INNOVATIVE APPROACHES IN LEARNING AND TEACHING IN HIGHER EDUCATION: THE PARADIGM SHIFT TOWARDS NATIONAL CREDIT AND QUALIFICATION FRAMEWORK SYSTEM

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Abstract

The use of learning outcomes in higher education has gained a crescendo and loudening as the education and the learning experiences are now outcome-led. The National Credit and Qualifications Framework from the Botswana Qualifications Authority has put demands on higher education sphere to change the image of education in Botswana and to align their programmes offerings with such. Higher education in its contemporary mode deals with a diverse nature of students, young and mature adults, who require to be capacitated to face the real world upon completion of their learning programmes. I argue in this paper that new ways of learning and teaching need to be established that critically engage students in rich learning environments. Innovative approaches to learning and teaching in higher education are very crucial as they ensure that students find relevance in their learning, and that the pedagogical and andragogical approaches use are robust with the demands of the twenty-first century. Experiential learning, collaborative learning, and other pedagogical approaches in teaching such as constructivist and inquiry-based approaches need to be further explored in higher education institutions for their benefits to learners. The pedagogical and andragogical dichotomy should be unpacked and educators be capacitated in handling these as part of the innovative approaches in the era of learning outcomes. I suggest in this paper and provoke thoughts on key issues that need to be taken into account when developing learning outcomes, qualifications and learning programmes in higher education.

Keywords: Learning outcomes, national credit and qualification framework, pedagogy, assessment, andragogy.

1.0 Introduction

The current episode of developing qualifications and learning outcomes and their execution in higher education and training in Botswana emerged as a result the Botswana Qualifications Authority (BQA) requirements. Premise to say, learning outcomes as literature suggest, play an increasingly important role in higher education. The design of learning experiences, qualifications, and learning programmes are increasingly becoming outcome-led, hence the use of learning outcomes in higher education. The critical uncertainty and discord relate predominantly to the implementation of the learning outcomes as these are new facets of learning and curriculum design attributes.

Higher Education of recent has been challenged for not offering the workforce with meaningful and relevant learning experience and for heavily relying on pedagogies that cater

for one cohort of students, young learners. In this paper I explore learning and teaching in higher education in Botswana and argue that learning encapsulated in learning outcomes should be engaging with the traditional approaches being minimised. The traditional role of academia should be expanded to give an insight to new educational demands and delivery modes. I suggest in this paper and provoke thoughts and debates on key issues that need to be taken into account when developing learning outcomes, qualifications and learning programmes in higher education. I posit that new innovative approaches in learning and teaching in higher education should be deployed and provide the need to explore new paradigm shift towards the National Credit and Qualification Framework system (NCQF). This paper, therefore, discusses the background to the debate, gives theoretical framework underpinning the discussions and informing the paper conceptualization, explores the pedagogical debates *insitu* in higher education, the paradigm shifts towards National Credit and Qualification Framework and learning outcomes and ends with key issues in the implementation of National Credit and Qualification Framework and a composite of learning outcomes.

2.0 Background

Higher Education Institutions have been criticised for providing graduates who are a misfit to the workforce required by the economy and with high skills mismatch to real-work of the industry, and their unconcerted effort to face the global competition. Non alignment and non-compliant of higher education qualifications and learning programmes to the national credit and qualification framework has been another issue. Botswana Government has advocated for move towards the knowledge economy which demands focused attention towards a productive, adaptable and visionary workforce. Hence, higher education provision should address these deficiencies and propel positive graduates' attributes desirable and acceptable by the industry and society. This calls for development of desirable competences in the Botswana education system and economy. In the light of achieving quality and relevant education, appropriate authorities have been put in place with robust policies to fulfil and to address quality assurance in education, coordinate, monitor and evaluate the provision of education in Botswana.

Botswana Qualifications Authority (BQA) is one of the main organs of the Ministry of Education and Skills Development (MESD) charged with the mandate and responsibility of resolute quality assurance of Botswana education system, and coordination and implementation of the national credit and qualification framework (NCQF). The NCQF provides mapping of qualifications and classifications of different fields with accompanied level descriptors of learning. Post year 2020, BQA requested all education and training providers (ETPs) to align their qualifications and learning programmes to the NCQF. The latter with advocacy for outcome-based education orientation for the country's education system in line with the international trends and SADC protocols. Subsequent to these requirements, tertiary institutions, inclusive herein higher education institutions (HEIs) and technical and vocational education and training (TVET) institutions had to comply. Higher education institutions in the likes of University of Botswana were obliged to align the development and design of their qualifications and the learning programmes to the NCQF requirements. In this predicament the registration of qualifications and learning programmes was premised in the new paradigm shift.

