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Article

Effectiveness of The SWOM Model in Developing Critical Listening Skills Among Middle School Female Students

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Abstract

This study evaluates how well 64 female first-grade middle school students taking an Arabic language course improve their critical listening abilities using the Schoolwide Optimum Model (SWOM). The study employed a quasi-experimental design to assess SWOM-based training in comparison to traditional teaching approaches. The results indicate statistically significant differences ($p < 0.01$) in post-test scores for overall critical listening abilities and the sub-skills of evaluation, discrimination, understanding, and inference between the experimental and control groups. The experimental group exhibited substantial improvements from pre-test to post-test, along with notable effect sizes. These findings confirm SWOM's effectiveness in improving critical listening abilities through the incorporation of higher order thinking into the curriculum. The research underscores SWOM's capacity to enhance student engagement and motivation. Recommendations entail integrating critical listening across several disciplines, highlighting contemporary instructional frameworks such as SWOM, and offering professional development for educators. Further investigation is required to ascertain the applicability of SWOM across various educational years and disciplines. The present study offers further evidence to endorse learner-centred techniques for student success.

Keywords

SWOM Model, Integrating Thinking Skills, Critical Listening Skills, Middle School Female Students.

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Introduction

Recent years have seen increased interest in innovative pedagogical practices aimed at fostering critical thinking and lifelong learning (Pieterse, Temane, & Downing, 2023). The surge in multimedia content highlights the growing need for critical listening skills, yet the Arabic language curriculum lacks structured interventions in this area (Abdel Baqi et al., 2021). This study examines the effectiveness of the Schoolwide Optimum Model (SWOM) in developing critical listening skills among middle school female students in Arabic language courses. SWOM, a four-phase framework integrating cognitive abilities into information delivery, has proven effective in enhancing higher-order thinking skills across disciplines (AlAli, Wardat, & Al-Qahtani, 2023). The research evaluates SWOM's efficacy compared to traditional methods, offering insights for instructional design and teacher training in Arabic education while contributing to the broader discourse on cognitive skill development essential for lifelong learning and academic success.

Teaching critical thinking is essential for shaping learners' character. Education aims to equip individuals with advanced skills, creativity, and adaptability to drive societal progress and address emerging challenges (Al-Ayasra, 2011). Developing cognitive skills, including logical reasoning, critical analysis, and creativity, aligns with international curricular standards and educational goals (Abdel Baqi et al., 2021; Al-Omair, 2020). Embedding these skills into the curriculum enhances students' intellectual capacity, aiding problem-solving and informed decision-making in personal and professional contexts.

Critical thinking, a higher-order cognitive skill, enables individuals to form logical and reasonable conclusions, essential for navigating propaganda and misinformation and fostering responsible citizenship (Mirchandani, 2005). Similarly, critical listening, characterized by understanding and awareness of delivered messages, allows individuals to process and interpret diverse information effectively in a media-saturated environment (Engraffia et al., 1999). With the proliferation of information sources and communication channels, critical listening has become increasingly important. This skill enables individuals to discern accurate information, evaluate content, and make informed decisions, which can be developed through intensive training. Listening remains a fundamental component of education, particularly in teaching Arabic, as it supports the development of various linguistic skills. Despite advancements in educational technology, listening plays a crucial role in dialogues and interactive exchanges (Ashour & Al-Hawamda, 2007).

However, studies indicate that listening is often neglected in Arabic language instruction (Al-Bishri, 2017). Research further highlights that Arabic language teachers struggle to cultivate critical listening and understanding skills in elementary and middle school students (Abdel Qader, 2022; Al-Qurashi, 2018). Recent advancements in education advocate for innovative pedagogical approaches that prioritise student-centred engagement, critical assessment, and skill enhancement (AlAli et al., 2023). Modern educational methodologies shift from passive learning to active participation, aiming to foster critical thinking, problem-solving, and creativity in students (Al-Hashemi & Al-Dulaimi, 2008).

