

# Preparing the 21<sup>st</sup> Century Teacher for the Implementation of Outcomes-Based Education: The Practical Reality

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**Abstract** Teaching and learning in contemporary education systems are experiencing a paradigm shift. There is a move from the traditional teacher-centred teaching, to student-centred education. Outcome-based education is a process of curriculum design that starts with a clear picture of what is important for students to be able to do, then organizing curriculum, instruction, and assessment to make sure that learning ultimately takes place. At the centre of outcome-based education is the learner. How best can the learner learn? What is the role of the teacher in making sure that learning takes place? How do we prepare teachers for the successful implementation of outcome-based education? How do we take care of every learner's needs? These are pertinent questions that this paper addresses. The study was carried out in Botswana using a qualitative research approach. Semi-structured interview questions were adopted to collect data from twelve teachers purposively selected from three technical colleges in Botswana. Relevant documentary analysis was used to augment the data that was collected through semi-structured interviews. Findings of the study revealed that different stakeholders understand the role of teachers in the implementation of outcome-based education differently and that teachers should be adequately prepared if outcomes-based education is to be implemented successfully in Botswana. The study concludes that the teacher recruitment exercise in the 21<sup>st</sup> century should be geared towards hiring teachers who are equipped with the necessary skills needed for teaching 21<sup>st</sup> century learners.

#### Keywords: teacher preparation, implementation, outcomes-based education

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### **1. Introduction**

Twenty-first century teaching and learning is experiencing a paradigm shift in expectations about approaches to curriculum development and delivery. The current move is towards Outcome-Based Education (OBE). Outcome-Based Education is a move from traditional teachercentred teaching to student-centred teaching and learning. As Spady [1] puts it, if OBE was to have a viable future, then democratic processes and strong professional norms should be allowed to prevail in society and in educational contexts. At the center of Outcome-Based Education, is the learner. It is a process of curriculum design, teaching, learning, and assessment that focuses on what students can learn after they are taught. In OBE, learning outcomes are formulated by the teachers to guide them in determining what would be expected from the learner at the end of the lesson. Attempts are made to encapsulate learning outcomes with knowledge, skills, attitudes, and values that match the immediate social, economic, and cultural environment of the society [1,2].

Outcome-Based Education involves a clear picture of what is important for learners to be able to do, by organizing the curriculum, instruction, and assessment to make sure that learning ultimately takes place. OBE approaches go as far as ensuring that all students are equipped with knowledge, competence, and qualities needed to be useful and successful after exiting school. The main principle of OBE is that all students can learn and succeed, but perhaps not on the same day, or in the same way. It is, therefore, the responsibility of the teacher to be a facilitator of lessons that would support individual differences in learners. This responsibility, therefore, requires that teachers should be mentally, physically, and emotionally prepared for the successful implementation of OBE in various institutions of learning. Teacher preparation for OBE implementation revolves around curriculum design, instruction and assessment, and promotion of effective learning for all learners. Assessment must involve an integration of knowledge, skills and values, and be placed within the context of performance-based authentic assessment strategies aimed at enhancing teaching and learning processes [3]. It is necessary to appreciate the fact that teacher preparation starts from teacher education and

training that will enable contemporary student teachers to be equipped with knowledge, skills, and competences for the implementation of the OBE system. Student teachers should be prepared to face the practical realities of implementing OBE in schools and colleges successfully. This study therefore examined the teacher preparation processes and the role of 21st century teachers in the successful implementation of OBE in Botswana.

Botswana is one of the African countries involved in the shift from traditional teacher-centred teaching and learning to student-centered learning that is conducive to Outcome-Based Education. The study focused on the role of the teacher in ensuring that Outcome-Based Education was successfully implemented in Botswana. This included examination of a variety of implementation questions, such as: How best can a learner learn under OBE? What is the role of the teacher in making sure that learning takes place in an Outcome-Based Education? How do we prepare teachers towards effective implementation of Outcomes-Based Education? How do we take care of every learner's needs? These are pertinent issues that were addressed in this study.

## 2. Background to Botswana and the Implementation of Outcome-Based Education

The countries of the world such as the United States, Australia, and the United Kingdom opened their doors to Outcome-Based Education in the 1980s and 1990s, while African countries started adopting this approach to teaching and learning in the 2000s [4,5,6]. It was, in addition, used as a way of providing evidence of accountability to meet the needs of accreditation agencies and external stakeholders in those countries. It is also evident that some countries of the world adopted Outcome-Based Education with the purpose of ensuring that learners were equipped with relevant skills and competencies to enable them to function very well in the world of work.

