Exploring Higher-Order Thinking Skills (HOTS) Awareness in Listening Among Undergraduate EFL Students.

في مهارة الاستماع (HOTS) استكشاف الوعي بمهارات التفكير العليا لدى طلبة اللغة الإنجليزية كلغة أجنبية في المرحلة الجامعية.

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ملخص البحث:

هدفت هذه الدراسة إلى استقصاء وعي طلبة اللغة الإنجليزية كلغة أجنبية في مرحلة البكالوريوس بمهارات التفكير العليا (HOTS) في فهم الاستماع. واعتمدت الدراسة المنهج الكمي باستخدام تصميم المسح، حيث جُمعت البيانات من 74 طالبًا وطالبة من طلبة قسم اللغة الإنجليزية بكلية جنزور في مدينة طرابلس، ليبيا. ولتحقيق أهداف الدراسة، تم استخدام استبانة ذاتية مكوّنة من 20 فقرة وفق مقياس ليكرت، وذلك لقياس تصورات الطلبة حول وعيهم بمهارات التفكير العليا أثناء مهام الاستماع، بما يشمل مهارات حل المشكلات، والتفكير الإبداعي، والتفكير النقدي، والوعي فوق المعرفي.

تم تحليل البيانات باستخدام الإحصاءات الوصفية. وأظهرت النتائج أن الطلبة يتمتعون عمومًا بمستوى متوسط إلى مرتفع من الوعي بمهارات التفكير العليا، خاصة في تحديد الفكرة الرئيسة، والتعرّف على التفاصيل المهمة، وتفعيل المعرفة السابقة، وإظهار وعي مرتفع بعملية الاستماع من الناحية فوق المعرفية. في المقابل، أظهرت النتائج انخفاضًا في مستوى الثقة في المهارات العليا التي تتطلب معالجة معرفية أعمق، مثل استنتاج المعاني الضمنية، وتقييم قوة الحجج، والتنبؤ بالمعلومات القادمة.

وتخلص الدراسة إلى أنه على الرغم من إدراك الطلبة لأهمية مهارات التفكير العليا في فهم الاستماع، إلا أنهم يواجهون صعوبات في توظيف هذه المهارات بصورة منتظمة أثناء مهام الاستماع المعقّدة. وبناءً على ذلك، توصي الدراسة بضرورة اعتماد استراتيجيات تدريسية صريحة تدمج أنشطة قائمة على مهارات التفكير العليا ضمن تعليم الاستماع، بما يسهم في مساعدة المتعلمين على الانتقال من مستوى الوعي إلى مستوى التطبيق الفعلي.

الكلمات المفتاحية: مهارات التفكير العليا، فهم الاستماع، متعلمو اللغة الإنجليزية كلغة أجنبية في المرحلة الجامعية.

Exploring Higher-Order Thinking Skills (HOTS) Awareness in Listening Among Undergraduate EFL Students.

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Abstract

This study investigated undergraduate EFL students' awareness of higher-order thinking skills (HOTS) in listening comprehension. Using a quantitative survey design, data were collected from 74 undergraduate students in the English Department at the College of Janzour, Tripoli, Libya. A self-administered questionnaire comprising 20 Likert-scale items was used to examine students' perceived awareness of HOTS during listening tasks, including problem-solving, creative thinking, critical thinking, and metacognitive awareness. Descriptive statistics were used to analyse the data. The findings indicated that students exhibited generally moderate to high HOTS awareness, particularly in identifying main ideas, recognising key details, activating prior knowledge, and demonstrating strong metacognitive awareness of the listening process. However, confidence was lower in higher-order skills that require deeper cognitive processing, such as inferring implicit meaning, evaluating the strength of arguments, and predicting upcoming information. These findings suggest that although students recognise the importance of higher-order thinking in listening comprehension, they struggle to apply these skills consistently during complex listening tasks. This study highlights the need for explicit instructional strategies that integrate HOTS-focused activities into listening instruction to support learners in moving from awareness to effective application.

KEYWORDS: Higher-order thinking skills, listening comprehension, undergraduate EFL learners.