Contemporary pedagogical theories, including the SWOM model, emphasise integrating cognitive approaches to enhance school learning. As Routman (2012) suggests, an effective learning model should promote profound, critical, and creative thinking by providing students with systematic procedures for inquiry and idea development. This highlights the importance of integrating innovative pedagogical approaches like the SWOM model, which significantly enhances critical thinking and lifelong learning competencies. Addressing the gap in fostering critical listening within the Arabic language curriculum, such frameworks promote higher order thinking across disciplines, with practical implications for instructional design and teacher training. These models represent a vital shift towards interactive and effective learning environments, underscoring the necessity of adapting to the evolving educational landscape. By equipping students with essential cognitive skills to navigate complex information, they foster a more active, creative, and meaningful academic environment.

Study Problem

Previous studies by Salman and Alwan (2020), Al-Subaie (2020), Al-Rashidi (2020), Al-Suwayrki (2019), and Haroun and Al-Kalbani (2022) have identified significant weaknesses in students' listening skills. These studies attribute the issue to the limitations of traditional teaching methods for critical listening, which fail to consider students' preferences, interests, or critical thinking. Additionally, these methods lack the essential processes needed for skill acquisition. This finding aligns with the researcher's observations during field

education supervision, noting limited student participation and poor listening skills during listening activities. Previous studies have demonstrated that the SWOM model enhances academic achievement and develops cognitive skills across various courses, as evidenced by Al-Ghannam (2018), Al-Jubouri and Raziq (2019), Abdel Baqi et al. (2021), and Al-Ghamdi (2022). However, research applying the SWOM model to humanities curricula remains limited compared to basic sciences, despite its potential in these fields. Additionally, most studies have focused on academic attainment without addressing skill development, a core objective of the model, as highlighted by Al-Asiri, Al-Najdi and Shehata (2022).

This study investigates the use of the SWOM model in language learning, focusing on improving critical listening skills—an essential competency in the age of information overload. Modern communication platforms, including social media, generate vast amounts of visual, auditory, and textual content, often laden with misinformation. Enhancing critical listening equips students to discern deceptive information, make informed decisions, and apply critical thinking, which are crucial for navigating the pervasive impact of media. Abdel-Nabi (2022), Al-Jubouri and Raziq (2019), and Yasiri, Mahdi and Saheb (2019) supports the use of the SWOM technique in teaching Arabic, demonstrating its effectiveness in improving various linguistic competencies and academic performance. This study now aims to assess the effectiveness of SWOM techniques in enhancing the critical listening skills of first-year female middle school students.

Objectives of the Study

1. This research aims to investigate the efficacy of SWOM in improving critical listening skills among novice female middle school students.
2. Cultivate fundamental critical listening abilities in first-year female middle school students.
3. Present contemporary educational techniques and frameworks that effectively cultivate critical listening abilities in learners.

Study Significance

Theoretical Importance

1. Identifies essential listening abilities for first-year middle school pupils.
2. Presents an innovative methodology for language training utilising the SWOM concept.
3. Promotes active student involvement and efficient communication in language acquisition through the application of the SWOM paradigm.
4. Offers guidance for teacher trainers on incorporating the SWOM strategy into contemporary pedagogical methods for the enhancement of critical listening skills.
5. Offers an extensive guide on critical listening skills for first-grade middle school students while promoting the SWOM approach in language education.

Practical Importance

1. It provides strategies for integrating the SWOM paradigm into classroom instruction to improve the critical listening skills of first-year middle school students.
2. It advocates for a more adaptable approach to lesson planning among language teachers by offering strategies that, when implemented within the SWOM model, foster the development of students' critical listening skills.

Analyse Principles

1. Critical Listening Skills: Rubin (1994) defines critical listening as "the process of deriving meaning and conducting cognitive analysis that goes beyond mere auditory perception; it involves identifying the deeper implications conveyed by the speaker and interpreting them, even if the speaker themselves is unaware of these meanings."

Al-Nuseirat (2014) describes it as "a skill requiring focus and awareness to interpret various messages conveyed by speakers, with the objective of reflecting on the content, forming opinions, making judgments, and providing critiques." The researcher asserts that this process involves assisting first-year middle school students in distinguishing auditory information, analysing its meaning, establishing connections, evaluating the content,

and assessing it against specific criteria. The effectiveness of this is measured through scores obtained on a test specifically designed to assess critical listening skills.

