacher education programmes through curriculum and pedagogical approaches. Furthermore, they called for future research to focus on assessing the impact of these promising practices on the awareness and ESD competences of university students in faculties of education.

Bentham et al. (2014) carried out a content analysis of the key policies that guide teacher education development in South Africa, the results indicated that although ESD principles could be found in the policy text, these are in a general sense and not with specific reference to sustainable development issues.

Schrage (2015) developed and implemented an assessment tool to identify variables that encourage or obstruct the implementation of initiatives intending to incorporate ESD into teacher education curriculum in Botswana. The results show that pre-service teachers' understanding of sustainability issues is determined by their teacher educator's awareness of ESD and how instructional procedures contribute to mental model transformation. The institution's support and capacity to strategically apply ESD were also indispensable.

Jumani (2015) conducted a case study in order to determine the elements of Education for sustainability (EfS) in teacher education in Pakistan, and investigate teacher educators knowledge, skills and attitude related to EfS as well as their perceptions and engagement in EfS, the findings of his study showed the absence of teacher educators' involvement in any activities relevant to EfS, meanwhile, they suggested more integration of sustainability in the curriculum of teacher education programmes.

Moreover, Kalsoom et al 2019 investigated the status of education for sustainable development in teacher education of Pakistan, through analyzing the main teacher education documents developed during the UN DESD, the study concluded that ESD has been partially addressed in national documents related to teacher education, and advocated more mainstreaming of ESD in teacher education in the country.

In their study that implemented in nine TEIs in Pakistan, Mirza & Tajuddin (2020) sought to explore the perceptions of teacher educators about the issues hindering sustainable development at the global and national levels, and the role of teacher education in promoting SD; their results showed that teacher educators were below the satisfactory level in terms of their knowledge and understanding of the concepts and challenges related to SD, in addition, they pointed out the absence of institutional support provided to them to adapt the curriculum.

In another context, Kieu et al. (2016) conducted interviews and focus groups with lecturers and students in five teacher education institutions (TEIs) in Vietnam, in order to identify challenges in (ESD) implementation, aiming at advancing ESD in training teachers toward sustainability. Although their findings demonstrated that ESD-related topics were included in both formal and nonformal education, meanwhile they disclosed a critical gap between ESD cognition and ESD teaching capacity among student teachers, and recommended that TEIs need to adopt more effective approaches to ESD. Dumitru (2017) proposed a pedagogical training program to infuse ESD competencies in the existing curriculum for HE teachers in Romania, the argument is since the Romanian teacher training curriculum does not nurture ESD competencies, therefore, this technique can be considered as a good practice to integrate ESD competencies in the present curriculum without any cost.

Bourn et al. (2017) reviewed the available evidence from different countries on the extent to which GCED and ESD are included in initial teacher education, their analysis highlighted few examples where the governments have pursued strategic ways to support initiatives directly within teacher education such as in China, South Korea and Ireland, moreover, other examples of ESD inclusion in strategies and programmes of in-service teacher training; were found in Europe, North America and Asia Pacific region, but as outputs from projects rather than the outcome of strategic direction and intended actions (Bourn et al. 2017, P23).

Additionally, from an international perspective, Rieckmann, M. (2019) presented a number of good practices to integrate ESD in teacher education from different countries, and discussed the state of teacher Education for SD in Germany, he argued that this field is still largely characterized by courses and projects in individual disciplines, whereas there is a dire need for structural changes in teacher education and training, in order to promote the integration of ESD in teacher education.

Finnveden et al. (2019) reported on the self-assessment that all forty-seven HEIs Sweden were asked to perform, in order to evaluate the integration of SD in their programmes, the findings reflected a mixed picture, where less than half of the HEIs have developed goals for mainstreaming SD, as well as setting systematic follow-up measures, while approximately 25% of universities got a high rating.

In Spain, Albareda-Tiana et al. (2019) analyzed four case studies of the degree in primary education at three Spanish universities, and examined the effectiveness of different active teaching-learning strategies in promoting the integration of ESD, and enhancing students' sustainability competencies. Their analysis demonstrated that active teaching-learning strategies have a positive impact on students' acquisition of sustainability competencies.

While Sánchez-Carracedo et al. (2021) implemented a survey to explore the perceptions of students in four Spanish universities in nine education degree courses, regarding their training in sustainable development, although the results showed development in students' competencies, students expressed the need to further strengthening of ESD in universities.

Furthermore, Nyatuka (2020) through research review tried to explore the success stories and challenges associated with the implementation of the competency-based curriculum in basic education in Kenya, which is meant to foster the acquisition of ESD competencies, the review pinpointed that some milestones have been done, but at the same time, there are still many challenges that limit the achievement of curriculum objectives, among them insufficient understanding, inappropriate pedagogical approaches, and weak involvement of the different actors.

Agyemang (2020) investigated how teacher educators integrate the principles, knowledge and values of sustainability in their teaching practices in three Colleges in Ghana, revealing the challenges and enablers to implement sustainability models, the main results indicated that teacher educators make modest efforts in addressing sustainability in their work, and some local initiatives were implemented while sustainability mainstreaming process at national level is insufficient with low community awareness and inappropriate institutional structures as well as the scarcity of resources.

On the other side of the spectrum, in the Arab countries, a growing interest can be observed in studying the reorientation of education at all levels towards ESD; in a study targeted the involvement of the Arab countries in ESD, it was demonstrated that many countries in the Arab region started to include environmental content in their curricula since 1970s, and started to recognize the importance of ESD from 2005 with the launch of DESD.

According to that study, Palestine was among the Arab countries that were included in many initiatives on ESD, such as the Mediterranean Education Initiative for Environment and Sustainability (MEdIES), however, Palestine has not implemented ESD initiatives at national level (Saab et al. 2019).

Searching the related literature on ESD in the Arab countries revealed that few or almost no studies were found focusing on teacher education, but rather, most of studies on ESD integration were directed to investigate mainstreaming sustainability in K-12 curricula (Zguir et al. 2021; Al Anzi 2021; Bani Murtada & Adili 2020).

Other studies sought to review the assessment approaches and the educational goals in light of the SDGs, Al-Kuwari et al. 2021 implemented an indepth analysis of the Qatar education system (K-12 level), to explore the alignment of the current assessment approaches with SDGs, and whether these approaches appropriate for evaluating and guiding the teaching of twenty-first-century skills that support the achievement of the SDGs, they concluded that the education system in Qatar still needs more developments to align its assessment practices and educational goals, with the SDGs.

Moreover, some studies focused on university programmes in general, Biasutti et al. (2016) evaluated the integration of sustainability principles into university curricula at two Jordanian universities by revising eighteen syllabuses. The findings highlighted that some sustainability themes, principles, and competencies were infused in the revised curricula. In addition, it provided a rich scenario for the strategies applied by university professors to adopt ESD strategies, as well as a goal-oriented approach in curriculum planning.

Al Mohsen (2017) sought to develop a number of competencies for teachers in light of education for sustainable development based on UNESCO documents and literature review, his proposal consisted of five competencies called (Pyramid of cultural competencies for teacher in the light of education for sustainable development) namely: Preserving cultural identity, citizenship and belonging, respecting cultural and intellectual diversity, community participation and preserving the environment, in addition, the study discussed some approaches to enhance the acquisition of these competencies by teachers.

Like other countries in the Arab region, ESD in Palestine has so far rarely been addressed in the literature, nonetheless, the topic has been treated in different ways, Elyan and Al-Doulat (2020) developed standards for the Palestinian curricula in line with the prosperity goals of the 2030 agenda, their list contains fourteen criteria and seventy five indicators, and they called for adopting these standards as a reference document for developing and enriching the Palestinian curricula.

Furthermore, the authors in another study Elyan and Al-Doulat (2021) tried to evaluate the extent to which the SDGs are incorporated in the Palestinian curricular, relying on the national standards for each SDG. Their findings indicated that there is a discrepancy in the inclusion of the SDGs in the curriculum, and there is a need for further development in this field.

With respect to teacher education, there are a number of studies that have focused on the topic in various aspects; SHINN (2012) sought to explore the role of key international actors in shaping teacher development in Palestine, particularly UNESCO, the World Bank, and the US Agency for International Development, he argued that donor-funded projects, along with the absence of a holistic vision toward teacher education; hinder improving the quality of teacher education.

Bsharat, and Rmahi (2016) endeavoured to assess quality dimensions in pre-service teacher education programs in Palestine, through interviewing student teachers and educators at three universities, their recommendations highlighted the need for enhancing the quality of pre-service teacher education in terms of the quality of instruction; the quality of learning opportunities for both studentteachers and the educators; and, the quality of academic leadership from the administration

In addition, Al Kurd (2018) questioned the role of the Palestinian universities in fostering SD, highlighting the requirements and challenges to the contribution of the Palestinian universities to the achievement of SD. The study suggested a set of recommendations to link universities to the sustainable development process, including the integration of sustainable development into their policies, programs and practices, in addition to pinpointing some impediments in doing so, most notably focusing on theoretical research more than applied research, as well as the insufficient budget allocated to research.

According to the Palestinian national review report of the implementation of the 2030 agenda, the commitment to train teachers was stressed; to ensure the development of their capacities (P34), without mentioning the pre-service teacher education, however, the SDG 4 target 7.1.3, which reflects the extent of ESD and GCED integration; was evaluated as partially mainstreamed in teacher education (Palestinian Central Bureau of Statistics 2020).

Finally, Burke et al. (2020) provided a comprehensive review of the Teacher Education Improvement Project for Grades 1– 4 Class Teachers in the West Bank and Gaza, which was supported by the World Bank; and implemented

between 2008 and 2019, with the aim of implementing the recommendations of TES 2008.

The main accomplishment of the project was producing the professional development index of teaching competences, that was used to redesign, develop, implement, and evaluate pre-service and in-service programs in line with international good practices, the review concluded that the project achieved many desired results, nevertheless, teacher education reform in the West Bank and Gaza is still an incomplete work, and there are areas of development should be pursued, with special focus on sustaining and embedding of the achievements of TEIP in teacher education.

Looking at the above-mentioned literature demonstrates a growing global interest in investigating ESD in teacher education, however, it may indicate a research gap in studying the reorientation of teacher education holistically from different aspects and levels including policy, strategy and implementation, many studies were perceptional, they sought to explore the perceptions of students and educators whether on particular programmes (Nyatuka 2020; Sánchez-Carracedo et al. 2021), or to examine their knowledge, skills and attitudes toward EfS (Jumani 2015), as well as reflecting on the challenges and enablers to ESD (Kieu et al. (2016); Mirza & Tajuddin 2020; Agyemang 2020).

Another common topic is evaluating or proposing a pedagogical approach to enhance the integration of ESD in teacher education (Dumitru 2017; Albareda-Tiana et al. 2019), in addition to assessing university programmes in their relation to ESD (Biasutti et al. 2016; Finnveden et al. 2019), or reviewing a number of national documents with regard to ESD (Kalsoom et al 2019), While other research interests were directed towards introducing some good practices in mainstreaming ESD into teacher preparation programs (Sims & Falkenberg 2013; Rieckmann, M. 2019). In Palestine, the gap is even wider; the scarcity of research in the field of SD and ESD particularly in teacher education is obviously witnessed, some studies emphasized SD and SDGs in general education curriculum (Elyan and Al-Doulat 2020; Elyan and Al-Doulat 2021), or questioned the role of HE in promoting SD generally (Al Kurd 2018). Whilst studies on teacher education paid attention to discuss the challenges impeding teacher education reform (SHINN (2012), or undermining quality aspirations (Bsharat, and Rmahi (2016), as well as reporting on improvement projects relevant to teacher education strategy (Burke et al. 2020).

The only evidence on the integration of ESD in teacher education in Palestine is provided in the self-assessment review 2018 (Palestinian Central Bureau of Statistics, 2020) of the implementation of 2030 agenda, where ESD mainstreaming in teacher education was rated partially, based on the Global SDG indicators database. However, it is not clear what source of data or evidence that has been relied upon in that assessment.

Accordingly, the current study aims to bridge this research gap, as it examines the reorientation of teacher education towards ESD, holistically at multiple levels, starting from policies, strategies, implementation, to monitoring, and evaluation.

Proposing a framework to Integrate ESD in Teacher Education in Palestine

In light of the previous research, integrating ESD into pre-service teacher education can be achieved by mainstreaming ESD related content, skills and pedagogies in different dimensions of teacher education; this should be seen as national priority at the level of the ministries of education and higher education including the accreditation and quality assurance commission, and as an institutional responsibility at the level of higher education institutions that provide initial teacher education programmes (Figure 4).



Figure (4) a Model for the Integration of ESD into Initial Teacher Education

Therefore, ESD knowledge and core competencies can be included within the policy of the MoE, the MoHE, and AQAC, by identifying specific standards to be the basis of quality assurance and accreditation of teacher education programmes, which should be facilitated by full coordination with all stakeholders, as well as establishing a wide range of partnerships to support the successful integration of ESD whether financially or technically.

The other level of integration is HEIs, where teacher education colleges should demonstrate a clear reference to ESD in their policies, in addition to address ESD knowledge and core competencies in their goals, outcomes, content monitoring and evaluation, and direct research to be focused on ESD.(Table 4)

| Table 4. Managing the Integration of | f ESD | at National | Level |
|--------------------------------------|-------|-------------|-------|
| (Author's own elaboration) | | | |

| Integration Level | Features |
|--|--|
| Ministerial Level (Ministry of education and higher education) | POLICY Includes all national policy documents related to teacher education. STRATEGY Refers to integrating of ESD in national strategies, such as MoE strategy, MoHE strategy, teacher education strategy Standards Indicates to teachers' standards identified by the ministry of education and higher education QUALITY ASSURANCE AND ACCREDITATION Connotes quality assurance and accreditation framework and process |
| | |
| Institutional Level (Teacher education institutions) | VISION & MISSION The vision and mission statement of the faculties of educational sciences, which reflects the aspiration to graduate agents of change towards more sustainable societies. OBJECTIVES and OUTCOMES Objectives and learning outcomes of teacher education programs offered at universities CONTENT The planned curriculum, which includes objectives, thematic knowledge related to sustainability axes that provides the context where competencies can be inculcated, activities, initiatives, research, teaching and learning methods, and assessment. PEDAGOGIES The practical approaches and experiences where knowledge can be constructed, skills can be nurtured and attitudes can be formed and expressed. RESEARCH Refers to scientific research activities that related to SD MONITORING and EVALUATION Refers to the systematic internal monitoring and evaluation process of HEIs with regard to integrating ESD competencies into teacher education |

CHAPTER III

Methodology

Research Design

The study employed a qualitative case study design, as it is the most appropriate methodology for the purpose of this research, which aimed at exploring the status of ESD integration in teacher education in the Palestinian context, therefore case study design facilitated the investigation of this "contemporary phenomenon, focusing on the dynamics of the case, within its real-life context" (Yin, R.K. 2003).

Case study is an empirical inquiry (Yin, 2014, P19) which is popular in social science research (Ylikoski & Zahle 2019), it can be designed to explain, explore, or describe a phenomenon of interest (Ellinger & McWhorter 2016); Thus, case study design allowed for an in-depth exploration of the status of ESD in teacher education, as well as examining whether education policies and strategies have been managed to reorient teacher education towards ESD in the Palestinian context.

There are two distinctive types of case study: single and multiple (Yin 2003; Yin 2013), where single case study may be preferred when the case itself is critical, or unusual, or common, or revelatory, or longitudinal, and therefore can make a significant contribution. (Ellinger & McWhorter 2016).

Hence, the research adopted a single exploratory case study with embedded multiple units of analysis Yin (2013), and used triangulated data collection protocol, by drawing upon multiple sources of evidence (Glenn 2009), in order to examine research problem from different perspectives.

The metaphor of triangulation denote methods for data collection and interpretation that help to enhance the validity of the research (Stake1995, p.107; Scholz 2002, p.20); in terms of adding breadth and depth to data collection, as

well as assisting in bringing a richness of data (Yin, 2003) (Figure 5 research design)

Figure 5. Research Design (Created by the researcher)



Teacher education in Palestine was the single case study, while the different sources of data formed the units of analysis that comprised the following units: the first one was official policy documents relevant to teacher education, and the second unit included ministries of education and higher education as well as accreditation and quality assurance commission, whereas the third unit covered faculties of education at three higher educational institutions in Palestine.

Yin (2003) defined the embedded case study as a case that contain more than one sub-unit of analysis, which means that the researcher is able to explore the case with the ability to analyze the data within the case analysis, between the case analyses and make a cross-case analysis (Gustafsson 2017). This enable the researcher to examine subunits that are located within a larger case (Yin, 2003). (Figure 6 Single Case Study)



Figure 6. Single Case Study with Embedded Multiple Units of Analysis

Adapted from: Yin, (2013) Figure created by the researcher

Study group

Sampling procedure relied on purposive or judgmental sampling, which is an acceptable sampling procedure for qualitative research; this approach allows non-randomly selection of participants for special situations using the judgment of an expert or the researcher (Ishak and Abu Bakar 2014).

The study group included different actors in teacher education at policy, implementation, and monitoring and evaluation levels, in addition to official documents pertain teacher education.

Therefore, the sample encompassed representatives of the ministry of education, the ministry of higher education, and accreditation and quality assurance commission, to explore their views on the implementation of ESD in teacher education at policy and management level. With total number of four participants at different managerial positions who are involved in teacher education policies at different levels.

In addition, the researcher analyzed key official documents relevant to teacher education namely: (Teacher Education Strategy 2008, Teacher Professional Standards 2012, and Readiness to Teach Competencies within Teacher Professional Development Index 2018).