Introduction

Lstening comprehension is assumed to be an interactive process in which listeners select important information and integrate it with their existing background knowledge to construct a deeper understanding (Esmaeel & Zahra, 2024). It enables individuals to comprehend spoken discourse, expand their vocabulary, and enhance their overall communication.
Listening is not simply hearing sounds; rather, it is a mental and active process that begins even before the first word is fully heard and continues after the speaker finishes. Meaning is not taken directly from sounds; instead, listeners construct understanding by processing sounds, grammar, vocabulary, and the overall message. Context also plays a crucial role, as factors such as the topic, participants, purpose, and setting influence how listeners interpret what they hear (Celce-Murcia et al., 2013).
Effective listening, therefore, requires more than identifying words and sentences. As noted by Nainggolan and Haniah (2020), listeners must think beyond the surface level of speech, which highlights the close relationship between listening comprehension and cognitive processing. Basic thinking skills involve remembering, understanding, analysing, evaluating, and creating, and according to the revised Bloom's taxonomy, these abilities are categorised into lower-order and higher-order levels. Lower-order skills include remembering, understanding, and applying information, while higher-order skills involve analysing, evaluating, and generating new ideas (Vafamehr et al., 2024).
Higher-order thinking occurs when a person receives new information, stores it, connects it with existing knowledge, and then uses that combined knowledge to achieve a goal or address a complex problem. It is closely linked to both creative and critical thinking, and instructional approaches that promote creativity can support learners in generating original ideas, broadening their viewpoints, and developing imaginative interpretations. In addition, higher-order thinking focuses on strengthening students' skills in analysing information, making informed evaluations, and synthesising ideas to produce something new (Nourdad et al., 2018).
To understand spoken messages fully, learners must analyse information, evaluate its relevance, draw inferences, and connect ideas—all essential

higher-order thinking skills. These abilities help listeners accurately interpret meaning, distinguish main ideas from supporting details, and respond effectively to the speaker (Nainggolan & Haniah, 2020). For this reason, integrating higher-order thinking skills is a key component of successful listening, particularly for EFL learners who must process language and meaning simultaneously.

Higher-order thinking skills involve complex, purposeful reasoning. They require learners to understand information deeply, organise their thoughts, make informed decisions, and identify relationships between ideas. Skills such as critical thinking, analysis, synthesis, evaluation, and creativity enable students to solve problems, make judgments, and generate new ideas. Using these skills effectively can enhance learning outcomes and support students in achieving stronger academic performance (Resnick, 1987, as cited in Azhani et al., 2024).

Research Questions

1. What is the Level of Undergraduate EFL Students' Awareness of Higher-Order Thinking Skills (HOTS) in Listening Comprehension?

Statement of the Problem

While listening is considered one of the most crucial skills in EFL learning, many students continue to struggle to understand spoken texts, particularly when the information requires deeper thought or interpretation. Although higher-order thinking skills, such as analysing, evaluating, and inferring, are recognised as supporting comprehension, little is known about how aware EFL learners are of these skills or how often they use them during listening. Previous research suggests that integrating HOTS can positively influence learners' comprehension. For instance, Sitorus et al. (2021) reported that teachers who implemented HOTS in reading instruction observed improvements in students' attentiveness, vocabulary development, and clarity of comprehension.

Similarly, Nourdad et al. (2018) found that explicit instruction in higher-order thinking skills significantly enhanced the reading comprehension abilities of EFL learners. Despite these positive findings, the majority of existing studies have focused on reading skills rather than listening, leaving a noticeable gap

in understanding how HOTS awareness and use relate to EFL learners' listening comprehension. As a result, there is a limited understanding of the relationship between students' listening performance and their ability to apply higher-order thinking skills. This gap poses challenges for teachers in designing effective listening instruction that promotes both comprehension and critical thinking.

Therefore, the present study seeks to address this gap by examining EFL students' awareness and perceived use of higher-order thinking skills and exploring how these skills relate to their listening comprehension abilities.

Literature Review

Theoretical Framework

This theoretical framework draws on Bloom's Taxonomy of the Cognitive Domain (Bloom et al., 1956) and its revised version by Anderson and Krathwohl (2001) to explain the cognitive processes involved in listening comprehension and to justify the design of the questionnaire used in this study. These taxonomies classify thinking skills from lower-order to higher-order skills and are widely used to analyse learners' cognitive engagement in language learning tasks. In the present study, the questionnaire items were designed in alignment with these cognitive levels to examine students' awareness of higher-order thinking skills (HOTS) in listening comprehension.

Remembering

In Bloom's original taxonomy, knowledge, and in the revised taxonomy, remembering, refers to the ability to recognise or recall previously learned information, such as facts, definitions, or basic concepts. This level represents the foundation of cognitive processing and involves retrieving information from memory without necessarily understanding its deeper meaning (Anderson & Krathwohl, 2001).