3.0 Theoretical Framework

Below is the theoretical framework that provides the foundation to and informs the discourse and discussions of this paper.

3.1 Educational policies and advocacy for outcome-based education in botswana

One of the key educational policies in Botswana guiding its education system is the Education and Training Sector Strategic Plan (ETSSP 2015-2020). This policy advocates for educational reforms to transform Botswana education system and amongst key priority goals are improving access to education, quality, and governance in the education system within a knowledge-based economy. One of its key priorities are "to produce qualified productive and competitive human resources, for a skill and knowledge-based society, for effective participation in both local and global economy" (ETSSP 2015-2020, p.19). The emphasis of ETSSP is on quality and relevant education and training accessible to everyone. It is in this domain that it advocates for outcome-based education (OBE) – the posits of which are learning outcomes, where stakeholders in the form of industry and society play a critical role. The policy in its OBE fashion spells out the nature of desirable curriculum, instruction and assessment that are students or learner centred; what a learner can do.

Another critical policy that informs this paper is the Botswana Qualifications Authority. The authority was established by the BQA Act of 2013 and was charged with the mandate to provide for and maintain the National Credit and Qualifications Framework (NCQF) and to coordinate the education, training, and skills development quality assurance system from early childhood to tertiary level [lifelong] (BQA ACT, 2013).

3.2 Reset agenda in higher education vs learning outcomes debates and execution

Are higher education institutions in Botswana offering quality and relevant education and training advocated by ETSSP and the BQA Act, as well as meeting the requisites of professional accreditation bodies? The requirements by BQA called for the reset agenda in Higher Education. First, to rethink about their programmes' offerings, relevance and credibility of their qualifications and learning programmes. Second, a modus operandi of reflexive consideration of pedagogical and andragogical approaches *insitu* and futuristic planning taking cognizance of learning outcomes and the graduate profiles and attributes of their products.

The use of learning outcomes in higher education, higher education and training, is not a new phenomenon and occurrence. This has been evidenced in United Kingdom, USA, and mainland Europe (Allan, 1996; Melton, 1996; Otter, 1992, 1994). In the 1980s the British Government began to set national standards for both education and training in order to coordinate and manage its education system for all current and potential variegated education and training providers. The ultimatum of which was the crafting, developing, designing, and composing of specifications of standards in the light of competences and learning outcomes. The initiative saw the British Government engaging the industry to participate in education and training through enabling them to identify and devise requisite standards of performance in the workplace for their workforce. In turn, higher education was required to devise their qualifications and learning programmes that met the set standards by industry and to provide

industry-led education and training (Manpower Service Commission, 1981), hence outcome-based education subsuming learning outcomes concept.

Melton (1996) argues that learning outcomes play an increasingly important role in higher education but have implications for how they are executed in learning, teaching, and assessment. In the purview of Melton, "Learning outcomes are statements of learning expressed in terms that make it clear how measurable can be achieved" (Melton, 1996, p. 409). Allan (1996) describes learning outcomes as "what a learner knows or can do as a result of learning" (Allan, 1996, p.99). These as literature evidence suggests, include subject specific, student and teacher specific outcomes. These, therefore, require specifications of standards that warrants that competences and learning outcomes should be used to measure and report students' achievements at the end of the learning programme or course or unit of learning. The focus is on what has been learnt and what students or learners can do with the acquired body of knowledge, skills, and competences, inclusive of affective attitudes-application and use. The latter embodying requisite life-skills of teamwork, interpersonal skills, and critical reflections.

The learning outcomes paradigm shift is in sync with how students might demonstrate the acquisition of knowledge, understanding, attitudes and skills (Eisner, 1979; Melton, 1996; Tyler, 1964;) at the end of the learning programme in the form of outcomes and measurables as the evidence of learning (Alyasin et al.; 2023). Inevitably, learning outcomes are clear statements of what the learner shall and will be able to do as a result of learning experiences which have been planned. Learning outcomes are by nature result-oriented and measurable. Complex as they are, learning outcomes in formulation and design provide for action, content, and context. The use of learning outcomes as enacted by BQA and other statutory bodies of same magnitude with BQA and responsible for standards has implication for higher education and training.

