# Leadership Roles in Enhancing Learners' Critical Thinking Skills: Evidence from Northern Tanzania Secondary Schools

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**Abstract.** This study assessed the role of school leaders in promoting critical thinking skills, it also examined teachers' understanding of the concept of critical thinking skills, its relevance to learners, and the pedagogical strategies used in selected secondary schools in Northern Tanzania. An explanatory sequential mixed-methods design was employed, involving 100 randomly selected teachers and five heads of schools selected purposefully from five public secondary schools. Data was collected through interviews and questionnaires, with quantitative analysis conducted using SPSS and qualitative analysis done thematically. Findings revealed that school leaders indirectly play significant roles in enhancing critical thinking skills by fostering environments that encourage innovative teaching and support the competence-based approach. Teachers generally understood key attributes of critical thinking, including attentive listening, independent thinking, analytical reasoning and informed decision-making. Despite growing awareness, many teachers still use rote methods, rarely applying learner-centered strategies like inquiry-based learning, creative writing and differentiated instruction; therefore, adopting participatory approaches is recommended to strengthen students' critical thinking. Additionally, guided by the philosophies of John Dewey, Paulo Freire, and Julius Kambarage Nyerere, the study appeals to school leaders to strive towards moving from theory to practical leadership strategies that embed critical thinking as a driver of socio-economic transformation. National-level intervention strategies, such as in-service training for teachers and policy prioritization of critical thinking, are urgently needed. These measures will empower school with resources to support innovative pedagogy, break the cycle of "business-as-usual" teaching, and ensure learners' holistic development while advancing national goals.

**Keywords** Leadership roles, Critical thinking, practical practices, pedagogical strategies, learner centered approaches.


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# 1 Introduction

In the world, which is more than ever, undergoing an extraordinary technological revolution, generally referred to as the 4th Industrial Revolution (4IR), learners indispensably require critical thinking skills to cope with life and its challenges. It is an undeniable fact that the Fourth Industrial Revolution (4IR) is transforming the social realities of humanity, including education, largely due to advancements in technology and increased access to global knowledge. In the workforce, 4IR has created new career opportunities and fostered international collaborations, among other benefits. Despite these advantages, 4IR has also introduced several challenges, such as information overload, the digital divide, ethical dilemmas in technology, misinformation, and complex global problems. Addressing these challenges requires learners to develop critical thinking skills to ensure resilience, innovation, adaptability, and ethical participation in a technology-driven world. To navigate life in this context, individuals must cultivate critical thinking to engage effectively with technology. School leaders, therefore, have a crucial responsibility in shaping academic environments that foster the development of these essential skills.

In this study, school leadership refers not only to those with assigned leadership responsibilities but also to all individuals who can influence others by initiating activities that inspire learners to develop the skills needed to improve their own lives and contribute to society. It also involves providing the teaching and learning resources necessary for effective instruction [1, 2]. In other words, it refers to those who believe in and strive to make a difference in the lives of their learners by empowering learners, educators, and societies to innovate, adapt, and thrive in a rapidly evolving, technology-driven world. Understood within this perspective, school leaders are expected to adopt various strategies that can contribute to enhancing learners' analytical skills, which are important to cope with life in the era of advanced technology and a competitive job market. It is unfortunate that, as found out by the current study, despite global recognition of the importance of critical thinking, Tanzanian schools continue to rely on rote memorization as a teaching approach to achieve high examination results. This reliance on rote learning limits students' engagement in hands-on, reflective, and problem-solving activities, which are crucial for building analytical, teamwork, and leadership skills necessary for critical thinking [3].

As argued by various scholars, critical thinking is generally conceptualized as the capacity to analyze, assess, synthesize, and meaningfully apply knowledge to real-world contexts [4, 5]. It encourages students to become independent thinkers, challenge assumptions, and approach problem-solving with creativity. These skills are crucial for individual development, career advancement, and positive societal contributions, especially in today's ever-evolving world. As catalysts for educational change, school leaders must create favorable conditions for teachers to integrate critical thinking approaches. This includes providing resources and opportunities for professional

growth [6]. Furthermore, as instructional leaders, they must ensure that teachers adopt active, student-centered pedagogical approaches such as experiential learning, cooperative activities, and inquiry-based teaching which can significantly cultivate students' reflective and analytical thinking skills.

