

Higher-order Thinking Skills in Teaching Reading Skills at Ethiopian Higher Education: A Qualitative Study on Classroom Practice, and Teachers' Knowledge and Beliefs

Sintayehu G. Gergera

Addis Ababa University, Addis Ababa, Ethiopia

ORCID://orcid.org/0000-0002-8247-2567, e-mail: sintayehu.gmariam@aastu.edu.et

Alamirew G. Tesmand

Addis Ababa University, Addis Ababa, Ethiopia

ORCID://orcid.org/0000-0003-3605-7802, e-mail: alamirewgmariam@gmail.com

The widespread availability of information and rapid technological advancement are among the significant characteristics of this century. These trends of the century have triggered a paradigm shift in educational goals. As a result, nowadays, to produce active citizens capable of meeting the demands and challenges of the century, developing learners' higher cognitive skills has become a priority in modern education. For instance, in modern language education, improving learners' thinking skills has become one of the responsibilities of language teachers. In line with this concept, this qualitative study aimed to explore English language teachers' classroom practices, knowledge, and beliefs about integrating higher-order thinking skills in teaching reading skills. Data were collected from four randomly selected English language teachers at Addis Ababa Science and Technology University using observation and interviews. The study's findings indicate that teachers are less frequently implementing higher-order thinking strategies. However, it has been found that the teachers have a better understanding of higher-order thinking skills and believe that integrating higher-order thinking into teaching English in general and reading skills in particular is among their responsibilities.

Keywords: higher-order thinking skills (HOTS), higher education, teachers' knowledge and beliefs.

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Гергера Г. С.

Научно-технический университет Аддис-Абебы, Аддис-Абеба, Эфиопия
ORCID://orcid.org/0000-0002-8247-2567, e-mail: sintayehu.gmariam@aastu.edu.et

Тесманд Г.А.

Научно-технический университет Аддис-Абебы, Аддис-Абеба, Эфиопия
ORCID://orcid.org/0000-0003-3605-7802, e-mail: alamirewgmariam@gmail.com

Широкая доступность информации и быстрый технологический прогресс – одни из важнейших характеристик этого века. Они вызвали смену парадигмы образовательных целей. В результате в настоящее время для подготовки активных граждан, способных отвечать требованиям и вызовам века, развитие высших когнитивных навыков учащихся стало приоритетом в современном образовании. Например, улучшение мыслительных навыков учащихся стало одной из обязанностей учителей иностранных языков. В соответствии с этой концепцией настоящее качественное исследование было направлено на изучение классной практики, знаний и убеждений учителей английского языка в отношении интеграции навыков мышления более высокого порядка в обучение навыкам чтения. Для исследования были случайным образом отобраны четыре преподавателя английского языка научно-технический университет Аддис-Абебы. Использовался метод наблюдения и интервью. Результаты исследования показывают, что учителя реже реализуют стратегии мышления более высокого порядка. При этом, установлено, что интеграция мышления более высокого порядка в преподавание английского языка в целом и навыков чтения в частности входит в их обязанности в рамках преподавательской деятельности.

Ключевые слова: навыки мышления высшего порядка (HOTS), высшее образование, знания и убеждения учителей.

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Introduction

The ever-changing nature of our world forces changes in teaching in general and in teaching English as a foreign or second language in particular. Various issues concerning teachers, students, methodologies, and materials, among others, are the catalyst for the changes [1; 12; 30; 38; 43].

Recent issues related to learners and affecting the teaching of English as a foreign or second language include developing learners' intercultural competency, building learners' autonomy, improving learners' problem-solving ability, nurturing learners' reflective capacity, and fostering learners' critical thinking skills [9; 10]. Because of these and other emerging issues, English as a foreign or second language instruction has progressed beyond the teaching of the four language skills and language items [24; 25; 42].

Recent developments in language teaching and learning highlight the significance of critical thinking in students' academic and personal success [7; 11; 41]. The primary goal of meaningful education in general and language education in particular has evolved into teaching students how to think and learn [35; 47]. This is primarily due to today's society's high demand for exceptional knowledge and strong critical thinking skills. Feuerstein, as cited in [46, p.78], summarizes the preceding concept as follows:

“Modern technological society increasingly requires the development of individuals possessing critical and creative thinking skills, and the mass of the people living in a self-professed democracy require the tools to evaluate and reorient themselves in rapidly changing and complex situations. In response to this need, educators have made unprecedented efforts over the last decade to develop methods and teaching strategies aimed specifically at developing thinking skills in children”.

