

The Role of Assessment Practices in Fostering Higher Order Thinking Skills: The Case of Uganda Certificate of Education

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Abstract The need to nurture learners' thinking skills both in Uganda and internationally has become a focus of education. This is apparent as studies consistently show the significance of thinking skills for learners both in school and later in life. The intent of this paper is to explore the role of assessment practices and teaching methods in Uganda in fostering higher order thinking skills. The study used a descriptive analytical research method to analyse the underlying mechanisms of national examinations and how they relate to teaching and learning. Data sources and analysis included official documents from the Ministry of Education and Sports, and Government of Uganda as well as academic literature about assessment and examinations. Analysing the current assessment and examinations at the Uganda Certificate of Education (UCE) level, we argue that these assessments and examinations can be one of the ways to compel teachers refocus their pedagogical practices towards learners' thinking skills. We, however, also acknowledge that this approach can only be successful if teachers possess the technical capabilities to nurture these skills. We also highlight the significant role of a school environment that fosters a culture which encourages and rewards learners for asking questions, challenging colleagues and teachers' points of view without fear of being punished or reprimanded for challenging authority.

Keywords: *assessment, student evaluation, examinations, secondary schools, higher order thinking skills, Uganda*

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1. Introduction

The focus of this paper is the relevance of Higher Order Thinking skills (HOTS) and how assessment and teaching practices impact the acquisition of HOTS within secondary schools in Uganda. We use a philosophical stance to locate the relevance of Higher Order Thinking in teaching and learning. We engage the available literature about assessment and teaching practices particularly in Uganda to explore the role of these practices in cultivating these skills in students. While most authors on philosophy do not explicitly write about higher order thinking, their writings often focus on thinking beyond the usual. For example, Socrates is often remembered for his insistence on his contemporaries to go beyond the "loose" thinking by asking higher order thinking questions and since then philosophers have contended that critical thought is pivotal for effective teaching, learning as well as the general quality of human life [1]. In his *Metaphysics*, Aristotle defined a human person [Man] as a rational animal - *homo est animal rationale* which scholastic philosophy has often used to define the quality of a person and to distinguish human persons from other beings [2,3].

At the beginning of Book I, CH I of *Metaphysics*, Aristotle argues that "the animals other than man live by appearances and memories and have but little of connected experience; but the human race lives also by art and reasonings" [[4], p.1]. This line of thinking was so much adapted, though not exclusively, by the seventeenth-Century philosophers such as Descartes, Spinoza, Leibniz and Malbrache, often associated with "rationalism". While the term "rationalism" does not generally designate a single precise philosophical position, these thinkers privilege reason over other ways of acquiring knowledge. For example, Descartes' famous phrase, "Cogito Ergo Sum" alludes to an idea that a human person is precisely because of reason. In terms of teaching and learning, this suggests that nurturing students' thinking skills should be a priority if students are to safely navigate the current and future life situations.

However, an analysis of the teaching and learning practices in Uganda reveals an almost exclusive reliance on techniques that mostly generate rote learning. At the national level, [5] reports that there are also many Ugandan children and youth who are in school but either not learning or not learning what is relevant for their future life achievements. [6] has equally argued that many of the students, in Uganda, who are "successful in school"

have not acquired enough of the skills they need for their current and future including the world of work. What is still missing in the conversation is to locate the relevance of Higher Order Thinking skills, and the role of teaching and assessment practices in cultivating these skills in students.

The study employed a descriptive analytic research design with a qualitative approach. According to Gay [7], a descriptive research involves collecting data to test hypotheses or to answer questions concerning the current status of the subject of the study. In this study, we utilised the available literature both academic, published and official documents such as assessment reports and policy papers to highlight the role of assessment practices in fostering higher order thinking skills. In order to this, we started by locating the definition of higher order thinking, we then examined how higher order thinking skills can be fostered within a school setting and then explained pedagogical practices and how they influence students' thinking skills. We explained examination regime in Uganda and examined the backwash effects of examinations on teaching and learning. We then proposed a model of the influences of end of cycle assessment and examinations on pedagogical practices.