Although the Government of Tanzania and various educational stakeholders have made strategic efforts to promote critical thinking in teaching and learning, many educators still rely on didactic approaches that encourage students to remain passive recipients of knowledge, thereby limiting their critical engagement. As a result, schools that do not prioritize critical thinking risk making education a dull and insignificant experience, failing to adequately prepare students for real-life challenges. This situation is concerning, as the demands of life in the 21st century require critical thinking skills more than ever. Moreover, students are increasingly expected to make informed decisions, critically analyze societal trends, and actively engage in global problem-solving [7]. Hence, school leaders must fulfill their role as instructional leaders by ensuring that teachers shift from merely transmitting knowledge to nurturing learners who are reflective, innovative, and capable of lifelong learning [1]. This means that school leaders are to ensure that education being offered in their school is emancipatory. They are to do this by promoting and supporting learner-centered pedagogical approach. Educators should be motivated to instruct in a way that encourages students to engage actively in their learning by posing questions, assessing information, and connecting knowledge to real-world situations. In this way, they enhance learners' analytical skills. This is essential, as meaningful learning depends on learners' ability to question, analyze, and contribute to knowledge production. Hence, school leaders should strive to fulfill their roles in enhancing learners' analytical skills as a prerequisite for life in the Fourth Industrial Revolution and for sustainable national development.

Additionally, as the world becomes more interconnected and society grows increasingly complex, educational systems are called upon to equip students to be adaptable, thoughtful, and resilient global citizens. Scholars therefore emphasize that critical thinking is central not only to personal well-being but to the future of all societies [8]. In Tanzania, as in many other nations, school leadership bears the responsibility of ensuring that schools deliver quality education that prepares and develops the future workforce necessary for the country's advancement. Part of this responsibility involves implementing strategies that strengthen students' critical thinking abilities. Possessing these abilities is essential, as they enable learners to lead meaningful lives and contribute significantly to the well-being of society at local, national, and international levels. However, their effective application remains limited, raising serious concerns about the country's future. Global research highlights the urgent need to foster critical thinking, as it equips individuals to adapt to change, solve complex problems, and drive innovation [9,10]. In Tanzania, however, limited information exists on the specific approaches that school leaders and teachers use to nurture these skills, despite ongoing national efforts to reform curricula and

enhance educational outcomes. It is from this backdrop that this study sought to evaluate leadership roles in enhancing critical thinking skills in learners and to identify strategies that secondary schools in Tanzania can adopt to promote critical thinking. This research was anchored on four principal objectives, namely; to assess the role of school leaders in promoting critical thinking; (b) to examine school leadership awareness on characteristics of critical thinking; (c) to explores school leadership views on the relevance of critical thinking to learners; and (d) to find out about pedagogical strategies employed by school leaders in enhancing critical thinking skills in learners. By addressing these areas, the study seeks to inform school leadership and policy on how to enhance education quality through the cultivation of analytical thinking.

## 2 Literature Review

### 2.1 Leadership Role in enhancing Critical Thinking

School leaders play a critical role in enhancing learners' analytical skills. As a process of influence directed toward achieving shared objectives, including the nurturing of analytical skills, leadership provides the foundation through which educational goals are realized [2]. In this sense, leadership should not be perceived as a fixed set of traits or authoritarian behaviors; rather, it represents a collective social process that nurtures best practices supporting the development of critical thinking [2]. Collaborative perspectives [11] view leadership as a shared responsibility across various school levels, guiding direction and aligning actions with common goals. Such collaboration creates an environment that encourages inquiry-based learning, problem-solving, and active participation, all of which are important aspects for advancing analytical abilities.