The first wave of the Outcome-Based Education system in Botswana started with the establishment of the Botswana Technical and Vocational Education institutes in the early 2000s. This development marked a significant milestone in curriculum development and implementation processes in Botswana. Botswana's technical and vocational education curriculum was developed to address the gaps in the old curricula [7,8]. The old curriculum was teacher-centred; the teacher was in charge of the teaching and learning processes and students engaged in rote learning rather than being given the chance to own the learning process. The new approach, which embodied the principles of learner-centred teaching and learning, was aligned to arm learners with the necessary skills and competencies to prepare them effectively for the world of work. This goal is in agreement with the principles and philosophy of the Botswana National Education Policies of 1977 (Education for Kagisano-Social Harmony) and the 1994 Revised National Policy on Education. The 1977 Education for Kagisano principles included the principle of self-reliance and development being inculcated in the school curricula, while the 1994 Revised National Policy on Education had as its aim to enable Batswana to acquire the technological skills needed in the 21<sup>st</sup> century [9,10].

It is necessary to emphasize that one way of achieving the principles of self-reliance and development was to adopt an Outcome-Based Education approach to help prepare learners for the world of work. In this spirit, the Botswana Technical Education Programme (BTEP) was developed to meet Botswana's labour force requirements and to prepare learners for the industry. Outcome-Based Education, just like problem-based learning, allows learners to develop flexible understanding and lifelong learning skills and competencies. When students learn through the experience of solving problems, they can learn both content and thinking strategies. Their learning centres on a complex problem that does not have a single answer. Learners are encouraged to engage in Self-Directed Learning (SDL), apply their own knowledge to the problem, and reflect on what they learned, and on the effectiveness of the strategy they employed [11]. In this case, the role of the teacher was to facilitate the learning process rather than to provide knowledge [12]. It is therefore necessary that teacher education in the 21st century prepare student teachers psychologically and content-wise towards successful implementation of the OBE system.

## 3. Outcome-Based Education: A Paradigm Shift

The traditional approach to teaching in Botswana paid little or no attention to clear statements as to what learners were expected to learn or achieve at the end of the learning process. The teacher was at the helm of the teaching and learning process. Instructions were dished out to the students as the teacher deemed fit. As Harden [13] put it, "... it was almost as if we expected students to join us in some sort of magical mystery tour with an assessment at the end" (p. 625). It was like giving the students the impression that we did not know or could not say precisely what skills, knowledge, or competencies we expected them to acquire from the modules/courses we offered them. The traditional approach to learning was about the teacher, hence, teacher-centered as manifested in the manner in which lessons were prepared and delivered. The teachers would have learning objectives in their lesson plans where they concentrated on what they (the teachers) would attain at the end of the lesson, contrasted with the learner-centred method of learning-outcomes where the teacher would expect the learner to be able to demonstrate an understanding of what he/she has learned at the end of a lesson.

The greatest catalyst for change to OBE in the Botswana context was in the language that would allow educators to discuss what they were expecting students to learn and how they should be assessed. Learning outcomes can provide the necessary language needed for a successful implementation of OBE. Learning outcomes open opportunities to learning and assessment in ways that were not possible in the traditional syllabus. Once learning is targeted on outcomes, the other features of the model follow as a natural consequence. Through OBE, facilitators of learning could question the validity of what they taught and how they taught it. OBE not only specifies what students are expected to learn, with the course of study being arranged to achieve this, but it also specifies when and how students learn, rather than only specifying what is learned and if it is learned well. OBE starts with the end in mind and focuses on the knowledge, skills, and competencies needed by learners to meet the needs of those they serve and affects the outcomes desired in the field [1,14]. In the OBE approach, an objective is characterized as an intention, while a learning outcome is the projected realization of that intention [15].

## 4. Three Patterns of OBE and the Need to Prepare Teachers

OBE cannot be successfully implemented without adequately preparing teachers for its effective use. Some practicing teachers who were trained under the traditional methods of teacher-centered education are finding it difficult to accept the principles and realities of the OBE system. This calls for a proper evaluation of the realities of OBE before a successful implementation can be achieved. One might consider the fact that the implementation realities of OBE follow three predictable patterns as stated by Harden [16], who referred to these patterns as the ostriches, the peacocks, and the beavers.

The ostriches are those teachers who ignore the move to OBE with the belief that it is a passing fad or it is irrelevant. The ostriches completely ignore the move to OBE because they consider it to be one of those new initiatives in the teaching and learning processes that will come and fade away in-the-not-too-distant future. The practical reality is that teachers are one of the main stakeholder groups in the implementation of OBE. If a group of them sees it as a passing fad with little or no recognition of it, how then do we expect this new system to be implemented successfully? This is one of the burning issues; hence, the need to prepare teachers for the successful implementation of OBE.