2. Defining Higher Order Thinking

At the start of the last Century, the understanding of the importance and higher order thinking skills emerged and became more explicit in its formulations. [8] published a study of the foundations of sociology and anthropology, in which he documented the fact that human mind can tend to be ethnically centred and how schools can sometimes serve the uncritical function of social indoctrination. According to [8], schools unless regulated by the best knowledge and good sense will produce persons who are all of one fashion. An orthodoxy regarding all the great doctrines of life which consists of the most commonplace opinions, yet the popular opinions often lack personal judgment and contain broad fallacies, half-truths, and generalizations. To [8], therefore, higher order thinking entails a critical mental faculty as a guarantee against delusion, deception and superstition. It includes being open to unlimited verification and constantly remaining open to this verification [9].

The works of John Dewey have also increased the understanding of human thought in its instrumental nature. Dewey's education theories focus on concepts of inquiry-based learning, problem-based learning, reflective inquiry and experiential learning in the context of the classroom, school and community. Reflective thinking is at the heart of higher order thinking and it involves systematic utilization of knowledge, skills and personal character traits like curiosity and open-mindedness. John Dewey in his book *How We Think* [10], states that reflection or reflective thinking is the examination of an idea "in light of the grounds that support it and the further conclusions to which it tends" (p. 7). Dewey believes that the nature of higher thinking is reflective and is logic based [11]. Reflection is the cognitive inquiry process that contains analysing and finding ways which will lead to production of new knowledge and experiences in the context of

previous knowledge and development of alternative ways. According to Dewey, an individual who is reflective actively questions his/her assumptions and practices with a determination to not only gain new knowledge but also come up with alternative ways of solving the problem. Reflection is a meaning-making process that moves a person from one experience into the next with deeper understanding of its relationships with and connections to other experiences and ideas.

[12], in her work on education and learning to think, provides a definition of higher-order thinking in which the following characteristics are identified: it is nonalgorithmic, complex and often yields multiple solutions; it involves nuanced judgement and interpretation, the application of multiple criteria, uncertainty, self-regulation of the thinking process, imposing meaning and finding structure in apparent disorder; and it is effortful. To Resnick, higher-order thinking requires problem-solving skills to deal with the nonalgorithmic and complex challenges; come up with multiple solutions through nuanced judgement and the application of multiple criteria as well as going through a lot of uncertainty. By implication, higher order thinking skills involve metacognitive skills, self-regulation, deep understanding to find meaning and structure within text, audio and or visual messages.

More recently, Matthew Lipman initiated educational theory and practice in his Philosophy for Children program at Montclair University that revolutionized scholars' stance on thinking. Lipman explores how to educate to reasonableness, which he defines as "rationality tempered by judgment" [[13], p. 11]. He views higher order thinking skills among children in terms of curiosity and inquisitiveness. Rather than just focusing only on transmission of knowledge, schools should come to grip with terms like inquiry, rationality, judgment, creativity, and autonomy- all of which contribute to reflective education in the classroom. Inquiry is suggestive of thinking that involves imagining the problematic situation, constructing, evaluating, testing and applying solutions to it to reconstruct it into a meaningful experience. This inquiry is moved by the sense of wonder which every human being born with. This is easy to be identified in children but then because of different factors including the education system and approach, it is lost in adulthood.

Drawing from the above references, we can only infer what higher order thinking skills entail and what characterises a person with such skills. These characteristics include openness to experience and verification, curiosity and inquisitiveness, creative and reflective thinking, autonomy and self-regulation, nuanced judgment and interpretation, as well as ability to find structure in apparent disorder [12,13].

2.1. Developing Higher Order Thinking Skills within a School Setting

While official documents and academic literature highlight the relevancy of higher order thinking skills in education [1,12,14], it often remains a puzzle how students can develop these skills. Literature highlights two main strands of approaches to developing students' higher order thinking skills: infusion approach [12,15,16,17] and explicit teaching using a stand-alone course [18].

Although the aim of this paper is not to choose between the infusion and stand-alone approaches to nurturing higher order thinking skills, we find it important to briefly look at each of the two approaches to get the benefit of each one since the ultimate choice of an approach might depend on the specific field of study, its structure of thinking and thinking goals [19].