In addition, school leaders articulate and safeguard the school's vision and mission, thereby strengthening learner-centered teaching and learning approaches, which are fundamental to promoting critical thinking [12]. They also promote teachers' professional development, an important factor in advancing learner-centered methods, provide resources to support projects and problem-based learning, and encourage collaboration among teachers to share effective practices, a prerequisite for the enhancement of critical thinking [13]. Further, school leaders establish school culture, learning environments, and support systems or policies that directly shape teaching and learning effectiveness [14]. By creating a conducive environment where teachers can effectively adopt learner-centered pedagogies, leaders foster critical thinking skills that

move students beyond rote memorization toward analysis, evaluation, and practical application of knowledge equipping them to make informed decisions and address complex community challenges. Thus, this perspective emphasizes that those entrusted with school leadership play a significant, though often indirect, role in enhancing learners' critical thinking skills.

## 2.2 Characteristics of Critical Thinkers

Critical thinking, rooted in the work of Socrates, Dewey, Piaget, and others [15], is defined by its key characteristics such as; self-awareness, curiosity, creativity, analytical ability, objectivity, effective communication, respect for ideas, decision-making, active listening, and the capacity to determine relevance and draw inferences [16]. In addition, critical thinkers analyse from multiple perspectives and consider alternative solutions before acting[15]. Learners who possess self-awareness are known for their ability to assess their thoughts, select useful ideas, and work confidently without overreliance on supervision [17]. They monitor their own activities, construct logical evidence-based arguments, and engage actively in learning [18,19]. Likewise, those who possess intellectual curiosity tend to question, analyse, and link ideas to real-life situations [19]. Curious learners interpret incomplete data, make inferences, and generate innovative solutions [18], excelling in research, analysis, and problem-solving [20]. These characteristics are generally detected and cultivated by use of debate, creative writing, synergy, and panel discussions as a technique for teaching and learning.

## 2.3 Relevance of Critical Thinking Skills to Learners

Critical thinking skills are essential for learners at all levels, serving as a foundation for lifelong learning and preparation for the job market. Scholars continue to emphasize that critical thinking goes beyond academic rhetoric, highlighting its increasing importance in the workforce and in an increasingly dynamic global context [21]. Similarly, other scholars have also argued that critical thinking enables learners to become responsible, innovative, and adaptive global citizens in a technology-driven era [22]. Research further shows that these skills enhance comprehension, improve academic performance, stimulate curiosity, and foster exploration [19,23]. thereby nurturing a commitment to lifelong learning [10]. Furthermore, early acquisition of critical thinking skills also prepares learners for a successful transition to, and achievement in, advanced studies at the university level [24]. Beyond academic gains, it prepares learners to address societal issues with creativity [10], promotes innovation and problem-solving, and contributes to socio-economic growth through employment and self-employment[22]. People equipped with analytical skills add value in workplaces and communities, they uphold ethical standards, and engage actively in civic initiatives [25, 9].

## 2.4 Strategies for Developing Critical Thinking Skills

Educators should not assume that students completely lack critical thinking skills [26]. Rather, they should recognize the level students have reached and work to advance these skills using learner-centered strategies [19]. Key elements of such strategies include the Questioning Technique, which involves formulating well-structured and thought-provoking questions that stimulate analysis and reflection [27]. In this approach, teachers should encourage active student participation by asking higher-order questions, particularly those that begin with "how" or "why"[28]. Additionally, students should be motivated to inquire about how and what they are learning, which promotes self-evaluation [23]. Moreover, learner-centered instruction, which emphasizes active engagement, allows students to build upon their existing knowledge, learn through collaboration and assume responsibility for their own learning [29,30, 10]. Other techniques may consist of group discussions, peer teaching, research, and question-driven learning [31, 32]. Integrating contemporary social issues can also foster creativity and societal involvement [1]. Another strategy is the discussion technique, which requires students to articulate and clarify their thoughts [33], thereby strengthening both confidence and comprehension [34]. Well-structured discussions and debates further promote self-reflection, analytical thinking, synthesis, and the ability to present arguments all of which is referred to as critical thinking [23].

Hence, considering key responsibilities of school leaders in promoting analytical skills, among learners and techniques highlighted in the literature, it is important to recognize that leaders must create a supportive and conducive learning environment that enables teachers to effectively implement these approaches. Among their key responsibilities are developing and clearly communicating a vision, providing opportunities for professional growth, encouraging teamwork, ensuring the availability of learning resources, and nurturing a positive school culture. They must also establish mechanisms to evaluate both the existence and progression of analytical skills among learners. Moreover, as custodians of their schools, leaders are responsible for ensuring that efforts to promote analytical thinking are consistent and effective.