In listening comprehension, remembering is reflected in learners' ability to recognise familiar words, topics, or ideas in spoken texts. In the current questionnaire, this level is indirectly related to Item 1 ("When I listen, I can recognise what the audio is mainly about"), as identifying the general topic often relies on recalling known vocabulary and familiar content.

Understanding

The comprehension level in Bloom's taxonomy, renamed understanding in the revised version, involves constructing meaning from spoken or written input. Learners at this level can explain ideas, summarise information, and interpret messages rather than simply recall them. Understanding requires listeners to process linguistic input and grasp the speaker's intended meaning (Anderson & Krathwohl, 2001).

In the current questionnaire, this level is represented by Item 2 ("I can identify important details and differentiate them from less important details when listening") and Item 10 ("During discussions, I can summarise the main point I have heard"). These items assess students' ability to comprehend and organise information, which goes beyond surface-level listening.

Applying

The application level, referred to as applying in the revised taxonomy, involves using learned knowledge or procedures in new or practical situations. In listening, applying occurs when learners use strategies such as predicting content, organising information, or adapting known listening strategies to new contexts (Anderson & Krathwohl, 2001).

This level is reflected in Item 6 ("I can predict what the speaker will say next based on the context") and Item 8 ("I can organise information during complex listening tasks"). These items require learners to actively use their listening knowledge and strategies rather than merely understand spoken input.

Analyzing

Analysis, or analysing in the revised taxonomy, refers to breaking information into parts and examining relationships between ideas. At this level, learners can distinguish between main ideas and supporting arguments, identify viewpoints, and detect underlying assumptions (Anderson & Krathwohl, 2001).

In this study, analysing skills are assessed through Item 3 ("I can understand the meaning that is not directly stated by the speaker"), Item 9 ("I can analyse different viewpoints presented in an audio text") and Item 12 ("I

consciously try to analyse the speaker's point of view while listening"). These items reflect students' ability to engage critically with spoken discourse by examining how ideas are structured and presented.

Evaluating

The evaluation level, referred to as evaluating in the revised taxonomy, involves making judgments based on established criteria and standards. In listening comprehension, evaluating includes judging the credibility of information, assessing the strength of arguments, and reflecting on accuracy (Anderson & Krathwohl, 2001).

This level is clearly represented by Item 4 ("I am able to judge the strength of the speaker's ideas while listening"), Item 13 ("I use critical thinking strategies to evaluate what I listen to"), and Item 19 ("I reflect on whether the information I listen to is accurate"). These items require learners to move beyond understanding and actively critique spoken content.

Creating

In Bloom's original taxonomy, synthesis, and in the revised taxonomy, creating, represents the highest level of cognitive processing. Creating involves combining elements to form a new, coherent whole, generating original ideas, or producing new interpretations (Anderson & Krathwohl, 2001).

Although listening tasks rarely involve creation in a direct sense, this level is indirectly reflected in Item 15 ("I try to interpret hidden meanings while listening") and Item 17 ("I try to compare various opinions expressed in the audio"). These items require learners to synthesise information, integrate multiple viewpoints, and construct personal interpretations of spoken messages.

Metacognitive Awareness

In addition to the cognitive processes outlined in Bloom's taxonomy, metacognitive awareness plays a crucial role in effective listening. Metacognition refers to learners' awareness of their own thinking processes and their ability to regulate comprehension strategies. In the questionnaire, metacognitive awareness is captured by Item 11 ("I am aware that listening requires more than understanding single words"), Item 16 ("I am aware that

summarising is an important part of active listening"), and Item 18 ("I often ask myself questions about the content while listening"). These items highlight learners' reflective engagement with listening tasks, which supports the application of higher-order thinking skills.

Overall, Bloom's taxonomy and its revised version provide a strong theoretical framework for analysing the cognitive demands of listening comprehension. By aligning the questionnaire items with different cognitive levels, the present study systematically examines undergraduate EFL students' awareness of higher-order thinking skills in listening, particularly those associated with analysing, evaluating, and creating meaning from spoken texts.

