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## REIMAGINING POST GRADUATE SECONDARY SCHOOL TEACHER TRAINING PROGRAMME FOR SUSTAINABLE DEVELOPMENT IN BOTSWANA

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### ABSTRACT

Education is the bedrock for all forms of development in any country, be it in the social, political, technological and economic fields. In this regard, nations should strive to churn out trained and qualified teachers who are well-disposed to preside over the preparation of learners for the future. The study aimed to reimagine a post-graduate secondary school teacher training programme for sustainable development in Botswana. The study was guided by the general systems theory. A qualitative case study design was used to understand participants' perceptions regarding the reimagined programme that is preferred to prepare learners for the nation's future development. The study comprised of postgraduate secondary school teachers who taught social studies, science and practical subjects and a university lecturer at an institution located in the study context. A purposive sampling technique was used to select participants for the study based on their knowledge and experience pertaining to the training of postgraduate secondary school teachers in Botswana. Individual face-to-face interviews were conducted with 5 teachers and a lecturer using a semi-structured interview guide. The gathered data were analysed thematically. The study established that some teachers in schools are unaware of the sustainable development goals for the country, lack technology competence, and are able to infuse fragmented aspects of sustainable development components in their teaching. The study recommends that post-graduate secondary school teacher training curricula should include deliberate courses on sustainable development goals (SDGs), soft skills and be sensitive to unanticipated national hazards.

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## 1. Introduction

Education is the driving force for national development and economic growth. Anderson (2020) explains that education is a powerful driver of development and one of the strongest instruments for reducing poverty and improving health, gender equality, peace and stability. The author further elaborates that education delivers large, consistent returns in terms of income and it is the most important factor to ensure equity and inclusion. At an individual level, education promotes employment, better earnings, and health as well as eradicating poverty (Simon, 2020). For societies, it drives long-term economic growth, spurs innovation, strengthens institutions and fosters social cohesion. Hence, education can lead a person from poverty into prosperity and fuel sustainable national development (Simon, 2020).

Sustainable development, as a global aspiration is articulated in the United Nations Education, Scientific and Cultural Organisation (UNESCO) Road Map for Global Action Programme (GAP). The foundation for the need to infuse aspects of sustainable development in education is apparently the United Nations Sustainable Goals (Agbedahin, 2018). The United Nations

Declaration of a Decade of Education for Sustainable Development (DESD) emphasises the need to integrate sustainable development into education systems at all levels, including post-graduate teacher training, to make education a crucial instrument for change (Ketlhoilwe & Jeremiah, 2010). Similarly, The Johannesburg Summit of 2005 clarified that ESD focuses on a wide area of thematic areas that include poverty alleviation, ethics, peace, governance and democracy, justice, gender equality, human rights, biodiversity and human resource management (Mathews, et al., 2020). The utmost quest is for nations to develop high-quality education through, among other things, the provision of requisite learning support materials, conducting research into environmental education and training, and promoting Information and Communication Technology (ICT).

The goal of education is to empower people to create a better world by facilitating ongoing constructive change. In Botswana, The Revised National Policy on Education (RNPE) 1994 sought to equip Botswana for the shift from a traditional agro-based economy to an industry-based economy (Makwinja, 2017). This policy views education as aimed at preparing the nation for the transition from a traditional agrarian economy to one that is diversified and could compete with the rest of the world. The anticipation was that a knowledge-based economy would result in new innovative ideas, efficient production processes and technology, and increased labour productivity (Charowe, 2021). Vision 2016 also aspired to make Botswana society an educated, informed nation by the year 2016 (Rapula, 2022). This envisioned a nation with an excellent educational system that would enable people to adapt to the changing requirements of the nation and the world. To stay abreast with the rest of the globe, the nation would need to evolve into the information era (Vision, 2016). The government has also reiterated this thrust in its Vision 2036 that “education and skills are the basis for human resource development”. Furthermore, Vision 2036 strives to transform Botswana into a knowledgeable society with relevant quality education that is outcomes-based, and thus fitting for the realisation of an innovative and inventive economy.