Issues that usually emerge are lack of history of use of learning outcomes in the education system; what are they?; lack of common understanding of what constitutes learning outcomes and how are they composed in the curriculum design in higher education; how are the learning outcomes unpacked and delivered as part of the instruction in learning and teaching practices; how are they assessed; what constitutes competence and set standards; what informs the selection of learning outcomes and assessment criteria when composing and developing course or module outlines and how do you scope the content relevant to the identified course learning outcomes? Other attributes concern the composite and amalgamation of learning outcomes, which instigates questions such as should they be subject-based? what personal transferable outcomes should be there? and what generic academic outcomes are desirable and should be there? Other pertinent and germane debates and considerations are: which subsumes which? Is it objectives subsuming outcomes or vice-versa? Though these two are confusedly and usually synonymously used interchangeable, learning outcomes may subsume objectives. However, this is not the premise of this paper to be belaboured upon.

In resetting the agenda for higher education in the context of learning outcomes, higher education institutions need to explicitly define their educational intensions, their vision and

mission and be categorically clear on what constitutes and the fashion of learning outcomes for the purpose in their educational setup. The philosophy of the institution, nomenclature of their qualifications and learning programmes, the profile of their graduate should be succinctly clear and commonly understood by their academic community who executes and implements them. Notional hours should be explicitly expressed and agreed upon for the entire institution and be well informed by the institutions vision and mission.

Internationally and regionally, the society aspires for accredited learning programmes and qualifications. It is, therefore, incumbent upon HEIs to accredit these learning programmes with reputable accreditation bodies, be it authorities or professional bodies. The latter that lays emphasis on set standards that are based on best practices as a conformance framework that ensures adherence to content, professional or clinical stands (Alyasin et al.; 2023). Conformance to the NCQF allows for global competitiveness, grounded learning outcomes formation, design and development and setting of global competences.

3.3 Pedagogical approaches and issues in the new NCQF paradigm shift

This section speaks to different pedagogical issues and advocacy for employment of innovative approaches in learning and teaching in higher education. Higher education is increasingly pressed to rethink their pedagogical approaches in the execution of NCQF, as well as reflecting and rethinking effective, stout, and robust learning and teaching approaches and innovative approaches to employ in the learning process. The latter being appropriate in this new era of learning outcomes manifestations. As Melton (1996) alluded, the emergence of competences and learning outcomes require appraisal of the aims and objectives of higher teaching and training, which inevitable calls for the envisioning and development of new innovative pedagogical strategies for learning and teaching. The latter suggesting that they should be fully and convincingly piloted and tested. For most higher education institutions, this has not been the case. A team or group of people are deployed to develop the qualifications. Once the qualifications are approved then follows the designing and developing of the learning programmes to meet deadlines and requirements of the oversight bodies. In resetting the agenda for higher education and in the execution of the learning outcomes caution should be made to avoid a rush and temptations of swiftly executing wonderful ideas into practice in a wide scale without a clear monitoring and evaluation system in place. This can be a costly and very expensive, atrocious mistake which cannot be easily corrected and undone.

3.4 Pedagogy and andragogy explained

In the midst of resetting the agenda in higher education lies the issue of pedagogy and andragogy debates, conflicts and dichotomy in alignment to the learning outcomes enacted by NCQF, which needs to be unpacked. On the one hand, pedagogy is the art, profession, science, and theory of teaching. It is also referred to as the method and practices of a teacher and has its roots in French and Latin adaptations of the Greek word "boy" or "leader" or as Gudaji (2019) suggests, "...a man having oversight of a kid," hence the art and science of teaching young people or learners (cf. Shah & Campus, 2021). The pedagogical processes are restricted to education and teaching methods predominantly. The activities, instructions and ways of conveying knowledge and skills are catapulted within the domain of young and growing

learners. Gudaji (2019) defines pedagogy as the "interactions between the teachers, college students, and the mastering surroundings and the mastering tasks" (Gudaji, 2019, p. 319), hence exercising of instructing in education, the exercises that confers information and aptitude (Morales et al.; 2022). Pedagogy, therefore, enables learners to grow and develop, developing young minds within the zone of proximal dimension (ZPD). It is underpinned by different learning theories employed, modalities assessments strategies and teachers' instruction modes– curriculum delivery practices. Andragogy on the other hand relates to adult learners, which is "the art and science of helping adult learners to learn" (Knowles, 1995, p.82). Most adults learn differently because they have acquired some experiences, it be at work or as they grow, and the mode of delivery should match their aptitude and inculcate some research ability to inform learning.