Teacher Education Strategy (TES) is one of the most important policy documents in teacher education in Palestine; as it formed the basis of teacher education reform since 2008, which was carried out during the DESD. Furthermore, the professional standards for new teachers as well as teacher professional development competencies index; came as major accomplishments of the TES. Therefore, it would be a paramount to investigate the incorporation of ESD into such essential documents.

Moreover, at programmatic or implementation level, the study focused on three of the prominent universities in Palestine; (An-Najah National University, Birzeit University and Al Quds Open University) in order to examine ESD implementation in teacher education programmes offered by educational sciences faculties in these universities, where deans or heads of departments interviewed to explore their views on the integration of ESD in teacher education programmes.

Additionally, the sample included five instructors from each faculty of education in each university, through focus group discussion, who have been selected from the main specialties in the college of education, which comprised the following specializations: Arabic Teaching, English Teaching, Science Teaching, Social Studies Teaching, and Lower Elementary Class Teacher.

Data Collection Tools

A comprehensive review was carried out of the related literature and official policy documents released by international bodies, essentially by UNESCO, which is responsible for ensuring the integration of ESD in all forms of education, and mobilizing global efforts to achieve Vision 2030.

The literature review revealed global trends and success stories, which contributed to the formation of the basic features of the approaches and aspects of reorienting teacher education programs towards sustainable development; this assisted in the formulation of the theoretical framework of the study, and thus the development of the study tools. Consequently, three research tools were developed; one tool for each unit of analysis.

For the purpose of analyzing official policy documents; the researcher developed and implemented a data mining tool, which was built based on the key axes of integrating ESD into national education systems, drawing upon monitoring tools that have been developed by UNESCO (UNESCO 2005 a; UNESCO 2010; UNESCO 2018), as well as benefitting from related literature (Steele, 2010, Hoskins, 2016, Leicht et al. 2018; UNESCO. 2007a; UNESCO 2007b).

The tool included four dimensions that shaped the analytical framework for analyzing documents; the first one is ESD concept, which includes the concepts: Sustainable development, education for sustainable development, sustainability education, sustainability, sustainable development goals. The second one is ESD content and issues that encompass knowledge on the key dimensions of sustainable development: society, culture, economy and environment, and the third one is ESD competencies where we rely on UNESCO (2017) framework; as it consolidates other competencies in the literature and can be considered as a combination of them (Rosén et al. 2019), While the last element is ESD process, which refers to learning process and pedagogies. (Table 5)

| Themes | Subthemes | Description |
|---------------------|--|--|
| ESD Concepts | Sustainable development, education for sustainable development, sustainability education, sustainability, sustainable development goals | Is education for sustainable development concept incorporated into relevant national teacher education policies and strategies? |
| ESD Content | society, culture, economy and environment, | Is education for sustainable development related knowledge incorporated into relevant national teacher education policies and strategies? |
| ESD Competencies | Systems thinking competency, anticipatory competency, normative competency, strategic competency, collaboration competency, critical thinking competency, self-awareness competency, integrated problem-solving competency | Are ESD core competencies incorporated into related national teacher education policies and strategies? |
| ESD Process | a variety of teaching and learning approaches which can include but not limited to: experiential learning, reflective learning, participative learning, active learning, creativity, collaboration, problem solving, practice based learning, self-regulation, problem-based learning, and project-oriented learning in interdisciplinary, transdisciplinary and cross-disciplinary sittings | Are there any elements that can be connected to ESD process and pedagogies? |

 Table 5. Themes and sub-themes used in document analysis

The second tool was built to answer the second research question that targeted MoE, MoHE, and AQAC representatives.

The interview questions revolved around specific pre-determined aspects based on the literature as well as the global indicator framework for SDGs. These aspects framed the main codes that geared the data collection of this part of the study through a number of questions. The tool consisted of eleven open-ended questions (Appendix C). While the third tool assisted in answering the third research question, targeted faculties of education at universities as a final unit of analysis, through semi-structured interviews and focus group discussions.

Data were collected from both administrators and instructors through twelve research questions prepared by the researcher for this purpose based on the literature. (appendix)

The instruments were sent to three experts for validation, where positive feedback was received confirming their appropriateness.

Data Collection Procedures

After the formation of the theoretical framework of the research based on a comprehensive literature review, through a systematic literature review, the data collection went through different phases.

First, the study conducted a document analysis of three key national policy documents (see study group section), second semi structured interviews were conducted with representatives of the ministry of education, the ministry of higher education, and the accreditation and quality assurance commission, as well as deans or head of departments of faculties of education in three universities. Third, the researcher carried out focus group discussions with instructors from faculties of education in the three-targeted universities. It is worth mentioning that data collection process spanned over about three months from October until December 2021.

The document analysis used a data mining tool prepared by the researcher for this purpose. The documents were chosen according to their relevance to teacher education.

Document analysis is often used in combination with other qualitative research methods as a means of triangulation, and it yields data—excerpts,

quotations, that are then structured into major themes, categories, and case examples (Bowen 2009).

For data collection, a thematic analysis was applied, which is a search for themes that can be important for the description of the phenomenon, and involves recognizing patterns within the data, where emerging themes become the categories for analysis (Fereday & Muir-Cochrane, 2006).

A deductive analysis was implemented following Boyatzis, (1998), and Crabtree & Miller (1999), which was adapted by Fereday & Muir-Cochrane, (2006), whereas, pre-defined codes were developed based on the literature, as well as UNESCO documents, the codes were tested through peer review with the supervisor, and by comparing these initial codes with those identified in UNESCO tools (e.g. UNESCO 2010). The initial codes and their explanations served as a data-mining tool that was applied to the targeted documents, whereby the emerging themes have been documented as main categories relevant to these codes and can be linked to the research question.

The next phase of data collection aimed at examining the views of policymakers, and educational official bodies' representatives towards the integration of ESD in initial teacher education from a ministerial perspective.

Therefore, individual semi structured interviews were held with representatives of the ministry of higher education, the ministry of education, and accreditation and quality assurance commission, where the researcher after obtaining ethical approvals; contacted the potential participants via their official emails, provided them with the needed forms including ethical approvals, consent form to be signed by the participant, letter to participants that provide overview on the context of the study, and the interview questions.

The four contacted representatives of ministries of education and higher education accepted participating in the study, thus, two interviews were held face to face, while two of them were conducted through Microsoft teams. Each interview lasted between forty five to sixty minutes, all interviews were recorded, and the anonymity of the participants was confirmed.

While the final phase sought to investigate the integration of ESD into preservice teacher education programmes, where interviews were carried out with one of the heads of departments in each of the faculties of education in the targeted universities, with a total of three participants, one from each university. The same procedures explained above were followed, whereas two interviews convened through Zoom and one was face to face.

In addition, the researcher conducted three focus group discussions, one per university; each group comprised five educators who teach student teachers in different disciplines in the faculties of educational science, with total fifteen participants. All focus groups implemented via Zoom, and each one lasted for approximately two hours.

The researcher pursued official procedures to obtain the required approvals, and the participants were contacted via their emails through official channels. It is noteworthy that the same questions were asked to both the heads of departments in the interviews and to the educators during the focus group discussions.

However, data collection procedures and tool implementation could cause some limitations due to the fact that data collection was in Arabic or using tools in Arabic, and some analyzed documents were written in Arabic, without official translation, therefore, some meanings may be missed and the intended meaning may be affected by the translation.

Data Analysis Procedures

The researcher adopted a thematic analysis to analyze interviews and focus group discussions, based on Braun & Clarke (2006) six steps approach (Figure 7), using deductive and inductive techniques. Thematic analysis is a

common type of analysis in qualitative research (Merriam & Tisdell, 2016, p.7), it was first developed by Gerald Holton in 1970s (Damayanthi 2019) and has recently been introduced as a "distinctive method with a clearly outlined set of procedures in social science" (Braun & Clarke, 2013, p. 178)

Figure 7. A Six-Step Process for Thematic Analysis Based on Braun & Clarke (2006) (Figure created by the researcher)



As elaborated previously, a set of codes have been identified based on the literature, which means that the analysis was driven by latent or researcherderived codes (Gamage, 2019) according to conceptual and theoretical frameworks (Ellinger & McWhorter 2016), to identify implicit meanings within the data. Crabtree, (1999) argued that deductive approaches can endeavour to seeking themes identified in other research in the data-set, or using existing theory as a lens to organise, code and interpret the data.

At the same time, the possibility of new codes emerging based on the data was addressed. Therefore, reviewing the data with the lenses of the theoretical framework and the set of pre-identified codes; was started with data familiarization as a fundamental step by transcribing recordings of the interviews and the focus group discussions. This involved a through and careful reading of these transcriptions, keeping in mind how this data related to the theoretical framework and the research questions, as a kind of "analytical sensibility" (Braun and Clarke 2013).

The second step was focused on analyzing the transcripts searching for data related to the pre-defined codes and any other potential codes. Defining codes is an indispensable step whether the codes are pre-specified or developed along the way (Miles and Huberman 1994 P 77),

Seven initial codes were identified based on the literature for interviews and focus groups, while one additional potential code has been detected with no significant iterance, thus, it was included within one of the existed codes, and peer review by supervisor was implemented to ensure reliability of the codes, and no more codes can be derived from the data. Ultimately, no changes have been made on the codes.

A pattern-based analysis was conducted to identify and labeling prominent patterns within the data in light of the codes, which facilitated identification of noticeable features of the data that seemed to be meaningful in answering the research questions (Braun and Clarke 2013).

Thereafter, the transcripts have been repeatedly reviewed in order to generate themes in the third step of the analysis. Some scholars defined the theme as a collection of codes or ideas that can be listed under a specific theme (Damayanthi, 2019), and it "*captures something important about the data in relation to the research question, and represents some level of patterned responses or meaning within the data set*" (Braun and Clarke, 2006, p. 82). Subsequently, themes were reviewed, defined, and named, preparing for the final step that involved writing, organizing and interpreting the data in light of the research questions.

Likewise, the analysis of documents adopted a deductive approach based on the data mining tool that was prepared for this purpose, the tool contained four pre-identified elements related to ESD in the literature (UNESCO 2010;UNESCO 2018a). The relevant themes in each document were reviewed and recorded, by linking them to ESD aspects, and these linkages constituted the basis of the results interpretation based on contextual presence of each theme.

Regarding the streamline of the whole process of analysis, initially, the focus was on single-unit analysis, to allow for a more in-depth understanding of the integration of ESD in each unit of analysis, then, the interpretation turned to cross-unit analysis, in an attempt to give depth and width of the analysis (Miles and Huberman 1994 P 187), which can increase the credibility of the results, as well as providing a comprehensive picture on the status of ESD integration in different axes of teacher education.

Furthermore, Data collection and analysis followed the four steps of ensuring trustworthiness refined by Lincoln and Guba (1985), which consist of credibility, transferability, dependability, and confirmability, these steps meant to parallel the validity criteria in quantitative research (Nowel et al. 2017). Scholz (2002) argued that validation in embedded case studies depends, largely, on the "verificationist's side" (Scholz 2002, p333).

The triangulation itself can be considered as a means to increase the credibility of the findings; first of all the instruments were tested by experts review and validation, and member checking was used for feedback on the interpretation of data (Nowell et al. 2017), along with a detailed data collection and analysis procedures, which may enhance transferability (Sikolia et al. 2013), while confirmability ensured through including quotations from participants' responses (Eldh et al. 2020) Finally, the process of the analysis were reviewed and verified by the supervisor in order to enhance dependability of the study (Sikolia et al. 2013).

Ethical consideration

Firstly, ethical approval of the research proposal was obtained from ethics office at Near East university, then, the researcher gained the required approval to conduct the research from the MoHE and MoE in Palestine, whereas the MoHE facilitated the study by conveying the request to the three targeted universities. All relevant parties nominated representatives in order to participate in the study, while signed consent forms were obtained from all participants. Moreover, anonymity of individuals and privacy of data has been preserved, additionally, it is worth mentioning that the study is for research purposes and there is no any kind of conflict of interest.

CHAPTER IV

Findings and Discussion

This chapter presents the findings generated from interviews, focus group discussion and document analysis; they were organized based on the main research questions.

1. Results of Document Analysis

This section presents the findings of analyzing three key national documents related to teacher education, including Teacher Education Strategy in Palestine (2008), Teacher Professional Standards (2012), and the Palestinian Teacher Professional Development Index (PTPDI) (2018). The aim of this document analysis is to answer the following research question:

How is education for sustainable development (ESD) incorporated into relevant national teacher education policy documents?

1.1 The presence of ESD in Teacher Education Strategy (TES)

The analysis demonstrated that the concept SD or any related concept is not mentioned in the TES, however, the notion of development is presented in different ways, in the vision for teachers to "participate in the development of his/her society"(TES, P.17), and for the education that "contributes to comprehensive development"(TES,P.17), with the rationale of focusing on the development of teachers and teaching profession to "improve the quality of education" (TES,P.9).

Regarding ESD content, there are a significant number of features that can be linked to ESD knowledge and issues, especially elements related to society and culture, with overall emphasis on the quality of education, as a means of society development. Most of these terms are mentioned in the vision and discussion around it. "The Teacher Education Strategy aims at qualifying and preparing teachers who are characterized by the following: Committed to their students... to be able to build and live in an independent, democratic, just and diverse Palestinian society that is in harmony with Arab, Islamic and human culture..." (P.18).

In addition, some terms came in the context of talking about the recommendations related to the curriculum of teacher preparation programs; "An understanding of the Arab, Islamic and Palestinian culture and identity, and the importance of maintaining and improving it, in addition to exposure to other cultures of the world" (P.25).

The vision also contained indications to some core competencies to be focused on in teacher education; "use a variety of teaching methods that respect the students and make them active learners, who are able to transfer knowledge, to improve and develop their different life-skills including problem solving and critical thinking" (P.10).

Consequently, the term life skills may be in consistence with ESD core competencies, problem solving and critical thinking are examples, as well as other key competencies, like system thinking, self-awareness, collaboration.

"Think systematically about their practices, learn from their experiences, and continue to develop professionally during their service...Work with their colleagues as members of a community of learners" (P.10).

This is also applied to learning process, where considerable congruence can be observed; as these competencies and good learning should be enhanced by a variety of learning methods, this is evident in TES recommendations on the content of teacher education curriculum that should involve knowledge on how "to teach and evaluate his/ her students, focusing on student-centered methods... in heterogeneous classes in terms of social and economic backgrounds, individual differences in ability and motivation, and some ideas on special education" (P.25).

Moreover, the recommendations concerning teaching methods that should be adopted in preparing student teachers for their future teaching; abounding with what so called "promising methods", which may provide a fertile soil for discussing and handling sustainability issues.

"Use modern and promising methods in teacher education (including the casebased approach, video recording of different teaching practices, using technology, and e-learning in particular, using interactive cases in teaching, analyzing teaching and learning situations, and conducting research, mainly action research" (P.26).

1.2 The presence of ESD in Teacher Professional Standards (TPS)

The teacher education strategy and the development plan of the MoEHE (2008-2012) formed the basis for the development of the professional standards for teachers, as well as the international directions especially UNESCO resolutions concerning teacher education. (TPS 2012)

Nevertheless, reviewing the standards for new teachers revealed the absence of ESD related concepts, and ESD content, whereas there is no explicit or implicit reference to any of ESD knowledge or issues.

On the contrary, there are several indications for some core competencies; it is worth mentioning that the standards have three axes: knowledge, skills and values, where most of these competencies are embedded within the skills, in the context of describing the learning environment that should be offered by teachers.

"provides an educational environment characterized by flexibility, innovation, and continuous stimulation of critical thinking and creativity" (P.15). While some competencies were connected to professional values and attitudes, namely: Cooperation, communication and Reflects on own practices. Furthermore, there is focus on technology whether as a knowledge or as a skill should be practiced in teaching and learning.

Finally, the elements that may considered to be relevant to learning process revolved around ensuring safe and supportive learning environment, that respond to different learning needs and abilities, in addition to link learning with real life context, and with other subjects. It is noticeable that the commitment of teacher towards students is addressed in the standards as required values and attitudes.

"Commitment to facilitating the learning process for all students... commitment to helping students highlight their different abilities and talents to enhance their self-confidence" (P.15).

1.3 The presence of ESD in Palestinian Teacher Professional Development Index (PTPDI)

The last document was the PTPDI, which was built based on TES and TPS, whereas the review focused on readiness to teach competencies index, the competencies in the index are distributed and presented into three dimensions of the education process: planning, teaching, assessment and evaluation.

The results showed that ESD concept and ESD related knowledge and issues are not incorporated in the index, whereas few elements might be in harmony with ESD core competencies and learning process.

Four competencies were found to have that connection, these are: Good working relationships, ICT and Technology Enhanced Learning, Communication skills and Lifelong learning, all of these competencies were integrated into "Teaching to facilitate learning" competencies.

As a matter of fact, these competencies can be considered as approaches to learning as well, in addition to other approaches that may lead to effective learning safe, motivating, and interactive learning environment. The index highlighted teacher's competencies to deal with different Learning styles, interests and needs, and focus on inclusive practices whether in planning or in teaching to facilitate learning competencies.

"Apply knowledge and understanding of approaches to inclusive practice; common and less common additional and special needs; and differentiate learning to motivate and engage all pupils; and cater for their diverse needs" (PTPDI, P.22).