Various instructional strategies for teaching English as a foreign or second language have been proposed to encourage the development of critical thinking skills [32; 33; 44]. Cooperative learning, active learning techniques, a learner-centered approach, project-based learning, and a communicative approach foster an environment conducive to incorporating critical thinking into the teaching of English as a foreign or second language [19; 20; 21].

A substantial body of theoretical and empirical evidence suggests that reading programs provide students with more opportunities to practice higher-order thinking skills [26; 28; 39; 40]. Reading is a cognitive process that necessitates thinking. So, effective reading instruction in which teachers make learners employ various higher-order thinking strategies increases the likelihood of learners' development of higher-order thinking skills [22; 40]. This approach to reading instruction requires students to process material using higher-level thinking abilities [13; 27].

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Statement of the Problem

Ethiopia established its Education and Training Policy in 1994. One of the policy's significant goals is to produce active citizens with high cognitive skills to effectively and efficiently solve problems and make decisions [16]. However, according to [36], a curriculum review conducted in 2009 revealed that the policy failed to achieve the goal. It identified that the traditional approach, which emphasizes rote learning and memorization, was mainly responsible for this.

Over the last 25–30 years, the education system of the country has failed to produce the desired innovative, job-creating, and globally competent graduate workforces [37]. To address the issue, the current Ethiopian Education Development Roadmap (2018-30) emphasizes the importance of prioritizing higher-order thinking skills in the proposed educational sector reform [37]. A significant focus of the proposed change in the roadmap is improving learners' higher-order thinking capacities in teaching and learning processes at all educational levels. The reforms initiated by this roadmap have already resulted in some improvements to higher education in the country. Among the modifications undertaken in higher education include the addition of new courses such as Logic and Critical Thinking, Communicative English Language Skills I and II, Geography, History, and others. Here, it is crucial to explore how these courses are delivered, what contribution the teachers' classroom practices have towards developing the learner's higher-order thinking skills, and what knowledge and beliefs the teachers have about integrating higher-order thinking skills into their teaching process. This study was initiated to explore English language teachers' classroom practices, knowledge, and beliefs about integrating higher-order thinking skills in teaching reading skills.

Objectives of the Study

The primary goal of the study was to explore higher-order thinking in the practice of teaching reading skills in the delivery of *Communicative English Language Skills I* at Addis Ababa Science and Technology University. More specifically, the study aims to:

1. Examine the extent to which higher-order thinking skills are demonstrated in the English language teachers' classroom practices of teaching reading skills.
2. Identify the knowledge and beliefs of the English language teachers about higher-order thinking skills and their incorporation into the teaching of reading skills.

The following are the research questions aim at guiding the study:

1. To what extent is higher-order thinking skills demonstrated in the English language teachers' classroom practices of teaching reading?
2. What are the knowledge and beliefs of the English language teachers about higher-order thinking and its incorporation into the teaching of reading skills?

Literature Review

Higher-order Thinking Skills and Bloom's Cognitive Taxonomy

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Higher-order thinking is also known as critical or strategic thinking. It is the ability to make decisions, solve problems, analyze arguments, negotiate issues, or produce reasons using knowledge [17; 13; 29]. Higher-order thinking also includes the ability to question assumptions and ideas, draw inferences, analyze evidence, and reach conclusions.

Higher-order thinking is the act of processing information by applying higher-order cognitive talents [2; 4]. This thinking goes beyond simple knowledge memory and recognition to information manipulation, allowing pupils to solve issues, develop comprehension, and uncover meaning.

The three top ends of Bloom's cognitive domain are usually referred to as higher-order thinking. They are analyzing, evaluating, and creating skills. These are also known as critical thinking skills. Critical thinking involves the ability to (a) identify and clarify problems, issues, conclusions, reasons, and assumptions; (b) judge the credibility, relevance, and consistency of information; and (c) infer or solve problems as well as draw fair conclusions [2; 4; 9; 29].

Concepts of Beliefs

As a mental construct, "beliefs" are not readily defined. Most experts agree that beliefs are difficult to describe [5]. Beliefs are psychologically held understandings, premises, or assertions about the universe that are seen to be true. Unlike knowledge, beliefs are not always supported by facts, and it may contradict logic [5; 8].

Scholars define beliefs in various ways. The terms, attitudes, values, judgments, axioms, opinions, ideology, perceptions, conceptions, preconceptions, implicit theories, personal theories, internal mental processes, rules of practice, practical principles, and perspectives have all been used to refer to beliefs [3; 18]. Beliefs are a kind of driving tool used by any working institution or individual to realize their inner ideas toward their intended objectives. However, various impeding factors can influence people's ability to exercise their beliefs in action [5].