3.5 Reconceptualisation of delivery modes of learning and teaching

The reconceptualisation of delivery modes of learning and teaching should be grounded on the perceived relationship between the learner and the teachers, between instruction and learning to pave way for good and desirable performance. The latter which results in desirable learning experiences (Eisner, 1979; Tyler, 1949). In reconceptualisation of delivery modes of learning and teaching, it is crucial to ground the decision-making on informed theories, innovative approaches, authentic assessment rubrics sympathetic to the new paradigm shift and collated vision and mission that speaks to the learning outcomes encapsulated by higher education and learning programmes learning outcomes.

4.0 Discussions

In aligning qualifications and learning programmes to the NCQF, designing, and developing qualifications and learning programmes key priority issues and questions for consideration by higher education emerge. For example, whose needs are higher education attempting to address? What type of outcomes should they be striving to achieve? Are national standards desirable in higher education? Which learning theories, pedagogical and andragogical approaches should be employed to meet students with different needs, abilities, and attributes (inclusivity been central to this formation)? What modes of assessment are relevant and authentic to address in view of the learning outcomes paradigm shift to cater for inclusive education?

4.1 Key issues in the implementation of NCQF

Innovative approaches in learning and teaching in higher education are premised in the learning outcome concept. In developing and formulating qualifications and developing learning programmes, graduate profiles in terms of exit learning outcomes are crucial and these have to be measured using assessment criteria or what in other literature evidence is referred to as performance criteria. The latter providing for and identifying the levels of performance, content and context expected of competent learner upon of the learning programme, course or module and unit. In some instances, the assessment criterion includes "range statements" or scoping the content coverage and conditions which such performance and action would be demonstrated.

In UK, the use of learning outcomes for example, was found in the newly developed standards by then the National Council for Vocational Qualifications (NCVQ) in 1986 which subsequently coordinated the General National Vocational Qualifications (GNVQs). The NVQs had to reflect the body of knowledge, understanding and skills underpinning the basket of NVQs (Debling, 1994; Smithers, 1994). These were industry led (employer lead bodies and industry training organisations). In debating the GNVQs Melton (1996) asserts that "GNVQs would identify 'units of knowledge and skills' that had been acquired, while the learning outcomes contributing to the achievement of such units would be expressed in terms of performance criteria and range statements" (Melton, 1996, p. 411). The development of GNVQs required identifying and developing 'core skills' or what is sometimes referred to as soft skills or 21st century skills, problem solving skills, communication, learning to learn, teamwork, collaboration, co-creation, literacy and numeracy, information technology, perseverance, critical thinking, creativity, and interpersonal skills; all of which are a requirement in tertiary and higher education.

Other critical issues amid in higher education for consideration and unpacked in debating and dialoguing the implementation of NCQF and learning outcomes in higher education are legislative system and governance issues at national and institutional level, education system itself, monitoring and evaluation processes and its efficacy, curriculum mappings practices, accreditation issues, mapping of learning and learning outcomes to the curriculum.

4.2 Pedagogical issues in higher education navigated

Most higher education institutions employ teacher centred traditional approaches in learning and teaching. This mode is however gradually and increasingly becoming outdated and irrelevant in the twenty-first century period. Traditional approaches predominantly are inclined to lectures, expositions, examinations heavy, and summative assessment oriented, leading to passive and disengaged students. The incoming of problem based learning and online assessment often pose challenges in higher education and requires clearly defined competences leading to development and composing of sound learning outcomes. This raises the question: How is education and learning experiences perceived in higher education?

In this new paradigm shift of learning outcomes, a new mindset change is required where students are required to be developed in the twenty-century skills amongst others. A shift should be intentionally made towards learning outcomes manifestations and use of friendly innovative learning and teaching approaches. HEIs need to aggressively employ innovative approaches in learning and teaching which prepare students for future careers, and a range of multiple pathways post their learning experience. HEIs enrol different types of learners, young and mature (Markey, et al.; 2023), all of whom must be catered for in learning to meet their changing needs and expectations. Both pedagogical and andragogical principles and approaches should be explored to give maximum learning benefits to all students, young and adult learners. The common practice amongst many HEIs is to use pedagogical approaches in teaching adult learners which is found to be inappropriate and ineffective in dealing with adult learners to deliver NCQF and learning outcomes at tertiary level.