Sustainable development has increasingly become a buzz concept that nations of the world aspire to realise. This entails that available resources should be used in such a way that the present human needs are fulfilled while also preserving them for future generations (Mishra, 2017). Sustainable development is about “meeting the needs of the present without adversely compromising the ability of the future generations to meet their own needs and obligations” (Mbulawa, 2016). This means that human engagements must be viable and thereby, enabling

development to occur with limited prospects for harm. The objective is to achieve a better quality of life for everyone now and for the generations to come. Mishra (2017) observes that sustainable development assumes the dimensions of protecting and preserving the environment, economic growth tied to rational exploitation and conservation of natural resources, poverty alleviation, inclusive society, and shared knowledge with spiritual and cultural understanding among groups of society.

Studies have presented education for sustainable development as a need that has associated challenges (Tran & Soejatminah; 2017, UNESCO, 2014; Mishra, 2017). The problems, among others, involve inadequate policies on sustainable development, lack of a will to deliver on available national and international declarations, lack of resources, limited time and shortage of requisite human capital to plan, implement and monitor practices. Other setbacks include a lack of vibrant research on innovative developments, work overload and a focus tilted towards learner performance rather than quality learning (Makwinja, 2017). UNESCO (2021) bemoans the lack of developed policies that mediate the integration of sustainable development into education systems to ensure education functions as an instrument for change. Similarly, Birhanu et al., (2022) contend that limited work experience plays a great role in exacerbating challenges faced during postgraduate studies. Makwinja (2017) also proposed an overhaul of the education system in Botswana, based on noted issues that impair the provision of quality education. Based on the given background, this study aimed to reimagine a postgraduate secondary school teacher training programme for sustainable development in Botswana

## **2. Theoretical framework**

This study was coached within the systems theory proposed by Ludwig von Bertalanffy (1968) in his General Systems Theory. Systems theory is a multidisciplinary theory that is useful in many systems involving society, nature, economy, politics, psychology, and scientific fields. It works also as a framework to understand a phenomenon from a holistic approach (Njoki, 2018). The system has elements that are rationally and mutually connected towards a shared purpose. It is conceived as a set of related parts or objects that are interlinked in the form of regular interdependence (Chatterjee et al, 2020). The components of a system can comprise inputs, processes, and products. The inputs relate to things or elements that feed into the system for services and activities to run. This is the part that drives the system and can be transformed to produce system results. The nature and quality of inputs and processes determine the quality of products. A system has an environment in which it operates. This environment can be internal and external. Internal environment refers to the conditions within the organisation, such as the

kind of relationships of individuals, equipment used, leadership styles adopted, resources used and the dynamics of communication. The external environment focuses on the conditions that influence the functions of an organisation from the outside spaces (Gajdzik & Wolniak, 2022). This part of an organisation includes the local community, business suppliers, funders, and service partners.

The postgraduate secondary school teacher training programme is hosted by university organisations. A university is viewed as an education system that provides higher competencies to students. It has discrete components that work in a coordinated way. There are inputs, processes and outputs that need to be considered for effective running of the entity. The nature and quality of organisational supplies as well as the way in which activities are performed determine the academic achievement of learners and orientations towards sustainability (Njoki, 2018). The state of the internal and external environment has a broader influence on the condition of learning organisations. The provision of resources such as study materials, teaching personnel and the nature of their training curricula, the nature of the built infrastructure, the use of institutional grounds and teaching approaches used to shape the way in which sustainable quality teaching is provided. Similarly, cultural resources from communities supporting universities such as language, values, and beliefs influence strides towards quality production of postgraduate secondary school teachers for sustainable development.

