The Perspectives of Educators Regarding the Critical Thinking Abilities of Students

MICHAEL ADELANI ADEWUSI[1], KAZIBWE SOPHIA[2], TOKUNBO ODEKEYE[3]

[1]*Kampala International University*

School of Education, Open and Distance Learning, Kampala, Uganda; ORCID ID 0000-0002-8003-6761

Email: michael.adewusi@kiu.ac.ug

[2]*Kampala International University*

Department of Political and Administrative Studies, Kampala, Uganda Email: sophia@kiu.ac.ug

[3]*Osun State University*

Department of Educational Technology, Osun, Nigeria; ORCID ID 0000-0002-9973-6741

Email: ola.odekeye@uniosun.edu.ng

Corresponding author email: michael.adewusi@kiu.ac.ug

(Accepted: 21 April 2023 and published on 5 may 2023)

https://doi.org/10.58653/nche.v10i2.08

Abstract

The exercise of critical thinking necessitates the utilisation of sophisticated cognitive abilities by educators. Educators hold the belief that they impart critical thinking skills to their students through intellectual stimulation, yet their pedagogical approach primarily emphasises rote memorisation and note-taking within the confines of the classroom. It is noteworthy that the conduct exhibited by educators in the classroom may be impacted by the critical thinking abilities of their students. Consequently, it is imperative to augment teachers' understanding of critical thinking in order to enable them to proficiently instruct students in the art of critical thinking within the context of university education. Data for the study was obtained via an online questionnaire that was based on Google Form. The qualitative data was analysed using topic order. A collective of 43 educators affiliated with university institutions provided their responses. Based on our findings, it is recommended that students acquire higher-order cognitive skills through a reassessment of pedagogical approaches. Additionally, it is suggested that

higher education curricula be updated to incorporate activities, whether within or outside of the curriculum, that focus on the development of critical thinking skills. Failure to grasp fundamental learning concepts such as analysis, synthesis, creativity and thinking may have implications for a student's future endeavours.

Keywords: *Critical thinking; Higher education; Intellectual; Creativity; Skills.*

Introduction

The informed society is an era in which learning is viewed as a way of life at individual, organisational and social levels and information as a strategic asset. During this phase, the fundamental priorities of individuals are redefined in order to manage the future, resulting in the development of novel, influential ideas that are beneficial to society (Arslan, Gulveren, & Aydin, 2014). This emphasises the demand for self-improvement and problem-solving individuals over those who continually create problems in daily life (James, 2015). In this regard, critical thinking receives a great deal of attention owing to certain creative cognitive skills, which are valued by every industry and business as the engines of social transformation (Gbeleyi, Okebukola, Potokri, Onoriode, Aribisala, & Shabani, 2022).

Critical thinking, as a process that requires intuition, logic, experience and universal values, enables individuals to recognise their own errors and biases and to make effective decisions (Duron, Limbach, & Waugh, 2006; Arslan, Gulveren, & Aydin, 2014) to better the society. In this regard, the manner in which an educator directs and communicates information to students to encourage critical thinking tendencies and higher cognitive abilities, which can result in positive differences in society, lies with the educator.

It is important to keep in mind that the educator's communication of information to the students in the classroom may have an impact on their ability to use critical thinking. According to Kasule, Mugizi and Rwothumio (2022), the lecture structure of learning, which is a common strategy in higher education, may not stimulate active learning of critical thinking on the part of students. They further state that educators of higher learning need to let go of the idea that students can only learn what is covered in class if they want their learners to be able to think critically and engage in active learning. Despite this, a significant number of educators continue to believe that learners require instruction before they are capable of learning in higher institutions (Dao Thanh Binh & Hockey, 2022). In addition, educators need to be adaptable and demonstrate to learners that there is sometimes more than one answer to an issue (Gbeleyi, Okebukola, Potokri, Onoriode, Aribisala, & Shabani, 2022). As a result, it is essential to consider the impact that educators have on how they perceive their students' learning (Okebukola, Shabani, Ntwari, Nineza, & Ndikuryayo, 2023; Adewusi, 2020) because

it is from this level of academy learners that they migrate to the labour market and transform society for its socio-economic betterment.

However, Benjamin Bloom's taxonomy was the first to draw attention to the importance of critical thinking (Duron, Limbach, & Waugh, 2006). Analysis, synthesis and assessment were thought to require a higher level of cognitive ability, entailing critical thinking, whereas knowledge, comprehension and application were thought to require just remembering, relating and applying information (Duron, Limbach, & Waugh, 2006). Riddell (2007) points out that critical thinking should not be defined but rather explained by its components, features, stages and qualities, as critical thinking specialists have done. Riddell (2007) further states in his study that reflection, which is identifying and appraising assumptions, inquiry, interpretation, analysis, reasoning and judgement with an account of context, are all facets of critical thinking that may be summed up from previous research. Furthermore, as critical thinking is so involved, it necessitates superior abilities in the processing of information which are beneficial to the learner after completion of higher education.

Critical thinking as active learning

Concerns have been raised about the effectiveness of critical thinking and the robustness of the evidence. Such concerns are related to different definitions of active learning as well as valid indicators for measuring related (positive or negative) learning outcomes (Adeyemi, 2001; Okebukola, Shabani, Ntwari, Nineza, & Ndikuryayo, 2023). The notion that active learning improves learning has prompted numerous political organisations, including UNESCO, as well as professional associations and accreditation organisations, to advocate the use of active instructional methods in education. Under these conditions, the use of active learning and empirical research on its effects on learning outcomes necessitate systematic attention (Hartikainen, Rintala, Pylväs, & Nokelainen, 2019; Adewusi, Odekeye, Egbowon, Rahman, & Akindoju, 2020). As a result, the concept of active learning has gained popularity.