2. The SWOM model is described as "an educational framework that integrates skills, processes, and cognitive habits into the teaching of scientific content, fostering creative and critical thinking, decision-making, problem-solving, and mental habits that support productive behaviour" (Al-Asiri et al., 2022). The researcher defines the SWOM model procedurally as a series of interrelated and sequential steps implemented across four stages: introduction, active thinking, metacognitive reflection, and application. Its aim is to integrate critical listening skills—comprising understanding auditory information, distinguishing, analysing, and evaluating—into the content of listening lessons within the Arabic language curriculum for first-year middle school students. These lessons will be delivered to the experimental group to foster the development of these skills.

Research Scope

Objective Scope: This study focused on listening lessons in the Arabic language textbooks for the first and second semesters, with an emphasis on key listening skills such as comprehension, discrimination, inference, and evaluation. The evaluation centred on four fundamental components of the SWOM strategy: comparison, problem-solving, decision-making, and accountability.

Temporal Scope: The study was conducted during the first and second semesters of the 2023 academic year.

Spatial Scope: The research was carried out at "Haya Bint Abdulaziz" Girls' Governmental Intermediate School, located in Riyadh.

Sample Scope: The study involved a randomly selected sample of female first-grade middle school students.

Theoretical Framework

This paradigm, developed by Al-Asiri, extends the model originally designed by Swartz, placing emphasis on cognitive skills as integral to the learning processes within various subject areas. Structurally adapted from the Comprehensive Optimal School Model, the SWOM project represents a collaborative effort by Swartz and Omar, aimed at fostering the holistic development of successful learners and other stakeholders within the school environment as an institution (Al-Asiri et al., 2022; Swartz & Parks, 2005). The SWOM paradigm has been shown to improve children's higher order thinking in several studies. Al-Ghannam (2018) found that SWOM-taught biology students excelled in critical thinking and crucial concept understanding. Al-Jubouri and Raziq (2019) noted that the model improved college students' grammatical comprehension and critical thinking. More crucially, Ahmed (2020) found a statistical difference in critical thinking and decision making among SWOM-taught pupils. Prior literature described how SWOM and SQ3R improved English hearing and reading.

Abdel Baqi et al. (2021) found that the SWOM model improves primary school students' maths cognitive processes. Finally, Al-Ghamdi (2022) found that the SWOM approach improved systematic thinking and futuristic skills in third-year female secondary students learning English. Abdel-Nabi (2022) showed how the SWOM model might improve first-grade preparatory students' cognitive and grammatical skills. On cognitive and mathematical assessments, AlAli et al. (2023) found statistically significant changes in SWOM-taught students' directions. This study distinguishes itself from previous research by evaluating the effectiveness of the SWOM technique in enhancing Critical Listening Competence within the Arabic language curriculum. The model seeks to nurture a generation of learners defined by wisdom, rationality, productivity, reflective thinking, lifelong learning, and a commitment to ethical values (Al-Asiri et al., 2022).

Basic Principles of the Model

The SWOM model is organised based on a set of principles and rules, with the most significant being as follows (Al-Asiri et al., 2022):

1. Thinking and reflection are fundamental to the learning process.
2. The model's core structure involves integrating productive mental processes, cognitive thinking skills, and high-level mental attributes explicitly into the teaching of educational content.
3. Recognising the learner's mental model is a crucial factor in successful learning.

4. Effective and meaningful education in acquiring, constructing, and integrating knowledge occurs when appropriate strategies are employed to facilitate learning processes.
5. Focusing on the learner's internal experiences accounts for fifty percent of an effective learning process.
6. Guiding the student towards action, application, and performance is another critical component of effective learning.

The model encompasses most cognitive abilities, processes, habits, and characteristics, which are organised into three categories: advanced cognition, cognitive thinking skills, and efficient mental processes and habits. It includes qualities such as self-awareness, self-regulation, metacognitive awareness, the regulation of these processes, willpower, and performance management. The applicability of the SWOM model lies in its ability to enhance students' cognitive abilities, enabling them to approach problems effectively and make informed, wise decisions regarding solutions. Additionally, it fosters a sense of responsibility, helping students develop an awareness and understanding of their actions, thereby encouraging behaviour that allows them to recognise the consequences associated with their choices.

Literature Review

This literature review will examine existing research on critical thinking and listening skills in students within educational institutions. Various studies have developed a range of models and strategies designed to enhance these critical skills across different educational levels. These research efforts highlight innovative approaches to both the instruction and assessment of students, aimed at fostering academic and cognitive development. The following section will provide an overview of the key studies in this area.