### **3. Purpose of the study**

The study aimed to reimagine a postgraduate secondary school teacher training programme for sustainable development in Botswana. Based on this aim of the study, the objectives of the study are to:

- i. Explore the level of postgraduate secondary school teachers' understanding of sustainable development in Botswana
- ii. Expose challenges of delivering sustainable postgraduate secondary teacher training programme
- iii. Establish the best possible strategies for sustainable postgraduate teacher training programme

### **4. Methodology**

This study is coached within the interpretivism paradigm. This paradigm suited this study as it regards knowledge as being created and recreated along the continuum of human interaction with themselves and their environment. This worldview presents reality as subjective and

residing in the minds of the natural settings of participants (Creswell & Creswell, 2018). It is through this lens that a single instance or occurrence may receive diverse meanings and interpretations. Consequently, this philosophical attitude is critical in probing into the ideas of individuals regarding the provision of postgraduate secondary school teacher training programmes for sustainable development.

An exploratory case study design was used in this study (Haradhan, 2018). This was guided by the objective of providing greater insights and understanding pertaining to the curriculum content and practices embedded within the post-graduate secondary teacher training program in Botswana. The research process was flexible, with a small sample used to gather data for qualitative analysis. The research thrust was to capture the views and perceptions of participants as they enacted their lived experiences. The exploratory case study design of the qualitative approach boasts of providing a blueprint or framework for conducting research that probes into the contextual practices and interpretations (Toyon, 2023).

The population of the study consisted of postgraduate secondary school teachers and a university lecturer based at a university offering the Postgraduate Diploma in Education (PGDE) programme. Purposive sampling was used to select participants with rich information regarding postgraduate secondary school teacher training. This technique for selecting participants was considered appropriate because the focus was not to generate a representative sample to generalize findings but to solicit versatile data that clearly illuminates the circumstances in the study context. Individual face-to-face interviews were conducted with 5 postgraduate secondary school teachers and a university lecturer.

The researchers sought permission to conduct the study from the targeted participants. Their consent to partake in the study was secured through, initially contacting them by telephone and then presenting them with consent forms to sign. They were briefed about the purpose of the study and convinced that their contributions would be used only for this study. We also established a mutually agreed verbal consensus that the outcomes of the study were to be availed to them prior to the publication of the report. This was to serve as a measure to validate the results through member-checking as a strategy to validate the authenticity of the results. The interview guides were built using semi-structured interview items. These provided participants the latitude to fully offer detailed or extended information on the nature of their understanding of the concept of sustainable development, challenges experienced in providing training for sustainable development and the best possible strategies to deliver post-graduate secondary school teacher training for sustainable development. The instruments for data

collection were piloted with two PGDE graduates who were not part of this study to test their suitability. Each face-to-face individual interview lasted for about 15 minutes. The sessions were conducted outside school regulation time to avoid disturbing the school sessions. The proceedings of data collection interviews were recorded using a smartphone with some non-verbal cues noted in our diaries.

Data were analysed thematically based on the Thompson (2022) framework. This involved the activities of data transcription, reading and re-reading data to ascertain its meaning. The patterns emanating from the data were derived and used to develop themes. Information related to the developed themes was collated. The themes were cleaned and labelled appropriately based on the contained information. An effort was made to rid the themes of overlapping information and “all-embracing *titles*”. The reporting of findings was done using simple and easy-to-understand language. Verbatim excerpts or direct statements from participants were used to support the outcomes of the study. Participants were referred to by the codes that were given to them based on the order which was established from the sequence of the interview process. Postgraduate secondary school teachers were coded T1 to T5, and the university lecturer was coded UL.

## 5. Findings

The results of this study were discussed under the sub-headings on the knowledge of the concept of education for sustainability, the nature of postgraduate teacher education curriculum for sustainability, challenges in delivering sustainable postgraduate teacher education programme and best possible strategies for sustainable postgraduate teacher education programme.