Active learning is a broad concept that typically refers to student-centred, active instructional methods as well as instructor-led activities and the ability of students to think critically (Hartikainen, Rintala, Pylväs, & Nokelainen, 2019). It is generally not a concept of learning but of instruction (Adeyemi, 2001). Previous research on active learning has been mostly positive in terms of student learning outcomes. Studies have supported the role of active learning as a superior approach to traditional, more content-centred approaches like lecturing (Adewusi, Egbowon, Abodunrin, & Rahman, 2021).

According to Arslan, Gulveren and Aydin's (2014) study, it is obvious that individuals must survive in an information-based economic society and that interpersonal competitiveness requires information-based potential. Furthermore, critical thinking has been identified as the most essential personal trait for success, regardless of whether the individual is an employee or a student.

Furthermore, individuals with higher critical thinking tendencies make significant contributions in the economic and social fields due to their superior thinking patterns.

Further, Arslan, Gulveren and Aydin (2014) state that critical thinking, which requires higher-order cognitive skills, is a complex and extensive process that develops primarily in higher education. Individuals develop characteristics of critical thinking through their undergraduate education, such as asking questions, diagnosing problems, evaluating events and being tolerant of ambiguity by analysing assumptions and biases (Arslan, Gulveren, & Aydin, 2014) in an active learning environment.

Evaluating traditional instructional practices and modifying them in a more student-centred direction in higher education through enabling critical thinking skills among them is worth practising (Arslan, Gulveren, & Aydin, 2014). More student-centred and activating instructional procedures have been linked to improved student learning and, more recently, generic working life skill or competence development because of their importance when a person transitions from higher education to the labour market. They have been viewed as important learning goals as a result of critical thinking skills (Hartikainen, Rintala, Pylväs, & Nokelainen, 2019).

University education

The university has a long history, beginning as an educational institution and later assuming the functions of knowledge creation (research) and, more recently, the so-called third mission (engagement) (Chankseliani & McCowan, 2021). In most cases, universities educated the elite for religious, professional or administrative positions (Chankseliani & McCowan, 2021). With increased participation in higher education, universities have a greater potential to contribute to societal development. Teachers, doctors and scientists, among other professionals, receive advanced academic training in order to practise their professions and contribute to society. In addition, universities conduct both applied and fundamental investigations in the fields of science and the humanities to advance the comprehension of life (Chankseliani & McCowan, 2021).

The 17 Sustainable Development Goals (SDGs) endorsed by all nations that belong to the United Nations in 2015 cover a wide range of issues related to socioeconomic, environmental and technological development and apply to all countries around the world, not just those classified as "developing" or "emerging". The SDGs expanded the focus beyond primary and secondary education to include tertiary education as part of their broad mandate. According to Chankseliani and McCowan (2021), it was a significant step because, as previous sets of development goals – the Millennium Development Goals (MDGs) and Education for All – showed, higher education was missing from the international development agenda and Africa as a continent was not left behind.

University education in Uganda

The origins of university education in Uganda can be traced back to the establishment of Makerere University in 1922 as a technical college to train African carpenters, construction workers and mechanics (Nabayego & Itaaga, 2014). Makerere was elevated to a university-level

institution in 1950, with degrees granted by the University of London. Following Uganda's independence in 1963, Makerere was reconfigured as one of three colleges that comprised the University of East Africa, joining its young sister colleges in Dar es Salaam and Nairobi. The loose federation came to an end in 1970, when it was transformed into an autonomous national university (Sicherman, 2008). Higher education in Uganda was entirely a public venture until 1988, when Islamic University in Uganda (IUIU) came on board. Makerere University, the only public university at the time, almost had a monopoly over the higher education market, but deregulation as part of the restructural adjustment measures of the 1990s ushered in a slew of private universities to meet a pent-up demand for higher education. The sector's growth has been nothing short of phenomenal since then (Olweny, 2011).

According to Jacob, Nsubuga and Mugimu (2009), hundreds of colleges in Uganda now play an important role in human resource development in all regions of the country. The colleges range from private colleges with only one or two rented classrooms in an office block to higher education institutions (HEIs) with large campuses and thousands of students enrolled. However, in order to meet the growing demand, future expansion of HEIs at all levels will be required, along with proper knowledge acquisition from educators.

University education in Nigeria

University education is defined in the National Policy on Education (2004) as the post-secondary section of the national education system, which includes courses offered by colleges of education, advanced teacher training colleges, correspondence colleges, and other institutions that are affiliated with them. However, according to Adeyemi (2001), higher education is a system that encompasses much of the country's research capacity and produces the majority of the skilled professionals needed in the labour market.

Obanya (1999) stated that "higher education" is taken to embody all organised learning and training activities at the tertiary level. This includes traditional universities with arts, humanities and science faculties, as well as specialised universities such as those specialising in agriculture, engineering, science and technology. Post-secondary institutions such as polytechnics and colleges of education are also included.

Higher education includes all forms of professional institutions drawing from the available pool of persons who have completed various types of secondary school education: the military, the police, nurses training schools, agricultural institutes/colleges, forestry institutes/colleges, veterinary institutes/colleges, catering institutes/colleges, tourism institutes/colleges, secretarial institutes/colleges, and other possible institutions.