Language Teachers' Beliefs

Language teachers, according to [5], bear a great deal of responsibility in education. Their beliefs about teaching are critical. It is because teachers' beliefs have an impact on their classroom activities. What teachers do in the classroom reflects what they know and believe about topics related to their professional practices.

Many academics have emphasized the relevance of teachers' beliefs in L2 teaching. They have summarized the substantial influence of instructors' beliefs on their classroom practice and the link between belief and knowledge [3; 5; 18]. Beliefs and values are the foundation for much of what instructors decide and do. Instructors' beliefs provide a necessary basis for students to gain the knowledge and skills they require to reach their full potential [5; 44].

Teacher Cognitions about Thinking Skills

Teachers' pedagogical beliefs have effect on their teaching practices, classroom decision-making, and

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classroom interaction [6; 15; 31]. Teachers' beliefs about language learning, as stated by Williams and Burden [48], affect everything they do in the classroom, guiding and prompting classroom actions far more strongly than the use of a specific methodology or course book. Thus, instructors' knowledge of what comprises thinking skills and how to incorporate them into topic teaching can have huge instructional repercussions. In summary, if instructors believe memorization to be a vital ability in learning, one should expect teachers to prioritize memorization abilities in their instruction. As a result, instructors' opinions in this situation may become a self-fulfilling prophecy [49].

To date, discussions on L2 teacher cognition have appeared in the research literature on the degree of "match" between learners' and teachers' beliefs (e.g., [6]; belief about subject matters (for example, grammar and grammar teaching; literacy) (e.g., [45]; changes in teachers' beliefs (e.g., [34]; the influence of belief on teachers' classroom behavior; and the convergence of practice from belief. However, there is no published research on foreign language teachers' beliefs about integrating thinking skills in teaching reading skills in my context.

Method

This is a qualitative study aimed at exploring the English language teachers' classroom practice, knowledge, and beliefs about integrating higher-order thinking skills in the instruction of reading skills.

Sampling and Participants of the Study

Four English language teachers at Addis Ababa Science and Technology University were the participants of the study. The teachers were randomly selected for the study.

Instruments and Data Collection Procedure

Observation and interviews were used to collect the necessary data. The teachers were observed twice while teaching reading skills. The major objective of the classroom observation was to supervise four randomly selected English language teachers' actual classroom practices of teaching reading. It was aimed to examine the extent to which the teachers make the students employ higher-order thinking strategies.

A checklist was used to conduct classroom observations. There are sixteen statements on the checklist. These statements directly or indirectly describe higher-order thinking strategies that the English language teachers may employ in the practice of teaching reading skills. The semi-structured interviews were recorded and transcribed for analysis. The interviews were conducted following the completion of the classes by the teachers.

Results and Discussion

The findings of the present study have been presented based on the research questions of the study. Accordingly, the following is the presentation of the findings for the research question: To what extent are higher order thinking skills demonstrated in the English language teachers' classroom practices of teaching reading?

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The presentation and analysis of classroom observation data have been summarized below. The frequency of observable features and the number of teachers observed using the strategies are shown in the table below.

Table 1

Frequency of Higher-order Thinking Strategies Observed

No	Features Observed	Frequency	Number of teachers employed the Strategies
1.	The teacher engages students to generate questions of their own about what they read.	0	0
2.	The teacher engages the students to focus on the meaning while reading the text.	8	4
3.	The teacher elicits students' prior knowledge to employ their background knowledge when reading text.	7	4
4.	The teacher helps students set purpose for reading and self-evaluate.	1	1
5.	The teacher explains the reading strategies and the rationale for learning them.	5	3
6.	The teacher teaches and models the reading strategies and provides adequate time and opportunities for students to practice the strategies through guided practice and independent work.	0	0
7.	The teacher assesses students' comprehension by asking questions of different levels.	1	1
8.	The teacher encourages students to write a reflective journal on the text they have read.	0	0
9.	The teacher probes students' responses.	2	2
10.	The teacher facilitates a collaborative learning environment to support the students' intellectual knowledge and skills.	6	4
11.	The teacher makes the students express opinions and support their opinions with logical reasoning and sources.	1	1
12.	The teacher engages students to present contrasting opinions about the topic of the text.	0	0
14.	Teacher engages learners in higher order questions (divergent questions) and gives the students time to answer them.	3	3
15.	The teacher makes students predict what a text is about and give logical reason to the prediction.	1	1
16.	The teacher engages students to examine issues in the text from different points of view.	0	0

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Almost all of the teachers observed were frequently employing the strategies described in statements 2, 3, 5, and 10 of the preceding table. The strategies mentioned in statements 4, 7, 9, 14, and 15 were rarely or never used by the teachers. Moreover, the teachers were never seen employing the higher-order thinking strategies mentioned in statements 1, 6, 8, 12, and 16. None of the teachers observed making students engage in such strategies during eight classroom observations.