Empirical Studies

Higher-Order Thinking Skills (HOTS) have been widely recognised as essential for fostering critical thinking, problem-solving, and comprehension across different educational contexts. Previous research consistently demonstrates that the integration of HOTS into instructional practices can significantly enhance students' cognitive abilities and academic performance. For instance, Sitorus et al. (2021) conducted a mixed-methods study that employed both quantitative pretest–post-test and qualitative interviews. The participants included 62 eighth-grade students assigned to treatment and control groups, along with five professional English teachers at SMPN 7 Medan during the 2020/2021 academic year. The findings indicated that the implementation of Higher-Order Thinking Skills (HOTS) strategies significantly improved students' reading comprehension skills. The HOTS-based instruction encouraged students to engage in intensive reading and develop a deeper understanding of textual content through analytical questioning. Overall, the study demonstrated that HOTS strategies had a positive effect on the reading comprehension performance of eighth-grade students.

Friyatmi et al. (2020) developed an economics Higher-Order Thinking Skills (HOTS) test integrating critical thinking, problem-solving, and creative thinking to assess students' multidimensional HOTS abilities. The study involved 750 high school students from 14 schools in West Sumatera,

Indonesia. Test items were calibrated using the multidimensional item response theory (MIRT) model in R Studio, and reliability was evaluated using Cronbach's alpha and the test information function. Results indicated that MIRT provided an accurate measurement of multidimensional abilities, with moderate item difficulty and discrimination. Students demonstrated moderate HOTS ability, with creative thinking lower than critical thinking and problem-solving**.** The test showed high reliability ($\alpha = 0.81$), a high information function (4.0124), and a low measurement error (0.4992), making it suitable for students with moderate problem-solving and critical thinking abilities, as well as high creative thinking abilities.

Indriyana and Kuswandono (2019) examined the strategies employed by English teachers to foster Higher-Order Thinking Skills (HOTS**)** in reading instruction within the 2013 Indonesian curriculum**.** Adopting a mixed-methods design, the study involved 22 junior high school English teachers in Yogyakarta, with data collected through questionnaires, observations, and interviews. The results indicated that teachers commonly promoted HOTS by stating learning objectives**,** using open-ended questions**,** facilitating group discussions, and providing constructive feedback**,** which collectively supported the development of students' critical thinking skills**.**

Che Seman et al. (2017) examined the challenges teachers face in implementing Higher-Order Thinking Skills (HOTS) in line with the Malaysian Education Blueprint 2013–2025, which aims to develop students' critical, creative, and innovative thinking skills. Using a qualitative research design**,** the study collected data through semi-structured interviews with nine teachers teaching Bahasa Melayu, Mathematics, and Science at a showcase i-THINK program school in Terengganu, Malaysia. The interview data were analysed thematically to identify emerging themes. The findings revealed that teachers encountered multiple challenges in teaching for HOTS, particularly related to teacher-related factors**,** instructional preparation and classroom practices**,** and **s**tudent-related factors**.** Overall, the study highlighted the need for greater support and professional development to enhance teachers' capacity to implement HOTS effectively in Malaysian classrooms.

Method

Research Design

This study adopted a quantitative research design using a survey to investigate undergraduate EFL students' awareness of higher-order thinking skills in listening comprehension. Data were collected through a structured questionnaire comprising a Likert-scale item measuring students' perceptions and self-reported use of HOTS during listening tasks. The questionnaire was administered online via Google Forms, enabling efficient data collection and accessibility. Descriptive statistics, including frequencies, percentages, and means, were used to summarise the questionnaire responses and determine the overall level of students' awareness of higher-order thinking skills in listening.

Research Sample

The participants of this study were 74 undergraduate students from the English department at the College of Janzour, Tripoli, Libya. The research sample included students from the first, second, third and fourth academic years, representing different stages of undergraduate English study. Both male and female students took part in this study.

In terms of gender distribution, 68 participants were female (91. 9%), while 6 participants were male (8. 1%). The participants were selected using voluntary response sampling, as the questionnaire was distributed online and completed by students who agreed to participate.

Instrumentation

Data for this study were gathered through a self-administered questionnaire during the fall semester of 2025. The questionnaire was designed to collect descriptive data on undergraduate EFL students' awareness of higher-order thinking skills (HOTS) in listening comprehension.

The questionnaire consists of 20 items, which were developed based on a review of relevant literature on listening skills and higher-order thinking skills. The questionnaire items were adopted and modified from previously validated instruments and studies focusing on higher-order thinking skills, metacognition, and listening comprehension (Vafamehr et al., 2018; Bozorgian, 2014; Irianti et al., 2022). This adaptation ensured a strong

theoretical grounding and content relevance. These items were further refined to suit the Libyan undergraduate EFL context. All questionnaire items were measured using a five-point Likert scale, ranging from strongly agree (1) to strongly disagree (5).