## 3 Methodology

A mixed-methods approach, guided by an explanatory sequential research design, was adopted. Data were collected in two distinct phases, beginning with quantitative data collection followed by qualitative data. As noted by previous researchers, this design goes far beyond simply collecting two types of data [35]. Rather, it involves the deliberate integration of qualitative and quantitative data, which allows researchers to refine and deepen the interpretation of quantitative findings by complementing them with qualitative insights. This process contributed to a more comprehensive understanding of how school leaders contribute to enhancing analytical thinking skills.

Thus, data collection involved two field visits. During the first visit quantitative data were gathered to identify awareness indicator of analytical skills and the extent of school leaders' awareness. The second visit focused on qualitative data collection, which provided deeper explanations and contextual understanding of the quantitative results. Together, these two phases enhanced the researchers' understanding of both the study topic and the study area.

The explanatory sequential design supported a structured approach for data analysis, with quantitative and qualitative data examined independently. This design enabled a clear presentation of findings from each method before integrating the results. The study sampled 100 teachers from five secondary schools in Northern Tanzania. Stratified simple random sampling was used to ensure balanced gender representation among teachers. To meaningfully examine leadership roles in enhancing critical thinking, purposive sampling was used to select study area and secondary schools that had been in operation for at least ten years and the schools that had well organized leadership structures. Additionally, a purposive sampling approach was used to select heads of schools based on the length of their leadership experience. Data collection instruments included questionnaires and interview guides, and a pilot study was carried out to assess the validity and reliability of the instruments, after which quantitative data were analyzed using SPSS (version 21) and qualitative data were analyzed thematically through critical interpretation, categorization, and the development of themes and sub-themes. To enhance the credibility of the findings, participants' voices were directly captured at various points in the qualitative phase, providing first-hand perspectives and strengthening the overall trustworthiness of the study.

## 4 Results and Discussion

Conducting this study during the 4th Industrial Revolution, which demands critical thinking for coping with life, was eye-opening. This is because as emphasized by previous scholars critical thinking extends beyond the classroom, serving as a crucial life skill necessary for lifelong learning [36]. Moreover, critical thinking is also important for overcoming the challenges of today's competitive world, requiring independent and reflective thought [37]. It is against this background, the study explored how educators in selected secondary schools in Northern Tanzania promote critical thinking.

### 4.1 The Role of School leadership in Promoting Critical Thinking

School leadership is paramount in enhancing critical thinking. In examining how school leaders enhance critical thinking skills, open-ended interviews with heads of schools revealed that leadership plays a central, though often indirect, role. One interviewee

explained, “As a leader in my school, I have the power to influence the school’s vision, mission, and culture. At the same time, I also influence teachers’ instructional practices and by doing so, I contribute to enhancing critical thinking” (Interviewee, 2024). The participant stressed that the school vision must prioritize critical thinking as an expected learning outcome. Other leaders described themselves as instructional leaders, fostering cultures of transparency, inquiry, and innovation where both teachers and students are encouraged to question and express ideas. Furthermore, other school leaders emphasized their responsibility to ensure the availability of resources, including technological tools, that support critical thinking. This finding aligns with researchers whose findings indicated that leadership promotes critical thinking by fostering supportive and diverse learning environments [38]. Another participant noted they promote critical thinking by encouraging teamwork among both teachers and students and by leadership monitoring classroom practices that enforce critical thinking. This finding is consistent with [39], who identified pedagogical approaches as vital leadership roles in nurturing critical thinking. Similarly, other participants viewed their role in promoting critical thinking as embedded in their core responsibility of ensuring quality education. They explained that activities such as organizing teacher professional development through workshops and seminars, encouraging participatory teaching approaches, and monitoring teaching and learning are implemented to empower teachers and students, thereby enhancing critical thinking. Although only a few examples are mentioned here, the findings indicate that school leaders play key roles in promoting critical thinking skills. Additionally, participants, while acknowledging challenges in teacher professionalism, emphasized the importance of strengthening professional development. They noted that enhancing critical thinking requires regular teacher workshops and seminars, as well as the consistent application of participatory teaching methods.