In the field of philosophy, for example, theoretical tradition has for a long time placed thinking skills in stand-alone courses in which objective of higher order thinking is part and parcel of the entire course design [18]. This has an advantage that students are explicitly taught how to think critically and creatively within the subject domain. The teaching of formal and informal logic in philosophy is a suitable example of a stand-alone approach in which students are explicitly taught how to analyse arguments, detect errors in reasoning and constructing convincing arguments [18]. Despite its long-standing tradition, educators often raise worries about its ability to transfer the thinking skills beyond the target course [16]. For example, how can a student use the knowledge acquired in formal and or informal logic class to resolve an apparent conflict with the neighbour? How can a student of entrepreneurship apply the knowledge of formal and or informal logic in their dealings with a potential business customer? These questions present reasons for the worries about transfer of higher order thinking skills students acquire from the courses which are developed and taught with a purely stand-alone approach. This challenge becomes more apparent when the teaching or direct instruction offer limited opportunities for students to apply what they have learned about higher order thinking in other courses, or challenging situations that call for thinking in their lives beyond school [16].

In this line of thought, [12] argues that given the complexity of transfer of skills from one specific course to another or to life beyond the school, higher order thinking skills should permeate the entire school and classroom climate and not limiting these skills to few taxonomic levels of learning – but requires an entire social setting. This includes libraries, the teacher-student interaction, school leadership and school ethos affect the nurturing of these skills. According to her, developing students' higher order thinking skills requires not only an environment with opportunities for thinking but also the freedom to think. This suggests that developing higher order thinking skills is beyond a hierarchical procedure since a context might require one to apply a higher level of thinking before learning a lower level thinking skill. This is opposed to the argument in favour of a sequential taxonomic approach to thinking, often associated with Benjamin Bloom's taxonomy of educational objectives in which problem solving, critical and creative thinking are placed at the top of the cognitive hierarchy. [12] and [20] argue that such conceptualizations have the effect of isolating thinking and problem solving from the main activities of learning. Their argument implies that higher order thinking can take place at any level of the pyramid. This however raises the question about the use of the comparative word "higher" within literature, since the presence of higher order thinking skills presupposes the presence of lower thinking skills. This hierarchical order of thinking leads one to think of a taxonomy of thinking

skills starting from the lowest to the highest. This concern about the hierarchical presentation in thinking skills is also shared by [21] where he argues that the phrase "higher order thinking skills" is relative to lower order thinking skills, implying that for one to acquire higher order thinking skills there is need to master the lower order thinking skills.

Whichever approach is taken, what is clear from literature is that higher order thinking skills are not likely to be realised spontaneously or as an incidental consequence of attempts to achieve other educational or pedagogical goals [22]. Nickerson emphasises that explicit attention must be paid to planning and delivering pedagogies aimed at enabling students acquire higher order thinking skills. He emphasises clear and intentional planning toward the goals of enabling students develop this type of skills. Clear and intentional planning enables students' higher order thinking skills and better comprehension of the content [15,17].

2.2. Pedagogical Approaches in Uganda Secondary Schools

Uganda's education sector is premised on the major aim of nurturing learners' higher order thinking skills and competences for personal and national development. This is evidenced in one of the general aims of education in Uganda, as stipulated in the Government White Paper on Education [23], as "to eradicate illiteracy and equip the individual with basic skills and knowledge to exploit the environment for self-development as well as national development, for better health, nutrition, and family life, and the capability for continued learning" (p.8). The same document further highlights one of the aims of secondary education as "enabling individuals to develop personal skills of problem solving, information gathering and interpretation" (p.61). Problem solving, information gathering, and interpretation have often been viewed as critical aspects of higher order thinking competence [10,24].

To achieve these aims, the government of Uganda has put strategies which are contained in several policy documents including the Uganda Vision 2040 [25], the National Development Plan 2010/11 2014/15 [25], the Revised Education Sector Strategic Plan (2015-2017), Education Sector Plan (2018-2020), the Education Act of 2008 and the annual Ministerial Policy Statements of the Ministry of Education and Sports (MoES). At best, these strategies and reform attempts can be explained as efforts to nurture students' skills and competences that they require to utilise the country's natural resources through responding to current labour market demands. However, the MoES recognises that even with all these policy documents and frameworks, "too many are leaving school without the knowledge and skills they need to participate as citizens and productive workers" ([27], p.9). This casts a shadow on the effectiveness of these policy documents and frameworks.