Perspective on critical thinking from teachers

The process through which we extract meaningful information from physical stimuli is one definition of perception (Arslan, Gulveren, & Aydin, 2014). That has to do with how we perceive our feelings. Three key ideas regarding perception, experience, intention and social needs are all factors that influence perception in addition to the stimuli. Second, the perceiver

actively chooses information and an initial solution while something is being perceived, rather than being passive and indifferent. This helps the perceiver determine what is truly happening. Finally, perception is a more complex mental process that enables a person to create a model of their environment, which enables them to foresee future events and prepare for them accordingly (Arslan, Gulveren, & Aydin, 2014; Okebukola, Shabani, Ntwari, Nineza, & Ndikuryayo, 2023).

As a result, the physical stimulation of a person's sensory receptors provides only a limited amount of information, which makes it impossible to understand without the aid of extra information gleaned from memories and previous experiences. Physical stimuli become an individual's perceptions if they are correctly understood (Okebukola, Shabani, Ntwari, Nineza, & Ndikuryayo, 2023).

Many think that learners' impressions of teachers influence their classroom conduct (Arslan, Gulveren, & Aydin, 2014). Okebukola (2020) advises that teachers must examine how their learners perceive them in the classroom since this can conflict with personal teaching philosophies and attitudes. The teachers think of the classes as communication-centred or grammar-focused, dominated by teacher talk, whereas the learners are more likely to view their course as difficult or easy and their instructors as strict or lenient (Onyewuchi, Adewusi, Okebukola, Odekeye, Gbeleyi, & Awaah, 2021; Awaah, Oladejo, & Suwadu, 2023).

It appears that teachers' and learners' perspectives can be starkly opposed (Arslan, Gulveren, & Aydin, 2014). Educators, for instance, may be more concerned with imparting the skills necessary for effective learning, whereas learners may be more concerned with their teachers' grading processes, assignment due dates and the quantity of assignments they must complete for the course. Furthermore, Awaah, Oladejo and Suwadu (2023) argue that teachers may not be aware of how to incorporate critical thinking into their lesson plans. Teachers may find it difficult to teach students critical thinking because it might be challenging to incorporate critical thinking concepts into their lesson plans in the classroom.

There is a distinction between teachers who view themselves as knowledge disseminators and those who view themselves as learning facilitators. According to Okebukola, Shabani, Ntwari, Nineza and Ndikuryayo (2023), a mediator empowers a person to learn by imparting the necessary learning skills and methods. Also, there is interaction between the student and teacher, and the student is an active participant in the learning process (Dao Thanh Binh & Hockey, 2022).

The student is able to communicate their perceptions to the teacher and is willing to do the assigned assignment. In contrast, if teachers view themselves as information disseminators, they disregard student involvement and feedback. The teaching scenario is exclusively under the control of the teacher, and meaningful student learning is uncertain (Awaah, Oladejo, & Suwadu, 2023). Consequently, it is questionable if a learner could develop critical thinking abilities from such a teacher in such a learning environment.

Research questions

Based on the notion that critical thinking is a social process, this form of thinking cannot exist without sharing and interaction with others (Gbeleyi, Okebukola, Potokri, Onoriode, Aribisala, & Shabani, 2022). As a result, critical thinking involves both introspection and interaction with others. The current inquiry focuses on educators' perceptions of critical thinking among their students, how this may affect their teaching practices, and their ability to foster this type of thinking among their students.

The following research questions were formulated for the study:

1. What do teachers think about critical thinking?
2. How do teachers perceive students' ability to think critically?
3. How do teachers perceive the role they must play in introducing critical thinking into their lessons?

The survey was carried out in a qualitative way, with the participation of a representative sample of lecturers from HEIs in Nigeria and Uganda.

Method

The study uses the descriptive-qualitative research method. The research questions prompted us to choose an interpretive research methodology (Jaiyeola, 2020). In this philosophical stance approach of the interpretivist, the individual develops personal meaning by interacting with the immediate surroundings to render them meaningful, necessitating an in-depth and perceptive investigation of the gathered facts (Burns, Bally, Burles, Holtslander, & Peacock, 2022). The objective is to view reality as socially created, in which the activities of humans are continuously analysed and reinterpreted to provide meaningful explanations for those behaviours, typically in a specific context.

Interpretivists argue that reality can only be fully understood through subjective interpretation and intervention (Burns, Bally, Burles, Holtslander, & Peacock, 2022). The study of phenomena in their natural environment is essential to interpretivist philosophy, as is the recognition that scientists cannot avoid influencing the phenomena they study. They acknowledge that there are many interpretations of reality but insist that these interpretations are part of the scientific knowledge they seek. In actuality, the meanings obtained in this manner are transient concepts (Jaiyeola, 2020). The responses were grouped based on themes derived from an analysis of the data.

Procedure

The data was collected through a Google Form-based online questionnaire. The choice to adopt the online questionnaire was made for convenience because of the geographical locations of the two countries. Though it is practically possible to visit the two countries, for ease and quick responses, the online questions are the best option. Eight questions were asked of the 43 respondents. The questions were designed to elicit their opinions regarding critical thinking. The semi-structured design of the questionnaire enabled the respondents to react in the most

effective manner. Jaiyeola (2020) uses the term 'topic ordering' to describe the method of preparing qualitative data for analysis. This method was used to analyse the questionnaire responses. This method was used to perform an inductive analysis of the transcripts. Several readings of the data led to the emergence of the primary categories. Several readings of the transcripts were conducted in order to identify and categorise emergent key themes, including the final categorisation of the data for consistency.