The study’s findings on school leadership in fostering critical thinking align closely with the educational philosophies of Julius Nyerere, John Dewey, and Paul Freire. Nyerere’s philosophy of self-reliance emphasized community-based learning and togetherness (“Ujamaa”), reflected in leadership practices such as promoting participatory teaching and organizing professional development. Similarly, Dewey’s philosophy of progressive education, which stresses experiential learning, resonates with leadership initiatives that encourage workshops and seminars to inspire inquiry and reflective thinking. Freire’s critical pedagogy further supports the role of leadership in cultivating critical thinking by empowering teachers and learners through dialogue and reflection. Thus, effective implementation of these leadership practices, consistent with these philosophies, would make education transformative for both teachers and students, ultimately facilitating the attainment of educational goals.

### 4.2. School Leaders Awareness of Critical thinking Indicators

To assess teachers' awareness of the indicators of critical thinking skills demonstrated by learners, respondents were first asked whether they could recognize students who think critically in their classrooms. Their responses are presented in Figure 1.

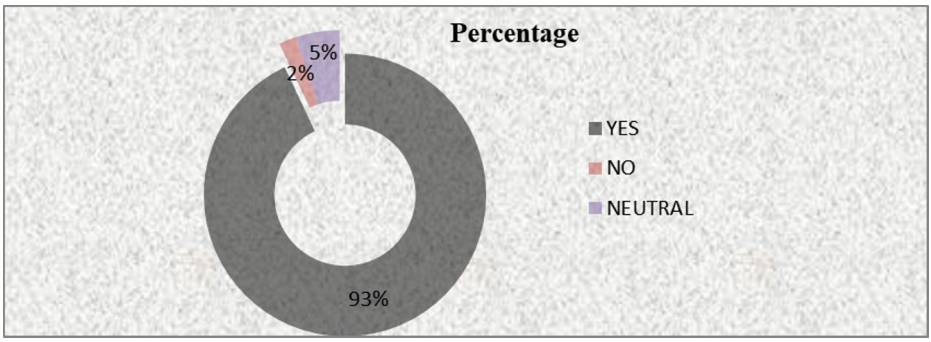


**Figure 1. Awareness of Indicators of Critical Thinking Skills in Learners**

As depicted in Figure 1, 93% of participants responded "Yes" to the question, "Can you recognize students who think critically in your classroom?" Only 2% responded "No," while 5% remained neutral. This indicates that most school leaders can identify the key traits of critical thinking, which is significant because, as noted by Michael Fullan, a renown scholar of educational change, transformation begins with awareness [40]. Similarly, other scholars have also maintained that raising awareness is essential for moving away from the traditional banking model of education, which emphasizes rote memorization rather than the co-construction of knowledge[1]. Recognizing critical thinkers among learners thus provides a foundation for implementing strategies that foster these skills more broadly. The characteristics commonly identified included questioning, independent thought, reasoning, attentive listening, and effective communication. Previous scholars emphasize the importance of asking "how" and "why" questions to promote deeper thinking, while others note that critical thinkers build logical arguments grounded in sound evidence [28,19]. However, interview findings suggest that awareness alone is insufficient, as it is often not translated into practice due to challenges such as limited resources and teacher shortages. School leaders are therefore tasked with addressing these barriers to facilitate learner-centered approaches that encourage innovation and active engagement. One participant explained: "Developing critical thinking requires time for student monitoring. Cooperative methods are effective, but heavy teacher workloads often lead to lecture-based teaching. Government hiring of more teachers could address this challenge.″ (Interviewee, 27th December 2023).

These findings display how heavy workloads hinder efforts to promote critical thinking despite school leaders' and teachers' intentions. While this challenge is widespread, it is potentially mitigated as the number of teaching graduates continues to rise. This underscores the urgent need for government intervention through increased teacher recruitment to reduce workloads and create conditions conducive to developing

critical thinking skills. Such skills are essential in the world where technological advancements and digital transformation are reshaping work, learning, and daily life. Furthermore, critical thinking underpins key workplace competencies such as problem solving, decision making, sound judgment, and effective analysis [15]

Building on these findings, school leaders must view critical thinking not merely as an academic skill but as a core competency necessary for navigating contemporary society and contributing meaningfully to collective well-being. Consequently, leaders should move beyond mere awareness of critical thinking traits to actively promoting their development, ensuring a lasting impact on learners.