Alqiawi (2015) designed the framework for teaching university students academic writing includes critical thinking. Helping pupils overcome academic writing issues is the goal. Critical thinking, self-assessment, and writing guidelines are covered. The strategy improves students' academic writing skills with high validity and dependability. A review on critical thinking applications for college students by Chen et al. (2019) guided evaluation tool creation. They focused on three critical thinking skills: pattern recognition, comparing new information to old knowledge, and reassessing old knowledge considering new evidence. These were design elements of their assessment instrument. Turkish language courses ignore critical listening, hence Erkek and Batur (2020) devised a critical listening skill attainment framework. Since reading and listening help with understanding, critical reading skills were applied to listening. Turkish curriculum materials, leading PISA countries' curricula, and a reading elective course provided achievements. Seventeen proposed successes were unanimously endorsed by experts for inclusion in the framework. The Critical Listening Attainment Framework enhances critical listening skills and provides guidance for the Turkish curriculum and educational materials.

Widhiatama and Dangin (2021) wanted to assess pupils' critical listening. Three specialists created and validated 40 tests. I-CVIs between 0.8 and 1 indicated validity for 30 items. The remaining 10 invalid goods have I-CVIs below 0.78. Improving instrument validity required amending invalid items. Krisnoviani and Sulistyani (2022) studied project-based learning's impact on Indonesian high school students' listening comprehension. An on-design, pre-experimental design included at least 31 students. Project-based learning improved student performance from 60.65 to 75.68. Thus, it is beneficial since the pre- and post-test listening comprehension outcomes differed statistically.

Basyoni and Medd (2023) employed qualitative-experimental research to show how much speech courses enhanced students' critical listening skills. All 17 kids participated. Students showed improvement in critical listening on both tests. Impacts were greater in the second cycle due to program and evaluation changes. The intervention's effectiveness and instrument design were shown by effect sizes from very modest to very large. Pieterse et al. (2023) developed a critical thinking strategy for South African radiography students. Theory-generating qualitative and contextual design underpinned the approach. Six radiography instructors assessed model implementation. The model allowed for purposeful tailoring of activities to educate critical thinking. Three themes emerged: 1) The model increased pedagogical awareness and peer collaboration; 2) online deployment needed creative and novel teaching methods; and 3) critical thinking across disciplines and academic years maximises benefits.

In conclusion, Basyoni and Medd (2023), Widhiatama and Dangin (2021), and Pieterse et al. (2023) all

focus on developing tools to increase students' critical listening and thinking. Basyoni and Medd's assessment tool improved students' critical listening abilities, achieving Widhiatama and Daging's goal of designing an instrument to assess them. Pieterse et al. (2023) focused on a paradigm to improve critical thinking skills, stressing customised activities for education. These studies emphasise the importance of systematic methods in teaching critical listening and thinking. The research has some consensus but also major disparities. Krisnoviani and Sulistyani (2022) use a pre-experimental method to study how project-based learning affects high school students' listening comprehension. Chen et al. (2019) used a literature review to design an evaluation tool for critical thinking applications, highlighting critical thinking constructs. Alqiawi (2015) and Erkek and Batur (2020) develop approaches to improve academic writing and critical listening in various educational environments. These differences highlight the many ways key skill development is examined.

More study is needed to improve tools and frameworks for assessing and fostering critical listening and thinking skills. Despite the growth of assessment methods and models, comprehensive frameworks that incorporate many aspects of core skills development across educational contexts are still needed. There is also little evidence on the long-term efficacy and durability of student skill-development initiatives. Technology-enhanced learning and cross-disciplinary approaches to critical ability development were neglected in previous research.

Much research have focused on traditional classroom interventions, but creative methods that use technology and multidisciplinary collaboration to increase students' critical listening and thinking are needed. Insufficient information exists about how socio-cultural factors affect pupils' critical skills, requiring further research. The writers collaborate to develop tools, models, and frameworks to promote students' critical listening and thinking skills across educational settings. The authors highlight gaps in current literature and propose new critical skill development strategies to improve students' academic achievement and lifelong learning.

Research Hypotheses

Theory Propositions in Science

1. The study's hypotheses were based on prior research.
2. To begin with, we will assume that the two groups will not differ substantially in their post-application scores on tests of critical thinking skills.

First Hypothesis: A substantial difference in the means of the experimental and control groups on a test of critical thinking abilities is observed when the task is applied.