### 5.1 Knowledge of Education for Sustainability

There was a mixed bag of responses pertaining to the knowledge of participants on the incorporation of sustainability issues in postgraduate teacher training programmes. UL showed that “*education and sustainability are integral components in teacher education, and these are contained in the national development plans and policies in Botswana*”. This corroborated evidence from recommendation 44, of the 1994 Revised National Policy on Education (RNPE), which indicates the need for defined national goals for environmental education to be incorporated into all subjects. The recommendation indicates that educational institutions, such as teacher training institutions and the University of Botswana should develop an environmental ethos and set an example to the rest of the community (Government of Botswana, 2017). T1 showed an understanding of the concept of education for sustainability and highlighted that the government has always been cognisant of the need for education curricula to articulate

sustainability discourses. He added that “*sustainability knowledge has been introduced through documents like the subject syllabi and Environmental guidelines from the Ministry of Education and Skills Development*”. This sentiment is also reiterated by Mathews, et al., (2020), who mentions that the Government of Botswana has exposed awareness of sustainability through various national development plans such as Botswana Government (1991/7), (1997/2002), (2003/09) and (2010/16). The National Environmental Education Strategy and Action Plans 1 and 2 are cited as other policy documents that contribute towards the provision of education for sustainable development. However, some participants were not very clear about the incorporation of sustainability information in the postgraduate teacher education programme. They were not very sure about the infusion of that component in their curriculum. T2 said, “*I am not very clear how the sustainable development aspect is covered in the Post Graduate Diploma of Education (PGDE) courses*”. The implication from the findings of the study is that sustainable development principles are not very strong in the current state of the PGDE programme, and that presents an opportunity for a negative critique of the veracity of the sustainability thrust in the current training programme on offer in Botswana.

## **5.2 Nature of postgraduate teacher education curriculum for sustainability**

The quality of teachers is highly dependent on the quality of teacher training programmes. In this thinking, it is crucial that the components of training be attuned to the development of holistic graduates. Teachers produced should be predisposed to enhance the achievement of learners. They should be creative and innovative to scaffold the learning potentials and pathways of learners with different needs. Postgraduate secondary teachers need to be role models for learners such that the values of social justice, social awareness, inclusivity, cultural preservation, and environmental protection can be upheld. In this regard, UL indicated that the “*post-graduate secondary teacher training programme aspires to inculcate critical tenets of sustainable development and growth, and these are observable in the aims of the programme*”. A perusal of the University of Botswana Post Graduate Diploma in Education programme document attracted attention to aims 2 and 3, which state that “it proposes to prepare individuals who are sensitive to issues of unity, equality, social justice and democracy...incorporating issues of gender, social class, ethnicity, age and race”, and to prepare teachers who will promote the Vision 2016 (and now, Vision 2036) goal of creating an informed nation. These aims attest to the quest of the PGDE to develop teachers who focus on creating a continuously regenerating and socially reconstructing society. The focus is to forge lifelong learning attitudes and orientations among learners. T3 added that “*the programme is embedded with progressive goals of critical thinking, reflective practice and interpersonal relations among various members and*

*groups of the population*". These are inherently 21st-century skills which are considered to have a global appeal and a forward projection into the future. This is the thrust of sustainable development and education for prosperity.

The PGDE is normally offered on a one-year full-time basis or three semesters for part-time students. A total of 12 courses are covered in three semesters, inclusive of a research project and teaching practice. Students do compulsory courses from the Educational Foundations Department, and an area of specialization such as Language and Social Sciences, Family and Consumer Sciences, Computer Studies, Mathematics and Sciences. The Practice of Teaching courses are offered depending on the areas of specialization of students. Most of the courses provided show no active thrust towards sustainability, be it social, economic, political, cultural, environmental or development. However, it is the computer studies and Practice of Teaching courses that have an apparent semblance of pursuing sustainable development goals. T5 noted that "*the PGDE curriculum has an implicit drive towards achieving education for sustainability. It is basically in the teaching activities that lecturers must tilt their scope to touch on sustainable development*". UL concurred that "*the bulk of issues on sustainable development arise in the form of examples and application of theoretical knowledge*". The traditional initiation schools of *Bojale* and *Bogwera* which are taught in the Languages and Social Studies courses are cases in point. According to UL":