Lecturers who were teaching in higher education institutions in Nigeria and Uganda, respectively, representing West and East Africa, and who volunteered to take part in the study made up the sample for this study. In terms of adoption of Western education and progress made in education, Nigeria's economic activities derived from the educational sector are high. This nation, which is home to two of the most developed regional economic communities, dominates the region in terms of population, easily representing West Africa. The West African Economic and Monetary Union (WAEMU) shares a common monetary policy that has held inflation down and constitutes a customs union with a compensation mechanism to uphold the Common External Tariff. The Economic Community of West African States (ECOWAS) maintains a regional military force and exerts peer pressure that has rooted out military coups in its member countries. Uganda, on the other hand, is a landlocked nation that depends on neighbouring countries for the importation of most of its needs.

Academia in these two countries has degrees and experience in a wide range of academic fields. Due to the fact that the study was conducted using an interpretive research methodology that implements methodological presuppositions consistent with phenomenology, hermeneutics and/or related ways of knowing and seeing, it is not possible to claim that the data analysis process was completely objective and neutral in reporting. It is also important to have a balance of presuppositions, which may form the basis of further inferences for other nations in Africa.

From the perspective of our own understanding and definition of critical thinking, we tackled the value-laden comments of the lecturers. We are aware of our own subjectivity, which we were able to control by focusing on the perspectives and sensitivity levels of the academics who took part in the study to be able to provide information that might be applicable to other African communities in the universities that are in circumstances that are analogous.

Findings and Discussions

Critical thinking in the teachers' eyes

Taking the first research question, the examination of the most important aspects of the data produced a total of three classifications (a. view of what critical thinking is; b. opinion of what critical thinking plays in the classroom; and c. belief that critical thinking occurs in the classroom when they teach students and how they find out) for the teachers' perspectives on what constitutes critical thinking among their learners. In order to provide an answer to this thematic heading, we used the thematic categories.

Furthermore, items one to three of the questionnaire were used to provide insight into what teachers think about critical thinking in their learners in the learning environment:

Teachers' view of what critical thinking is

Teachers gave various responses. The responses were then categorised into two thematic groups: making judgement and analysing; interpreting; and evaluating questions.

The vast majority of respondents characterised critical thinking as intellectual stimuli that become the impetus to facilitate thinking among learners in a classroom and enable learners to take pleasure in the process of learning as a procedure that requires one to analyse, interpret and evaluate the knowledge that is presented in the classroom. Exemplar responses in this category include:

> Respondent A (pseudonym): Critical thinking is a kind of thinking in which you question, analyse, interpret, and evaluate questions or discussion.
>
> Respondent B (pseudonym): Any form of reasoning that is deep and ready to solve problems by asking probing questions.

The remaining respondents said that logical reasoning was a component of critical thinking, and that it plays a role in assisting students in thinking critically and reaching sound judgements. Exemplar responses in this category include:

> Respondent C (pseudonym): Is in deep reflection on subject matter and evident based judgement with clear answers on the discussion.
>
> Respondent D (pseudonym): Critical thinking is a reflective thinking and analysis based on evaluation and good judgement.

Function of critical thinking in the classroom

Under this variable, responses were categorised into three thematic groups: develop and understand; relationship and experience; and creativity and innovation.

The majority of respondents were of the opinion that with critical thinking students developed critical thinking capabilities, and they were aware of this development, which resulted in a stronger student-teacher relationship. The teachers all noted that there is a track record of success for students because they are able to continue to be inquisitive and ask more probing questions during the teaching process in the learning environment. Exemplar responses in this category include:

> Respondent E (pseudonym): It enhances involvement and promotes students-teacher relationship.
>
> Respondent F (pseudonym): Help better understanding. It avoid any kind of negative or limiting beliefs. It increase the quality of life.Help to communicate well with others.

The rest of the respondents said that critical thinking opens the door to innovation that is relevant to all fields of study and, in addition, provides evidence-based responses to the questions raised. Exemplar response in this category include:

> Respondent G (pseudonym): Is provided creativities and let to innovation which is applicable to all subjects of studies, also provide evidence based answers to the study.

How critical thinking occurs in the classroom and how students learn

Under this variable responses were categorised into two thematic groups: asking questions, and contributions to learning.

The majority of respondents believed that critical thinking takes place in the classroom when students are asking questions, discussing in a courteous manner, evaluating, analysing, interpreting, developing arguments and trying to solve issues or reach conclusions about a concept. Exemplar responses in this category include:

> Respondent H (pseudonym): Yes. I easily find out through the kind of question they asked?

> Respondent I (pseudonym): I find out by using group discussion, question and answers.

The rest of the respondents said that critical thinking takes place through the contributions and collaboration of students. An exemplar response in this category include:

> Respondent J (pseudonym): Yes it does. By the contribution and sharing of learners.

The respondents who participated in the study had two distinct perspectives on what teachers think about critical thinking or what constitutes critical thinking among the students in the learning environment. The vast majority of them were of the opinion that critical thinking was a mode of thinking that would assist students in taking pleasure in the process of acquiring new knowledge and resulting in student-centred learning. This shows that critical thinking has the potential to be used as a technique to stimulate the thought processes of students and assist them in achieving improved learning results in the learning environment.

This finding is in consonance with the assertion by Hartikainen, Rintala, Pylväs and Nokelainen (2019) that student-centeredness and activating instructional procedures have been linked to improved student learning. More recently, generic working life skill or competence development has been linked to improved student learning because of the importance of these skills when a person transitions from higher education to the labour market. Generic working life skills have been viewed as important learning goals because of their importance.

The findings further agree with those of Okebukola (2015), in which constructivism was dominant in the learning paradigm among the respondents, and that saw learning as the construction of new knowledge in relation to the students' prior knowledge, which the learners demonstrate in the classroom. Constructivism criticises the notion that students acquire knowledge from external sources and emphasises comprehension over memorisation (Baviskar, Hartle, Todd, & Whitney, 2009). An additional characteristic of a 'deep approach' to learning is an emphasis on comprehension over memorisation. Depending on the constructivist theory,

learning can be viewed as either individual cognitive processes (cognitive constructivism) or social co-construction of knowledge (social constructivism), or as a combination of the two (Windschitl, 2002).