Second Reason: There is no statistically significant difference in the experimental groups' mean scores on pre- and post-application assessments of critical thinking skills, according to the null hypothesis. Assumption 1 states that there is a statistically significant difference between the experimental groups' means before and after the application in terms of critical thinking ability.

Methodology

Research Design

The researcher accomplished the study's objectives and addressed its research questions through a quasi-experimental design involving two comparable groups: an experimental group and a control group. The experimental group underwent training using the SWOM model, whereas the control group was taught through traditional methods.

Study's Population and Sample

The study's population and sample consisted of female students attending public intermediate schools in Riyadh during the 2023–2024 academic year. Specifically, out of 140 students enrolled at Princess Haya bint Abdulaziz School, 64 were in the first grade of intermediate school. From these, 48 students were randomly selected, with 32 assigned to the control group and 16 to the experimental group. Random sampling was used to ensure the sample appropriately represented the research population.

Study Instruments

To accomplish the study's objectives, two tools were developed: a list of critical listening skills tailored for first-grade intermediate female students and a test designed to assess these critical listening skills.

First: First-year intermediate females should have mastered the following listening skills

The development of the criteria for identifying critical listening skills suitable for first-grade intermediate female students was guided by the study's theoretical foundations, secondary-level goals for teaching Arabic, and relevant course material. The list included four primary listening skills and fourteen supplementary skills. To ensure its validity, the list was reviewed by experts in Arabic language education and curriculum design, and adjustments were made based on their recommendations.

Second: Test of critical listening skills for first-grade intermediate female students

Based on the nature of each main listening skill, test items were designed in both multiple-choice and essay formats. Each main skill was allocated 25% of the total test items, resulting in a total of 18 items.

Test Validity

To ensure the test's validity, it was evaluated by ten educational supervisors from the General Directorate of Education in Riyadh and faculty members specializing in curriculum and teaching methods. Based on their feedback, some test items were revised. Following this, the test was administered to a sample from the research population to assess the clarity of instructions and items, estimate completion time, evaluate internal consistency reliability, and determine overall test stability. All Pearson correlation coefficients between the test item dimensions and the total score were statistically significant at the 0.01 level, ranging from 0.539 to 0.873, confirming the test's reliability as a research instrument. The difficulty index of the test items ranged from 0.23 to 0.81, while the discrimination index varied between 0.40 and 0.75, demonstrating the test's ability to effectively distinguish between varying levels of student performance. Cronbach's alpha coefficient was employed to measure test reliability, yielding an overall value of 0.851, indicating high reliability. Additionally, the reliability coefficients for individual dimensions of the test ranged from 0.773 to 0.842, further confirming the instrument's suitability for the study.

Teaching Approach for the Experimental and Control Groups

The control group was taught using conventional teaching methods, whereas the experimental group participated in listening lessons from the Arabic language curriculum for the first and second semesters, delivered through the SWOM model.

- The lessons followed a structured sequence, beginning with preparation and an introduction to the lesson's content and the targeted thinking skill.
- Students then listened to an audio clip included in the textbook, designed to foster active listening and develop the specified thinking skill.
- Teachers prompted reflection through direct questioning and provided activities that allowed students to apply the newly learned skill in various contexts, highlighting its practical relevance in daily life.
- The lesson content was designed to include topics that could be adapted into tasks and problems aligned with higher-order thinking skills. These included comparison, problem-solving, decision-making, and responsibility-taking. This was supported through the use of mind maps and graphic organizers, seamlessly integrating these skills into the curriculum.
- Each lesson was allocated 45 minutes, with an average of five lessons per week over four weeks.

Statistical Processing Methods

Data analysis was conducted using various statistical methods in SPSS-25 to summarize, present, and draw inferences from the results, as detailed below:

Mean: Assessed the differences between pre-test and post-test scores.

Standard Deviation (SD): Measured the degree of variation in responses within the study sample.

Pearson's Correlation: Verified the internal consistency and reliability of the study instrument.

Difficulty and Discrimination Index: Analysed the ease or difficulty of test items and the test's ability to distinguish between varying levels of critical listening skills.

Cronbach's Alpha: Assessed the reliability and validity of the instrument for field application.

Independent Sample T-Test: Compared the control and experimental groups, evaluating their equivalence based on pre-test results and analysing post-test performance in critical listening competence.