To assess reliability and awareness, teachers were presented with a Likert scale (Table 1) featuring five key indicators. They rated each from 1 (Strongly Disagree) to 5 (Strongly Agree), with "Strongly Agree" and "Agree" combined as "Agree," and "Strongly Disagree" and "Disagree" combined as "Disagree," while "Neutral" remained distinct.

**Table 1: Indicators of Critical Thinking Skills**

| Indicators of Critical thinking skills | Agreed *n* (%) | Disagreed *n* (%) | Neutral *n* (%) |
|---|---|---|---|
| They listen very carefully | 86 (86%) | 12 (12%) | 2 (2%) |
| They think independently | 65 (65%) | 26 (26%) | 9 (9%) |
| They are curious and they question | 80 (80%) | 15 (15%) | 5 (5%) |
| They make rational decisions | 73 (73%) | 21 (21%) | 6 (6%) |
| They communicate their ideas clearly | 78 (78%) | 14 (14%) | 8 (8%) |

**Note.** Values represent frequencies followed by percentages in parentheses. Field Data (2024)

Table 1 presents school leaders' and teachers' views on key indicators of critical thinking in students. The highest level of agreement (86%) was for careful listening. In addition, 65% of respondents identified independent thinking as an indicator. Curiosity and questioning were also widely recognized, with 80% of participants acknowledging this trait. Furthermore, 73% highlighted the ability to draw conclusions based on reasoning, while 78% agreed that the ability to express ideas clearly reflects critical thinking. Overall, agreement on these indicators ranged from 65% to 86%, with disagreement spanning 12% to 26%, reflecting varied perceptions of students' critical thinking abilities. Notably, the relatively low agreement on independent thinking, 26% of participants disagreed, raises concern. For as Lekule observes, it is difficulty to develop critical thinking skills in an educational system where rote learning is practiced [1]. The paradox of students being curious and articulate yet not recognized as independent thinkers suggests structural limitations that hinder the full expression of critical thinking. These findings are a wake-up call for educators to reassess teaching strategies to better foster independent thinking skills.

### 4.3 Relevance of Critical Thinking Skills

The significance of analytical thinking in today's world is unquestionable. The Fourth Industrial Revolution has significantly transformed technology and knowledge [41], reshaping societal demands and influencing education. Like other sectors, education systems are pressured to adapt, requiring school leaders to ensure learners develop critical thinking to navigate a competitive global environment and contribute to social and economic development. In this context of rapid transformation, cultivating analytical thinking skills is indispensable for learners' educational advancement and lifelong achievement. It is against this background, the study explored how educators perceive the relevance of analytical thinking. To gather perspectives, open-ended questionnaires were distributed to school leaders, focusing on their views about promoting these skills among students. Respondents were asked to rate the relevance of critical thinking to students' development using a five-point scale: 1 (Very Low), 2 (Low), 3 (Not at All), 4 (High), and 5 (Very High). For analysis, "Very High" and "High" were combined as "High," while "Very Low" and "Low" were grouped as "Low," as summarized in Table 2.

**Table.2:** ***Relevance of Critical Thinking Skills to Students***

| Relevance of Critical Thinking Skills | High *n* (%) | Low *n* (%) | Not at all *n* (%) |
|---|---|---|---|
| Enables students to solve complex problems | 78 (78%) | 14 (14%) | 8 (8%) |
| Enables students to make informed decisions | 75 (75%) | 19 (19%) | 7 (7%) |
| Enables students to build deeper self-awareness | 72 (72%) | 15 (15%) | 13 (13%) |
| Inspires in them a self-search for knowledge | 76 (76%) | 23 (23%) | 1 (1%) |

***Note.*** Values represent frequencies followed by percentages in parentheses.

As shown in Table 2, participants were asked to rate the relevance of critical thinking skills for their students. The findings were notable, with 78% indicating that critical thinking enables learners to address complex problems in academic and real-life contexts, while 75% observed that it facilitates informed decision-making beyond schooling. Furthermore, 72% highlighted its role in enhancing self-awareness, and 76% reported that it motivates students to pursue knowledge. Overall, positive responses ranged between 72% and 78%, while negative responses remained relatively low, between 14% and 23%. These findings affirm that educators regard critical thinking as highly significant, both for academic achievement and future endeavours, underscoring the necessity of cultivating it within education.