This scaling method was chosen as it allows participants to express varying degrees of agreement, and it is widely used in educational research to measure perceptions and self-reported cognitive awareness. The use of a structured Likert-scale questionnaire enabled the systematic collection of quantifiable data, facilitating descriptive statistical analysis to determine the overall level of students' HOTS awareness in listening.

Data Collection

The questionnaire was distributed to participants via Messenger and WhatsApp using a shared Google Forms link. Respondents were given sufficient time to complete the survey at their convenience. An online data collection method was selected to ensure efficiency, ease of access, and reliability in gathering responses. The collected data were analysed using descriptive statistics, specifically frequencies and percentages, to summarise participants' responses and determine the overall level of undergraduate EFL students' awareness and use of higher-order thinking skills in listening comprehension.

The distribution of participants across academic years showed that the majority of responses were obtained from senior students. Specifically, 39 respondents were fourth-year students, followed by 28 third-year students and 7 second-year students, while no responses were received from first-year students.

Regarding students' exposure to English outside the classroom, the results indicated varying levels of listening frequency. Thirty-nine participants reported listening to English several times a week, 16 participants listened every day, and 13 participants listened once a week. In contrast, 4 participants reported listening rarely, while 2 participants indicated that they never listen to English outside the classroom.

Results

Analysis of Questionnaire

Identifying Main Ideas and Details

Analysis of Questions 1 and 2 indicates that students generally perceive themselves as competent in identifying the main idea and key details in listening texts. For Question 1, a total of 72.9% of participants selected 'agree' (45.9%) or 'strongly agree' (27.0%), suggesting that recognising the overall meaning of an audio text is a relatively well-developed skill among the majority of students. Similarly, Question 2 showed that 58.1% of respondents agreed or strongly agreed that they could identify important details, although a considerable proportion (32.4%) selected the neutral option, as demonstrated in Table 1. This quite high neutral percentage indicates that, whereas many students feel confident, a notable number remain uncertain about their ability to distinguish essential from non-essential information during listening tasks.

Inferencing and Evaluative Listening

Questions 3 and 4 focused on inferential and evaluative listening skills, which are closely associated with higher-order thinking. In Question 3, only 48.7% of students reported agreement or strong agreement with their ability to understand implied meaning, while 35.1% selected neutral, and 16.3% disagreed or strongly disagreed. Likewise, Question 4 showed 58.1% agreement or strong agreement in judging the strength of a speaker's ideas, but 28.4% of students remained neutral, and 13.6% expressed disagreement, as described in Table 1. These distributions suggest that inferencing and evaluative listening pose challenges for a substantial proportion of learners, reflecting incomplete development of higher-order listening skills.

Understanding Speaker Purpose and Predicting Content

Responses to Question 5 showed strong awareness of identifying a speaker's purpose and attitude, with 67.5% of students selecting 'agree' (48.6%) or 'strongly agree' (18.9%), and minimal disagreement (2.7%). In contrast, Question 6 produced more varied responses on predictive listening. Although 51.4% of participants agreed or strongly agreed that they could predict upcoming content, a relatively high number of participants (32.4%) chose

neutral, and 16.2% disagreed or strongly disagreed. This suggests that predictive listening skills are less consistently applied and may require further instructional support.

Linking Information and Managing Complex Listening

Question 7 showed strong positive perceptions of linking new information to prior knowledge, with 75.7% of respondents agreeing or strongly agreeing, highlighting learners' ability to activate background knowledge during listening. On the other hand, Question 8 revealed increased uncertainty in managing complex listening tasks. Only 41.9% of students agreed or strongly agreed, while 36.5% selected neutral and 20.3% disagreed or strongly disagreed. These results suggest that an increase in cognitive load in complex listening situations may hinder students' organizational abilities.

Analysis, Summarizing, and Metacognitive Awareness

Questions 9 and 10 addressed analytical listening and summarising skills. In Question 9, 54.0% of students reported agreement or strong agreement in analysing different viewpoints, and 35.1% selected neutral. Similarly, Question 10 showed a higher level of confidence, with 67.5% agreeing or strongly agreeing that they could summarise main points, although 21.6% remained neutral. Remarkably, Question 11 demonstrated high metacognitive awareness, as 82.4% of participants agreed or strongly agreed that listening involves more than understanding individual words, indicating a strong conceptual understanding of the listening process.