Table (6) summarizes the presence of ESD in the three analyzed policy documents

 Table 6. ESD in National Teacher Education Policy Documents (Author's own elaboration based on the analysis)

| Policy document | Phrase \Quotations | ESD relevance |
|-----------------|--|------------------|
| | | ESD Concept |
| Teacher | Diverse Palestinian society | |
| Education | In harmony with Arab, Islamic and human culture. | ESD Content and |
| Strategy in | Exposure to other cultures of the world | issues |
| Palestine 2008 | participate in the development of his/her society | |
| | Education as a human right for all | |
| | Preserves the national identity and heritage | |
| | Supports the principles of democracy. | |
| | Contributes to comprehensive development | |
| | Improve the quality of education | |
| | Creativity, Life skills | |
| | Technological development | ESD Competencies |
| | Problem solving and critical thinking. | |
| | Think systematically, Systematic reflection | |
| | Learn from their experiences, develop professionally | |
| | Work with their colleagues | |
| | student-centered methods, Active learners | |
| | Heterogeneous classes, Inclusive education | ESD Process |
| | Fostering creativity, using technology | |
| | Case-based approaches | |
| | Action research, Field experience | |
|--|--|------------------|
| Teacher | | ESD Concept |
| Professional | | ESD Content |
| Standards 2012 (Readiness to teach competencies) | Flexibility, innovation Critical thinking and creativity | ESD Competencies |
| | Information and communication technology (ICT) Cooperation and communication Reflects on own practices | Lob competencies |
| | Highlight students' different abilities and talents Link the subject to different topics and fields Connection with student's social and cultural context knowledge of the diverse conditions of students Safe and supportive learning environment | ESD Process |
| The Palestinian | • | ESD Concept |
| Teacher | • | ESD Content |
| Professional Development Index (PTPDI) 2018 (Student teacher competencies) | Good working relationships ICT and Technology Enhanced Learning Communication skills Lifelong learning | ESD Competencies |
| | Effective learning Safe motivating, and interactive learning environments Learning styles, interests and needs, inclusive practice Meaningful connections among learning Assessment for learning | ESD Process |

2. Results of the interviews with representatives of the ministry of education, the ministry of higher education, and accreditation and quality assurance commission

This section presents the results related to the research question:

RQ2: How is the reorientation of teacher education towards sustainability in Palestine from the perspective of the ministry of education, the ministry of higher education, and accreditation and quality assurance commission?

In order to answer this question, data was collected from semi-structured interviews with representatives of the ministry of education, the ministry of higher education, and the accreditation and quality assurance commission, who are familiar with and knowledgeable about teacher education programs at policy, implementation, and monitoring and evaluation levels.

A set of pre-identified codes were developed based on the literature and international good practices as well as the global indicator framework for SDGs. These aspects framed the main codes that geared the data collection of this part of the study through a number of questions.

The interview questions revolved around specific pre-determined aspects based on the literature as well as the global indicator framework for SDGs.(Figure8)

Figure 8. Initial codes for investigating the integration of ESD into teacher education at ministerial level (Created by the researcher)



2.1 The Status of Reorienting Teacher Education towards Sustainability in Palestine

2.1.1 Integrating Education for Sustainable Development into National Teacher Education Policies and Strategies in Palestine

All interviewees indicated that there are no stand-alone policy documents for integrating ESD in teacher education, however, SDGs and SD in general are explicitly mentioned in the strategy of the ministry of education and the ministry of higher education, while they are implicitly included in the documents relevant to the strategy; "SD is explicitly mentioned in the strategy of the ministry, as it focuses on SDG4 (P2), but the documents that the ministry derives from the strategy do not clearly mention sustainable development". (P1)

All participants expressed the importance of having documents and policies related to education for sustainable development, which would enhance the orientation of teacher education towards sustainability. One of them added that there is an intention to issue such documents. "*There are no separate documents for this purpose but in our future planning we intend to produce such documents*" (P1).

The National Policy Agenda (2017-2022) was heavily referred to by the interviewees as the basis of all policies in Palestine, whereas the eighth national priority is to provide quality education for all. Meanwhile, ESD is embedded in other policy documents relevant to teacher education and their applications without being clearly stated, these documents encompass HE Law, teacher professional standards and teacher Education Strategy.

But when it comes to teacher education, the most important document articulated as the main policy document related to teacher education reform was teacher education strategy, this document is essential not just in guiding other policy documents, such as teacher professional standards, but is also considered a starting point for initiatives and projects aimed at developing teacher preparation programs in universities, most notably was the World Bank-funded project (2008-2019).

"After announcing teacher education strategy the ministry started to develop programs accordingly... this was done through the implementation of the WORLD BANK project".(P4)

The dominant idea was that the basis and the goal of the strategy and teacher professional standards is to develop the teaching profession and thus the development of education, this is the basis regardless of whether sustainable development is referred to or not in these documents. "Our goal is to achieve quality education as a means to SD, this is the idea of developing the programs for teacher education".(P2)

"Even if ESD is not explicitly mentioned in teacher education strategy and teacher standards, however, the essence is to achieve SD, and the interpretation of these standards can be connected to SD".(P3)

Some participants said that "despite of ESD as a concept has not explicitly mentioned, nevertheless, in service teacher training focuses on topics related to ESD, such as: global citizenship, open learning, project-based learning that includes environmental investment. These competencies are supposed to be included also in pre-service teacher education".(P3)

In summary, the analysis revealed that ESD is explicitly mentioned in the main policy documents in the education sector and higher education in general, mainly, the strategy of the MoE and the MoHE, but it is implicitly embedded in the documents derived from the strategy and those relevant to teacher education. In addition, although there are no clear national policies for integrating ESD in teacher education, but at the same time, SD is embedded in the policy documents pertain teacher education, which focus at their core on improving teacher education as a means of improving the quality of education.

2.1.2 ESD in National Teacher Education Standards and Accreditation

When the participants were asked if there are national standards for integrating ESD in teacher education, there was a divergence in their answers, they focused at this stage on the line of authority and the responsibility for setting these standards, some of them on one hand stressed that setting standards is the responsibility of the MoHE and AQAC, "*standards should be set by AQAC and the MoHE, but I am not sure if there are such standards*". (P3)

On the other hand, some interviewees argued that developing standards for teacher education is the role of the MoE, "The ministry of education should develop standards for teacher education; we consult them and rely on their technical decisions in determining these standards"(P2). Meanwhile, they admitted the administrative role of the MoHE in this regard, "Although the administrative decision to accredit teacher education programs is for the MoHE and AQAC, we rely on relevant documents and on the technical consultation provided by the MoE"(P1).

However, in responding to the question, are there standards for ESD in teacher education? Some respondents pinpointed that there are no dedicated standards for ESD in teacher education, "there are no standards, frankly, we haven't even put levels"(P4). This is contrary to the view that there are standards, but they are general and that sustainable development is included in them, "not separately but rather, there are general standards for the institutions or self-assessment"(P1). Furthermore, the self-evaluation that developed by AQAC serves as a source of reference for teacher education standards; "AQAC developed

self-evaluation document, which in its content include standards for teacher education programs" (P2).

Additionally, the participants referred to teacher professional standards as the basis of teacher training, where ESD is embedded in them especially for inservice training and these standards are supposed to be adhered to in pre-service teacher education as well.

"For in-service teacher education, ESD is implicitly embedded in teacher professional standards, which are reflected in teacher training, but I am not sure if this is the case of pre-service teacher education" (P3). Another participant pointed out that the MoE "developed new standards for new teachers which are not endorsed officially yet, where ESD and related knowledge and competencies are explicitly mentioned" (P4).

Moreover, one interviewee highlighted that standards and a number of documents have been developed in line with teacher education strategy during the implementation of the World Bank-supported project, in order to improve teacher education programs, and now it is the role of *"the MoHE and AQAC to ensure sustaining them in university programs*" (P4).

On a related topic, answers to the question (Is ESD integrated into the indicators and accreditation process for pre-service teacher education programs?); varied between there are no indicators so far, but there is intention to develop them, therefore, some universities were requested to direct research to focus on developing indicators for aligning programmes with SDGs; *"within the two studies that we asked PhD students to do, we asked them to focus on developing indicators for SDGs" (P2)*. While other participants were not sure whether ESD is integrated into the accreditation process of teacher education programs or not. *"It*

should be based on standards and indicators, but AQAC would be on a better position to answer this question" (P3&P4).

Nonetheless, SDGs are addressed in a way or another in accreditation process of university programmes in general, and teacher education programmes in particular, this can be evident in the profile that the universities submit for accreditation purposes, as well as in the self-evaluation document." *The profile that the university submit for accreditation, it should contain study of market need, decrease unemployment and poverty and provide job opportunities, this is in line with SDGs*"(*P2*).

2.1.3 Monitoring and Evaluation of the Integration of ESD in Teacher Education at National Level

The interviewees were asked if there is a systematic review and assessment of the integration of ESD into teacher education. Most of them indicated that there is no systematic assessment of mainstreaming ESD in teacher education, or the alignment of teacher education with SDGs. (P1) said "to my knowledge no indicators and no assessment on ESD but could be included in the details, process and the instructions". While (P4) expressed that integrating ESD "is a strategic and systematic issue, but to my knowledge I don't think that there is such systematic review."

Similarly, (P3) was not sure of the existence of this systematic review, "I assume that there are systematic evaluation but not sure". Whereas (P2) indicated the lack of data on the degree to which university programmes are aligned with SDGs, "for this moment we haven't evaluated the extent to which SDGs are integrated in university policies, plans and outcomes".

2.1.4 Coordination and Partnerships to Reorient Teacher Education to Address ESD

The discussion during the interviews demonstrated that reorienting teacher education towards sustainability is seen as a shared responsibility, and ultimate goal. All participants accentuated the need for ESD to be explicitly featured in teacher education.

(P1) mentioned that the MoHE endeavors to create a guidance and indicators to foster mainstreaming SDGs in all programs, "*The MoHE plan to produce a guidance and indicators to promote the integration of SDGs in all programs including teacher education*". Hence, universities as independent entities that have autonomy in planning, implementing and evaluating their programmes; they should ensure developing their programmes and mainstream ESD into them. (P2) stated, "*Developing the programs is the responsibility of universities… they have autonomy and they should start developing their programs and should not wait the ministry to ask them to do so"*.

Participants expressed, polices are in place, SDGs as strategic goals are prioritized at national level, and the MoHE conducted many awareness and training sessions in the universities at administrative levels, as declared by (P2), he added, "Universities indicated during previous meetings that they are aligning their programs to SDGs, but for this moment we haven't evaluated the extent to which SDGs are integrated in university policies, plans and outcomes. We have quantitative data collected from universities annually, but we cannot rely only on it to measure the alignment of HEIs' programmes with SDGs".

Moreover, all participants highlighted teacher education strategy as the first and the most important policy document for improving teacher education, and the World Bank-funded project as implementation of the strategy, however, some of them pointed out that the momentum has abated and is no longer the same as before, "In the early years of issuing the teacher education strategy when the two ministries were one, there was a greater cooperation, coordination and focus in this regard, but now, it is as if the enthusiasm has subsided, as if we have finished this matter and the task is done" (P4).

This has shed light on the extent of coordination and complementarity in the roles between all partners including the Ministries of Education and Higher Education and AQAC, as well as universities, one of the participants said, "*the MoE put strategies and set teacher professional standards, and they should be reflected in pre-service teacher education*"(P4), likewise (P1&P2) highlighted that the MoHE consult the ministry of education on the competencies needed for teachers to be addressed in teacher education, and build their plans to develop teacher education programs, "The MoHE consult the MoE in technical issues *before accredit teacher education programmes*"(P2). An instance of the collaborative work, that the two ministries supported "*some projects to train teachers and* educators at universities" (P1).

Other interviewees reflected that, except the implementation of the World Bank-funded project, no real coordination to ensure the improvement of preservice teacher education, especially after the separation of the MoEHE into two ministries, "Now there is a lack of coordination between the two ministries... it seems like they assured that universities have developed their programmes and everything is ready". (P4)

(P3) described the situation that no real complementarity on the ground, "In fact, each party works on its own according to a separate vision, it should be common standards and road map with different roles that organize and direct all efforts towards the common goals". To summarize the discussion on roles and responsibilities, the MoE has a technical role, in terms of setting teacher professional standards and competencies, in addition to integrate them into in-service teacher training, while the MoHE plays an administrative role to include these standards and competencies in pre-service teacher education programmes. Nevertheless, at first place, the responsibility for developing programs rests with universities, while the role of the MoHE and AQAC is monitoring and evaluation.

2.2 Challenges and Enablers of Reorienting Teacher Education towards Sustainability

2.2.1 The Main Challenges

There was consensus among the interviewees that the constraints caused by Israeli occupation; are among the biggest challenges facing any will to develop education in Palestine, as providing children with the basic right to quality, equitable, and inclusive education is still facing restrictions from the occupation.

Another common challenge was the lack of financial support provided to universities in order to develop their programmes; therefore, the MoHE cannot enforce the implementation of policies related to the development of teacher education programmes in universities while it cannot support these universities financially. "For the ministry to impose policies, they need to provide financial support for universities, now this is not available, and the universities are already suffer from financial difficulties, so, we cannot impose additional requirements on them" (P2).

In addition, the fact of aid dependency was mentioned as a challenge; as in spite of the importance of receiving fund to implement plans, however, relying on donor-funded projects, may limit the implementation of national plans and the sustainability of their outcomes. Moreover, some participants pinpointed, "Sometimes, these programs are imposed on us without planning or being related to our plans" (P4), or the donor may "require focusing on specific aspects" (P1).

This is accompanied with a lack of coherence and coordination between all stakeholders, as well as the absence of a common plan for this purpose, as reflected by (P3&P4), consequently, there is inconsistence between pre-service and in-service teacher education, and a gap between school curriculum and preservice teacher programmes, *"there is still fragmentation between school curriculum and the content of teacher education programmes at universities"* (P1).

Furthermore, some challenges raised were related to the culture and convictions prevailing among teachers, along with the lack of awareness about SD, and the importance of adopting new strategies in education to contribute to the development of the competencies necessary for students to meet the challenges of sustainability locally and globally, these challenges can be summarized "teachers' culture and their tendency to transfer knowledge and traditional education...Teachers are not convinced with technology and integrating it as a supportive tool in education..." (P1). Adding to this the "Lack of awareness at university level" (P4).

In addition to teachers' convictions, there is a challenge that can be attributed to the quality of graduates of faculties of education, whereas the economic factor once again plays a critical role in shaping the attitudes of young people towards the teaching profession, where the teachers' wages are relatively low, besides the scarcity of job opportunities, which leads to the reluctance of young people to enroll in faculties of education, this matter may negatively affect the quality of graduates, as it is rare for these faculties to attract young people especially males - with advanced academic achievement and high capabilities. "Teacher career not attractive to young people due low salaries and the lack of job opportunities, this negatively affect the quality of the graduates; as often, colleges of education do not attract students with high academic attainment or high abilities". (P2)

Finally, another challenge expressed by (P3) related to insufficient support for research aimed at improvement in teacher education, "there is no real educational research that leads to change at strategic and policy level on teacher education, for example, teacher education strategy was issued in 2008, now we are approaching 2022, with no real research on teacher education policies, implementation and outcomes".

2.2.2 Main Enablers

In answering the question (Are there opportunities and enablers that help reorienting teacher education towards sustainability in Palestine?); there was a harmony in the responses, the most prominent was their talk about internal enabling factors in terms of the will and desire for change at all levels, and the possibility of this, If coordinate efforts, set standards, develop content and raise awareness. This is, of course, backed by national strategies and priorities that focus on sustainable development, and consequently there is a potential to catalyze transformative change in teacher education programmes.

"By coordination between the MoE, the MoHE and AQAC, they can develop programs and aligned accreditation standards to ESD and enhance partnerships with universities" (P4).

This willingness when translated to a unified comprehensive plan to reorient teacher education programmes towards sustainability; it can be supported by international emphasis and aspiration to promote the achievement of SDGs, which may mobilize more funding opportunities to implement those plans. "Our intention is to develop education, all projects are opportunities but first, the change should start from us." (P2).

Lastly, the participants in general, highlighted donor-funded projects as opportunities that can respond to Palestinian national plans, and can contribute to remarkable changes, but what is needed is to sustain the outcomes of these projects.

"The projects funded from donors are good opportunities, most of these projects are related to SDGs, but we need to think about the sustainability of the outcomes of the projects. These projects respond to our developmental needs and plans" (P3).

Figure (9) summarizes the expressed challenges and enablers for integrating ESD in teacher education

Figure 9. Challenges and Enablers for Reorienting Teacher Education towards Sustainability in Palestine. (Created by the researcher based on the analysis)



3. The Status of Integrating Education for Sustainable Development into Pre-Service Teacher Education Programmes at University Level

This section illustrates the results pertain the research question:

How are ESD core competencies and ESD knowledge integrated into preservice teacher education programmes from the perspective of university administrators and instructors?

For answering the above mentioned research question, semi-structured interviews were conducted with administrators from faculties of education in three universities in Palestine, in addition to three focus groups discussion in the three universities, these groups included instructors from different specialties in the faculty of educational sciences.

Data were collected from both administrators and instructors and deductively analyzed, relying on specific codes based on previous literature and international good practices. (Figure 10), and then, the responses were categorized under relevant themes.

Figure (10) Initial codes for investigating the integration of ESD into pre-service teacher education programmes at university level



3.1 Results of Interviews with Administrators of Faculties of Educational Sciences

3.1.1 Aspects of integrating ESD into Pre-Service Teacher Education

3.1.1.1 Integrating ESD into the Policy of Faculties of Educational Sciences

The interviewees were asked two questions related to pre-service teacher education policies in HEIs, in an attempt to explore whether ESD knowledge and core competencies are incorporated in these policies.

The responses unveiled that SD as a concept is not mentioned in teacher education programme's policy, where the vision and mission of the faculty of education are devoid of any reference to SD, however, ESD related knowledge and competencies are embedded in them. "SD is implicitly embedded in the vision and mission of educational sciences college without being clearly mentioned; phrases such as creativity, excellence, entrepreneur and keeping pace with developments, are in their essence relevant to sustainable development and its goals" (P1).