From the classroom observation data, it is possible to conclude that the teachers are less frequently or rarely implementing higher-order thinking strategies in their teaching reading skills.

The following is a presentation and discussion of the findings related to research question 2: What are the knowledge and beliefs of the English language teachers about higher-order thinking and its incorporation into teaching reading skills?

The responses obtained from the respondents through interviews were transcribed and coded. Then major themes were identified and used for the analysis presented below:

A) Teachers' definitions of Higher Order Thinking Skills/Critical Thinking Skills

The interviewees were asked a question about the definition of higher-order thinking skills or critical thinking skills in order to find out what they knew and how they understood the concept. In terms of responses, two participants described higher-order thinking skills or critical thinking skills that are somewhat related to the definitions provided in the literature. These teachers have used the following expressions to describe it:

- ✓ It is the thinking that involves in problem solving, decision making and creative thinking;
- ✓ It is the thinking that goes beyond surface level of what we see, read and hear;
- ✓ It is a thinking ability that we need to be competent mainly in the 21st century;
- ✓ It is cognitive activity that one engages in during reflective thinking.

Two remaining participants also described higher-order thinking skills somewhat different from what most texts state. The participants have used general terms to illustrate the construct.

- ✓ It is the thinking that educated persons accomplish;
- ✓ It is a thinking ability that everybody may not be endowed with.

From the above responses, it is possible to conclude that teachers are not new to the concept of higher order thinking skills.

B) Teachers' understanding of Bloom's Taxonomy and their experiences in applying in teaching

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Many educators assert that Bloom's taxonomy is one of the most useful teaching tools. It is a taxonomy used for formulating learning objectives, designing learning tasks, and preparing different tests [4]. The participants were asked to what extent they know this taxonomy and apply it for formulating learning objectives, designing learning tasks, and preparing different tests.

In replying to the question, three of the participants mentioned their familiarity with Bloom's taxonomy. They had different pedagogical courses during their undergraduate and postgraduate learning programs. Here, it is important to cite the following from the conversation with one of the participants:

I vividly recall my pedagogy course from my first degree or undergraduate studies. I had a really interesting teacher for the course. He was deeply discussing the Bloom taxonomy with well-illustrated examples. Even if I cannot exactly name which elements of the category are named as "higher order," I do have a better understanding of the taxonomy. They are hierarchical and should be in the learning objectives that teachers should design and students are required to achieve. (T1)

But, one of the participants has clearly put that he is not familiar with the taxonomy. He explained his reason as follow:

I guess these terms go to the pedagogy course. I am not from an educational background. I learned applied English. I did not take a pedagogy course during my undergraduate studies. What I remember are some of the courses I took in my MA program. I do not remember any course related to such a concept. (T2)

All the respondents are hesitant about their current use of the taxonomy for formulating learning objectives, designing learning tasks, and preparing different tests. One of the participants stated:

I do have better understanding of this taxonomy. I was using in design learning objectives. It was when I was teaching at high schools before 12 or 14 years. Frankly speaking, here in the university, I do not rely on this. (T1)

C) What do teachers think about roles of the English language teachers in enhancing students' thinking skills?

All of the participants shared the belief that the English language teachers have tremendous roles in enhancing learners' thinking skills. They have indicated that learning language and thinking are interrelated. The following is how one of the teachers expressed it:

Learning in general and language learning in particular have something to do with learners' thinking abilities. Learning a language has an effect on a student's cognitive level as language and thinking are interconnected. Moreover, the English language teachers can consciously work

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on enhancing their learners' thinking abilities through engaging them in meaningful learning processes. Learners need to be given the opportunity to accomplish learning tasks that demand different cognitive levels. (T3)

From the above quote, it is possible to infer that students are required to enhance their thinking abilities in the English language classroom. Teachers are required to deliver learning tasks that demand students engage at various cognitive levels [11; 13; 20].