Building on this, school leaders need to understand that critical thinking goes beyond an academic skill and is an important competency for navigating the modern era and contributing meaningfully to societal well-being. This perspective aligns with Indrašienė and colleagues [21] who argue that employers increasingly demand graduates with strong critical thinking abilities, especially in a world characterized by rapid change and information overload. Similarly, this study emphasizes that fostering critical thinking among Tanzanian learners is indispensable, not just for academic

achievement, but also to arrive at thoughtful decisions, overcoming complex challenges, and adapting to future demands.

Within the context of the Fourth Industrial Revolution (4IR), the relevance of critical thinking has significantly intensified [41]. Without these skills, students may struggle to address the socioeconomic and technological challenges of contemporary society. Those trained in analytical reasoning are most likely capable to analysing and realising societal issues, often generating innovative solutions that promote community growth. These competencies enhance academic performance, workplace efficiency, and overall national development. Given the unpredictability of future challenges, students need to be prepared for higher order thinking to sustain lifelong relevance of their education, and at the same time enhance adaptability that supports informed decision-making[17]. Similarly, recent educationalists have emphasized that modern challenges demand creativity and flexibility, while others stressed the need for deliberate efforts in preparing students for global transformations[10, 22].

The strong demand for critical thinkers underscores the responsibility of teachers to guide learners in developing this competence. As one participant noted, educational institutions prepare the future workforce, and students should therefore be encouraged to think critically to become innovative, efficient, and adaptable to real-world challenges (Participant, 28th January 2024). The study revealed that critical thinkers are independent learners who go beyond teacher-provided materials. They look for further materials, pursue independent learning, and take an active role in discussions with their peers. Such learners compensate for limited instructional time, ask insightful questions, and often excel academically and in extracurricular activities.

As students advance, critical thinkers make subject choices aligned with their career aspirations. One educator stressed: “This skill is vital because students who think critically perform better in exams and at work, and choose subject combinations aligned with their future careers, unlike those who don’t. We must work hard to foster this skill” (Interviewee, 24th January 2024). These findings underscore the need for school leaders to create supportive environments for critical thinking by ensuring adequate teacher staffing and promoting effective instructional strategies. Ultimately, critical thinking emerges as an essential foundation for meaningful learning.

### 4.4 Strategies for Promoting Critical Thinking Skills

School leaders as overseers of instructional activities and teachers, as key implementers of the school curriculum, were asked to suggest effective instructional methods that can contribute to the enhancement of independent thinking skills among secondary school students. A five-point scale was used: 1 (Strongly Disagree), 2 (Disagree), 3 (Neutral), 4 (Agree), and 5 (Strongly Agree). For analysis, responses marked “Strongly Agree” and “Agree” were combined as “Agree,” while “Strongly Disagree” and “Disagree” were combined as “Disagree,” as shown in Table 3.

**Table-3:** ***Strategies for Promoting Critical Thinking Skills***

| Strategies for Developing Critical Thinking Skills. | Agree *n* (%) | Disagree *n* (%) | Neutral *n* (%) |
|---|---|---|---|
| Think-Pair-Share teaching technique | 78 (78%) | 15 (15%) | 7 (7%) |
| Creative writing | 68 (68%) | 14 (14%) | 18 (18%) |
| Differentiated teaching techniques | 71 (71%) | 18 (18%) | 11 (11%) |
| Problem-based learning technique | 70 (70%) | 15 (15%) | 15 (15%) |

***Note.*** Values represent frequencies followed by percentages in parentheses.

Table 3 presents teaching techniques suggested during this study as means of fostering critical thinking skills. Levels of agreement ranged from 68% to 78%, while disagreement was between 14% and 18%. The most frequently cited method was Think-Pair-Share, identified by 78% of respondents. This approach engages students in reflection, peer discussion, and group sharing, enhancing reasoning, problem-solving, self-esteem, and independence. However, its success depends on careful facilitation: "For effective Think-Pair-Share, the thinking, pairing, and sharing steps must be well-managed. Teaching should emphasize self-directed, cooperative, and inquisitive learning to help students rely on their own thoughts in fulfilling responsibilities" (Interviewee, 31st December 2023).