*Bojale consists of formal instruction in matters concerning womanhood, domestic and agricultural activities, sex and the behaviour of women towards men. The skills that were learnt by the women included sewing, cooking, carving mortars, making hoe handles and weaving beads. Bogwera was usually conducted away from the village in a special bush camp. Boys learnt special skills such as hunting, tending livestock, making shields and spears. In the end, the boys undergo a circumcision ceremony under the supervision of a Ngaka (traditional doctor).*

In Family and Consumer Sciences and Environmental Education courses, students are exposed to environmental conservation, biodiversity and ecological concepts, which embrace concepts of sustainable development. They are taught to practice safe methods of disposing of environmentally harmful substances such as oil and plastics, the importance of rainwater harvesting, global warming and general conservation of the environment. Climate-smart practices, civic principles and progressive values, beliefs and social integration are also pertinent concerns in education for sustainable development (Yli-Panula, Jeronen & Maki, 2022). UL aptly described the PGDE curriculum "*as generally reflective of sustainable*



*development aspirations but obviously lacking in detail and thrust*".

### **5.3 Challenges in Delivering Sustainable Postgraduate Teacher Education**

Participants in the study indicated that there are challenges that beset the advancement of sustainable development agenda in the preparation of post-graduate education teachers. At the apex of the concern is the absence of specific and dependable policies regarding the dissemination of knowledge on sustainable development practices and activities. T4 indicated that *"teacher education in Botswana relies on international, national and institutional policies that have general commands, but we need programme-focused guidelines that address sustainability imperatives in teacher training"*. UNESCO (2021) argues that there is a need to develop policies that mediate the integration of sustainable development into education systems at all levels to ensure education functions as an instrument for maneuverings into the future. T1 noted that *"...the effect of inadequate policies on sustainable education is worsened by slake monitoring mechanism of the available guidelines and instruments"*. This may be caused by the natural lack of commitment by public officials to deliver on policy plans and pronouncements. The other reason may be the disjuncture that usually plays out between policy formulation and implementation. The people who craft public policy are rarely those who put it into practice. This creates a policy implementation gap, crippling even well-devised policy intentions.

It emerged that participants perceive the rollout of the PGDE programme as a fast-cracked version of the conventional teacher training programme, which is conducted over a three-year period. The popular sentiment is that the graduates are released into classrooms without having really mastered the entire principles and practices of the teaching profession. T3 said that *"the three weeks of teaching practice is inadequate to help postgraduate students grasp the essential elements of the teaching profession"*. This was also alluded to by T1, who indicated that *"the teaching practice period elapses when you are still coming to terms with classroom dynamics and the environment of the school"*. T1 concurred that ideally, *"the weeks of teaching practice should be the time where an individual gets acquainted with the school context prior to engagement with actual teaching practice experiences"*.

The assessment or supervision of teaching practice is inadequate and ineffective. This contributes to the development of teachers that lack in quality. T4 indicated that *"it is now the norm that postgraduate teacher trainees are assessed once in any of the two courses taught at secondary school, instead of, at least two times"*. This suggests that these trainees are left to school mentors and colleagues for supervision. In addition, this group of students is not assigned positions of responsibility at practicing schools, since they are not professionals that are guided

by the code of conduct of the Ministry of Education and Skills Development. Furthermore, part-time students have difficulty accessing the university library and provided internet connections to help align academic activities with sustainability imperatives. The belief is that a diminished usage of Information and Communication Technology (ICT) ultimately retards proficiency in technical skills that are needed for the 4<sup>th</sup> Industrial Revolution compliance (Dogaru, 2020).