Another participant indicated that examples of integrating ESD knowledge and competencies could be found more clearly in programmes objectives and outcomes, which may serve as evidence that teacher education policies are geared towards sustainability;

"Although SD as a concept is not mentioned, we can find many examples of embedding ESD knowledge and competencies in different ways, particularly in programme objectives and outcomes... when you integrate ESD competencies within programmes outcomes and goals, this is an evidence that the policies address orienting teacher education programmes towards sustainability" (P2).

In addition, the same participant pointed out that a new update was proposed to be made to the vision and mission of the faculty of education, to include some concepts related to SD;

"We recently proposed an update to the college vision and mission, we included concepts like: lifelong learners, change leaders, contribute to update educational policies, adapt to changes and emerging needs and promote research... In the mission we suggest to add phrases like promote diversity, equity, freedom, democracy, excellence and scientific research and serving community" (P2).

Furthermore, the World Bank funded project (Teacher Education Improvement Project) was highlighted as a major milestone in developing teacher education programmes in universities, especially in lower elementary programmes, some participants said that the university started to develop its programmes accordingly by adopting the competency-based approach. "Although SD was not highlighted, as SDGS began to be brought to light from 2015 onward, the project was competency based, it focused on the quality of education, 21st-century competencies, and life skills were integrated into the programmes, there were modules to train teachers, and these competencies were integrated into practicum education" (P3).

Furthermore, objectives and outcomes of pre-service teacher education programmes, may include ESD competencies and knowledge, but in an indirect way and without linking them to sustainable development. "*The knowledge and competencies are integrated in the objectives and outcomes, but SD as a concepts I don't think that it is mentioned*" (P3).

The participants gave some examples of the competencies that might be incorporated in the objectives or learning outcomes; "the objectives of the different programmes include SD but in implicit manner not explicitly, examples of this can encompass professional competencies, and technological skills" (P1).

One of them reviewed some of the educational goals and outcomes of the social education programme, with the aim of giving some evidence on the inclusion of sustainable development in teacher preparation programs, even if the term sustainable development is not included in them

"If we go through the goals and learning outcomes of social studies education, we can find ESD knowledge and competencies embedded into them, for example, the outcomes of the programme are: enhance the concepts of democracy, human rights, and development, the acquisition of the skills of critical thinking, communication skills and using technological tools and resources..." (P2).

However, the participants regretted that to date, teacher education programs cannot be considered sustainability-oriented, and there is still much work and development required for this purpose. "Is there a systematic plan to *integrate education for sustainable development into teacher training programmes? Unfortunately the answer is no*" (P3).

3.1.1.2 Integrating ESD into the content of Pre-Service Teacher Education Programmes

The interviewees indicated that SD as a concept or a theme is absence from the content of teacher education programmes, whether as a stand-alone course, or as a cross cutting theme, "you will not find a title or a chapter in the content of any course for SD" (P1), the same point was raised by (P2) "in all programmes of the college of educational sciences; we don't have a dedicated course or even title within a course on ESD", likewise, (P3) reflected that there are no separate course for SD, but it can be implicit in some courses; "you will not find a course talk about SD in direct manner, but rather it can be embedded within different courses".

Nevertheless, ESD related knowledge and competencies can be found in the objectives and description of some courses, as well as the intended outcomes, this is particularly evident in specific courses that can be connected to ESD.

"But some competencies like problem solving, critical thinking and teamwork are clearly mentioned". (P1)

Moreover, (P2) added that competencies like critical thinking, active learning, problem solving, technology integration, are essential in course development. "All these competencies are basic criteria and requisites for developing our courses, they embedded in programmes plans, content and learning outcomes". The results revealed that ESD knowledge and core competencies are incorporated in the description of many courses, some interviewees provided examples to demonstrate this point;

"For example, the course (An Introduction to Education), in which we talk about education and society, the relationship between education and culture, democracy, and the role of education in the development... Some competencies are stressed like teaching and learning in heterogeneous classes, learning styles, other cognitive skills, such as critical and creative thinking, problem solving, collaborative learning" (P2).

Additionally, when the participants were asked whether teacher education programme plans contain courses related to sustainable development, they indicated that there are many courses that are closely related to sustainable development, either in the cognitive, skill, or in attitude aspects.

"Some examples include: introduction to education, education technology, teaching and learning in heterogeneous classes, these courses and many others related to SD" (P2).

Participant (1) presented some courses in (Lower Elementary Teacher) programme, which can be linked to SD, for instance, prospective teachers should complete courses related to special education and how to deal with students with special educational needs, and there is a college requirement called (Environmental Education), in addition to university requirement called voluntary work, and there is a course on social responsibility, as well as another one named creative thinking.

There is particular emphasis on competencies; therefore, there is a dedicated course on life skills and 21st century competencies;

"Last year we added a compulsory university requirement course for all majors called (Life Skills), I think this course can be linked directly to SD as it focuses on communication, high order thinking skills, critical thinking and relationships with community, in addition to 21st century competencies" (P1).

Despite the obvious linkage between these courses and SD, there is no reference to it; "you may not find any word related to SD, but all these competencies and the objectives of the courses contribute to SD. the focus is on the acquisition of the competencies, as these competencies eventually supposed to help achieving SD" (P1).

However, some participants pointed out that ESD related knowledge and competencies are addressed more clearly in Master programmes than in Bachelor's. "SD knowledge and competencies are presented more clearly in the master's programme, but without mentioning the concept. For example, there is a course called (Education and Society in the Arab Countries), in which many topics related to SD are presented, such as culture, gender, and knowledge economy" (P2).

Another participant added "in master programme, there is a course called (Education and Development) in the programme of educational management, SD should be mentioned in such course" (P3).

Consequently, teacher education institutions can add courses relevant to SD, although "adding a new course is not an easy task, as it should be gone through long process to be approved" (P3), "many courses can be added based on recommendations from MoHE" (P1).

Regarding the appropriateness of teaching methods to enhance ESD, the interviewees explained that when adequate content is added with an explicit link

to ESD, then the role of educators or teachers comes to promote it through appropriate pedagogical methods, but first, there should be appropriate content.

"In order to teach something, there must be content around it, so to teach sustainable development, there must be content related to it, whether in a separate course, or mainstream it in all other curricula as a cross-cutting theme" (P3).

Based on the responses, a variety of teaching methods have been already applied, and they are suitable for promoting ESD, "we rely more on problem solving, modeling, brainstorming, discussions, and case studies." (P2). Another participant said, "The nature and the content of the course determine teaching strategies, for example practical education all of it based on practice, while other courses combined practical and theoretical strategies" (P1).

While the most important aspect is to relate SD to the Palestinian context, as expressed by (P3)

"Then it is necessary to support the integration of sustainable development in the various subjects through the employment of different strategies such as presentations and reports on related topics, but, most importantly linking sustainable development to the Palestinian context, especially as we suffer from unsustainability in all walks of life due to the political conditions in which we live."

In short, there has been a consistency in all responses that SD as a concept is not presented in the content of teacher education programmes, in all aspects of that content, neither as a stand-alone course, nor as across cutting theme, however, there is significant evidence that ESD-related knowledge and competencies are being incorporated into teacher education programmes in various ways, but without any reference to SD, or the SDGs.

3.1.1.3 Integrating ESD into Research Strategy of Pre-Service Teacher Education

The participants were asked if ESD is included in the research strategy and to support their responses with examples, (P1) pointed out that the focus is on practical topics related to professional aspects in general, without embedding ESD or direction to research to be focused on sustainability topics; "SD is not explicitly addressed in research strategy; researches often focus on practical aspects within the teaching profession".

In addition, COVID-19 has affected research trends, therefore, recently the research has been directed to focus on education after the COVID-19, and "how it affects teaching and learning, and the role of teachers in compensating learning loss, with particular emphasis on digitalization of education and technology in education".

Participant (2) indicated that there are some students in the Master programme working on topics related to SD, but in under graduate programmes, they focus more on the 21st century competencies. "For bachelor students, they may work on 21st century competencies, the extent that curriculum is focused on these competencies, and the extent of teachers' awareness on them".

While (P3) mentioned that SD has been included in the university's research strategy in general and not only in teacher preparation programmes, this was circulated officially since the last year.

"The Deanship of Scientific Research has stipulated that all research projects should be directed towards sustainable development. Therefore, we indicate in the introduction how the topic of the research relates to SDGs." As a result, SDGs have started to be emphasized in the research more than recent years, "we currently have two master's thesis, one in Arabic programme and the other in mathematics, both of them are studying the degree of the alignment of school textbooks to the sustainable development goals".

3.1.1.4 Integrating ESD into Initiatives and Extra-curricular Activities in Pre-Service Teacher Education

Interviewees clarified that sustainability dimensions and related competencies may be included in some activities, but not systematically or constantly, and without linking them to SD, *"in an unsystematic way, yes, you can find an initiative here or there"* (P3).

Some faculties of education conduct annual or periodic activities, where ESD knowledge and competencies could be embedded, these activities focus mainly on enhancing the relationship with the community, in addition to the compulsory volunteer hours for all students.

"We asked each department to suggest at least two activities per year, these activities related to SD knowledge and competencies; for example we will have soon an activity on how to provide support to students with special needs and provide awareness to their parents ... "(P1)

Other universities support students clubs that implement different activities relevant to SD, even if the term (sustainable development) is not mentioned;

"We have student clubs that work on awareness programs and extracurricular activities such as activities related to clean environment, environmental education or recycling". (P2)

While in some universities, SD can be presented more clearly in some activities aiming at raising awareness on the SDGs; "In the college of educational sciences, there is an advertising banner that includes the sustainable development goals as a kind of awareness for students and professors, and there are similar display screens in the university in various places" (P3).

Furthermore, all interviewees highlighted the World Bank project as the main initiative to develop teacher education programmes; "we developed modules, train teachers, and update the courses, their description and content" (P2).

Moreover, a prospect to build on the success of that project was indicated by one of the participants, as there is a chance to receive a new project to continue the development of all teacher education programmes, where SDGs are expected to be explicitly addressed.

"A brainstorming session was held yesterday, in which the university participated in, with the Ministry and representatives of the World Bank, the idea is how to build on the previous projects and sustain them with clearly addressing the SDGS" (P3).

3.1.1.5 Monitoring and Evaluation of the Integration of ESD into Pre-Service Teacher Education Programmes

All responses revolved around the idea that there are internal reviews by the university, but they are general and not related to the integration of education for sustainable development into the programs, and there is no such thing at all.

Meanwhile, there are no reviews or evaluation implemented by the MoHE or AQAC, whereas the role of AQAC is focused on accrediting the new programmes only, without any revision of existing programmes. "There is a review of the programmes and their objectives and competencies that can be linked to SD but for the integration of ESD, no, and nothing from the MoHE and AQAC." (P1)

"There is no systematic review for this purpose, there is review but ESD not addressed." (P2)

"There is no systematic review internally or externally by AQAC of the integration of ESD in university programmes." (P3)

It is noteworthy that one of the participants mentioned that AQAC requested universities to fill a self-assessment, which was in some parts related to SD but indirectly.

"Three years ago, we were asked to fill a self-assessment that included some aspects, which may be linked indirectly to SD, but without specific axes on SD." (P1)

3.1.2 Challenges and Enablers for Integrating ESD into Pre-Service Teacher Education Programmes

3.1.2.1 Main Challenges to Integrate ESD into Pre-Service Teacher Education Programmes

The interviewees discussed a number of challenges that can be summarized as follows:

Ch. 1. Lack of awareness and understanding of SD. *"There is a prevailing culture to divide the SD and the education; you will not find that linkage between them."* (P1)

Ch. 2. The absence of national policies with regard to integrating ESD into University programmes in general and teacher education in particular.

"There are no policies and follow up from the MoHE." (P1)

"Unfortunately, this matter is not usually done by self-initiatives, but rather comes in the context of policy-level interest in such issues." (P2)

"There are no policies in the MoHE to promote universities to orient their programmes towards SD." (P3)

Participant (3) added that there is no decision from the MoHE urging universities to reconsider their programs from the standpoint of sustainable development. "Although *there are initiatives and activities, however, these initiatives and activities do not reflect an integrated institutional work that leads to real changes in programmes to make it a sustainable culture.*"

Ch. 3. Lack of fund and the scarcity of financial support provided by the MoHE for universities, which lead to the absence of follow up.

"The fact that there is a failure to fulfill the financial obligations towards universities, so there is no firmness in following up and setting standards for universities to abide by." (P1)

We need additional fund in order to develop our programmes, these developments are feasible, if they were among projects funded by donors and supported by the *Ministry*." (P2)

Ch. 4. Relying on donor-funded projects without being linked to a long-term vision for the needs of the country.

The main point here is the instability of fund and the absence of a clear strategic plan to integrate ESD in different levels of education including teacher education, so that the fund can mobilized accordingly.

"Wherever we find an appropriate opportunity to apply for a project, we submit a proposal, but there is no prior orientation or a long term vision for the needs of the country, this does not exist and is not done in this strategic way, the matter is that wherever the opportunity arises, we seize it." (P3)

Then the participant explained; "Sometimes the project ends with the end of financial support, and sometimes these projects are not related to our plans or needs, so things get mixed up, hence, we feel that there is a lot of work, with few results." (P3)

"Sustainable development is like other trends. If there is funding to support the integration of sustainable development into teacher preparation programs, we will definitely do so." (P2)

Ch. 5. Lack of standards to reorient teacher education programmes towards sustainability, whether at the university level or at the national level.

"There are no standards for SD internally within the common standards for course development... I have no idea if there are standards set by AQAC." (P1)

"We are working on it, but sporadically, it is not organized by a clear strategic framework or plan." (P3)

Ch. 6. The tendency to traditional methods of education by educators

"Usually, teachers tend to stay on the methods and content they are accustomed to, sustainable development is a new trend, and traditional education dominates...this is embedded in their mentality they tend to the content and strategies that are well known for them." (P3)

Ch. 7. The reluctance of young people from the teaching profession, which results in poor quality of graduates.

"There is a lack of demand for teacher education programs, so that colleges of education are not among the first option for students, but rather they resort to them as the last option, and this negatively affects the quality of graduates." (P2)

"Do not forget that the quality of students who come to the colleges of education are the least fortunate, so the inputs that come to the faculties of education cannot build mountains on them." (P3)

3.1.2.2 Key Enablers for Integrating ESD into Pre-Service Teacher Education Programmes

The participants expressed a number of enablers and opportunities to enhance the integration of ESD into pre-service teacher education programmes, these points can be summarized as follows:

En. 1. The availability of expertise

"We have a big staff of experts; we can invest their capabilities and expertise to reorient programmes towards SD." (P1)

En. 2. Partnerships with international universities and NGOs

"There are partnerships with international universities, in addition to NGOS." (P1)

"The possibility to rely on our partnerships with local community institutions to implement initiatives related to sustainable development." (P2)

En. 3. Fundraising possibility

"The concepts of sustainable development and environmental education and so on are attractive concepts and certainly, there is a possibility to mobilize fund for the development of programs." (P2) *"There is a possibility to mobilize support and funding, as any change need to be financially supported."* (P3)

En. 4. The possibility to integrate SD in the courses.

"For example, there is a course in all teacher education programmes called (Contemporary issues and trends in education); it is very easy to integrate any topic related to SD within it... it is very easy to have an optional university requirement called sustainable development," (P3)

En. 5. The possibility of directing teacher education policies towards sustainability

"SD can be enhanced if it is focused on policies and funding... certainly there are always opportunities to develop teacher preparation programs" (P2)

"If one bulletin sent by the MOHE to the university, it can lead to movement and change." (P1)

En. 6. The possibility of raising awareness on ESD.

"If we make a cultural breakthrough and a framework for awareness, we can easily enhance learning opportunities for sustainable development, if it is incorporated into school curricula mainly... and in universities." (P3)

3.2. Results of Focus Group Discussions with Instructors in Faculties of Educational Sciences

This section presents the results of focus group discussions, which were held with instructors from faculties of educational sciences in the three universities under study; the questions are the same that were asked to the administrators in those faculties; therefore, the answers have been organized within the headings that were adopted in the previous part.

3.2.1 Aspects of Integrating ESD in Pre-Service Teacher Education Programmes

In order to explore whether ESD is integrated into pre-service teacher education programmes in the targeted universities, a number of questions were asked comprehend the following aspects: Policy including vision, mission, objectives and outcomes, content of the programmes, initiatives and activities, in addition to challenges and enablers.

3.2.1.1 Integrating ESD into the Policy of Faculties of Education

The analysis revealed that there was a main persisted idea in the three focus groups, which is that sustainable development is not explicitly mentioned in the vision, mission and objectives of the faculties of educational sciences, but at the same time, ESD knowledge and competencies are included in them and their applications.

Participant (A) in (FG.1) referred this to the fact that the college's vision and mission have not been updated for long time.

"The vision and mission do not clearly mention SD, this may be because they have not been updated for about seven years, but in the implementation of the programmes and the related projects, there are many activities that can be linked to SD."

Meanwhile, SD is implicit in the vision, mission, and goals "SD is implicit in the vision and mission, also in the objectives of the college." (FG.1E) other participants gave some examples of the goals; "provide the community with qualified teachers; this can be linked to SD" (FG.1C). Moreover, the participants emphasized that they address SD and SDGs in the implementation of the programmes; "despite SD is not stipulated explicitly, we focus on quality education which is the fourth goal of SDGs" (FG.1B). Likewise, (FG.1D) reflected, "In the implementation of the programmes there is focus on SD skills and knowledge, so it is included but without relate it to SD".