Critical Thinking and Reflection

Questions 12 and 13 examined analytical listening and the application of critical thinking strategies. Question 12 revealed that 67.6% of students agreed or strongly agreed that they could analyse a speaker's viewpoint, while 27.0% of them remained neutral. In Question 13, agreement dropped to 55.4%, with 29.7% neutral and 14.9% disagreeing or strongly disagreeing, as shown in Table 1. These findings propose that although many students recognise the importance of critical thinking in listening, consistent application of such strategies is not yet fully recognised.

Similarly, Questions 14 and 15 showed moderate confidence in connecting audio content to prior knowledge, with 64.9% agreeing or strongly agreeing,

and interpreting hidden meanings recorded a 54.1% agreement. However, neutral responses remained high in both items **(**24.3% and 33.8%**,** respectively), indicating partial development of inferential skills.

Comparing Opinions, Self-Questioning, and Accuracy Evaluation

Questions 16 and 17 reflected moderate awareness of summarising and comparing opinions. In Question 16, 62.2% of students agreed or strongly agreed, but 17.6**%** disagreed, suggesting uneven mastery of summarising skills. Question 17 showed slightly stronger performance, with 62.2% agreement and 31.1% neutral responses, indicating that comparing viewpoints remains challenging for some students.

Question 18 indicated active metacognitive engagement, as 64.9% of respondents reported asking themselves questions while listening. Similarly, responses to Question 19 showed that 62.1% of students reflected on the accuracy of the information they heard. However, a notable proportion of participants (29.7%) selected the neutral option, suggesting uncertainty or inconsistent use of evaluative listening strategies.

Awareness of Predictive Thinking as a HOTS Component

Responses to Question 20 indicated strong conceptual awareness of higher-order thinking skills. Specifically, 74.3% of participants agreed or strongly agreed that prediction is an essential component of HOTS in listening, whereas 6.8% expressed disagreement. These findings suggest that, despite differences in the practical application of predictive strategies, most students recognise their significance in higher-order listening processes.

Table 1: Descriptive Statistics of Students' Responses to the Awareness of HOTS in Listening Questionnaire (N = 74).

No.	Items	SA %	A %	N %	D %	SD %
Q1	When I listen, I can recognise what the audio is mainly about.	27.0	45.9	23.0	2.7	9.5

No.	Items	SA %	A %	N %	D %	SD %
Q2	I can identify important details and differentiate them from less important details when listening.	10.8	47.3	32.4	8.1	1.4
Q3	I can understand the meaning that is not directly stated by the speaker.	9.5	39.2	35.1	14.9	1.4
Q4	I am able to judge the strength of the speaker’s ideas while listening.	12.2	45.9	28.4	12.2	1.4
Q5	I can identify the speaker's purpose and attitude.	18.9	48.6	29.7	2.7	0.0
Q6	I can predict what the speaker will say next based on the context.	12.2	39.2	32.4	10.8	5.4
Q7	I can link new information from the audio to what I already know.	17.6	58.1	16.2	8.1	0.0
Q8	I can organise information during complex listening tasks.	14.9	27.0	36.5	17.6	2.7
Q9	I can analyse different viewpoints presented in an audio text.	16.2	37.8	35.1	9.5	1.4
Q10	During discussions, I can summarise the main point I have heard.	18.9	48.6	21.6	10.8	0.0
Q11	I am aware that listening requires more than understanding a single word.	36.5	45.9	13.5	4.1	0.0
Q12	I consciously try to analyse the speaker's point of view while listening.	14.9	52.7	27.0	2.7	2.7
Q13	I use critical thinking strategies to evaluate what I listen to.	14.9	40.5	29.7	13.5	1.4

No.	Items	SA %	A %	N %	D %	SD %
Q14	I attempt to make connections between the audio and my prior knowledge.	14.9	50.0	24.3	9.5	1.4
Q15	I try to interpret hidden meanings while listening.	12.2	41.9	33.8	12.2	0.0
Q16	I am aware that summarising is an important part of active listening.	25.7	36.5	20.3	17.6	0.0
Q17	I try to compare various opinions expressed in the audio.	12.2	50.0	31.1	5.4	1.4
Q18	I often ask myself questions about the content while listening.	31.1	33.8	23.0	12.2	0.0
Q19	I reflect on whether the information I listen to is accurate.	13.5	48.6	29.7	8.1	0.0
Q20	I understand that predicting information is part of higher-order thinking skills in listening.	29.7	44.6	18.9	5.4	1.4

Discussion

The purpose of this study was to examine undergraduate EFL students' awareness of higher-order thinking skills (HOTS) in listening comprehension. The findings revealed that students demonstrated generally moderate to high HOTS awareness, particularly in identifying main ideas, recognising important details, activating prior knowledge, and showing strong metacognitive awareness. However, confidence was lower for skills that required deeper cognitive processing, such as inference, evaluation, and prediction.