#### **5.4 Best Possible Strategies for a Sustainable Postgraduate Teacher Training Programme**

The viability and quality of any programme depend a lot on the quality of human capital to support its delivery. It is in this perspective that the post-graduate secondary school teacher education programme should be carried out in a systematic way. The inputs and processes should be considered for quality to determine the ensuing quality of products and outcomes. This entails that care should be considered to recruit a clientele capable of delivering on the intended aspirations and vision. UL reiterated that *“those accepted into the post-graduate teacher education programme must be qualified and experienced in particular areas of study so that the training is used only to impart skills for teaching and learning”*. T4 added *“that the right placements have to be done to allow qualifying individuals to be selected for training”*. Birhanu, Assefa and Tilwani (2022, p.1) argue that having work experience plays a great role to minimize challenges faced during post-graduate studies”. Enrolling candidates with prior experience helps to guarantee preparedness for job training and for institutions to position themselves for the international education market that is competitive. This may be true, to some extent but salient personal characteristics can work against anticipated better performance.

The governments should provide scholarships for postgraduate training. This would allow the students to train without the pressure of pondering where to source tuition fees and ensure the host institutions, whether public or private, have funding for their programmes. This is in line with the views of T1, who believes that *“providing financial support to postgraduate student teachers would go a long way to facilitate their professional development”*. Postgraduate teacher trainees also need to be provided with psychological and emotional support while on course. They deserve counselling so that they are not overwhelmed by the challenges they encounter while engaging in programme activities. Tran and Soejatminah (2017) identified career support and emotional upliftment as the main areas to avoid student dissatisfaction. As part of assisting the students to familiarize themselves with the school environment while in teaching practice, institutions of training should allow students to visit their schools prior to deployment to remove the effect of anxiety on their teaching. Participant T1 indicated that *“we*

were allowed to select to do teaching practice at schools of our own choice, where we were guaranteed of accommodation in the local area". This works well in situations where student teachers are not provided with accommodation or allowances are so meagre to support the process. While "village accommodation" may not always be the best for practicing teachers, it is, however, helpful to also allow teachers to conscientious communities of the need for sustainable education. This also assists in changing the mindsets of communities regarding the role of education in the dissemination of traditional values, beliefs, and ethical standards and in teaching environmental conservation. In this regard, T5 noted that "*it is usually communities that inform schools to teach peace, harmony and social integration, which are integral parts in the provision of education for sustainable development*". The ultimate goal is for teachers to forge strong links between communities and schools, with associated possibilities of initiating resilient sustainable development collaborations and partnerships.

## **6. Conclusion**

This study concluded that the postgraduate teacher training programme is provided in an environment with limited knowledge of sustainability. The government of Botswana is making unrelenting efforts to formulate policies on sustainable development, which are also applied in education, but industry-specific ones are still needed to drive teacher education. The curricula of the postgraduate secondary teacher training programme have principles of sustainable development that are covertly built into the system but require teacher expertise to identify and practicalise them. These relate to matters such as social justice, unity, cultural preservation, environmental protection and civic education. The effective impartation of sustainable development knowledge is blurred by the limited duration of the programme, and the lack of dedicated personnel to implement and monitor the implementation of sustainable development knowledge during training, and practice of teachers.

## **7. Recommendations**

Based on the findings of this study, it is recommended that policymakers such as teacher training officers should be conscientious curriculum developers on the need to deeply integrate Education for Sustainable Development issues in the curriculum. The post-graduate teacher education programme needs to be sensitive to the United Nations' Sustainable Development Goals. The academic and '*methods course*' curricula should be reviewed to include more content on ESD. The Botswana government needs to craft a specific postgraduate teacher education policy that promotes and advances sustainability operations and practices. Advocacy teams must also be constituted to continue to remind providers of post-graduate teacher training

institutions of their responsibility to disseminate knowledge for sustainable growth and progress. In addition, effective capacity-building and change programmes should precisely concern issues of sustainability such as environmental management, resource conservation, cultural preservation, civic education, and human rights. Postgraduate teacher training for sustainable development can be effectively achieved through a united force involving various stakeholders consisting of the government, media, non-government organisations, the private sector, cultural groups, and educational institutions. This collaborative action and partnerships can go a long way towards achieving sustainable teacher education. It is also recommended that deliberate courses on sustainable development be included in post-graduate teacher training programmes, rather than integrating fragmented portions of sustainable development materials into the otherwise developmentally static curriculum.

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