Another participant highlighted specific concepts in the vision that are relevant to SD, these included equitable education, lifelong learning, and open learning opportunities, as well as quality learning through blended learning and technology, and commented, "*Although SD is not mentioned clearly, it is actually implemented and addressed*" (FG.1A).

In addition, participants in (FG.2) agreed on that SD is explicitly mentioned in the new strategic plan of the university, but not reflected clearly in the strategy of the faculty of educational sciences.

"In the strategic plan of the university in general, yes, sustainable development is mentioned explicitly, but in the faculty of Education it is implicit" (FG.2 C).

One of participants added that they are familiar with SD related knowledge and they already address it in their practices; "SD is new concept but we are familiar with the dimensions related to it as we already embedded them" (FG.2 A).

Therefore, the participants provided some examples of concepts contained in the vision, mission or goals, which they see as relevant to sustainable development.

"Not necessarily the existence of the concept, some other concepts can reflect sustainable development, we focus on professional development, and lifelong learning, as well as the formation of the personality of our graduate as a teacher-researcher, which in one way or another contributes to sustainable development" (FG.2C).

Another participant added "The College seeks to achieve goals related to the characteristics of graduates, most importantly is prepare them for competition in the labor market, in addition to focusing on knowledge production in specific specialization"(FG.2B).

In the same way, this notion was expressed by (FG3), where the participants concurred that SD knowledge and competences are embedded in the vision, mission and goals of the faculty of education in different concepts.

"When the vision, mission or goals includes phrases like: the production of a good citizen or preparation for the labor market, these concepts are closely related to sustainable development, even if sustainable development is not mentioned explicitly." (FG.3A)

To conclude, the same idea has been repeated more than once during discussions, which is that the seeds of sustainable development are scattered in the folds of the vision, mission and goals, in different concept relevant to ESD dimensions and competencies, but without clear links to sustainable development.

3.2.1.2 Integrating ESD into the Content of Pre-Service Teacher Education Programmes

The participants answered the questions concerning this part from the angle of the subjects they teach, where there was a consistency in the answers; as if there are subjects related to one or more SD dimension, then, it would be integrated and presented clearly, but again, the content is seldom linked to sustainable development as a concept. Rather, it depends on teachers or educators to make these connections, in order to raise students' awareness, as well as to boost their acquisition of competencies needed and attitudes towards sustainability issues.

"If the content of the course touches on one of the axes of sustainable development, the teacher focuses on it and gives different activities to address it, but other than that, the teacher usually focuses on the content of the curriculum or the course" (FG.2A).

"I agree, for example in the course "technology in education", there is a topic on recycling, so we focus on preserving environment; because the content touch this issue" (FG.2B).

Therefore, the existence of the content on ESD knowledge and competencies is a prerequisite to be mainstreamed and emphasized, whereby the elements of sustainable development can be included in different aspects of the content, the first one as indicated by the participants is course objectives, where they provided many examples of SD-related content.

"The third unit of the civic education course, which talks about environmental education, among its objectives: Introducing environmental education as part of the civic education subject to enable students to understand the problems of the surrounding environment; in an effort to improve the standard of life. Another objective: to acquire positive attitudes towards preserving environment and link this matter to cultural and religious aspects" (FG.1C).

Similarly, participant from (FG3) referred to the civic and national education courses;

"In my major, the courses that I teach, we focus on social justice, human right and so on, this is included in the course (civic education), as well as within national education course, whereas part of the course dealing with the environment; however, I think in subjects like science, SD may be presented more clearly" (FG.3B). Additional example on how ESD dimensions are incorporated in the objectives was raised from the perspective of science education, "one of the objectives of the course (science teaching methods) is preparing students for the current scientific and technological changes" (FG.1D).

Furthermore, a participant from another group explained, "in science education there is what so called (STS) approach, science technology and society, it could be linked to SD; as we deal with topics related to environment, society, and economics" (FG.2C).

Thus, the idea of sustainable development is already included in teacher education programmes and curricula, "when I offer students a meaningful learning and link that learning to real life context, this is in fact what sustainable development seeks" (FG.3A).

Regarding competencies, some participants argued that the competencies are included in the objectives, "we focus on critical thinking, problem solving etc. whether in objectives or in our practices" (FG.3B).

"We always focus on critical thinking and problem solving. We also focus a lot on people with special needs" (FG1D).

Additionally, competencies may be integrated in course description but without connect them to SD, "within course description competencies like critical thinking, problem solving, and apply technology in education may be included but without link them to SD," (FG.2C).

However, even if these competencies are not contained within course objectives or description, they are emphasized in educational practices, through different teaching methods, "we already included these competencies and dimensions within our teaching practices, at least, I talk on my behalf" (FG.3A). Participant from the same group added, "We use the method of problem solving and promote research, this is a practice on the ground" (FG.1B).

The participants mentioned a variety of practiced teaching methods, which can be linked to ESD, these comprised for example: Linking to the real life context and local problems, micro learning, role playing, modeling, the use of technology and learning resources, critical and creative thinking, Problem solving, brain storming, action research, debate, and collaborative Learning.

In answering the questions pertaining incorporating ESD in pre-service teacher education curricula, participants highlighted that ESD or SD as a concept may be not mentioned, whether as a separate course or a topic within a course; "there are some titles can be linked to SD, but SD as a concept is not mentioned, neither as a separate course or a topic within a course" (FG.3A).

However, the discussions demonstrated that there are many examples that can prove the integration of ESD knowledge and competencies into the curricula or programme plans, but without a clear link to SD; *"we are working on all dimensions of ESD without mentioning the concept of SD"* (FG.1B).

"As a topic or titles within the course yes, there are many topics related to SD but without clearly linked them to SD" (FG2.A).

One of the examples was updating the curricula of some programmes within a project partnered with the University of Kent in the United States, where new educational methods have been introduced into those curricula; "for example, in the course English Language teaching (ELT2), there is a unit titled: professional development and reflective teaching practices, in an attempt to highlight the importance of continuous development and relate this to lifelong learning, this is really an up to date topic and related to SD" (FG1A). Nevertheless, the same participant commented, "there is a problem in some courses, the curriculum or the content is outdated, and has not been updated for many years."

Another participant indicated, "there are health sciences courses 1&2, where we talk about various scientific and environmental issues, in addition, sustainable development is mentioned explicitly in the course of ecology, biological relations and environmental education" (FG.1D). A similar opinion that "in the specialty of social education there is a course called life skills, and there is a volunteer work course that can be linked to good citizenship" (FG1A). A third participant pointed out, "there are many courses in the specialization of social worker include the concept development, (development and community, development and culture etc.) but SD is not included as a concept" (FG1.B).

Likewise, participants in (FG.2) provided several examples; "there are many courses can be linked to SD but without mentioning the concept clearly, for example, technology in education, and research as an approach for professional development" (FG.2C). Participant (FG.2B) referred to the course (curriculum1), as it "includes topics like culture, environment and some life skills."

Additional examples were discussed by participant (FG.3), most notably a new course that has been proposed as an elective university requirement called "Civic Behavior", where the course description is "based on the three basic concepts of sustainable development" (FG.3B). In addition to many other courses that can include titles or units related to sustainability dimensions without link them clearly to SD.

3.2.1.3 Integrating ESD into Research Strategy of Pre-Service Teacher Education

The participants emphasized the importance of focusing on sustainable development issues in research, recognizing that this field still needs more
attention, "*it is necessary for future action to include SD and SDGs more clearly in research*" (FG.1A).

Some participants indicated that there are a growing interest in this topic, and there are several funded research projects in this regard, however, it still needs more focus and awareness; *"this trend is still in its infancy, we may need more awareness about it and a change in our curricula so that we can focus more on it"*(FG.2A).

Other participants provided examples on how they address sustainability issues in research, "we have a course called (a seminar in education), where we direct students to write research papers on topics that can be linked to sustainable development, for example we deal with issues of inclusive education, and action research on specific teaching methods, and we focus on topics related to contemporary issues in education for example during COVID 19, some researches conducted on remote learning... but other issues related to environment may be more presented in pure science not in education" (FG.2C).

By the same token, another participant explained, "some topics we focus on not just in research, but also in tasks and homework, these include teaching methods that consider students with special needs" (FG.2B).

Likewise, a similar idea was raised concerning the focus on teaching methods within research, "we focus on meaningful learning and lifelong learning, these are linked to SD in way or another even without mentioning the concept of SD" (FG.3A).

3.2.1.4 Integrating ESD into Initiatives and Extra-curricular Activities in Pre-Service Teacher Education

It was noticeable that the project supported by the World Bank was mentioned as the main initiative to improve both pre and in-service teacher education, where some participants pointed out that ESD knowledge and competencies were included in the training modules; *"for example, there was a module called, 21st century teacher, equity in education, and how to deal with students with disability"* (FG.1B),

Other participants indicated that although the project was competencybased, it was no reference to SD in it, "*I don't think that there are any dimension or component mentioned SD explicitly, however, it focused on competencies and professional development as a means to lifelong learning*" (FG.2D).

Furthermore, ERASMUS, was mentioned as relevant to enhance teachers' competencies and capacities, *"there were partnerships with international universities, and training was conducted on the use of various means in education, such as some web tools and the use of technology, and various educational methods"* (FG.1A).

A similar project was mentioned, which involve partnership with international universities, "currently we are working on a project with a university in Finland on digitalization of programmes at the college of educational sciences" (FG.2B).

In addition, some participants highlighted students' activities and initiatives, "the College of Education Club undertakes initiatives, even if they are random and unorganized, but in their content they may be related to the development of students' competencies such as cooperation, dialogue, partnerships, community service, etc." (FG.2A). While the link to SD can be

obvious in some activities, such as *"recycling and environment preserving where the teachers participated in cleaning the university campus of cigarette leftovers"* (FG.2B).

Finally, participants in (FG.3) shed light on a practice in the college of education, where a banner has been placed somewhere in the college, displaying the SDGS as a form of awareness raising.

3.2.1.5 Monitoring and Evaluation of the Integration of ESD into Pre-Service Teacher Education Programmes

All participants expressed the idea that there is internal review but not included aspects concerning the integration of ESD into programmes in general or teacher education in particular.

"There is review internally, but not for this purpose" (FG.1B).

"There is no direct internal or external evaluation to follow up on the integration of ESD or the SDGs into the programmes" (FG.1C).

"There is a general evaluation process, but not include ESD integration" (FG.1D).

Although the participants referred to the internal quality assurance processes, some of them expressed their uncertainty about whether there are indicators to track the alignment of programs with the sustainable development goals.

"I have no information if there are indicators used by the quality unit at the university to measure the integration of education for sustainable development into the various programmes" (FG.3B).

One of the participants summed it up as "there is no plan to integrate sustainable development into teacher preparation programs, therefore, there is no systematic evaluation and follow-up for this purpose" (FG.2A).

While another participant in the same group illustrated that there is a selfassessment curried out at the university level, and there is a plan to develop programmes; "but there is a plan to follow up and develop programs, and there are many overlaps in our plan with SDGs and the necessary competencies, even if they are not explicitly mentioned" (FG.2C).

3.2.2 Challenges and Enablers for Integrating ESD into Pre-Service Teacher Education

3.2.2.1 Main Challenges

The discussions unfolded the following challenges that may be hinder the integration of ESD.

Ch.1. Policy challenges in terms of the lack of policies for developing preservice teacher education programmes, which may often be linked to the availability of funding.

"The biggest challenge at policy-making level, as we depend on what we receive from outside, it is like that our policy is the policy of (riding the wave) or the trend... if there is a fund and this topic is supported by the donor, we will do it" (FG.1B).

"The university must obligate the faculties, including the College of Education, to direct their policies towards sustainable development" (FG.2A).

Ch.2. Financial challenges, whereas universities suffer from scarcity of fund, therefore they cannot afford additional expenses to develop their programmes.

"Lack of financial support, as we can hardly manage to pay the employees' salaries" (FG.1A).

Another participant connect financial difficulties with aid dependency, which may impede universities from implementing their own developmental plans.

"Any programs that we create in universities require financial support, donors usually dictate their conditions, and we cannot always implement our development plans" (FG.1C).

Ch.3. The lack of job opportunities, which affects the demand for teacher preparation programs, and thus affects the quality of graduates.

"Another challenge is the challenge of unemployment, which affects students" demand for learning and develop themselves and the quality of graduates" (FG.1A).

"The biggest challenge is that students face a closed job market with limited opportunities; and thus leads to frustration, which negatively affects the learning outcomes" (FG.3A).

Ch.4. Lack of awareness and resistance of change.

"There is a challenge relevant to the mindset, which is resistance to change and unwillingness to improvement" (FG.1B).

"There is a cultural challenge represented in the need to raise awareness of the importance of development in general and sustainable development in particular, so far, this matter has not yet penetrated the intellectual depth, whether at the level of individuals, officials and decision-makers" (FG.2A).

Ch.5. The lack of experiences in the field of sustainability.

"Other challenge relates to the scarcity of experiences in this field...the society is still premature in terms of sustainable development" (FG.2A).

Ch.6. Some participants indicated a trilateral challenge, includes curriculum, educators, academic burden; on the one hand, the curriculum is traditional in some of it and not updated, and on the other hand, educators are overloaded, with no time for them to develop it, and the third aspect is related to the negative attitudes of educators towards training and professional development.

"The curriculum is traditional, some curricula need to be updated, and the challenge of the intensive academic burden of the instructors, which may prevent them to take the initiative to develop, as well as the lack of acceptance by educators for training courses" (FG.1D).

Ch.7. The political situation of Palestine, as a state under occupation

"The political situation that limits harvesting the fruits of projects aimed at promoting sustainable development" (FG.2A).

3.2.2.2 Main Enablers

En.1. Donor-funded projects and external financial support for improvement plans.

"The External financial support, it may be a challenge and an opportunity at the same time, but I consider it as an opportunity; because in the absence of these funding opportunities, it will be difficult for us to do any development" (FG.1A).

"We have succeeded in obtaining funding for some projects...this can help direct our programs towards sustainable development, especially that sustainable development is a global trend, examples of the focus areas in these projects are: digitalization of education, environmental preservation, self-learning and lifelong learning, the use of technology and other trends" (FG2.C). En.2. The possibility of more integration of ESD knowledge and competencies into pre-service education programmes.

"It is possible to support the inclusion of sustainable development in programmes if there is an integrated approach" (FG.1B).

"It is possible to add some new courses related to SD such as the civic behaviour"(FG.3B).

En.3. the Intention to change and the availability of its grounds

"SD is already embedded in our programmes and practices...what we need is just to explicitly highlight SD and SDGs in our programmes, there is awareness, and policies in place as well as the real intent to that change" (FG.3A).

"Despite SD is not explicitly mentioned, but the seeds of sustainable development are strong and present in teacher education programmes" (FG.2C).

Another participant highlighted some of the available factors that would facilitate change,

"Keeping in line with recent developments, continuous training, and dealing with modern technologies are all essential factors in orienting teacher preparation programs towards sustainable development" (FG.1E).

En.4. Partnerships and cooperation with international institutions.

"Academic cooperation and partnership with international universities in different countries in the field of research and other fields" (FG.2C).

En.5. Transformations in the education practices as a result of COVID-19

"COVID 19 is an opportunity to revisit our programmes to be ready to any emergency and reveal the need for focusing on SD" (FG.3A).

(Table 7, summarizes expressed challenges and enablers at HEIs level

Table 7. Challenges and Enablers for integrating ESD in teacher educationProgrammes at HEIs Level

| | Challenges | | Enablers |
|---|--|---|---|
| • | the lack of policies for developing pre- service teacher education programmes | • | Donor-funded projects and external financial support |
| • | Scarcity of fund for HEIs Poor quality of graduates due to Limited demand for teaching | • | The possibility of integrating ESD elements into pre-service teacher education programmes |
| • | profession Lack of awareness and resistance of change | • | the Intention to change and the availability of its grounds Partnerships and cooperation with |
| • | The lack of experiences in the field of sustainability Outdated content of some programmes Political situation of Palestine | • | international institutions Transformations in the education practices as a result of COVID-19 |

CHAPTER V Discussion

This chapter presents the discussion of the research findings in light of the context of the study and in comparison to the studies in the literature on ESD and teacher education.

The current study investigated initial teacher education in Palestine to explore whether it has been reoriented towards ESD, by questioning the integration of ESD dimensions and competencies into pre-service teacher education at policy and programmatic levels.

The focus on teacher education is based on the criticality of the role of teachers in the delivery of quality education, and in line with global and national aspirations for teachers as agents of change, and for education as a means to development in societies.

Teacher education in Palestine has received a special emphasis, this is evident in the successive developmental plans and strategies of the MoEHE, and other policy documents pertain teacher education, where a number of policy documents were developed during the decade for education for sustainable development (DESD). Therefore, the investigation of the status of ESD integration into teacher education become seasonable.

The data collection relied on a triangulation data collection protocol, where the author adopted different methods, which included document analysis, interviews and focus group discussions, after performing a comprehensive review of the literature, in order to identify the main elements related to the phenomena and developing the tools of the study.

1. How is education for sustainable development (ESD) incorporated into relevant national teacher education policy documents?

Document analysis was conducted of three key policy documents related to teacher education, these comprised: Teacher Education Strategy, Professional Standards for New Teachers, and Teacher Professional Development Index, the analysis revealed that ESD has not been addressed in key teacher education policy documents in Palestine.

The three documents are completely devoid of any explicit or implicit reference to ESD as a concept, however, the teacher education strategy (2008), includes some content related to society and culture, which can be linked to the knowledge dimension of ESD, and in general, the competencies and learning processes aspects were presented in the three documents, with many elements of similarity that can be linked to ESD, but without indicated that linkage.

Although the Palestinian education development strategic plan (2008-2012) that advocated quality education for development, mentioned ESD as one of the motivations for focusing on education reform, nevertheless, teacher education strategy (2008) that considered a significant strand of 2008-2012 development plan; has not mentioned ESD.