Paired Sample T-Test: Examined the differences in pre-test and post-test scores within the experimental group to evaluate improvements in critical listening skills.

Blake Gain Equation: Estimated the significance of statistically significant findings and calculated the effectiveness ratio when differences were observed between the two groups.

Results

The First Hypothesis: *There is a statistically significant difference in the mean grades between the control and experimental groups, which relates to a post-test application on critical listening skills, from the side of the experimental group*

Table 1 showing an Independent Sample t-test that tested this hypothesis. Table 1 shows a statistically significant difference at 0.01 in the mean scores of the control and experimental groups for critical listening skill application throughout the total score and sub-dimensions. The experimental group outperformed the control group due to the higher mean score: 3.31 (SD = 0.73) for the control to 1.50 (SD = 0.81); 3.16 (SD = 0.67) to 1.03 (SD = 0.66); 3.05 (SD = 0.74) to 1.47 (SD = 0.78); 3.05 (SD = 0.72) to 1.34 (SD = 0.82); and 12.56 (SD = 1.96) to 5.34 (SD = 1.86) on the total test score. The statistics show that the SWOM method improved critical listening abilities and sub-dimensions in first-grade middle school pupils. Such results support the hypothesis that the experimental group has a critical listening skill application advantage over the control group.

Table 1: Independent Samples T-Test Results for Control and Experimental Groups' Critical Listening Skills.

Dimension	Application	Number	Mean	Standard Deviation	T-Value	Significance Level
Comprehension	Control Group	32	1.5	0.81	9.401	0.001
	Experimental Group	32	3.31	0.73		
Discrimination	Control Group	32	1.03	0.66	12.836	0.001
	Experimental Group	32	3.16	0.67		
Inference	Control Group	32	1.47	0.78	8.267	0.001
	Experimental Group	32	3.05	0.74		
Evaluation	Control Group	32	1.34	0.82	8.831	0.001
	Experimental Group	32	3.05	0.72		
Total Test Score	Control Group	32	5.34	1.86	15.138	0.001
	Experimental Group	32	12.56	1.96		

The Table 1 also shows an independent sample t-test on critical listening competence in the control and experimental groups in four dimensions: comprehension, discrimination, inference, and evaluation, plus the total test score. The experimental group, which may have received an intervention or teaching method, scored higher than the control group, which did not receive the same treatment on all measures. The experimental group had higher means and t-significance values at 0.001 for each dimension, indicating a significant difference. Such findings suggest that the experimental group's intervention is crucial to improving their critical listening skills, justifying the use of such pedagogical strategies in teaching and learning.

The Second Hypothesis: *There is a statistically significant difference in the mean scores of the experimental group at the pre and post-tests concerning critical listening skill in the post-test*

For this hypothesis test, testing with a paired sample t-test uses two matched samples as follows in Table 2. A paired sample t-test was used to compare an experimental group's pre- and post-test results in Table 2. Students' critical listening abilities increased after an educational intervention. Comprehension, discrimination, inference, and appraisal improved significantly from pre-test to post-test, with p-values less than 0.001. All

Blake's Gain Ratios above 1.2 indicate significant critical listening skill gain, demonstrating instructional efficacy. The intervention promoted critical listening skills, as shown by these outcomes.

Table 2: Paired Sample T-Test Results for Pre-Test and Post-Test Scores in Experimental Group's Critical Listening Skills.

Dimension	Application	N	Mean	Standard Deviation	T-Value	Significance Level	Blake's Gain Ratio
Comprehension of Listening	Pre-Test	32	1.77	0.92	7.485	0.001	1.27
	Post-Test	32	3.31	0.73			
Discrimination	Pre-Test	32	1.39	0.86	9.194	0.001	1.31
	Post-Test	32	3.16	0.67			
Inference	Pre-Test	32	1.86	0.72	6.482	0.001	1.23
	Post-Test	32	3.05	0.75			
Evaluation	Pre-Test	32	1.63	0.66	8.220	0.001	1.28
	Post-Test	32	3.05	0.72			
Total Test Score	Pre-Test	32	6.64	1.21	11.341	0.001	1.22
	Post-Test	32	12.56	1.05			