Susanti and Lailiyah (2021) emphasised that the demands of the twenty-first century necessitate the development of higher-order thinking skills to enable effective problem-solving in real-life contexts. In the present study, problem-

solving skills—reflected in inferencing, evaluating, predicting, and comparing information—appeared to be only partially developed. Items assessing the ability to infer implicit meaning and judge the strength of arguments received lower agreement rates and higher neutrality, suggesting that many learners struggle to apply analytical and evaluative strategies during listening tasks consistently. These findings suggest that problem-solving in listening remains challenging, especially when learners are required to process information beyond its surface-level meaning.

This pattern aligns with Friyatmi et al. (2020), who reported that students' problem-solving abilities were generally weaker than their critical thinking skills. The current results reinforce this conclusion by demonstrating that, although students recognise the importance of prediction and evaluation, their practical application of these strategies remains inconsistent. The lower agreement percentages related to inferential and evaluative listening skills—such as understanding implied meaning, judging the strength of arguments, and predicting upcoming information—suggest that these higher-order processes are not yet fully developed.

The study's findings align with Mohammadi and Zare (2014), who identified a significant relationship between critical thinking ability and listening comprehension, suggesting that limitations in critical thinking may undermine listening performance. Similarly, Nampong and Hanifah (2020) found that university students often struggle with higher-level listening tasks that require analysis and evaluation rather than surface comprehension. Together, these findings highlight the need for explicit instructional support to strengthen learners' higher-order listening skills.

Furthermore, students' acknowledgement that listening involves more than understanding single words reflects strong metacognitive awareness. This finding supports Irianti et al. (2022), who demonstrated that instructional models such as the flipped classroom can enhance students' higher-order thinking in listening by promoting autonomy, reflection, and active engagement. Incorporating such approaches may help learners move from awareness to consistent application of HOTS.

Finally, the findings of this study align with those of Zhani et al. (2024), who reported a positive correlation between students' higher-order thinking skills and their overall English achievement. This suggests that strengthening HOTS in listening comprehension may have broader benefits for language proficiency. Similarly, Sitorus et al. (2021) emphasised that HOTS-based instruction improves comprehension abilities, reinforcing the importance of integrating HOTS-focused activities across language skills.

Conclusion

This study set out to investigate undergraduate EFL students' awareness of higher-order thinking skills (HOTS) in listening comprehension. The findings indicate that students generally possess a moderate to high level of awareness of HOTS, particularly in foundational listening skills such as identifying main ideas, recognising important details, activating prior knowledge, and demonstrating metacognitive awareness of the listening process. These results suggest that learners understand listening as an active and cognitive process rather than a passive reception of spoken input.

Despite this positive awareness, the findings also revealed noticeable weaknesses in higher-order listening skills that require deeper cognitive engagement. Skills such as inferencing implicit meaning, evaluating the strength and credibility of spoken information, and predicting upcoming content were reported with lower confidence levels and higher neutrality. This suggests that although students recognise the importance of these skills, they may lack sufficient practice, instructional support, or strategic guidance to apply them consistently during listening tasks. Overall, this study highlights the importance of explicitly and systematically integrating higher-order thinking strategies into EFL listening instruction.

Pedagogical Recommendations

First, EFL instructors are encouraged to explicitly integrate higher-order thinking skills into listening instruction. Teachers should design listening activities that require students to infer implicit meaning, evaluate speakers' ideas, predict content, and compare viewpoints rather than focusing only on literal comprehension.

Second, teachers should provide explicit strategy instruction to help students move from awareness to consistent application of HOTS. This may include teaching listening strategies such as inferencing, self-questioning, summarising, and evaluating information, as well as modelling these strategies through guided practice. Third, incorporating metacognitive and learner-centred approaches, such as the flipped classroom, collaborative discussions, and reflective listening tasks, may enhance students' engagement and promote deeper cognitive processing during listening activities. Finally, curriculum designers and material developers are encouraged to include HOTS-oriented listening tasks in EFL textbooks and assessment tools to ensure that students are regularly exposed to higher-level cognitive demands in listening comprehension.