Cognizant of this challenge, the Government of Uganda, through the Ministry of Education and Sports recently launched a review of the lower secondary curriculum with a renewed focus on higher order thinking skills as key skills to be nurtured among secondary school learners [14]. In the reviewed curriculum, these skills are conceptualised

as generic skills including critical thinking and problem solving, mathematical computations, cooperation and learning, communication and creativity and innovation [14].

3. Examinations Regime in Uganda

Uganda National Examinations Board (UNEB) is mandated by UNEB Act 1983 to manage and regulate all formal assessments and examinations at primary and secondary school levels. Prior to the UNEB Act 1983, end of cycle examinations in Uganda were managed and regulated by the East African Examinations Council (EAEC) until 1980 when the East African Community (EAC) broke up and Uganda started managing its own assessments and examinations. Since then, UNEB began managing three main end of cycle examinations, namely Primary Leaving Examinations (PLE) administered at the end of the seven-year primary school cycle; Uganda Certificate of Education (UCE) administered at the end of the four-year lower secondary school cycle and; Uganda Advanced Certificate of Education (UACE) which is administered at the end of a two-year upper secondary school cycle.

Following the Education Policy Review of 1989, the government of Uganda noted that the end of cycle examinations at primary and lower secondary school levels were not enough to provide adequate information about what learners know and the entire assessment and examination system was not responsive to the social, economic and political circumstances in Uganda. Following the recommendations from the Education Policy Review Commission (EPRC) Report [28] and the subsequent Government White Paper [23], UNEB introduced the National Assessment of Progress in Education (NAPE) in 1996 which is done in grades three and six in the subject areas of literacy and numeracy at primary level and; Biology, English language and Mathematics at the lower secondary school level. The purpose of NAPE was to provide information about what learners know and can do or cannot do with respect to the National Curriculum Standards (National Assessment of Progress in Education (NAPE) [29].

The last two decades have witnessed an increase in the private actors' involvement in assessment and examination in Uganda. Private organisations, mainly Non-Governmental Organisations (NGOs) have started their own independent assessments at different levels. In 2008, the Research Triangle Institute (RTI) International launched Early Grade Reading Assessment (EGRA) and Early Grade Mathematics (EGMA) in Uganda, and in 2010, Twaweza started household-based assessments focused on basic literacy and numeracy skills.

Despite these milestones undertaken in assessment and examinations in Uganda, still a lot is to be desired. In 2016, the Government of Uganda commissioned a study through the Health and Education Advice and Resource Team (HEART) to provide a road-map describing how Uganda can develop a robust, resilient, self-improving and adaptive assessment system, grounded in Uganda's culture, history and context. The study revealed that too many students who are successful in school do not learn enough of the skills and knowledge aligned with the current and future needs of employment and the further development

of Uganda's economy [30]. What remained unclear from the study report is the clarity about the place of assessment and teaching strategies in nurturing the desired skills among students.

4. Curriculum and Examinations in Uganda

Curriculum and examinations are close partners in education. The Curriculum Development Centre (NCDC) is mandated by NCDC Act 1973 and NCDC Act 2000 to develop curricula and instructional materials for pre-primary schools, primary schools, secondary schools and Business, Technical, Vocational and Education Training (BTJET) institutions in Uganda. The NCDC develops curriculum content of each of these educational levels. At the pre-primary level, end of cycle assessment is school-based and they are meant to prepare for learners' entry into primary education without explicit functions of certification and selection. However, due to the fact of having many primary schools subjecting learners to entry interviews and examinations, many of pre-primary schools do subject learners to pencil and paper examinations as a means of preparing learners for these entry exams.