In Table 2, the total score of critical listening abilities and its sub-dimensions—comprehension, discrimination, inference, and evaluation—was statistically significantly different at 0.01 on pre- and post-tests. Consider listening comprehension, whose mean changed from 1.77 with an SD of 0.92 in the pre-test to 3.31 with an SD of 0.73 in the post-test. Similar trends apply to discrimination, inference, and evaluation. This shows that SWOM method improves critical thinking in first-grade female middle school pupils and reduces its subdimensions. The mean scores of the experimental groups in the pre- and post-tests of critical thinking skills favour post-tests, supporting the null hypothesis. Blake's gain ratio formula showed significant differences between pretest and post-test means for critical listening and its subdimensions, such as listening comprehension, discrimination, inference, and evaluation, all of which exceeded the effectiveness threshold of 1.2. The SWOM method is excellent for enhancing critical listening skills in first-grade middle school female students.

Discussion

The SWOM paradigm, which integrates critical thinking skills into students' learning across four stages, led to the observed result. Students should use their brains to learn. The following level effortlessly integrates these competencies into the curriculum. Organisational charts, focused enquiries, and challenges help students evaluate circumstances, analyse options, and make good decisions, improving their critical listening abilities. Through reflection assignments and worksheets, the SWOM model allows students to engage in learning tasks and improve their cognitive abilities. The third stage involves increased awareness of thought processes, strategic perception, and task performance appraisal.

Fourth-stage students are challenged to use their cognitive views in numerous circumstances, allowing direct exposure to learning materials and improving understanding and real-life application. Explaining the SWOM model improves student motivation, persistence, and goal-oriented learning, as well as student and researcher communication, creating a social learning environment that explains complicated topics. In the SWOM paradigm, students' critical perception of their listening abilities develops through engagement with a variety of texts, allowing them to utilise such skills in learning and practice. Problem-solving, creative thinking, decision-making, and information evaluation similarly use the SWOM model to improve critical listening. All these elements allow students to participate, learn cooperatively, and develop their talents to improve education.

These data show that SWOM improves female middle school pupils' critical listening. The statistically significant differences between experimental-control individuals and post-pre-tests on critical listening and related sub-skills support the outcome. These findings confirm and expand previous research on SWOM's ability to improve higher-order thinking by Al-Jubouri and Raziq (2019), Abdel Baqi et al. (2021), and Al-Ghamdi (2022). Not all are used for Arabic language instruction. Abdel-Nabi (2022) and Al-Jubouri and Raziq (2019) found SWOM effective in teaching Arabic grammar, however this study found it effective in improving target

group critical listening. SWOM is useful for multiple purposes and cognitive abilities, according to the studies.

The widespread application of SWOM in STEM disciplines, as stated by the current study, emphasises the need to emphasise humanities curricula. The mean change in students' critical listening pre- and post-test scores was considerable. Thus, SWOM improves cognitive ability in students, supporting Ahmed (2020) and Abdel Baqi et al.'s (2021) claim that it improves critical thinking and cognitive ability. This study shows that SWOM enhances middle school Arabic students' critical listening skills, adding to the expanding evidence that it increases higher-order thinking throughout the curriculum.

These findings support previous research on the SWOM model's effectiveness in improving listening and critical thinking (Abdel Baqi et al., 2021; Ahmed, 2020; Al-Ghamdi, 2022; Al-Jubouri & Raziq, 2019). These results show that the SWOM paradigm improves critical listening better. According to the course purpose of encouraging lifetime self-learning, learners used SWOM-developed critical listening skills in different contexts. SWOM increased student cooperation and created a competitive, exciting learning environment. Further, the SWOM paradigm was shown to focus learners on the learning process, which aligns with current studies and projects.

Conclusion of the Research

This research shows how the Schoolwide Optimum Model improves critical listening in Arabic language class for female middle schoolers. Results show a statistically significant difference between an experimental group taught using the SWOM paradigm and a control group taught normally. Experimental group differences in critical listening comprehension, discrimination, inference, and appraisal are statistically significant. The research contributes to the growing requirement for critical listening abilities due to unfettered access to multimedia content on all communication channels. The research shows evidence that the SWOM approach improves key cognitive functions in humanistic settings. Outstanding contrasts between pre- and post-test scores will demonstrate SWOM's relevance in fostering critical thinking in students. These findings demonstrate how the modern, student-centred approach helps students develop higher-order skills and knowledge to transition to active learning. Such methods' educational and curricular modifications show how education can prepare teenagers for critical citizenship in a complicated digital world. This is merely a fundamental block, therefore future study must quantify the SWOM model's ecological, situational, and ontogenetic generalisation. The consequences must then influence formal efforts to develop important competencies for school performance and lifelong learning in a complex knowledge environment.