Recommendations for Future Research

Future studies are recommended to employ mixed-methods or qualitative research designs to gain deeper insights into students' actual use of higher-order thinking skills during listening tasks. Interviews and classroom observations could provide richer data on learners' cognitive processes. Additionally, future studies could examine the relationship between HOTS awareness and listening performance by combining self-report measures with listening comprehension tests or performance-based assessments.

Further studies involving larger and more diverse samples from different institutions or educational contexts would improve the generalisability of findings. Finally, experimental or intervention-based studies could investigate the effectiveness of specific instructional strategies or teaching models in enhancing higher-order thinking skills in EFL listening comprehension.

References

Anderson, L. W., & Krathwohl, D. R. (Eds.). (2001). *A taxonomy for learning, teaching, and assessing: A revision of Bloom's taxonomy of educational objectives*. Allyn & Bacon.

Bloom, B. S., & Krathwohl, D. R. (1956). *Taxonomy of educational objectives: The classification of educational goals*. Longman, Green.

Bozorgian, H. (2014). The role of metacognition in the development of EFL learners' listening skill. *International Journal of Listening, 28*(3), 149–161. https://doi.org/10.1080/10904018.2013.861303

Celce-Murcia, M., Brinton, D. M., Snow, M. A., & Bohlke, D. (2013). *Teaching English as a second or foreign language* (4th ed.). National Geographic Learning.

Che Seman, S., Yusoff, W. M., & Embong, R. (2017). Teachers' challenges in teaching and learning for higher order thinking skills (HOTS) in primary school. *International Journal of Asian Social Science, 7*(5), 534–545. https://doi.org/10.18488/journal.1.2017.77.534.545

Iranti, I., Febriani, R. B., & Fatin, L. Y. (2022). Promoting students' higher-order thinking skills through flipped classroom model in listening comprehension classes. *VELES: Voices of English Language Education Society, 6*(1), 201–212. https://doi.org/10.29408/veles.v6i1.5060

Indriyana , B. S., & Kusumadewi, P. (2019). Developing students' higher-order thinking skills (HOTS) in reading: Strategies in selected junior high schools. *Journal of English Teaching, 5*(3), 204–216. https://doi.org/10.33541/jet.v5i3.1313

Mohammadi, E. N., & Zarei, A. A. (2014). The relationship between critical thinking ability and listening comprehension ability of Iranian EFL learners. *International Journal of Research Studies in Language Learning, 3*(4), 135–148. https://doi.org/10.5861/ijrsll.2014.903

Nampong, E. E., & Hanifah. (2020). University students' critical thinking ability in listening skill. *Creative English Education Journal, 7*(2), 340–358. https://doi.org/10.46244/cee.v7i2.1022

Nourdad, N., Masoudi, S., & Rahimali, P. (2018). The effect of higher-order thinking skill instruction on EFL reading ability. *Journal of Education Studies, 7*(3), 34–44. https://doi.org/10.17554/j.issn.2410-7352.2018.03.004

Rizqati, F., Mardianti, D., & Haryanto. (2020). Assessing students' higher-order thinking skills using multidimensional item response theory. *Padang State University & Yogyakarta State University*. https://doi.org/10.37235/jee.v20.78.196

Sitompul, M. S., Siahaan, L. H., Pasaribu, N., & Nation, J. (2021). The effect of higher-order thinking skills (HOTS) in reading comprehension. *Journal of English Education, 9*(1), 455–463. https://doi.org/10.24256/ideas.v9i1.1895

Susanti, A., & Khaidirah, S. (2021). Improving EFL students' higher-order thinking skills using reading strategies. In *Proceedings of the International Joint*

Conference on Arts and Humanities (IJCAH 2021) (Advances in Social Science, Education and Humanities Research, Vol. 618). Atlantis Press.
Vafaeenezhad, V., Haghani, F., & Jamshidian, A. (2020). Design and validation of a self-assessment questionnaire of basic thinking skills. *Journal of Education and Health Promotion, 13*, Article 33. https://doi.org/10.4103/jehp.jehp_1053_23
Zarei, A. A., & Razavi, M. (2024). The correlation between students' higher-order thinking skills and their English achievement at seventh grade. *Ecology Journal Ilmu Bahasa dan Sastra Inggris, 2*(1), 1–12. https://doi.org/10.61132/ecology.v2i1.707