There are a number of potential reasons behind this, it can be that the DESD was in its early stages, and have not started to affect national planning. Another possible reason is the Palestinian context, with its many difficulties and obstacles as a state under occupation, which hinder safe access to education in many areas in the West Bank and Gaza (Al Masri, 2021), this may explain the focus on quality education as a human right in TES (2008), as well as emphasizing social and cultural aspects necessary to build a cohesive Palestinian society, capable of developing and advancing to build its independent state. These

aspects reflect the Palestinian context in the current situation and its priorities as a people under occupation.

Moreover, the fact that the education system is relatively new in Palestine and the absence of previous policies related to teacher education in Palestine, in addition to lack of clarity and resources on how to integrate ESD whether in terms of the available policies, or specific materials (Saab et al. 2019). All these are possible reasons that may have made the focus on the technical aspects of improving teacher quality as a way to improve the quality of education, which is essential and a prerequisite for seeking to direct education to be a significant factor in sustainable development.

However, recently, sustainability has become more explicit and emphasized on, as a basis and strategic outcome for any plan in Palestine, this is obvious in the latest strategies of the MoEHE, especially 2017-2022 strategic plan, which was built based on the sustainable development goals and the National Policy Agenda of 2017-2022, in addition to the new plan for the MoHE 2020-2023; this shift may be attributed to the global momentum of the 2030 agenda.

It is worth mentioning that despite the absence of ESD concept from teacher education strategy, and the absence of ESD concept and content from teacher professional standards, as well as from readiness to teach index competencies, there are many competencies and learning process that can be linked to ESD, this might be in line with the aim of these documents to produce professionally skilful teachers (Teacher Education Strategy 2008). This may corresponds with the findings of Laurie et al. (2016) study, which asserted the contribution of ESD pedagogies in many ways to quality education in primary and

secondary schools, more than ESD content. Therefore, ESD concept and content needs more attention in policy formulation.

International bodies and many scholars pointed out that having policies in place is a paramount in order to reorient teacher education towards sustainability (UNESCO 2005; Martin et al. 2013; OECD 2016; Bourn et al. 2017; UNESCO 2020).

Limited evidence was found in the literature on investigating the presence of ESD in national teacher education policies in different contexts; where the findings of document analysis in the current study are similar to the results of studies in other developing countries context; Kalsoom et al. (2019) analysed a number of teacher education policy documents in Pakistan, and concluded that ESD is not addressed in teacher education documents, while ESD dimensions are partially presented in these documents.

Another similar results have been highlighted in the study of Bentham et al. (2014) on teacher education policies in South Africa, which demonstrated that ESD principles are included in the policy text in a general sense without specific reference to sustainable development issues. This is also in congruence with the findings of Bourn et al. (2017) from different developed contexts, where limited evidence was found on strategic direction to ESD mainstreaming in teacher education.

This is in consistence with what is highlighted in the final report of the UN DESD, which demonstrated that although many countries have included goals related to sustainability and/or environmental education, and incorporate relevant themes in their curriculum, there is still a need to prepare teachers to deliver these objectives, and to "reorient teacher education to approach ESD in content and learning methods" (UNESCO 2014a). Likewise, Benavot (2014) indicated that

during DESD, policy attention to ESD has strengthened in many countries; meanwhile many other countries lack either an ESD policy or a viable one.

Therefore, further development still needed to integrate ESD in teacher education policies; this also applies to developed countries, as demonstrated by Bourn et al. (2017).

2. How is the reorientation of teacher education towards sustainability in Palestine from the perspective of the ministry of education, the ministry of higher education, and accreditation and quality assurance commission?

To ascertain the status of reorienting teacher education toward sustainability in Palestine, data were gathered through interviews with representatives from the ministry of education, the ministry of higher education, and the accreditation and quality assurance commission. The focus was on exploring the aspects and manifestations of integrating ESD into teacher education from a ministerial perspective, with the aim of elucidating how this is reflected in national policy pertinent to teacher education, as well as the role of the MoE and the MoHE in enacting these policies, supervising their implementation, and evaluating their outcomes.

Therefore, the dialogue centred on whether there are dedicated policies, standards, and specific indicators to ensure the integration of ESD into teacher education, and the extent to which these policies and standards are reflected in the accreditation process of pre-service teacher education programmes at universities. Moreover, the different roles of partners and stakeholders in achieving ESD integration were highlighted, as well as the challenges and enabling factors.

2.1 Integrating Education for Sustainable Development into National Teacher Education Policies and Strategies in Palestine

The findings revealed that there are no dedicated policy documents for integrating ESD in teacher education, whereas the documents identified by interviewees as the main documents related to teacher education, namely the teacher Education Strategy and teacher professional standards, could implicitly include ESD, as the essence of these policies aims to develop education as a foundation for societal development.

However, sustainable development is one of the national priorities in the National Policy Agenda (2017-2022), as well as achieving quality education for all; moreover, ESD is explicitly mentioned in the last strategy of the MoEHE (2017-2022) and the MoHE (2020-2023).

These results are consistent with the findings of the document analysis under the current study of key teacher education policy documents, which demonstrated that although ESD is not integrated as a concept, there are many elements can be linked to ESD, especially in competencies and learning process. Moreover, this is also in congruence with prioritizing the designation of policies and programmes to encourage education for sustainable development and education in the field of global citizenship in the MoEHE strategic plan (2017-2022), and stressing the need to apply these policies to formal and non-formal education; in addition to offer training to teachers (MoEHE 2017-2022, P113).

The reason behind the absence of ESD concept and knowledge from teacher education policy documents, may be due to the fact that most of them were built based on teacher education strategy 2008 (Burke et al. 2020, P9), which has not been updated since its inception.

Furthermore, it is noteworthy that the MoEHE strategy started gradually embedding SD, where the emergence of sustainable development concept has increased with the years, this is apparent from the difference between the last plan (2017-2022), where SD and SDGs are significantly presented, and the previous plan (2014-2019) a learning nation, that released in 2014, by the end of the DESD, without any reference to ESD or SD. Therefore, it is possible to say that the 2017-2022 strategy is a quantum leap in terms of directing educational policy towards sustainable development, which can be attributed to the Palestine's commitment to international obligations towards the 2030 agenda (MoEHE 2017, P225), as well as prioritizing SD in the National Policy Agenda (2017-2022).

Additionally, it seems that the lack of ESD integration in teacher education policies in Palestine is compatible with what highlighted in the study of Saab et al. (2019), who argued that the global assessment of ESD provisions show slow signs of a favorable trend in the Arab region, in which 4 out of 19 countries have a budget allocated specifically to ESD.

2.2 ESD in National Teacher Education Standards and Accreditation

The analysis revealed a contradiction in the answers about integrating education for sustainable development into the standards of teacher education programmes, , whether in terms of the existence of those standards in the first place or in terms of the party responsible for setting such standards; the views ranged between the lack of standards for teacher education programs, and the reference to teacher professional standards as a basis for the formulation of teacher education programs, in addition to how to see the roles of the MoE, the MoHE, and AQAC, as some believe that the responsibility for setting standards lies with the MoHE and AQAC, while others believe that the role of the MoHE is an administrative one and the primary role for setting standards lies with the MoE. This controversy may indicate the absence of standards for teacher education programmes, noting that the development of standards for teacher preparation programs was one of the prominent recommendations of the teacher education strategy (2008), and one of the tasks assigned to the commission of developing teaching profession (CDTP) (Teacher Education Strategy 2008). Hashweh (2011) confirmed the same notion when pointed out that (CDTP) has developed professional standards for teachers, but not for teacher education (Hashweh 2011, P38), this is contrary to Burke et al. (2020), who mentioned that (CDTP) developed standards for teachers and teacher education programs. Unless they mean that professional standards for teachers are meant to be standards for teacher preparation programmes as well.

In addition, there were some indications to the self-evaluation that used by AQAC within the TEIP to evaluate teacher education programmes, as a potential source of standards and indicators for teacher education programmes, it is worth to mention that self-evaluation document was built based on teacher education strategy 2008, and professional standards for new teachers as well as readiness to teach competencies index (AQAC 2017)

Burke et al. (2020) mentioned the professional development index of teachers' competencies as the main accomplishment of TEIP that was used to redesign, develop, implement, and evaluate pre-service and in-service programs.

Therefore, the evidence suggests that there are no standards for pre-service teacher education programs, and consequently ESD is not systematically integrated into the standards and indicators for teacher preparation programs. What can exist are general standards for accrediting those programs that may be linked in some aspects to sustainable development. Evidence shows that embedding ESD in quality assurance criteria can strengthen policy to prioritize ESD integration at national level; subsequently, incorporating ESD in quality assurance standards and indicators may enhance the follow up role of the ministries of education and higher education, and thus ensure better integration of ESD in teacher education (UNESCO 2020, P26).

2.3 *Monitoring and Evaluation of the Integration of ESD in Teacher Education at National Level*

The results disclosed that there are no monitoring and evaluation procedures to track the integration of ESD in teacher education at national level; this also was linked to the absence of national standards for integration ESD in teacher education, whereas a gap was highlighted in evaluating the extent to which SDGs are integrated in university policies, plans and outcomes.

These results were confirmed by the absence of any policy documents or research results related to systematic monitoring and evaluation processes for integrating ESD into pre-service teacher education programs. the only evidence, what is mentioned on the Palestinian Central Bureau of Statistics based on the national review of the progress towards 2030 agenda, whereby SDG 4 target 7.1.3, which concerns in part of it, teacher education; was evaluated as partially (Palestinian Central Bureau of Statistics 2020), without any reference to the source of evidence and data that were relied upon in making that judgment.

Jaber (2018) indicated the same point when highlighted the lack of available data for monitoring the SDGs and their targets as an obstacle to the implementation of the 2030 Agenda.

2.4 Coordination and Partnerships to Reorient Teacher Education to Address ESD

The discussion was concentrated on the roles and responsibilities of the main actors in teacher education; the participants indicated the technical role of the MoE in setting the standards for teacher education, and it already developed professional standards for teachers, and designed training programmes for inservice teacher education, while the MoHE as well as AQAC should ensure the adherence of these standards in pre-service teacher education programmes, but first and foremost, it is the responsibility of universities to improve their programs.

However, coordination between the stakeholders was negatively perceived, as each party work based on their own vision without real complementarity on the ground, especially after the separation of the MoEHE into two ministries, and after the TEIP is over. It is as if the momentum of the teacher education strategy has faded, as if it was just a task done and things are fine. This idea was also highlighted as potential concern in Burke et al. (2020), who pinpointed that teacher education reform in the West Bank and Gaza is an incomplete work, and there are areas of development should be pursued.

Coordination and coherence at policy and implementation level is considered vital and a prerequisite for successful achievement of ESD aspirations (OECD 2016; UNESCO 2020). In the Palestinian context, policy coherence and coordination between different players in the education system, is yet has to be promoted. As a result, the national policy agenda (2017-2022) emphasized the relevance of the Education Sector Strategy arising from a collaborative approach aimed at ensuring coherence and quality among all educational institutions.

2.5 Challenges and Enablers of Reorienting Teacher Education towards Sustainability

The discussion brought to surface many challenges that may inhibit the integration of ESD in teacher education, the most predominant challenge or rather impediment is the occupation, which is not just continue restricting the Palestinian

government to have control over the levers of development (UNDAF 2018-2022), but the occupation also –according to the UN - incurs a high financial and human cost to Palestinians, which is the main obstacle to achieving real sustainable development in Palestine (UN 2020).

In addition, "the concept of sustainability is inextricably linked to independence" (National Policy Agenda 2017-2022), as the occupation prevents implementing any plans towards sustainable development, therefore, the State of Palestine in its main messages to the 2018 High-Level Political Forum on Sustainable Development, called for adding an 18th SDG, which is: "Ending the occupation" (Voluntary National Review 2018), if the international community is serious about achieving 2030 agenda.

Another challenge is the lack of financial support for universities, which is in congruence with what mentioned in the strategy of the MoHE (2020-2023) about the importance of ensuring the sustainability of financial support for HEIs, as one of the objectives of the strategy.

Aid dependency also was expressed as a challenge, which is conform with the findings of Shinn (2012), who argued that donor-funded projects, along with the absence of a holistic vision toward teacher education; hinder improving the quality of teacher education in Palestine. Similarly, Nicolai (2007) pointed out that education planning is not only about vision, but also about donor harmonization (Nicolai 2007, P70), and likewise Turman (2019) who indicated that development in Palestine may be subject to donor requirements.

Furthermore, the lack of coherence and coordination between stakeholders was regarded as a critical challenge, in addition to inconsistency between pre- and in-service teacher education, while the importance of promoting synergies and policy coherence has been emphasized on various occasions as a corner stone of successful integration of ESD in all forms of education (OECD 2016; UNESCO 2020).

Lack of awareness on the importance of SD was another challenge especially among teachers and teacher educators, along with s tendency to traditional methods in their teaching practices. This is in consistence with studies in other countries, whereas the limited progress in the provision of ESD was imputed to lack of vision, awareness, policy framework and funding (Benard et al. 2020).

Additionally, the interviewees stressed indirect socioeconomic challenge related to the low wages of teachers and the lack of employment opportunities, which leads to the reluctance of the superior youth from the teaching profession; and thus negatively affects the quality of graduates, this is compatible with Jaber (2018), who highlighted that unemployment among graduates in Palestine has reached 35 percent, which may explain why the teaching profession is not attractive for young people in many countries (EFA 2015).

Finally, insufficient support for research to improve teacher education was pinpointed as a challenge that may undermine the development of teacher education programs and reorient them towards sustainability, which is consistent with what was stated in the strategy of the MoHE 2020-2023 regarding the limited role of scientific research in sustainable development, in addition to focusing on theoretical research more than applied research, as well as the insufficient budget allocated to research Al Kurd 2018).

On the other hand, the interviewees shed light on a number of factors that can be enablers for integrating ESD in teacher education, these factors included among them a fundamental element for any change and development, which is the willingness and desire for change at all levels in Palestine, this is apparent in the national policies, strategies and reports (TES 2008; the National Policy agenda 2017-2022; MoEHE 2017-2022; MoHE 2020-2023; Palestinian National Voluntary Review on the Implementation of the 2030 Agenda; Atlas of Sustainable Development (2020).

Moreover, there is a possibility of change if coordinate efforts, set standards, develop content and raise awareness, supported by national strategies and priorities that focus on sustainable development, enhanced by international aspiration to achieve 2030 agenda.

In addition, the availability of various donor-funded projects, can be a pivotal opportunity to implement Palestinian national developmental plans, and can contribute to transformative changes, although this point was highlighted as a challenge, it can be a good opportunity with strong leadership and clear vision for education development (Nicolai 2007, P70), correspondingly, Hashweh (2011) indicated the role of donor-funded projects from international bodies in implementing the TES (2008), likewise, SHINN (2012) argued that the financial support from international actors has been shaped teacher development in Palestine. Congruently, some scholars considered financial support from international donors, NGOs, and the private sector indispensable for successful ESD implementation (Benavot 2014).

3. How are ESD core competencies and ESD knowledge integrated into preservice teacher education programmes from the perspective of university administrators and instructors?

Being important agents of change in society, universities are expected to play a leading role in implementing national policies and international trends. Thereby, the purpose of data collection at this stage was to examine the integration of ESD into pre-service teacher education programs in order to obtain a comprehensive picture of the integration of ESD into all facets of teacher education, whether at the level of national policies, their practical implementation in university-based teacher preparation programs, or their monitoring and evaluation.

The data were gathered through interviews with administrators of education colleges at the three institutions that participated in this study, as well as focus - group discussions with educators from various specialties within these colleges. The questions were based on pre-determined codes and covered the major areas of teacher education programs, including vision and mission, objectives, content, pedagogy, research, initiatives, and activities.

3.1 Integrating ESD into the Policy of Faculties of Education

Analysis of the data from both interviews and focus groups revealed that the responses of administrators and educators from the three universities were consistent, with the main reflected idea being that ESD or SD as a concept is not explicitly mentioned in any policy text in the faculties of educational sciences, including: vision, mission, objectives, and outcomes. However, ESD knowledge and competencies are embedded in different ways, most notably in program objectives and outcomes, but without being linked to ESD.

According to some participants, this could be due to the fact that the vision of some faculties of education is outdated, therefore, there is intention to update it and suggestions have been already discussed in some faculties to explicitly include SD and related knowledge and competencies, whereas some participants explained that universities focus on sustainable development at the level of the general policy of the university, without this being reflected in the Micro level of each of the programs. However, at this stage the participants both administrators and educators alike, stressed the role of the World Bank funded project (Teacher Education Improvement Project) in affecting teacher education programmes whether in terms of policies or content, especially in adopting the competency based approach.

Moreover, the examples provided for embedding ESD knowledge and competencies in the vision, mission, objectives, or outcomes, are in consistency with the findings of document analysis carried out under this study, in terms of concentrating on equipping teachers with competencies and knowledge necessary to their teaching process; this is clear in focusing on achieving goals related to prepare graduates for competition in the labor market, in addition to knowledge production in specific specialization.

Nevertheless, many features may be found in the vision and mission of the three universities that are directly related to SDG4, with explicit reference to SD (An Najah national university 2022; Birzeit University 2022; Al Quds Open University 2022) for example, but not limited to equitable education, quality learning, lifelong learning, open learning opportunities, blended learning and technology integration, this is at the Macro level, but when it comes to Micro level, the image fades, and the terms sustainable development and education for sustainable development are no longer included in any of the vision and mission statements of the faculties of education.