At the primary level, learners are subjected to a national end of cycle examination by UNEB. This includes four subjects of Mathematics, English Language, Integrated Science and Social Studies. In a descriptive case study on Uganda assessment and examination system, [31] underscored four important weaknesses, including: (i) their very high stakes nature; (ii) the narrowing of the curriculum taught in class to match materials covered in the examinations; (iii) excessive targeting of lower order thinking skills; and (iv) having students repeat the grades prior to the examinations to increase passing rates. This situation could partly be attributed to the fact that examination results are used by learners to seek placement to successive levels of learning. Learners with high grades are often admitted to prestigious educational institutions in the country while the rest are left to join less prestigious and at times less performing institutions and others drop out of the educational system [31]. Although the Primary Leaving Examinations also serve accountability and certification functions, these are less pronounced than the selection function. For example, [32] show in a qualitative study conducted in Kampala and Kabale districts in Uganda, that schools and teachers are often biased towards the selection function of examinations. This bias towards a selection function goes on to other successive levels of education and influences other functions especially that of accountability. The study indicated that schools and teachers are often on social pressure to present learners with first grade. Consequently, teachers prepare learners to "answer examination questions" more than nurturing the competencies as laid down in a curriculum.

After primary school education, learners who join the lower secondary level are subjected to a four-year curriculum. After completing the lower secondary education and achieving the Uganda Certificate of Education (UCE), learners either join a two-year upper secondary school or institutions such as Business, Technical and Vocational Education (BTJET), Health institutions, Pre-Primary

education or Primary teacher education. Selection to these levels of education is based on academic performance with high competition for prestigious Uganda Advanced Certificate of Education (UACE) schools and other institutions of learning. The competitive nature of selection to higher levels of education and coupled with limited opportunities present enormous pressure on students and teachers to prioritise academic scores and grades more than the required skills and competences.

What counts to examination candidates is often the final grade that will appear on their certificates. An attempt to describe public examinations and their effect on pedagogical practices in Uganda would be incomplete without an explanation of the grading system used. At the Uganda Certificate of Education (UCE) level, an examination candidate is required to register for a minimum of eight and a maximum of ten subjects. Of the eight subjects, seven are compulsory for every candidate. Compulsory subjects include English language, mathematics, physics, chemistry, biology, history and geography. Each of the subjects is graded in a range of nine grades whereby each grade corresponds to an aggregate (weight) written in an inverse order. The higher the aggregate figure the lower the weight.

Table 1. UCE Letter Grades and Aggregates

Grade	Distinction			Credit			Pass		Failure
	D1	D2	C3	C4	C5	C6	P7	P8	F9
Aggregate	1	2	3	4	5	6	7	8	9
Weight	Highest						Lowest		

Source: Adapted from UCE Grading 2019.

In the grading process, rather than criterion referenced assessment and grading, the Board applies a norm referenced form of assessment. For example, if examination candidates of a particular year did not perform well and no candidate scored 80% in a given subject, then a candidate who scores 79% would be awarded a distinction one (D1). Similarly, if a big portion of candidates scored below 35%, then failure grade is reduced to as low as 20%. If on the other hand in the subsequent year, examination candidates perform better than the previous year and a big portion of them score above 80%, then a candidate who scores 79% might be awarded a distinction two (D2). A norm referenced

assessment system implies that an examination candidate in one particular academic year might have a better subject grade than another candidate in another academic year while the two candidates have the same percentage marks in a given subject. Put differently, two candidates of different academic years might have different percentage marks but with a similar grade point. This presents difficulties in comparing students' performance across years. In terms of selection, it sorts the "best" examination candidates. This presents a challenge in which schools and teachers are caught in a competition trap. In this way, instead of aiming at achieving a given standard of competence, candidates strive to become the "best". If what is tested in the end of cycle examinations does not match the desired competence levels of students, such competition might lead to system inefficiency in which teachers might start teaching what is tested or expected in examination papers instead of competences, skills, knowledge and values students require for the world of work and or successive levels of education. A criterion assessment system on the other hand would encourage teachers to focus on equipping with the required competence, knowledge and skills since they might not want to disadvantage their students during end of cycle examinations which is hinged on a given criterion – competence levels.

After obtaining a candidate's subject letter grades, the Board calculates the total aggregates to establish the division. There are four UCE divisions an examination candidate can achieve namely, first division, second division, third division and fourth division. There is also a fifth category often referred to as "Failure" or "Grade 7". Each of these divisions has conditions and requirements. In calculating the total number of a candidate's aggregates, only eight best performed subjects are considered. These, however, must include mathematics and English language. The divisions and corresponding aggregates are as follows:

Table 2. UCE Division Grades

Division	One	Two	Three	Four
Aggregates	8-32	33-45	46-58	59-69

Source: Adapted from UCE Grading 2019.