The findings show that the respondents were more concerned with students obtaining knowledge and learning how to reason and analyse than reflecting on and evaluating the content that they were taught. However, it is interesting to note the use of the word 'reflection' in their definition of critical thinking, which agrees with Gbeleyi, Okebukola, Potokri, Onoriode, Aribisala and Shabani's (2022) view that the ability to analyse and reason is not the only important component of critical thinking but that reflection and imagination are also critical thinking skills that the students showed. Although obtaining knowledge and learning how to reason and assess are vital, these should not overshadow the requirement for higher-level cognitive thinking, that is, critical thinking, which comprises analysis, synthesis and evaluation, as indicated in Bloom's definition of critical thinking (Gbeleyi, Okebukola, Potokri, Onoriode, Aribisala, & Shabani, 2022; Adewusi, 2021).

How do teachers assist in students' critical thinking skills?

Taking this question, "How do teachers assist students' ability to think critically in the learning environment?" in order to provide an answer to this, we used these two categories of questions in the questionnaire to provide answers: "How do teachers believe that they can encourage students to think critically?" "What specifically do they do or could do to encourage their students to think critically, and what challenges do students confront when their teacher tries to teach them critical thinking? If so, please identify them."

How can teachers encourage critical thinking?

Their responses were categorised into two thematic groups: group discussion, and teacher asking questions.

The majority of respondents reported that encouraging students to engage in critical thinking activities in the classroom had beneficial outcomes. They also believed that students would be able to acquire a deeper grasp of the topics they were studying and apply what they had learnt in the classroom to real-world scenarios if they were taught to engage in critical thinking.

Accordingly, this procedure maximises the outcome of the learning experience for the students because it enables them to get higher results in their courses, improve their performance in class, and become proactive learners and independent thinkers. It does this by the use of questions, encouraging students to work in groups, so stimulating their collective creativity and fostering an environment that is conducive to unrestricted thinking on their part. Exemplar responses in this category include:

> Respondent K (pseudonym): Enco[u]r[ag]ing students to critical thinking simply means inspiring them to question and creating for them an environment which allows thinking freely. Asking questions freely helps students to become better thinkers.

> Respondent L (pseudonym): There should be questions and answers methods as well as used of students center method of teaching and rephrasing.

How do students struggle to learn critical thinking?

The problem that most students face is that expectations are not being clearly interpreted during teaching and learning in the classroom. While the instructor encourages them to work together on projects, some students would rather do their assignments on their own. Some students require enough time to brainstorm and find a solution to a particular problem; if they are deprived of this time, it could have an impact on their grade. Exemplar responses in this category include:

> Respondent M (pseudonym): Hard to contribute and absence of some weak student or low turn up in the classroom by some students.

> Respondent N (pseudonym): They usually don't want to think most especially if it's involves abstract task.

As a result, most respondents believed that it was essential for critical thinking to be accomplished in the classroom. They also believed that instruction in critical thinking was necessary in order to assist students in achieving higher levels of success in the classroom. The study by Adewusi, Odekeye, Egbowon, Rahman, and Akindoju (2020) and that by Hartikainen, Rintala, Pylvas, and Nokelainen (2019) support the findings that the majority of respondents believed that students displayed critical thinking when they were able to perceive facts, thoughts and ideas from a new perspective and defend these ideas using sound reasoning. It is crucial to be able to demonstrate skills such as contemplation, inquiry, interpretation and analysis. According to the findings of this investigation and the conclusions drawn from the study, it does not appear that these students have been able to acquire all of the abilities essential for critical thinking, despite the perception of their teachers that they are already engaging in this style of thinking. This would imply that the level of critical thinking that students exhibit depends on how well their teachers understand the skills required for this kind of thinking and how effectively they teach those skills.

Furthermore, the finding agrees with that of Hartikainen, Rintala, Pylvas and Nokelainen, (2019) that there is a possibility that teachers do not even know how to think critically and, as a result, their assessment of the quality of critical thinking among students may be restricted by their own limited capacity to think critically. In addition to this, teachers can further confound students by leading them to believe that critical thinking is just rephrasing the information that they have been given in their own terms, thereby derailing them from active learning.

Concerns have also been expressed regarding the efficacy of active learning and the reliability of the evidence. These concerns are associated with various definitions of active learning and are valid indicators for measuring related (positive or negative) learning outcomes (Awaah, Oladejo, & Suwadu, 2023). Academic institutions have advocated the use of active instructional methods as a result of the belief that active learning enhances learning.

Active learning and empirical research on its effects on learning outcomes require systematic attention under these conditions (Adewusi, Odekeye, Egbowon, Rahman, & Akindoju, 2020; Hartikainen, Rintala, Pylvas, & Nokelainen, 2019).

The findings of the study showed that the respondents believed their students to be capable of critical thinking when they were able to express what they had learnt using their own words and rephrase what they had learnt, which agrees with those of Namayanja, Akugizibwe, Kajunguri, Katende, and Bazeyo (2022). Because these students would consider paraphrasing to be the same as critical thinking, it is possible that they do not genuinely know how to think critically. It would appear that the students were unaware of the necessity for them to think critically since they were not exposed to this way of thinking and because they were not taught. The respondents had the impression that the students were not encouraged regarding the process of critical thinking because they did not answer particularly well when they were challenged to think critically. This would imply that aiding educators is quite important, as is recognising the need to regularly incorporate critical thinking into the instruction they provide for their students.