The peacocks sometimes display ostentatiously a specified set of outcomes. They are somewhat confused about the sustainability of the OBE system. The peacocks are interested in pursuing the cause of their organization, but are really not sure if they are doing the right thing or if the whole effort required is worth putting into the OBE system. They may lack conviction that their efforts will yield any positive or lasting dividend. This again, explains the urgent need for teacher preparation for the successful implementation of OBE.

The beavers are those teachers who, having prepared their set of learning outcomes, use this as a basis for curriculum related decisions. They are interested in pursuing the course and are ready to give OBE a chance. To ensure successful implementation of OBE, the beavers should be equally prepared professionally, like the ostriches and peacocks, to ensure smooth running of the system and sustainability in terms of a lasting positive direction towards the implementation of the OBE system. The main point to be emphasized here is that teacher preparation for  $21^{st}$  century teachers and the hiring of such

teachers, should be cognizant of the fact that there are different categories of practicing teachers who are already in the field and those yet to be hired. They all need to be encouraged through teacher education programs, workshops, seminars and conferences, to embrace the principles of the OBE system and the practical realities of a successful implementation of it.

Harden [16] further reiterated that an OBE implementation inventory enables various institutions to assess their level of adoption of an OBE approach by taking the following steps:

- creating statements of learning outcomes;
- communicating with staff and students about the outcomes;
- adopting appropriate educational strategies;
- making the learning opportunities available;
- monitoring student progression through the course;
- monitoring and optimizing the educational environment; and
- selecting students.

With proper preparatory procedures coupled with good teacher education that mirrors all necessary elements of 21<sup>st</sup> century learner-centered teaching and learning, OBE and its implementation realities will drive the nation's education system in the right direction in this contemporary era. Quality teacher education is needed right from the moment student teachers are admitted to the program through to the period when they graduate and are ready to face the practical realities of the profession [17].

## 5. Teacher Preparation in the 21<sup>st</sup> Century for the Implementation of Outcome-Based Education

The successful implementation of Outcome-Based Education should start with preparing teachers for the task. Teacher preparation in this case involves both training of student teachers and organizing professional development opportunities for those who are already teaching but do not know how to go about implementing the demands of Outcome-Based Education. One might question what the 21<sup>st</sup> century teacher should be able to know and do in their work towards successful implementation of Outcome-Based Education. The answer to this question demands that teachers are expected to understand many issues surrounding how learners learn, know how to teach effectively to ensure that learning takes place, and, in this case, master aspects of pedagogical content knowledge that incorporate language, culture, and community contexts for learning [18,19].

Powerful teachers are needed in the 21<sup>st</sup> century teaching and learning process. Outcome-Based Education requires that learners be empowered to learn at their own pace and according to their capabilities. It is therefore the responsibility of teachers to know and understand the spirit of every child, how they each learn, and to be able to nurture that style of learning. The teacher's role is to facilitate teaching and learning in such a way that learners can demonstrate competences and understanding of what they have learned. In addition, teachers need skills to construct and manage classroom activities efficiently, use technology to enhance the teaching and learning process,

and continuously reflect on their professional practice with a view to learn from, and improve on their short-comings as teachers. For teachers to be able to carry out these tasks successfully, they should be equipped with the knowledge, skills and competences right through all stages of teacher preparation and further through professional development practices.

Today's students are graduating into a world that is interconnected as never before. As citizens of the contemporary era, they are required to be responsible and responsive to the myriad of complex problems and issues emerging from globalization. In previous decades, teachers were expected to prepare a small minority for intellectual work, but currently things have changed, as teachers are now believed to be agents of change tasked with preparing all students for higher order and problem solving skills that were previously reserved for the gifted students [20]. To make this possible, 21st teacher education program should be geared towards helping teachers develop the knowledge and skills applicable to current practice. Given the wide range of learning environments posed by our contemporary students, student teachers need an understanding of how to manage and cater for a wider range of learners than previously. It is therefore necessary that teachers are prepared as both classroom researchers and expert collaborators in the facilitation of the teaching and learning process [21,22]. Jackson (1974, as cited in Darling-Hammond, [18], p. 6) describes it as "the problem of complexity".