Besides a candidate's total aggregates, the Board applies other conditions in determining a candidate's UCE division.

Table 3. Grading Conditions

Division /Grade	Conditions
One	<ul style="list-style-type: none"> • Pass a minimum of eight subjects which must include English Language (with credit) a Humanity subject, Mathematics and, except for visually challenged candidates, a Science subject; • Pass at least seven of the subjects at credit level or better; • Have the aggregate of the best eight done subjects not exceeding 32
Two	<ul style="list-style-type: none"> • Pass a minimum of eight subjects including English Language; • Pass at least six subjects at a credit level or better; • Have the aggregate for the best-done subjects not exceeding 45
Three	<ul style="list-style-type: none"> • Either, pass a minimum of eight subjects (with at least 3 credits of better); • Or pass a minimum of seven subjects (with at least 4 credits of better); • Or pass a minimum of five subjects with credits or better; • Have the aggregate for the best done eight subjects not exceeding 58.
Four	<ul style="list-style-type: none"> • Either, pass at least one subject with credit or better; • Or pass at least two subjects with pass seven; • Or pass at least three subjects with pass 8 or better.
Seven/Failure	<p>Does not qualify to receive a UCE certificate due to</p> <ul style="list-style-type: none"> • Not registering or sitting for subjects according to examination rubric; • Missing to do one of the examination papers of a compulsory subject such as Mathematics or English Language.

Source: Adapted from UCE Grading 2019.

By grading UCE candidates into these divisions, it facilitates easy selection of candidates for higher educational levels and other existing opportunities including employment. For instance, while it is generally agreed within the public sphere that academic grades alone are not enough for one to acquire and maintain employment, they still play a pivotal role in the job recruitment process. For example, when it comes to public service in which the government is still perceived as a major or at least a reliable employer, academic grades are given the priority, implying that a candidate with “poor” grades might miss out opportunities often starting with initial shortlist.

Backwash effects of assessment and examination

Washback or backwash [33], also known as measurement-driven instruction, is a common term referring to the influence of testing on teaching and learning, which is a prevailing phenomenon in education [34]. This concept is rooted in the notion that tests, and overall assessment processes, should and could drive teaching and hence learning. In fact, [34] claim that washback of tests can have powerful influence, both positive and negative, on classroom settings. Empirical research about pedagogy and classroom practice has consistently located the cause of the narrative-nature of classroom lessons to the type of assessments and examinations which often focus on “the evocation of responses that involve repetition rather than critical analysis and reflection, a lack of procedures designed to improve students’ high-order cognitive skills” [6,34]. To prepare students for the reproduction of content responses, many of the teachers resort only to lecture-style techniques generating rote learning with limited opportunities for students to developing higher order thinking skills [32,36].

Literature also attributes positive effects of assessment and examinations on teachers’ pedagogical approaches [36,37,38]. Assessment and examinations can be used to shape teachers’ pedagogical practices in desirable ways if examination test what educators desire [36]. This can turn to undesirable ways if test items do not necessarily test what educators desire [37]. This is because teachers tend to teach to the test rather than the curriculum. Especially

in high-stakes assessment and examinations, teachers have a high propensity to teach according to what is expected in the final examination [36]. Moreover, students also study toward the fulfilment of their expectations about the final examinations. Parents and the general community are not exempted from these influences [32]. Consequently, teachers tend to pay more attention to examinations and assessment requirements than to the curriculum expectations for fear of disadvantaging students on the exam [38]. Thus, while teachers’ tendency to teach according to the end of cycle assessments and examinations is often cited as an impediment to improving classroom pedagogical practice[37, 39], some also argue that end of cycle assessments and examinations can be used to encourage teachers to adjust their pedagogical practices by intentionally aligning the assessments and examinations to the set of knowledge and cognitive skills required of the learners [36]. Others have viewed assessment and pedagogical practices in rather a reciprocal relationship in which a change in either directly affects the other [10].