The classroom setting can present some difficulties, as reported by some respondents, and this is in support of findings by Awaah, Oladejo and Suwadu (2023), which urge that strategies for teaching critical thinking should be integrated into the lessons so as to support a seamless flow of the lesson while also teaching critical thinking to students. This would allow for the maximum amount of learning to take place throughout each class. The fact that the respondents regarded their students as passive and restrained during conversations to increase critical thinking may reflect that students' and teachers' opinions of the learning that is taking place in the classroom are extremely different from one another. This suggests that the perspective from which teachers observe their learners will have an effect on the teaching and learning that are imparted in the classroom.

The findings of this study are in support of Okebukola, Shabani, Ntwari, Nineza and Ndikuryayo's (2023) statement that there are three essential concepts regarding perception. In addition to the stimuli, experience, intention and social needs, are factors that influence perception. Second, rather than being passive and indifferent, the perceiver actively selects information and an initial solution while something is being perceived. This assists the perceiver in determining what is actually occurring. Perception is a more complex mental process that allows a person to create a model of their environment, allowing them to anticipate future events and prepare accordingly. As a result, physical stimulation of a person's sensory receptors provides only a limited amount of information, making comprehension impossible without the aid of additional information gained from memories and prior experiences. If they are correctly comprehended, physical stimuli become a person's perceptions.

What role do teachers play in teaching critical thinking?

Taking this into account, how do teachers perceive the role they must play in introducing critical thinking to their students? We used these three categories of questions in the questionnaire

to provide answers: Do you believe your students appreciate your lessons? What is your reasoning? Do you believe you must provide all of your students with knowledge in order for them to understand your subject? What is your reasoning? Do you believe you would be able to incorporate critical thinking into your lessons if obliged to do so?

According to the opinions of some of the respondents, one of the most significant factors in making students like their coursework is giving them explanations to which they can relate. The respondents had the impression that this facilitated critical thinking among learners while they were in class. In addition, the respondents were of the opinion that the students' capacity to take pleasure in their classes was contingent on a variety of factors, including their level of comprehension and connection with the material that was presented, their level of interest in the subject matter of the lesson, and whether or not they were adequately prepared to learn the lesson. Below is an exemplar response in this category:

> Respondent O (pseudonym): Yes because I make my class interactive and more of media mediated instructions.

The findings of the study show that the majority of the teachers believed that their classes are entertaining for the students they are teaching. They also believed that the degree to which the instructors themselves enjoyed the courses they were responsible for instructing was a useful indicator. In addition, the students' independent preparations for the content that was to be learnt would strengthen their capacity for critical thinking. Accordingly, the study supported the view that the students appear to take pleasure in the content that they were doing (Adewusi, Omosalewa, Usman, & Egbowon, 2022).

The students had the expectation that the lecturers would provide notes that contained all of the information that they needed to know in order to respond appropriately to the questions that would feature in their exams. Students who attended private educational institutions of higher learning typically had the expectation that they would be treated like customers who were purchasing education (Namayanja, Akugizibwe, Kajunguri, Katende, & Bazeyo, 2022). As a result, learners had the expectation that the education provider would supply the information rather than require them to locate it on their own. As a consequence of this practice, the instructors at the private institutions had a more difficult time encouraging students to develop their critical thinking skills.

This finding implies that respondents are confident that they can apply critical thinking in their classrooms. Many of them argued that students should be empowered to pick what they choose to learn and encouraged them to solve problems using their own methods. The respondents' conviction that students rely on their teachers to give them all the necessary study materials, however, seemed to temper this confidence in their capacity to exercise critical thinking in the classroom. Teachers view learners' inability to comprehend compulsory reading materials as an impediment to developing their critical thinking abilities.

In addition, the respondents lacked confidence in teachers' ability to think critically, as reported by Agaba (2022). These perceptions may also reflect how individuals perceive

themselves and their students. These respondents may actually be information disseminators as opposed to mediators. They may not know how to encourage learners to think critically because they may not be able to think critically themselves. This finding may suggest that the method teachers use to manage their classrooms affects the way in which they engage with students and the way in which students learn, which supports Awaah, Oladejo, and Suwadu's (2023) study. In addition, a teacher's confidence, sense of self-efficacy and self-respect may impact their ability to influence the thinking of their students in a learning environment.

Conclusion

The results indicate that teachers believe they teach students critical thinking. They believe that critical thinking will provide students with the intellectual stimulus necessary for learning. They consider learners' capacity to articulate things in their own words as proof of their critical thinking. However, this view is debatable because logical reasoning and problem-solving skills are highly valued. It is possible that a student's use of novel techniques to solve problems is not indicative of critical thinking but rather of the process the student uses to achieve comprehension of the supplied content. This appears to suggest that teachers may not have a solid grasp of critical thinking and how to inspire students to think critically. This lack of comprehension of the notion also includes their notion of critical thinking. Many of them link critical thinking to intellectual stimulation but are unable to specify the necessary forms of these stimuli.

The findings also indicate that teachers lack confidence in their learners' ability to acquire critical thinking skills independently. Many of them view their students as unwilling to share and lacking in the manipulation of language to effectively express their opinions. The tendency of teachers to provide the necessary materials and the requirement to complete their syllabi show that they are not always able to incorporate critical thinking into their courses. Many teachers believe that their students do not enjoy class topics that involve critical thinking. Teachers appear to be at odds with their desire to encourage critical thinking in their students and require them to accomplish the course requirements. The relevant regulating and licensing authorities of these institutions may be unaware of the needs and time limits imposed on teachers, creating a conundrum. Gbeleyi, Okebukola, Potokri, Onoriode, Aribisala and Shabani (2022) emphasise that despite the importance of content delivery in higher education, it frequently discourages active learning of critical thinking among students. This tendency for teachers to provide all necessary learning resources, plus the requirement to complete course outlines, would suggest a highly planned approach to instruction.