Quality teacher education demands that student teachers should be prepared in such a way that they learn not only to think like teachers, but also model themselves as teachers by acting like one. In pursuance of this, a good teacher education program that is geared towards meeting the requirements and expectations of the  $21^{st}$  century, should possess the following characteristics: a clear vision of good teaching to be coupled with quality and rich course work, and superior teaching practice experiences; opportunities to show evidence of professional and quality standards to promote practice; knowledge of curriculum that is an embodiment of good professional practice; assessment *for* learning; and sound subject matter pedagogy/andragogy.

Good teacher preparation should also involve extended internship of at least half a semester and well supervised teaching practice. Student teachers should be trained to be actively involved in reflective practice to prepare them for the world of teaching and be able to assess their own effectiveness as teachers. It is pertinent to note that, through extensive use of case studies, teacher research, performance assessments, and portfolio evaluation, student teachers will be better equipped to handle the intricacies involved in the contemporary teaching and learning landscape than was the case in the past.

Above all, there is an urgent need for teacher preparation to incorporate the idea of ample transformation of theory into practice. One way of seeing this materialize is to ensure that teaching practice exercise is made effective through long practical experiences and serious supervision of instruction during internships [23,24]. With this in mind and all necessary measures put in place, our 21<sup>st</sup> century student teachers can be fully prepared to face the practical reality of successful implementation of the Outcome-Based Education system with a global outlook for contemporary global citizens [25,26]. In addition, the 21<sup>st</sup> century teacher–preparation process should be an embodiment of programs that allow the teacher–trainees to have knowledge of: learners and their development in social and economic contexts; ability to apply democratic principles in teaching and learning processes; knowledge of subject matter and curriculum development goals; and knowledge of both pedagogy and andragogy that lead to successful teaching and learning outcomes geared at making teachers strong in both theory and practice.

#### 6. Methodology

The aim of the study was to examine the need for teacher preparation and the roles teachers play towards the successful implementation of Outcome-Based Education in Botswana. Three Technical Colleges, Gaborone Technical College, Francistown Technical College, and Kgatleng Brigades were involved in the study. A qualitative approach was adopted and four teachers were purposively selected from each of the technical colleges, making a total of twelve teachers who participated in the study. A qualitative approach was deemed necessary for this study, as one of the characteristics of a qualitative approach is that it is concerned with understanding the social phenomenon from participants' points of view. The qualitative approach regards participants as the prime source of information. The researcher should in essence establish rapport with the participants to acquire an understanding of their views [27,28]. This approach therefore, is considered very appropriate for a study like this where the researcher sought to collect information from teachers on their role in the implementation of Outcome-Based Education in Botswana.

Semi-structured interviews were used to collect data from teachers of the three tertiary institutions in Botswana. Relevant literature on teacher preparation and the OBE system were used to augment the data from the semi-structured interviews. Data collection was done in the months of March and April in 2018. The study specifically focused on finding out the role of the teacher in the implementation of Outcome-Based Education in the institutions that were used as case studies and to identity views about the need for adequate teacher preparation to promote successful implementation of the OBE system.

### 7. Findings

During the study, interviewees were asked to relay their understanding of what the OBE system means. Some of the teachers indicated that the OBE system engages students in gaining skills that they should apply when they are in the industry. Others stated that OBE is a learner-centred and result-oriented system that is based on achieving the set learning outcomes by demonstrating knowledge, understanding, and practical skills. For some of the interviewees, OBE was identified as an educational approach that caters to all learners with different learning styles because each learner's performance and progress is measured by demonstrated achievement of clearly defined learning outcomes.

One of the teacher participants described OBE as "the learning experience that results in the learner being able to produce tangible products, such as teaching a learner how to make a dress and making sure that the dress is made". Participants felt that the rate at which the learner has achieved the goal did not really matter because the assessment is not rated by time. In the words of one of the interviewees, " OBE is a process where the curriculum and assessment is [are] restructured in such a way that the outcomes or the evidence is measurable rather than the accumulation of course credits". The interviewee alluded to the view that, in OBE, if a student is being assessed against standards in practical subjects, then the evidence of that practical product has to be seen, and if it is a service, it should also be observable. Overall, findings on the meaning of OBE revealed that the teachers who were interviewed had an adequate conceptual understanding of OBE as they all talked about observable and measurable learning outcomes [29].

The second research question addressed the issue of the necessary conditions needed to enable learners to benefit from the teaching and learning processes in Outcome-Based Education systems. Findings revealed that the participants felt there should be a conducive learning environment, such as thermally conducive classrooms, well maintained machines, enough tools and equipment needed for facilitation of learning, knowledgeable and trained teachers in the principles and approaches of OBE, and learning-centred approaches to be appreciated by the facilitators of learning. One of the interviewees was of the opinion that, "it is important to have all learning resources and instructional materials similar to the ones in the industry availed in the schools, hence, the need to have improved participation of relevant stakeholders in the development of the curriculum". Students' academic performance can be enhanced through the OBE system when all necessary conditions are put in place for teaching, learning, and assessment of learning effectiveness [30,31].