Creative writing, reported by 68% of respondents, was also considered valuable. It encourages students to analyze, synthesize, and organize ideas into narratives, often through short stories and class presentations. As one educator noted, "We have very few students who can think critically, which contributes to exam failure and lack of creativity after graduation. Critical thinking can be nurtured, but students are often unwilling to engage. Schools should establish writing clubs to promote creative writing and presentations, helping to awaken students' minds" (Interviewee, 29th December 2023). Despite these strategies, some Tanzanian secondary school students remain passive learners due to low motivation and teacher-centered practices. This limits their ability to develop critical life skills. Ciobanu [30] emphasizes that educators should use methods that promote active participation, while other scholars argue that full learner involvement builds accountability and strengthens critical thinking abilities [10].

Differentiated teaching, supported by 71% of respondents, was highlighted as another effective approach. Defined by Hirsch (2013) as tailoring instruction to learner needs, it requires adapting content, methods, and assessments. As one participant explained, "Differentiated instruction requires teachers to adapt methods and activities to learners' diverse needs, ensuring varied approaches that foster critical thinking across abilities, levels, and preferences" (Interviewee, 12th January 2024). Problem-based learning, cited by 70% of respondents, similarly engages students in real-world problem-solving, cultivating higher-order thinking. Questioning was also identified as essential but underutilized. One participant emphasized, "Critical thinking requires deep, evaluative thinking. Hence, teachers should foster it by encouraging daily

questioning with peers and teachers, strengthening students' analytical and evaluative abilities through consistent practice" (Interviewee, 27th December 2023). Hence, as argued by Saleh, the importance of open-ended questioning in fostering critical thinking cannot be overstated; therefore, it should be widely promoted to support learners' overall development [28].

Participants also recommended explicitly teaching to learners about the theory of critical thinking, its relevance, and ways to cultivate it. As one participant stated, "We work hard to create critical thinkers, but success is limited. Few students demonstrate this skill. Perhaps they simply don't know about it. We should teach them its concept, importance, and how to develop it" (Interviewee, 7th January 2024). Overall, these findings highlight the urgent responsibility of school leaders to create supportive environments that empower teachers to adopt proven methods for cultivating critical thinking. As argued by recent educationalists, leadership plays a crucial role in promoting this essential lifelong skill, which is increasingly vital for students to adapt to life and succeed in a rapidly changing economy [1].

## 5 Conclusion and Recommendations

This study explored how school leadership contributes to the enhancement of learners' ability to think independently. The findings revealed that, although often indirect, school leaders impact the advancement of critical thinking among learners by shaping teaching and learning environments that promote innovation, reflection, and competence-based pedagogy, thereby discouraging rote learning. Both school leaders and teachers showed awareness of attributes such as analytical reasoning, independent thought, and informed decision-making. However, practices remained largely traditional, limiting reflective learning. The minimal application of pedagogical approaches such as case-based learning, creative writing, and differentiated instruction reflects a gap between awareness and application. Bridging this requires capacity-building for teachers and consistent support from school leaders modelling learner-centered approaches.

The study recommends that national education authorities prioritize empowering school leaders to champion innovative pedagogies through professional development, adequate resources, and frameworks that embed critical thinking as a central educational outcome. Without such interventions, learners' potential to develop higher-order skills crucial for national development will remain underutilized. Given the urgent demand for competent human resources with critical thinking abilities, the government should employ more teachers and provide schools with necessary teaching and learning facilities. Authorities must also consider the role of school environments and facilities in fostering critical thinking. Furthermore, in-service training is vital to equip teachers with updated pedagogical techniques, helping them move away from outdated methods that emphasize rote memorization. Ultimately, cultivating critical thinking requires the integrated effort of school leadership, teacher

practice, and supportive policies to create classrooms that nurture inquiry, creativity, and problem-solving.

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