The results suggest that teachers' comprehension of the notion of critical thinking must be enhanced so that they may effectively educate students to think critically. However, there appears to be a lack of comprehension regarding the requirements necessary to help learners think critically. Many teachers may believe they are fostering students' critical thinking, yet they may be focusing on students' comprehension of the material instead of the subject matter (Richard, 2022; Adewusi, Egbowon, & Akindoju, 2021). When attempting to incorporate critical

thinking into their teaching, teachers should also assess their present instructional approaches and their own personal values. Critical thinking is an ongoing learning process that must be incorporated into regular instruction. With the existing limits and demands placed on instructors, the viability of this procedure is doubtful. Time constraints may prevent teachers from properly incorporating critical thinking into their lessons, and it is necessary to conduct additional research on how teachers perceive satisfying expected standards.

Suggestions

In addition to academic achievement, it is important to investigate the impact of critical thinking skills on success in the workplace. In addition, the curricula of higher education should be revised to include either curricular or extracurricular activities pertaining to critical thinking skills, as a lack of fundamental learning concepts such as thinking, analysis, synthesis and creativity could cause future employees to develop poorer job skills, jeopardising the productivity and innovation of their employers. Therefore, university students should be taught these higher-order cognitive skills through a re-evaluation of teaching methods.

The following strategies may be implemented to assist students in acquiring critical thinking skills in higher education:

Classroom evaluation techniques (CAT): This is to enable students to participate in classroom discussions through brainstorming activities. Some universities use active learning techniques, such as problem-solving, to increase student participation and foster the development of critical thinking.

Collaborative learning strategies (CLS): This activity calls for increased teacher supervision. Students are anticipated to discuss a given topic or engage in creative thinking activities among themselves in the classroom.

Case study (CS): Students are expected to draw conclusions from the case provided. Students will hone their critical thinking skills as a result of their use of diverse perspectives on what they know about the case.

Developing conversation questions (DCQ): At the conclusion of the lesson, the educator poses certain questions to the students, which are then discussed. The students then generate follow-up or new questions, which they pose to their peers or the teacher. This type of instruction fosters critical thinking abilities.

Conference-style learning (CsL): This method allows students to develop their self-confidence as they deliver their speeches on stage. Students are exposed to various points of view. In conference-style learning, the instructor is expected to take on the role of facilitator by assigning readings and guiding discussion questions.

Pair work (PW): Students are expected to know about the characters in the dialogues they are dealing with in order to solve the problem or mystery, making this technique more akin to a thinking exercise. Therefore, the students have developed their critical thinking skills by utilising their competence.

Creating ambiguity (CA): This technique requires students to find a solution to a given ambiguous scenario. They are urged to engage in in-depth learning.

Declaration

Not applicable.

Funding

No funding was received for this study.

Conflict of interest/competing interests

There is/are no conflicts of interest.

Availability of data and material for data transparency

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

References

Adewusi, M. A. (2022). Learning analytics in a designed and developed learning platform during the COVID. NARST. *95th Annual Conference of NARST, Vancouver, British Columbia, Canada*. https://www.researchgate.net/publication/360774116_Learning_Analytics_in_a_Designed_Learning_Platform_during_the_Covid-19_Pandemic

Adewusi, M. A., Egbowon, S. E., & Akindoju, G. (2022). COVID-19 pandemic: An indigenously designed platform to the rescue. *Journal of Computer Science and Its Application*, *28*(2), 33–44. https://doi.org/10.4314/jcsia.v28i2.4

Adewusi, M.A., Egbowon, S. E., Abodunrin, I., & Rahman, K. (2021). The Combined Culturo-Techno-Contextual Approach (CTCA) and Peer-Led Team Learning (PLTL) strategies to teaching and learning machine language in secondary schools in breaking its difficulty. *Advances in Multidisciplinary and Scientific Research Journal*, *29*, 141–154. https://doi.org/10.22624/aims/abmic2021-v2-p11

Adewusi, M. A., Odekeye, T., Silas, E. E., Rahman, A., & Akindoju, O. G. (2022). Requirement engineering in learning analytics (machine learning) in an indigenously designed learning platform: A case study. *Advances in Multidisciplinary and Scientific Research Journal*, *1*, 119–126. https://doi.org/10.22624/aims/rebk2022-p112

Adewusi, M. A., Omosalewa, M., Odekeye, O. T., & Akindoju, O. (2022). Exploring the teaching and learning of machine language: A novel use of culturo-techno-contextual. https://doi.org/10.22624/AIMS/iSTEAMS/LASUSTECH2022V30P22

Adeyemi, K. (2001). Equality of access and catchment area factor in university admissions in Nigeria. *Higher Education*, *42*(3), 307–332. https://doi.org/10.1023/a:1017965905830

Agaba, R. B. (2022). *Staff training programmes and teachers' job performance in selected secondary schools of Kanungu town council, Kanungu district*. https://idr.kab.ac.ug/handle/20.500.12493/646

Awaah, F., Oladejo, A. I., & Suwadu, B. (2023). Quality here, quality there, quality everywhere: Comparing the higher education quality assurance agencies in Ghana, Nigeria and

Burundi. *Lagos/Paris/Washington 2023*, 439. https://www.academia.edu/download/99970722/Quality_Assurance_in_Higher_Education_Across_the_World_Book.pdf#page=441

Baviskar, S. N., Hartle, R., Todd, & Whitney, T. (2009). Essential criteria to characterize constructivist teaching: Derived from a review of the literature and applied to five constructivist teaching method articles. *International Journal of Science Education*, *31*(4), 541–550.