The next research question centred around the main focus of this study, teacher preparation towards effective implementation of the OBE system, and the role that facilitators of learning have to play in ensuring that learning takes place in Outcome-Based Education in their various institutions. Participants had various views on the role of the teacher in the successful implementation of OBE. Some of the interviewees believed that, if OBE was to be successful at the implementation level, teachers should be trained in the principles and practices of learner-centered teaching and learning and that teachers should be adequately prepared to understand their learners, since these learners have different learning methods and styles. The participants felt that OBE principles place the learners at the centre of teaching and learning, and democratic ideals are needed for students' voices to be heard. Further, they felt that teachers should recognize the need to use teaching methods that cater to diversity among the students, apply relevant instructional strategies, and assess students against standards and it is, therefore, necessary that teacher education programs are structured to prepare teachers adequately for a successful implementation of OBE in schools and colleges [32,33].

Further, participants felt that they, as facilitators of learning, should endeavor to guide students in achieving desirable learning outcomes by taking them through the route of knowledge construction from their learning, to an analysis of their learning products as evidence that learning has taken place. They demonstrated a belief that OBE starts with the process of curriculum design then progresses to instructional activities that address assessment and promotion of effective learning for all leaners. These participants identified that the teachers' role in the successful implementation of OBE includes: curriculum alignment; formulating overall educational objectives and learning outcomes that the learners are expected to attain at the end of their learning experience; developing critical thinking and problem solving skills in the students; creating a healthy and conducive learning environment; assessing learning outcomes using different techniques; and, using student-centred approaches. These beliefs are consistent with related research [2,34].

To achieve these skills and professional knowledge, participants recognized the requirement that teachers should experience powerful teacher education from the moment they enroll to be student teachers in their various institutions. They felt that through superior teacher education programs that embody quality teacher training and continuous professional development for those who are already in the field, that faculties of education can be sure of making OBE implementation into a practical reality. Further, the participants indicated that they felt it is practically impossible to have OBE successfully implemented in Botswana without having teachers trained in the process of theory and practice that promote Outcome-Based Education since teachers are the main agents of implementation realities in the learning and teaching arena. Teacher preparation should therefore receive priority consideration if the entire education system needs a positive outcome in the teaching and learning process [35].

## 8. Conclusion

This study was carried out in Botswana with three technical colleges used as multiple case studies. The study revealed that, for OBE to be successfully implemented in Botswana, teachers should be adequately prepared through teacher education programs that promote 21st century teaching and learning principles. OBE standpoints stipulate that all students can learn and succeed, but not on the same day or in the same way. The teacher who facilitates teaching and learning should cater for individual differences of learners. This responsibility placed on the teacher, demands that teachers should be mentally, physically, and emotionally prepared for the successful implementation of OBE in our institutions of learning. Teacher education and training should revolve around curriculum design, instruction, and assessment geared toward addressing all students' needs and capabilities, and promotion of strong democratic ideals. The teachers' role should be to facilitate learning that recognizes individual differences in learners, enabling the learners to demonstrate knowledge, skills, and competences as evidence that learning has taken place. It is therefore essential for student teachers to pass through quality teacher education programs that will prepare them for effective teaching and learning careers. The 21<sup>st</sup> century teacher should be trained and prepared for the 21<sup>st</sup> century learner.

Hiring 21<sup>st</sup> century teachers involves the identification and recruitment of teachers who have been adequately trained to teach 21<sup>st</sup> century learners. They should be creative innovative problem solvers. Institutions should strive to identify candidates who will inspire students to think critically and solve problems. With the introduction of the use of technology in various schools and colleges in Botswana, the 21<sup>st</sup> century teachers to be hired should have a growth-oriented mindset, be learners, collaborators, team players, good communicators and change makers. Above all, the 21<sup>st</sup> century teachers should be knowledgeable in the use of technology for a more effective and efficient facilitation of the teaching and learning process. Those responsible for hiring teachers should look out for teachers who can teach a diverse and new generation of learners. The 21st century teacher should be intelligent and possess good leadership qualities and high standards of professional conduct. Institutions should recognize the fact that the ability to recruit, retain and reward the best teachers is very crucial for the successful implementation of **OBE** principles.

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