The absence of ESD concept from university level policies of pre-service teacher education programmes is compatible with the findings of analyzing key national documents related to teacher education performed in this study, as well as the results of the interviews with representatives of MoE, MoHE, and AQAC. Although this is in harmony with the findings of some scholars (e.g. Kalsoom et al 2019; Agyemang 2020) as well as UNECO (2020) recommendations to ministries of education to review their education systems and policies to ensure more integration of ESD, it is also in contrary with the findings of the final report of the Global Action Programme (GAP) (2015-2019), which stated that ESD has been enhanced in policy and practice (UNESCO 2021a).

Such contradiction in the reports from the same source may indicate the absence of an in depth comprehensive assessment of the mainstreaming of ESD into national policies, or it could be due to the fact that these reports rely on the data obtained from some countries that voluntary contribute to the assessment, in addition, although there are identified global indicators for this purpose, however, the review is totally rely on voluntary self-reporting by government officials (UNESCO 2021b, p320)which can vary from country to country based on the source and the quality of evidence used to make the judgment.

Additionally, some scholars studied SDGs' indicators, in terms of their validity to measure the reorientation of national policies and systems to address SDGs, Simon et al. (2017) argued that the reductive nature of indicators might clash with a national understanding, due to different interpretations of them; however, the assessment using SDG indicators should be handled carefully, and should be considered the starting point of analysis, not the endpoint. Particular attention also paid for SDG 4.7 indicators, which have been criticized for their ability to evaluate this goal comprehensively, as the indicators focused on the assessment of inputs and outcomes and neglected the assessment of the processes, specifically the teaching-learning practices or pedagogies that are essential for the assessment of this specific indicator (Helin2021).

The discussions emphasized the need to begin a comprehensive review of teacher education policies at all levels: micro, Meso, and macro, which may reveal both a research gap and a structural deficit at HEIs in terms of institutionalizing change, as any Macro level policy should be reflected in all components of the system to be successful and fully implemented.

3.2 Integrating ESD into the Content of Pre-Service Teacher Education Programmes

A variety of areas were covered in the conversations about the integration of ESD into the content of pre-service teacher education programs. These areas included course description, objectives and outcomes, learning material or curriculum, and teaching techniques, among others.

There was a consistence between the responses of the administrators and educators, they agreed on the absence of SD as a concept from the content of teacher education programmes, whether as a stand-alone course or as a cross cutting theme, meanwhile, sustainability dimensions may be integrated into learning objectives; if there is a content related to them, while some of the competencies are clearly integrated into educational practices, even if they are not incorporated in the objectives or the content, however, these competencies and knowledge are rarely linked to sustainable development.

Thus, the integration of ESD dimensions depends largely on the subject and the content; therefore, they could be integrated in various ways, in course description or objectives, whereas competencies can be found in different aspects of the content. The focus of the importance of ESD content and competencies is in line with the previous research (Schulera et al. 2018; Bürgener and Barth 2018; Brandt et al. 2019; Dlouhá et al. 2019; Brandt et al. 2021). However, teacher educators play a critical role in nurturing them in their students, if they embrace innovative approaches in their teaching practices; this in congruence with Schrage's (2015) results that teacher educators' expertise of ESD and instructional practices help pre-service teachers grasp sustainability problems.

Teachers' awareness of ESD and their ability to integrate it into their teaching practices are both unexplored areas that may require further investigation; this is especially critical given previous research findings that showed a deficit in the necessary competencies for ESD among both student teachers and teacher educators (Kieu et al. 2016; Kalsoom et al. 2017; Mulà et al. 2017; Wilhelm et al. 2019).

It was noticeable that particular competencies were repeatedly mentioned to have a great linkage to ESD core competencies, but without explicit reference to ESD, mainly: critical thinking, active learning, problem solving, and technology integration. These competencies were explicitly incorporated in the analyzed policy documents too.

Furthermore, a number of courses were mentioned as relevant to ESD, and can lead to equip student teachers with knowledge, skills and attitudes necessary, but this seems to has been ceded to the hands of educators, which is depend on their awareness. This is close to what pointed out in other studies that draw attention to the gap between ESD cognition and ESD teaching capacity among student teachers, and called HEIS to adopt more effective approaches to integrate ESD in their programmes (Kieu et al. 2016).

Review the examples given on these courses demonstrated once again the focus on skills and learning process, which is in congruence with the aspects highlighted in the findings of document analysis under the current study, this can be evident in a through look at these examples, such as: education technology, teaching and learning in heterogeneous classes, life skills and 21st century competencies, and research as an approach for professional development. Such

courses can harmoniously respond to the vision of TES (2008) of producing skillful teachers.

Finally, an idea was raised that may be worth mentioning, namely when the subject is closely related to one or more of the dimensions of sustainability, particularly in subjects of a scientific nature, such as science education; sustainable development may be explicitly mentioned; for example, at one of the universities under study, there is a course called "ecology, biological relations, and environmental education," which explicitly mentions SD.

Similarly, Rieckmann, M. (2019) claimed that the subject of ESD is still primarily defined by courses and projects in certain fields. In contrary, the findings of Goad and Kitaev (2020) pertinent to the integration of ESD in four Mediterranean countries, revealed that ESD has been incorporated through existing subjects and through stand-alone projects at tertiary education, while one country of four has reported that ESD is addressed through a cross-curriculum approach at Bachelor's, Master's or doctorate level (Goad and Kitaev, 2020, P71).

This reveals the need for structurally mainstreaming ESD in all subjects, along with raising awareness at all levels, especially among educators to better understand how the content can be seen and delivered in the lenses of sustainability. It is noteworthy that the final report on Palestinian government preparedness for the SDGs (2018) demonstrated that insufficient efforts have been made in Palestine to raise awareness in this regard.

3.3 Integrating ESD into Research Strategy of Pre-Service Teacher Education

The responses disclosed considerable differences between HEIs in directing research to embed sustainability issues, which indicates the absence of a research strategy at the level of the Ministry of Higher Education and Scientific Research, at least with regard to directing research to address SD in a binding manner for HEIs.

This is apparent especially in the responses of faculty administrators; one of them pinpointed that the research foci in first place is practical topics related to professional aspects in the teaching profession, while participant from another university indicated that SD topics might be emphasized in the Master programme, but under graduate programmes may focus more on the 21st century competencies, whereas, the third participant explained that the research strategy at the university has been directed towards SD, and clearly requested to align research to SDGs.

Another interesting idea that has been brought up by some of the participants in the group discussions, with regard to the role of educators' awareness as well as the subject they teach in determining whether they concentrate on SD issues in research.

However, all participants acknowledged the importance of integrating SD in research, and stressed the need to pay more attention to this field, which is in harmony with the recommendations raised by Al Kurd (2018) who indicated that the research in HEIs in Palestine focusing on theoretical research more than applied research, in addition to insufficient budget allocated to research. Comparably, from NGO perspective, Romahi (2010) highlighted the lack of support of research; stressing that the government has not allocated fund for research and most research funding rely on international and external financing (p13).

3.4 Integrating ESD into Initiatives and Extra-curricular Activities in Pre-Service Teacher Education

Initiatives is another aspect that unveil the variations between HEIs in terms of reorienting their programmes to address sustainability, while some faculties of education implement unsystematic activities that may include ESD dimensions without any reference to SD, one of the three universities, manifest interest in raising awareness on SDGs through advertising banners, without real opportunities in all universities under study for student teachers and educators to raise their awareness on ESD, or involvement in a systematic ESD initiatives. Ramahi (2015) suggested to focus on teachers as mediators of social change who can facilitate an emancipatory pedagogy. Not surprisingly, similar deficit was indicated in research in other contexts, Jumani (2015) demonstrated the absence of teacher educators' involvement in any activities relevant to education for sustainability.

Nevertheless, there was resemblance in referring to the World Bank project as the main initiative to develop teacher education programmes, whereby ESD knowledge and competencies were included in the training modules without reference to ESD.

ERASMUS is another initiative mentioned by one of the participants as relevant to enhance teachers' competencies and capacities. Additional project implemented in one of the three universities in a partnership with a university in Finland, the focus of the project is digitization of education.

It has become obvious that teacher education reform as embodied in the implementation of the teachers' education strategy was largely dependent on donor-funded projects without a comprehensive national evaluation of their impact on achieving meaningful reform in teacher education programs; likewise,

SHINN (2012) asserted that the MoE seeded teacher education reform through a handful of projects, correspondingly, the results of Ramahi (2015) attributed the declining state of pedagogical practice and teacher quality to unsuitable, ill-advised policies and reliance on foreign funding (P9). Which can also be attributed to the fragmentation of higher education's management over the years, as a result of the recurrent separation and merger of the two ministries of education and higher education (ETF 2020).

3.5 Monitoring and Evaluation of the Integration of ESD into Pre-Service Teacher Education Programmes

The central idea expressed in this regard was that internal reviews are conducted by quality assurance units within universities, but that these reviews are broad and do not address the integration of ESD into programs; additionally, although some participants were unaware of the indicators used in these reviews, they made inferences based on the documents and data required of them.

Besides that, despite its importance in this field, the role of the MoHE and AQAC is ineffective, and there is no monitoring or evaluation to ensure that university programs in general, and teacher training programs in particular, are aligned with the SDGs. However, the self-assessment that AQAC requested from universities four years ago was highlighted, as it was indirectly related to SD in some sections. This is consistent with the remarks made by AQAC and ministry representatives interviewed for this investigation. Another point raised that the MoHE and AQAC make modest efforts to obtain frequent qualitative data on various aspects; rather, they gather some statistical data that, while useful, cannot be used to evaluate HEIs' progress toward reaching specific goals.

The lack of monitoring and evaluation of universities' compliance with teacher education reform initiatives was also indicated. It was noted that universities began adapting their programs to conform to TES 2008 (Romahi 2010, P11), and it was further stated in (PTPDI 2018) that the MoEHE should take steps to ensure that the new PTPDI is embedded at the system level through formal policy requirements and through inclusion in accreditation requirements, conversely, no participants referred to that index, and despite the participants' emphasis on professional requirements for teachers, the alignment of teacher education programs to these standards has never been addressed.

However, the fundamental premise remains that without a systematic plan for integrating ESD into pre-service teacher education programs; the logical conclusion is that there are no monitoring and evaluation processes for this purpose, outlining the critical importance of paying increased attention to integrating ESD into various axes of teacher education programs, from policy to monitoring and evaluation, as highlighted by UNESCO (2020).

3.6 Challenges and Enablers for Integrating ESD into Pre-Service Teacher Education Programmes

There was a convergence between the challenges raised by administrators and those expressed by educators; whereas the challenges can be categorized based on the source of challenge, or in other words by the level that bears responsibility for this challenge, this includes: Ministerial, institutional, individual and contextual levels.

The most critical challenge was the absence of national policies with regard to integrating ESD into university programmes in general and teacher education in particular, as well as absence of standards to reorient teacher education programmes towards sustainability, at university and national level, along with the lack of awareness and understanding of the importance of SD. It is obvious that overcoming these challenges is a ministerial responsibility, as both the Ministry of Education and the ministry of Higher Education as well as AQAC are responsible for setting policies, developing standards and raising awareness about plans and roles, to ensure that education programmes at all levels are directed to be factors to achieve sustainable development goals, and this is in line with the results from other sources of data under the current study, especially the interviews with representatives of the MoE, the MoHE, and AQAC, who confirmed that education for sustainable development is not clearly integrated at the policy level.

Some argued that even if there are policies in place and sufficient awareness, there will still be a challenge of lack of funding to implement these policies, as HEIs suffer from the scarcity of funding, and do not receive the financial allocations that they should obtain from the government, consequently, this leads to the absence of follow up, which is highlighted as another challenge. These challenges are in consistency with the recommendations raised by Al Kurd (2018) to link universities to the sustainable development process, by integrating sustainable development into their policies, programs and practices.

It seems that Palestine is not alone in facing these challenges, as according to UNESCO report for the high-level political forum (2019); it has been demonstrated that public awareness in many countries of the 2030 Agenda and the Sustainable Development Goals appears to remain rather low, particularly at the grassroots and community level. Occasionally, awareness and communication initiatives suffer from a lack of sustainable institutional and financial resources (UNESCO 2019).

An equally important challenge in terms of financial factors is the reliance on donor-funded projects to implement national improvement plans, without being linked to a long-term vision. The same challenge was highlighted by the representative of MoE and MoHE, which corresponds to SHINN (2012) who argued that the MoEHE has ceded the development of teacher education to a handful of donor-funded projects, on a similar fashion, Ramahi (2015) noticed that members of the education community and Palestinian educational NGOs were generally critical of the Ministry's reliance on foreign aid, claiming that internationally sponsored teacher education programs disoriented teachers and had little or no impact on teacher development (P.9). Analogously, Turman (2019) argued that developments in the field of education may be subject to donor conditions.

The financial challenges despite they may appear as at a ministerial or governmental level, they are in fact due to the Palestinian context as a state under occupation, this occupation bear the responsibility for the deterioration of the socioeconomic situation, and depriving the Palestinians of investing in natural resources and implementing development plans in order to build their own independent economy (UN 2016). Noting that the occupation was highlighted by the participants as a major obstacle rather than a challenge, that prevents Palestinians from harvesting the fruits of projects aimed at promoting sustainable development.

At institutional level, a number of challenges were raised that require HEIs to take actions to address them, these challenges comprise the outdated and traditional content, with overloaded educators, who have no time to update the content or enrich it, along with the lack of experiences in the field of sustainability.

The aforementioned institutional challenges accompanied with the tendency to traditional methods of education by educators, and negative attitudes of educators towards training and professional development.

The last challenge may be attributed to more than one factor, which is that the fact of education profession is unattractive to the young people, due to low wages, and the scarcity of job opportunities, which resulted in poor quality of graduates.

Part of the above-mentioned challenges were highlighted by many scholars as hindering or slowing down the reorientation of teacher education towards sustainability; not only in Palestine, but also in many other contexts; Agyemang (2020) pinpointed a number of challenges that hinder ESD mainstreaming in three Colleges in Ghana, included low community awareness and inappropriate institutional structures as well as the scarcity of resources. Similarly, Nyatuka (2020) who stressed some challenges related to teachers in Kenya, included insufficient understanding, inappropriate pedagogical approaches, and weak involvement of the different actors.

Globally, UNESCO (2020) called education policy-makers at local, national, regional and global levels to mainstream ESD into education policies, curricula, teacher education and student assessment, as well as embedding ESD in education quality assurance criteria.

At Palestinian level, even after implementing the recommendations of (TES) 2008 through a number of projects, it has been demonstrated that teacher education reform is still an incomplete work, and there are areas of development should be pursued (Burke et al., 2020), it seems that teacher education continued as described by Nicolai (2007) focusing on delivery of separate courses rather than being built around a comprehensive skill set for teachers, which is indicated in (TES 2008). While Al Kurd (2018) highlighted the necessity of linking universities to the sustainable development process, in terms of policies, programmes, practices, and research.

However, despite these challenges, many factors can make the change possible, most notably: the Partnerships with international universities and NGOs, and the possibility to fundraising to implement the developmental projects, in addition to the potential to take advantage from the available donor-funded projects.

This point especially important, it was raised by the participants as a challenge and as an enabler. While this may look as a contradiction, both viewpoints are feasible depending on how the situation is evaluated; on the one hand, as an occupied state, Palestine lacks the resources and elements required for revival and develop, therefore, these projects are vital, they also represent the international community's commitment to an occupied society amid a century in which the globe strives to attain parity for all humanity.

On the other hand, these projects are typically conditional, aimed at achieving pre-specified goals, and have a limited time and budget, thus they do not result in actual change, but rather create the illusion that efforts are being made, but they are intermittent and ineffective, and their impact is not monitored or sustained. From this angle, it may be considered as a challenge rather than an opportunity.

The last idea was addressed by Romahi (2010) who concluded that the development plan of the MoEHE was highly donor driven and does not identify priority areas, on the same page Ramahi (2019) recommended that education reform should rely on locally derived resources if it is to be sustained. In addition, donor conditions were not limited to governmental institutions, but these conditions were also criticized from NGO point of view, which complain about conditions set by the donors in terms of using this money, but with the absence of any alternatives, these projects are the only developmental opportunities (Gerster and Baumgarten 2011).

In any case, it is unfair to deny the importance of these projects in bringing about educational reform in Palestine, even if only partially. This is especially true for the TES (2008), which its implementation has been supported both technically and financially by international bodies through projects and programs specifically designed to assist the implementation of TES (Hashweh2011).

Other suggested enablers included the prospect to improve policies, and raise awareness, especially with the existence of real intention to change and the availability of its grounds. Lastly, the transformations in the education practices imposed by COVID-19, can serve as evidence of the possibility of accelerating change. Which has been recently regarded as one of the take away lessons from the pandemic, whereas COVID-19 can be considered as an example of how efforts can be joint in order to tackle sustainability challenges (Giannini 2020)

To conclude, the findings of the research from different sources of data were consistence in many aspects, which can promote the reliability of the responses, that provided a trusted picture about the status of ESD integration in pre-service education programmes, especially in terms of consensus that the concept of sustainable development, despite its importance, is still not incorporated into the policies and programs for pre-service teacher education. In addition, ESD dimensions may be transmitted in documents, policies, and programs relevant to teacher education, but without clear links to ESD. Ultimately, this was the core issue that dominated the discussion; indicating the need for additional efforts to integrate education for sustainable development into teacher education programs at all levels.
CHAPTER VI Conclusion and Recommendations

Conclusion

This chapter presents the conclusions and recommendations generated based on the findings according to the main objectives of the research.

This current research thesis has attempted to provide substantial evidence on national efforts to achieve the 2030 Agenda by enhancing SDG4.7. It is an attempt to add a qualitative contribution to the literature on how countries have started to integrate ESD into different axes of their education systems.