HEIs should now focus on developing critical thinking, problem solving, collaboration and co-creation skills rather than enforcing decaying regurgitation methods which emphasis memorisation of information. Students at HEIs need to be heavily engaged and interactive and provided with learner friendly environments where they can display knowledge and skills in real-world situations and context. This in turn shall enable them to reach their full potential and acquisition of strong foundation for learning. Some of these attributes can be achieved through experiential learning, collaborative learning, adaptive learning, gamification and flipped learning amongst others. In rethinking appropriate innovative approaches in learning and teaching in higher education, the following are suggested for consideration: constructivism (inclusive of social constructivism), collaborative approach, inquiry-based approach, integrative approach, and reflective approach.

As the literature evidence suggests, constructive approach relies on the perspectives that learning occurs as learners are actively involved in a process of meaning and knowledge construction as opposed to receiving information (Gudaji, 2019; Su, 2019; Morales et al., 2022). The latter promotes passive learning and disengagement of learners. The constructive approach emphasises the concept that learners are active participate of learning rather than passive learners. It builds on the concept of learning through experience and reflections where the learner is central to all activities of learning— the *invisible pedagogy* as it is sometimes referred to. Collaborative learning approach enables students or learners to learn together in pairs, teams and not as individuals. The learners then share their experiences and support each other interactively, hence collective learning, peer learning and learning in groups. Inquiry based learning is a form of active learning that enables students to make connections in their learning beyond the classrooms by asking questions, problems, and scenarios, and investigating their contexts through hands on experiences. This approach includes problem-based learning and is useful in projects and research. Integrative learning posits that learning takes plays by making connections across the curricula, building on authentic understanding of concepts, content, and principles. Integrative approach to learning and teaching helps learners to provide holistic solutions to complex situations.

In terms of reflective approach, this one is more teacher oriented and allows teachers to analyse how they taught, and how they may improve on their classroom practices and better engage students for better learning outcomes. In a nutshell it is tied to teachers beliefs about learning and teaching and how individual cross examination of teaching could be aligned to normal classroom practices. It is an evidence-based approach that promotes effective teaching. In reflective teaching teachers keep journals, gather feedback and in some instances record their classroom delivery.

Therefore, in resetting the HEIs agenda of aligning learning programmes and qualification to NCQF, concerted effort should be made to rejig the traditional approaches and experiences to improve students' engagement by developing different innovative approaches that inform effective learning and teaching. Retooling of facilitators and academia in the light of the new paradigm shift and innovative pedagogical and andragogical approaches is a necessity. The qualifications developer and learning programmes developer should understand

that in developing these, the learning outcomes should be the first phase and foremost focal requirements to assessing the quality of these. It is imperative that learning outcomes construct be derived from the mission and vision of the institution and hence the university mission and vision education goals followed by institutional programmes learning outcomes. As captured by Alyasin et al. (2023) the outcome that students are expected to achieve and be able to demonstrate at programme completion are clarified by the purpose underlined in the mission statement.

The alignment of learning programmes to NCQF, evolution of learning outcomes in higher education postulates consideration of new thinking about assessment of students' performance and learning outcomes in HEIs. The rubrics designed for assessment of learner competences should be in consonant with learning outcomes concept. The literature evidence suggests that "The futuristic approach and practice posit a reconceptualisation of how students will be assessed, more likely a paradigm shift necessitating a change in practice and trend in which students' success (achievements) can be based on the learning outcome attained" (Alyasin et al., 2023, p.1593). In developing qualifications and learning programmes with composite learning outcomes it should be noted that instructional activities are aligned to the curriculum of what is to be learned. In turn, the assessment rubrics should be aligned to the learning outcomes to measure what is intended.

5.0 Conclusion

It is increasingly becoming evident in higher education that learning programmes should meet the defined learning outcomes and intentionally made to address students' cognitive, intellectual, and affective development domains. Quality assurance of such, therefore, is possible through assessment of learning outcomes. Innovative approaches to teaching and learning in higher education are essential for preparing students for the twenty first century. Classroom practices and learning environments need to be engaging to provide students with relevant experiences (Parmigiani et al., 2023). Literature evidence suggest that meeting the totality of an individual's needs is what education is largely about. Therefore, higher education institutions should comply with NCQF and align their qualifications and learning programmes to these with robust programmes and learning outcomes that speak to the industry and societal needs in this new knowledge economy.

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