Chankseliani, M., & McCowan, T. (2021). Higher education and the sustainable development goals. *Higher Education*, *81*(1), 1–8.

Dao Thanh Binh, An Le & Hockey, J. (2022) Critical thinking in the higher education classroom: knowledge, power, control and identities, British Journal of Sociology of Education, 43:1, 140-158. doi: 10.1080/01425692.2021.2003182

Duron, R., Limbach, B., & Waugh, W. (2006). Critical thinking framework for any discipline. *International Journal of Teaching and Learning in Higher Education*, *17*(2), 160–166. https://www.isetl.org/ijtlhe/pdf/ijtlhe55.pdf

Federal Republic of Nigeria. (2004). National Policy on Education. Abuja: NERDC.

Gbeleyi, O. A., Okebukola, P. A., Potokri, O. C., Aribisala, B. S., & Shabani, J. (2022). Enhancing students' attitude and gender equity in STEM using culture, technology, humour, context to logic gate. *Social Science Research Network*. https://doi.org/10.2139/ssrn.4079286

Hartikainen, S., Rintala, H., Pylväs, L., & Nokelainen, P. (2019). The concept of active learning and the measurement of learning outcomes: A review of research in engineering higher education. *Education Sciences*, *9*(4), 276.

Jacob, W. J., Nsubuga, Y. K., & Mugimu, C. B. (2009). Higher education in Uganda: The role of community colleges in educational delivery and reform. In Raby, R. L., & Valeau, E. J. (eds.), *Community college models* (pp. 335-358). Springer Science and Business Media B.V.

Jaiyeola, E.F. (2020). *Lecture on conducting mixed methods research* [Video]. https://youtu.be/13pP9QfLXt8. https://youtu.be/13pP9QfLXt8

Kasule, G. W., Mugizi, W., & Rwothumio, J. (2022). *Satisfaction with human resource management practices and job performance of academic staff in public universities in Uganda: a case of Kyambogo University*. http://kyuspace.kyu.ac.ug/handle/20.500.12504/1258

Le, D., & Hockey, J. (2021). Critical thinking in the higher education classroom: Knowledge, power, control and identities. *British Journal of Sociology of Education*, *43*(1), 140–158. https://doi.org/10.1080/01425692.2021.2003182

Nabayego, C., & Itaaga, N. (2014). How university education in Uganda can be improved to prepare economically productive graduates. *Asian Journal of Social Sciences and Management Studies*, 1(2), 62–70.

Namayanja, P., Akugizibwe, E., Kajunguri, D., Katende, R., & Bazeyo, T.E. (2022). Factors affecting students' performance, enrolment and retention in science subjects in secondary schools in Uganda: A case study of Kigezi region of Uganda. *Journal of the National Council for Higher Education*, *10*(1). doi: https://doi.org/10.58653/nche.v10i1.13

Obanya, P. (1999). *Higher education for an emergent Nigeria: Faculty of Education, University of Ibadan 5th Anniversary Lecture, Ibadan*. Heinemann Education Books (Nigeria Plc.).

Okebukola, P.A., Shabani, J., Ntwari, I., Nineza, C., & Ndikuryayo, F. (2023). Reasons explaining the difficulties of understanding the concepts in the study of general chemistry in Burundi

universities. *Applied Mathematical Sciences*, *17*(1), 1–14. http://www.m-hikari.com/ams/ams-2023/ams-1-4-2023/p/niterekaAMS1-4-2023.pdf

Olweny, M. (2011). Determining the unit cost of higher education: The case of the faculty of the built environment at Uganda Martyrs University.

Onyewuchi, F., Adewusi, M. A., Okebukola, P. A., Odekeye, T., Gbeleyi, O. A., & Awaah, F. (2021). *Breaking the backbone of difficult concepts in the new secondary school physics curriculum in Africa*. https://doi.org/10.22624/aims/isteams-2021/v28n3p7

Richard Bens, A. (2022). *Staff training programmes and teachers' job performance in selected secondary schools of Kanungu town council, Kanungu district* (Doctoral dissertation, Kabale University).

Riddell, T. (2007). Critical assumptions: Thinking critically about critical thinking. *The Journal of nursing education*, *46*(3), 121–126. https://europepmc.org/article/med/17396551

Sicherman, C. (2008). Makerere's myths, Makerere's history: A retrospect. *Journal of Higher Education, 6*(1), 11–39.

Windschitl, M. (2002). Framing constructivism in practice as the negotiation of dilemmas: An analysis of the conceptual, pedagogical, cultural, and political challenges facing teachers. *Review of Educational Research*, *72*(2), 131–175.

Arslan, R., Gulveren, H., & Aydin, E. (2014). A research on critical thinking tendencies and factors that affect critical thinking of higher education students. *International Journal of Business and Management*, *9*(5), 43. https://pdfs.semanticscholar.org/e25f/4fd57471cf6eb96316eff0b11886c78624fe.pdf

James, R. (2015). Evaluation of critical thinking in higher education in Oman. *International Journal of Higher Education*, *4*(3), 33–43. https://eric.ed.gov/?id=EJ1088728

Burns, M., Bally, J., Burles, M., Holtslander, L., & Peacock, S. (2022). Constructivist grounded theory or interpretive phenomenology? Methodological choices within specific study contexts. *International Journal of Qualitative Methods*, *21*, 160940692210777. https://doi.org/10.1177/16094069221077758