The Implications of the Findings

1. **Enhancing Educational Curriculum:** The study highlights the importance of developing critical listening abilities in all curricula, particularly Arabic education. This would require a major curriculum overhaul, as critical reading and writing are now prioritised.
2. **Pedagogical Strategies:** The SWOM model and other creative teaching methods are recommended for all educational levels. This applies to pedagogy: student-centred and active learning improves critical thinking and listening.
3. **Teacher Professional Development:** Implementation of the SWOM paradigm requires training courses and workshops for educators, especially Arabic language instructors. Educators need ongoing professional development to find novel methods to improve students' critical listening and thinking.
4. **Research and Development:** The document suggests examining the SWOM model's efficacy across many educational sectors. This shows a dedication to evidence-based teaching and recognition of the model's academic benefits.
5. The study recommends major changes in curriculum, teaching methods, professional development, and research to improve students' critical listening and thinking skills.

The Limitations of the Study

1. **Limited Scope of Generalization:** The study focuses exclusively on first-grade female students, limiting

the ability to generalize the findings to broader populations, including male students or those in different grades.

2. **Sample Size:** While a sample size of 64 students is adequate for preliminary analysis, it does somewhat reduce statistical power and may limit the robustness of the findings.
3. **Confounding Variables:** Being an educational study, various confounding factors, such as students' prior knowledge, learning environments, and external influences, could affect the results. Controlling for these variables was beyond the study's scope.
4. **Potential for Self-Report Bias:** The use of a self-reporting critical listening skills test to measure outcomes introduces the possibility of subjectivity and response bias, potentially affecting the reliability of the results.

Study Recommendations

1. **Integrate Critical Listening Skills:** Incorporate critical listening skills across all educational curricula, with particular focus on Arabic language courses, to foster students' comprehension and enhance their critical thinking abilities.
2. **Prioritize Listening Skills Development:** Focus on developing critical listening skills among the students because they are the cornerstone of successful learning, especially in the case of the Arabic language.
3. **Adopt Modern Teaching Models:** Encourage the integration of thinking skills into school curricula by adopting new models of teaching, such as the SWOM model, to build the thinking abilities of the students.
4. **Provide SWOM Model Training:** Organize training workshops and courses for teachers and supervisors of the Arabic language on the application of the SWOM model for the improvement of teaching skills and classroom outcomes.
5. **Include SWOM Model Guidelines:** Ensure that the teacher's handbook by the Ministry of Education includes clear examples on planning, conducting, and evaluating listening lessons using the SWOM model so that teachers are able to give effective lessons.

Future Directions

1. Widen the research into multiple universities and countries for the purpose of expanding the generalizability of the results in relation to the effectiveness of the SWOM model across diverse educational environments
2. Carry out longitudinal studies to quantify the long-term effects of the SWOM model on critical listening skill acquisition, tracking the development process over a sustained duration.
3. Examine the effect that incorporating critical listening instruction using the SWOM model has on varied grade levels and whether effectiveness differs by student age or educational level.
4. Conduct quantitative and qualitative research to gain in-depth insights about the views and experiences both teachers and the students regarding the SWOM model.
5. Conduct experimental research comparing the efficacy of the SWOM model with other new teaching models, most importantly in developing listening skills among the students.
6. Examine the application of the SWOM model in the acquisition of other language skills, i.e., grammar, word retention, and reading skills, to establish its versatility.
7. Discuss the impacts of teacher training programs based on the SWOM approach and the relationship between these programs and the improvement in student outcomes.

Further research building on this study's implications offers exciting opportunities to deepen our understanding and application of innovative, learner-centric education models designed to equip young people with essential 21st-century skills.

Suggested Studies

1. SWOM model's effectiveness for elementary-stage students in Arabic grammatical rules.
2. Interactive training program based on SWOM for Arabic language teachers.
3. SWOM model in developing critical listening skills among fourth-grade students.
4. SWOM model's role in secondary stage students' achievement in linguistic competencies.

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