A Model of the Influences of End of Cycle Assessment and Examinations on Pedagogical Practices

Education policy makers and practitioners who use end of cycle assessments and examinations to improve instruction often want to understand the linkage between the strategies they advocate and the ends they seek. In Figure 1, we give a framework that summarises the logic that presumably connects the possible uses of high stakes end of cycle assessments and examinations to improved pedagogical practices in the preceding three propositions. The general logical path assumes that a change in end of cycle assessment and examinations will generate school and community concern which will be expressed in either pressure or concern to improve teaching and learning. Generating school and community concern is helpful only if that concern is channelled in productive ways. Any improvement in pedagogical practice is premised on the assumption that teachers and school administrators will know how to respond to the community concerns and interest in ways that improve instruction to levels that can be detected on a standardised test or examination.

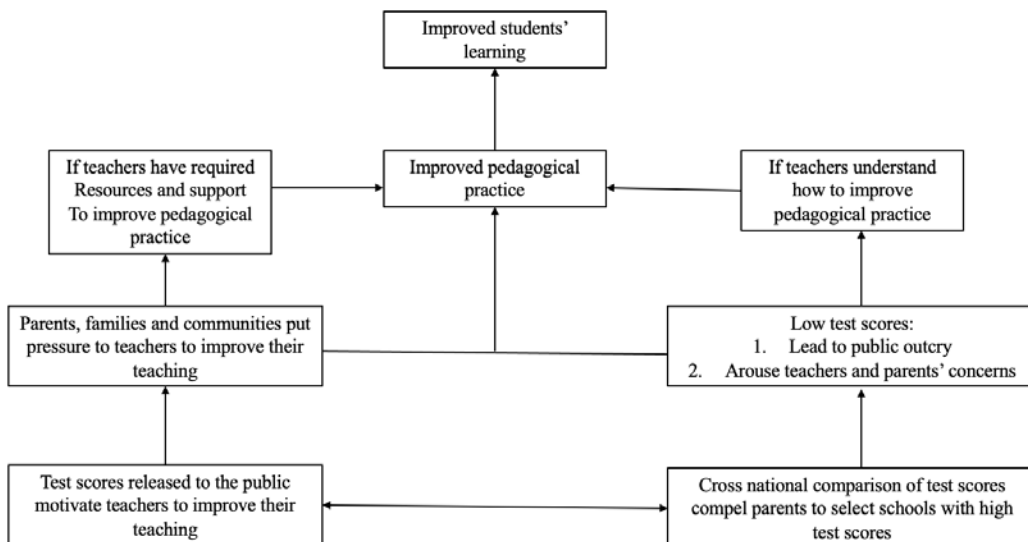


Figure 1. Impact of end of cycle examinations on pedagogy (Source: Authors’ Conceptualisation of assessment and teaching)

The two logical paths assume that assessments and examinations will generate community concern, expressed in either support or pressure. A change in high stakes national assessments and examinations will influence teachers to adjust their pedagogical practices so as not to disadvantage their learners in the national examinations. This however can only be effective if teachers have the technical and pedagogical skills to adapt to changes in the examinations. When an examination requires teachers to prepare their learners for higher order thinking skills required in the final examination, they can only do so if they have the capability to teach the said skills. This can be explained by the Peter Effect, term coined by [41]. The Peter Effect claimed that one cannot be expected to give what they do not possess. In fact, poor instruction due to poor teacher knowledge and poor teacher preparation has been suggested as one of the major causes of reading failure among learners [42,43]. In 2015, the Uganda National Examinations Board (UNEB) conducted a national survey with primary teachers and primary six learners and their proficiency in Literacy in English language [29]. The study revealed that only 38.8% of pre-service teachers, 66.4% of in-service teachers and 50.6% of Teacher Training College tutors were proficient. The same study also revealed that the teachers' proficiency levels were related that of learners where only 51.9% of them were rated proficient. This suggests that a change in the assessment without teachers' preparation might cause a system shock, leaving many learners failing the examinations causing more devastating effects on learners and schools. Nevertheless, with an assumption that better test scores and grades motivate teachers to improve their teaching, improved examination requirements in form of higher order thinking skills will motivate them to seek innovative ways of preparing learners for such skills. This might involve enrolling for further studies or continuous professional development courses to acquire the needed skills to teach and assess. This is because, in most cases it is what is assessed that is taught more than what the curriculum states.