Another teacher also mentioned that enhancing learners' thinking skills is among the responsibilities of the English language teachers. He eloquently described the idea as below:

We should know that one of the objectives of education is to develop learners' thinking skills. Education that does not work on students' mental/cognitive ability is meaningless. The basis of meaningful learning is to promote students' thinking abilities. Therefore, it is mandatory to consider students' cognitive development in the teaching and learning process. Enhancing students' thinking skills is one of the responsibilities of the English language teachers. (T1)

Some of the teachers are well aware of the reasons why students are required to have enhanced thinking skills. One of the teachers uttered the following:

This century has seen constant technological advancement and the spread of information. Furthermore, the philosophy underlying different countries' economies has become knowledge-based. So, it has become mandatory to have critical thinking skills to be a competent and productive citizen (T4).

From the above quote, it can be inferred that the current continuous technological advancement and widespread availability of information necessitate enhancing learners' thinking abilities. So, creating necessary situations that foster learners' thinking skills is sought from the English language teachers [21; 24].

D) Teachers' utilization of Instructional Strategies that facilitate Higher Order Thinking

Instructional strategies employed in the classroom have a tremendous impact on students' academic success. Teachers may differ in the levels of instructional strategies they employ in the teaching and learning process. There are instructional strategies dealing with higher-order thinking skills and those aiming to deal with lower-order thinking skills [22; 26; 27]. In the interviews conducted, an attempt was made to elicit teachers' understanding of instructional strategies aimed at facilitating learners' higher-order thinking skills and their beliefs about incorporating them in the teaching of reading skills.

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Most of the teachers described instructional strategies that promote higher order thinking as active learning/teaching techniques. They have mentioned that brainstorming, pair/group work, debating, role-play, presentation, and case study as instructional strategies that foster higher order thinking in students.

The teachers also explained the necessity of incorporating instructional strategies that foster higher order thinking in the practice of teaching reading. Some of them well explained that teachers' conscious use of such kinds of instructional strategies can benefit the learners.

Reading is a cognitive process. The reader brings together his prior knowledge and the information in the text in order to construct the meaning. I feel the level of a reader's comprehension depends on the extent to which he or she exerts cognitive effort. As teachers, we need to make the learners cognitively engage in the process of reading. Furthermore, the questions we allow students to answer in reading class should help students think beyond literal comprehension. (T4)

The above statements summarize the role of higher-order questions in reading comprehension. Reading exercises and questions posed by teachers in the reading classroom must include higher-order questions that encourage students to think divergently [22; 28; 29; 39].

Based on what has been discussed thus far, teachers now have a better understanding of higher-order thinking skills and instructional strategies that can help learners develop higher-order thinking skills. Furthermore, they believe that higher-order thinking skills should be incorporated into reading instruction.

Conclusion and Recommendations

As the results of this study, all of the observed teachers were less frequently implementing strategies for higher-order thinking skills. Teachers, on the contrary, have a better understanding of higher order thinking skills and instructional strategies that can foster higher order thinking in students. Moreover, they believe that higher-order thinking skills should be incorporated into the practice of teaching reading skills.

Based on the findings, the following recommendations are suggested:

1. The English language teachers who participated in this study less frequently or never implemented higher-order thinking strategies in their teaching of reading skills. These teachers need to be exposed (through training, seminars, etc.) to varieties of higher-order thinking strategies and encouraged to frequently implement them in their practice of reading skills instructions.
2. It is crucial to include in teacher education the courses that address how to integrate thinking into the teaching of language in general and reading in particular. This would help teachers develop knowledge and skills to effectively integrate thinking skills into the teaching of the English language in general and reading skills in particular.

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Information about the authors

Sintayehu G. Gergera, PhD candidate at Addis Ababa University, Addis Ababa, Ethiopia, ORCID: <http://orcid.org/0000-0002-8247-2567>, e-mail: sintayehu.gmariam@aastu.edu.et
Alamirew G. Tesmand, Associate Professor of ELT, Certified Professional Teacher Educator, Addis Ababa University, Addis Ababa, Ethiopia, ORCID: <http://orcid.org/0000-0003-3605-7802>, e-mail: alamirewgmariam@gmail.com

Информация об авторах

Гергера Г. Синтайеху, кандидат наук, Университет Аддис-Абебы, Аддис-Абеба, Эфиопия, ORCID: <http://orcid.org/0000-0002-8247-2567>, e-mail: sintayehu.gmariam@aastu.edu.et
Тесманд Г. Аламиев, доцент кафедры преподавания английского как иностранного, сертифицированный специалист по профессиональной подготовке преподавателей, Университет Аддис-Абебы, Аддис-Абеба, Эфиопия, ORCID: <http://orcid.org/0000-0003-3605-7802>, e-mail: alamirewgmariam@gmail.com

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