The study aimed at exploring the status of reorienting teacher education towards ESD in Palestine. Using a qualitative exploratory case study approach, the author sought to investigate the integration of ESD into teacher education at policy, implementation, and monitoring and evaluation levels. Although the focus of the study is to examine the how regarding this integration, it also digs deeper into the why, where possible and necessary to highlight.

The investigation involved different stakeholders including ministry of education, ministry of higher education, accreditation and quality assurance commission, and higher education institutions, as well as analysis of certain prominent teacher education policy documents.

The findings of this study enabled answering the research questions listed in the introduction. By so doing, this research led to identify two critical aspects of managing ESD in teacher education in Palestine:

- > The status of ESD integration at the policy and ministerial level.
- The status of ESD mainstreaming in teacher education at institutional level in higher education institutions.

The findings revealed considerable consensus between all players in teacher education that, despite its importance, the concept of sustainable development is still not incorporated into pre-service teacher education policies and programs, whether at ministerial or HEIs level. However, ESD dimensions can be found in teacher education-related documents, policies, and programs without explicit reference to ESD.

The main conclusion that can be drawn is that the absence of ESD integration from the first axis; including policies governing teacher education programs and accompanying documents or standards for accreditation and quality assurance, as well as the absence of a plan at the Ministry of Higher Education to institutionalize and monitor this integration in higher education institutions; limit the prospects to systematizing and structurally integrating ESD into pre-service teacher education programs, which is supposed to lead to increased awareness and a genuine shift in attitudes and behaviours among student teachers and educators to act as change agents.

The results indicated that teacher education programmes have yet to be reoriented towards sustainability; there is still a need for explicitly integrating ESD elements in all aspects of pre-service teacher education programmes, and for paying more attention to student teachers and educators competencies. Universities need to assume their responsibility to lead innovation towards addressing national priorities and global aspiration, by starting transformational changes in their programmes in terms of content, pedagogies and capacity building.

The scarcity of fund provided to universities along with the challenges associated with donor-funded projects arose as major challenges, nonetheless, with an informed plan based on national priorities and a clear vision towards what should be developed and need to be sustained in teacher education; then, these projects can become opportunities to realize national plans. The present findings confirm the possibility of change and the availability of its grounds, the seeds of sustainability are inherent in all components of the education system, along with a real intent and willingness to change.

Finally, the results show that the occupation is the primary impediment to promoting the SDGs through education in Palestine. At a time when the Palestinian people are still struggling and striving to overcome the difficulties and barriers imposed by the occupation; in order to ensure access to basic education for all children, among other difficulties, achieving SDG4 becomes a challenge by itself, necessitating the international community's involvement by adding "an 18th SDG, which is: Ending the occupation," as stated in the State of Palestine's Main Message to the 2018 High-Level Political Forum on Sustainable Development.

Despite the limitations of the current study, it provides insights and pave the way for further investigations and improvements in the field of ESD integration in teacher education and other components of the education system in Palestine and other similar contexts.

Recommendations

Based on the research findings, the following recommendations are made to policymakers, practitioners, and researchers:

- The need for educational policymakers to begin developing a national well-defined plan with clear roles and responsibilities to systematically and explicitly integrate the principles and dimensions of education for sustainable development into teacher education programs that involve all stakeholders and link pre- and in-service training.
- It is suggested that AQAC incorporate Education for Sustainable Development within the accreditation standards for teacher training programs as well as quality assurance indicators.
- It is recommended that teachers' professional competences be updated to incorporate not just professional competencies, but also life skills,

knowledge, and values that will strengthen the ability of teachers and learners to address sustainability issues in their respective fields.

- It is advocated that the Ministry of Higher Education implement formal national plans to track the extent to which universities' programs in general, and teacher education programs in particular, are aligned with the SDGs, along with developing follow-up mechanisms.
- Adopting a joint research strategy that includes the Ministry of Higher Education, the Ministry of Education, and universities to reorient research to promote the SDGs through education, and to link pre-and in-service teacher education.
- Faculties of Education are encouraged to direct graduation projects and scientific research at all scientific levels toward sustainability.
- It is proposed that universities need to start developing their preservice education programmes to systematically integrating ESD elements into all components of these programmes.
- It is advised that universities offer ESD as a stand-alone subject in all disciplines, and as a requirement for faculties of education, as well as integrating ESD competencies as cross-curriculum competencies, in addition to fostering students initiatives that promote the SDGs through education.
- This research is a first step that can be followed by further empirical research including all universities in Palestine to examine the extent to which teacher preparation programs are aligned with the sustainable development goals, including analysis of study plans, courses, programs, activities, and published research.
- Another possible future research would include suggesting one or more courses or experiencing a teaching method or approach in integrating ESD competencies as cross-curricular competencies.

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APPENDICES

Appendix A

APPROVAL FROM ETHICS COMMITTEE OF NEAR EAST UNIVERSITY



BİLİMSEL ARAŞTIRMALAR ETİK

KURULU

29.05.2020

Dear Kifah I.M. Imara

Your application titled "Managing Education for Sustainable Development in Palestine, the Role of Initial Teacher Education" with the application number YDÜ/EB/2020/497 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

Direnc Kanel

Appendix B Consent Form



Informed Consent Form

I, ______ hereby agree to participate in the research thesis of Kifah Imara entitled: "Managing Education for Sustainable Development in Palestine, the Role of Initial Teacher Education)".

I have read and understood what participation entails as set out in the information sheet. I have had an opportunity to ask questions and I am satisfied with the answers I have received.

I freely agree to participate in this research project as described and understand that:

- Participation in this study is voluntary.
- No information that may identify me will be included in the research report, and my responses will remain confidential.
- > I may withdraw information from the study at any time.
- > There are no risks or benefits associated with the study.
- I may choose not to answer any questions that I would prefer not to answer.
- The study may be written up for publication in a journal or presented at a conference; therefore, raw data will be stored safely and destroyed when the thesis discussion is completed.

Signature:

Date:

Appendix C

Tools of the Study



Managing Education for Sustainable Development in Palestine

The Role of Initial Teacher Education

The following tools (interview questions) were validated through the following professors:

- Prof Dr. Fahriye Altinay. Near east university-North Cyprus (fahriye.altinay@neu.edu.tr)
- Prof Dr. Ismael Hakki Mirici. Hacettepe university- Ankara, Turkey(<u>hakkimirici@gmail.com</u>)
- Prof Dr. Oytun Sozudogru. Ada Kent university- North Cyprus (oytun.sozudogru@adakent.edu.tr)
- 1. **Interview Tool with university instructors and administrators:** In order to explore the status of the integration of ESD in teacher preparation programmes offered by HEIs, a number of questions will be directed to university administrators and instructors in educational sciences faculties through semi-structured interviews. This is related to research question (How are ESD core competencies and ESD knowledge integrated into pre-service teacher education programmes from the perspective of university administrators?)

The questions

1.1 Are ESD related knowledge and competencies incorporated in pre-service teacher education policy? In which way?

- 1.2 Is there explicit or implicit reference in the college's vision for education for sustainable development and the related competencies? Please provide an example.
- 1.3 Are ESD competencies incorporated in pre-service programs objectives and learning outcomes or student competencies? With examples
- 1.4 Are ESD related knowledge and competencies embedded in teacher education curriculum? How?
- 1.5 Does the program plan include ESD related courses? Please provide examples
- 1.6 Among the teaching methods that you are using, which methods can be considered appropriate for integrating ESD competencies?
- 1.7 Is there a focus on ESD within the research strategy for teacher education programmes? how
- 1.8 Please indicate any activities or initiatives focused on enhancing and integrating ESD related knowledge and competencies into teacher preparation programmes?
- 1.9 Is there a systematic monitoring and evaluation of the integration of ESD in teacher education programmes? Please explain.
- 1.10 What are the challenges facing reorienting teacher education programs towards ESD (if any)?
- 1.11 Are there opportunities or enablers for reorienting teacher education programs towards ESD? Please specify them.
 - 2. Research Tool for Interview with MoE, MoHE and (AQAC) Representatives: Semi structured interviews will be conducted with representatives of the ministry of education and the ministry of higher education as well as with Accreditation and Quality Assurance Commission, in order to answer the following research question:

RQ3: How is the management of reorienting teacher education towards sustainability in Palestine from the perspective of the ministry of education, the ministry of higher education, and accreditation and quality assurance commission?

The questions:

- 2.1 Do you think that there are national policy documents specifically dedicated to ESD? please specify
- 2.2 Are ESD knowledge and competencies mainstreamed in teacher education policies and strategies? In which ways, please clarify with examples

- 2.3 Are there national standards for teacher education? If yes, are they reflect ESD principles, knowledge and competencies and how? If no, why there are no such standards?
- 2.4 How can pre-service teacher education promote ESD knowledge and competencies?
- 2.5 What measures applied in order to enhance the integration of ESD in teacher education?
- 2.6 Are there national indicators for monitoring and evaluating the integration of ESD in teacher education? if yes, please identify them
- 2.7 Does the accreditation of teacher preparation programs requires specific standards related to ESD? Please provide examples
- 2.8 Is there a systematic review or evaluation of the integration of ESD in teacher education? If yes, please describe the process
- 2.9 What is the role of the MoE, the ministry of MoHE and AQAC in managing the reorientation of teacher education towards ESD? Please explain with examples
- 2.10 What are the challenges facing reorienting teacher education programs towards ESD
- 2.11 Are there opportunities or enablers for reorienting teacher education programs towards ESD? Please specify them

Appendix D



NEAR EAST UNIVERSITY Institute of Graduate Studies

Participant Information Sheet for Qualitative Research

Study Title: Managing Education for Sustainable Development in Palestine, the Role of Initial Teacher EducationResearcher: Kifah ImaraSupervisor: Prof Dr. Fahriye Altinay

Dear Participant,

This research project is a dissertation to fulfill the requirements for the degree of a PhD in "Educational Administration, Economics Supervision and Planning" at Near East University\Cyprus";

The aim of the study is to investigate the status of the management of education for sustainable development in teacher education in Palestine, exploring whether teacher education programmes provided by HEIs equip prospective teachers with the key competencies for ESD, supported by national policies and strategies.

Your participation in the interview is totally voluntary and will help in answering the related research questions; the interview may take approximately 90 minutes, and will be recorded for data analysis purpose, where results will be reported anonymously without institutional or individual names (or other forms of identification), in addition, responses will not be shared with anyone outside the research team.

You will have the opportunity to ask for clarification of anything that is not clear. Upon your kind acceptance to participate in this study, you will sign a consent form. Under here a general overview on the research context. In 2002, the United Nations General Assembly has announced the period from 2005 - 2014 as a UN Decade of Education for Sustainable Development (DESD), and called to integrate principles, values, and practices of sustainable development into all aspects of education and learning.

Sustainable development can be considered as a process of learning that requires a shift in the mindset in order to think and act differently with respect to our resources, to make balance between needs and environmental, economic and social limitations.

Therefore, ESD is intended to empower 'learners to take informed decisions and responsible actions for environmental integrity, economic viability and a just society, for present and future generations, while respecting cultural diversity.'

This requires universities to integrate ESD knowledge and competencies in their programmes, especially in teacher education, and provide learners and educators with various opportunities to acquire the necessary knowledge and skills as well as transforming their attitudes to be agents of change towards a more sustainable society.

There are various frameworks in the literature for ESD key competencies, most commonly UNESCO (2017), which identified the following eight competencies: Systems thinking competency; anticipatory competency; normative competency; Strategic competency; collaboration competency; critical thinking competency; self-awareness competency; integrated problem-solving competency.

Although many universities around the world updated their per- service teacher education programmes in order to integrate ESD knowledge and competencies, in addition, many countries have revisited their national policies and standards for teacher education to reorient them towards ESD; however, the final report on DESD, indicated that efforts to reorient teacher education in support of ESD are insufficient, and a high priority should be given to teacher education post DESD. Consequently, it is a paramount to investigate the status of integrating ESD in a country. In Palestine, searching the related literature demonstrated that there is no evidence or studies on how HEIs prepare students teachers for sustainability, and how teacher education at policy level is managed to be reoriented towards ESD. Within this context, the current study will be an endeavor to close this research gap, and to contribute to the development and upscaling of teacher education policy and programmes towards more enhancement of sustainable development prospects in Palestine.

Appendix E

The Ministry of Higher Education Consent

STATE OF PALESTINE

Ministry of Higher Education & Scientific Research Public, International Relations & Media Unit



دولة فلسطين وزارة التعليم العالي والبحث العلمي وحدة العلاقات العامة والدولية والإعلام

الرقم: و ت ع/**١٥١ / ٤.٤ / ٤ 5 5** التاريخ: 2021/10/24

الأخ عميد البحث العلمي المحترم- جامعة النجاح الوطنية الأخ عميد البحث العلمى المحترم - جامعة بيرزيت الأخ عميد البحث العلمى المحترم - القدس المفتوحة

تحية طيبة وبعد،

الموضوع: تسهيل مهمة بحثية

تهديكم وزارة التعليم العالى والبحث العلمي أطيب التحيات، وبالإشارة إلى الموضوع أعلاه، نرجو من حضرتكم التكرم بالتعاون مع الباحثة كفاح ابراهيم أمارة طالبة دكتوراة في جامعة الشرق الأدنى/ قبرص، في مجال إدارة التعليم نحو التنمية المستدامة في فلسطين، دور معلمين المرحلة الأساسية.

وتفضلوا بقبول فائق الاحترام والتقدير،،

عبير الشهابي
 عبير للشهابي

رئيس وحدة العلاقات العامة والدولية والإعلام

- نسخة:
- ديوان معالى الوزير حفظه الله.
- رئيس الهيئة الوطنية للاعتماد والجودة والنوعية المحترم.
 - مدير عام التطوير والبحث العلمي المحترم.

رام الله - الماسيون تلفون: TEL: 02-2982600 Ramallah Al Masyoun الرمز البريدي (POSTAL CODE): P 6028820

info@mohe.pna.ps فاكس: FAX: 02-2954518

www.mohe.pna.ps

ص.ب: رام الله (P.O.BOX : RAMALLAH (1932)

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Appendix F

SUSTAINABLE GOALS



PLAGIARISM REPORT

| Imara PhD | | | | |
|--------------------|---|-------------------------|---------------------|----------------------|
| ORIGINALITY REPORT | | | | |
| SIMILA | 5% RITY INDEX | 12% INTERNET SOURCES | 11% PUBLICATIONS | 2% STUDENT PAPERS |
| PRIMARY SOURCES | | | | |
| 1 | 1 www.mdpi.com Internet Source 3 | | | |
| 2 | 2 wbgfiles.worldbank.org | | | |
| 3 | etheses.whiterose.ac.uk Internet Source | | | |
| 4 | Qudsia Kalsoom. "Status of Education for Sustainable Development in Teacher Education of Pakistan", SAGE Publications, 2019 Publication | | | |

Personal information

Name : Kifah Ibrahim Mahmoud Imara Phone: 00972599427621 E-mail: kifahamara@yahoo.com Address: Palestine-Ramallah

Work experience

1. Deputy Chief Field Education Program\UNRWA- Full time

Palestine-West bank 2020-Present

Main responsibilities: Supervises the administrative aspects of Education Programme ensuring coordination of personnel, finance, procurement, logistics and construction projects in line with UNRWA policies, rules and regulations, in addition to advises and supports Chief field education program in overseeing the implementation of Education Program

2. Head School Quality Assurance Unit\UNRWA- Full time

Palestine-West bank 2017-2020

Main responsibilities: Ensure high quality education services in schools, conducting regular reviews to ensure that schools meeting quality standards and identifying school best practices and areas for development, and report this to relevant parties.

3. School Quality Assurance Coordination\UNRWA- Full time

Palestine-West bank 2015-2017

Main responsibilities: a team member within the quality assurance team in Nablus area, conducting QA visits to schools and reporting on theses visits to the relevant parties

4. School Principal \UNRWA- Full time

Palestine-West bank 2007-2015

Main responsibilities: Managing and leading all school work including human resources to ensure that all educational practices are aligned with agency standards.

School Teacher \UNRWA- Full time Palestine-West bank 1997-2007 Main responsibilities: Teacher Arabic language-Basic education

Faculty Instructor\Annajah National University-Part time Nablus- Palestine 2011-2014

Education

- PhD candidate 2019 present Institute of graduate studies-Faculty of education Near East University, Nicosia, Cyprus
- MA degree in Arabic language 2005 2009
 Faculty of Arts- AN Najah National University
- BA in Arabic literature 1992 1996
 Faculty of Arts- the University of Jordan
- 4. Higher diploma in education1997 1998
 Faculty of educational sciences- AL Quds open university

Training

- A one-year training on school administration 2007-2008\UNRWA-UNESCO
- A one-year training on leadership (Leading for the Future) 2013-2014\UNRWA
- 3. A two-year training on strategic leadership 2015-2017\UNRWA

Academic contributions

✓ Research articles

- Imara, K. & Altinay, F. (2021) Integrating Education for Sustainable Development Competencies in Teacher Education. Sustainability 2021, 13, 12555. <u>https://doi.org/10.3390/su132212555</u>
- Imara, K. (2021). International Dimension in Curriculum Development A Synthesis of Research. Journal of Inclusive Educational Research Vol 1 No 1 (2021), 1-7
- Amara, K. (2020). THE ROLE OF FOREIGN LANGUAGE TEACHING IN ENHANCING STUDENTS' INTERCULTURAL COMPETENCE. Near East University Online Journal of Education. 3. 22-36. 10.32955/neuje.v3i1.177.
- ✓ Conferences

Beyond the Pandemic: Reflections on Teachers' Competencies, The 8th International conference on ICT & Accessibility ICTA 2021, December 8th -10th, 2021