However, the level of motivation and availability of professional development opportunities for teachers in Uganda are desperately low, yet these are exceptionally critical if teachers are to quickly adjust their pedagogical practices. For example, [43], conducted a cross sectional survey in Yumbe district on teacher motivation and effectiveness within Universal Secondary Education (USE) schools and found that while professional development training of teachers greatly improves their effectiveness including pedagogical practice, such training opportunities are rare for teachers. This might suggest that many of the teachers are likely to leave their professional practice without engaging in any professional development training. [43] also studied the remuneration of teachers and their motivation in government aided schools in Mukono district of Uganda and found that teachers are significantly demotivated due to insufficient salaries, allowances and poor accommodation. These factors if not well handled, teachers might not quickly adjust their pedagogical practices even when they go through professional development trainings.

Thus, the dynamic influences of high stakes examinations on teachers' choice of pedagogical practices are only part of an interconnecting web of inputs, events

and social factors that surround a teacher. For example, the implicit and explicit expectations of school leaders and formal employers, including the local and central governments, greatly influence what teachers do in the classroom. It would simply be imprudent for a teacher to devote a great deal of time to certain aspects of practice which the employer does not deem essential or important. When parents compare schools' performance in tests scores and consequently start choosing those schools with improved test scores, teachers start to adjust their pedagogical practices to meet the increasing demands for test scores. This can however be devastating if teachers choose to teach students how to answer examinations instead of preparing them to acquire the skills and competences required in the examinations and later life situations.

In societies, including Uganda, where education is largely private funded by parents and guardians within a free market economy in which the consumer is a king, the pressure from parents, families and communities has a stronger influence on what teachers do in the classroom than the legislations on education. This gives great power to national examinations in influencing what teachers ultimately do in the classroom. Through parents' demand for better test scores and certification, schools and teachers mobilise school resources in form of instructional time, text books, writing materials among others and direct them towards learners' performance.

5. Conclusions and Implications

Given the importance teachers, learners, parents and the public put on examination and grades including higher order thinking skills test items in the end of cycle examinations might be one of the best ways to ensure that these skills are taken seriously and emphasized in the teaching and learning process. If end of cycle assessments and examinations require candidates to portray higher order thinking skills, teachers are most likely to adjust their classroom practice so as not disadvantage the learners [36]. This is only possible, however, if teachers really know how to prepare learners for these examinations. Even when teachers are aware of what is expected of them in the classroom and the thinking skills expected from learners during examinations, teachers are less likely to adjust their pedagogical practice if they do not know how to teach or nurture these skills. If teachers do not possess these skills and competences, it is practically an uphill task for them to prepare learners for the same skills. If a teacher is a critical thinker on the other hand, he or she can teach learners to think critically as a matter of life rather than mechanical application of rules or steps for the sake of examinations. Thus, one approach to nurturing learners' thinking skills, would to simultaneously adjust end of cycle examinations in which higher order thinking skills are required and developing teachers' capacity to adjust their pedagogical practices. This might necessitate deliberate teacher training and professional development of teachers so that they are abreast with what is expected of them.

This might also call for parental and community engagement so that parents and families demand for what

children really need rather than just examination grades. If parents and families shift their paradigm about educational success parameters from examination results to skills and competences, schools and teachers will be more likely to prepare students for the acquisition of such skills and competences rather than just the final examinations. By inference, if final examinations also require these skills and competences, higher examination results will also imply better skills and competences. This, if it happens, will also motivate teachers to focus on higher order thinking skills and competences in their pedagogical practice.

However, we also acknowledge the view that nurturing higher order thinking skills requires an environment or culture in which these skills are practiced, encourages and rewarded [12]. This implies that if an approach aimed at nurturing higher order thinking skills does not go beyond an instructional level, it remains a rationalist mechanical formula with little application to daily life. Thus, creating a stimulating culture which encourages and rewards learners for asking questions, challenging colleagues and teachers' points of view would be one best way to nurture learners' thinking skills. We however acknowledge that this is not an easy task especially in contexts where challenging an authority such as a leader, teacher and or parent is often discouraged and at times punished.

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