

**Effectiveness of the Deep Learning Strategy in
Developing Secondary Stage Students' EFL Public
Speaking Skills**

**فاعلية استراتيجية التعلم العميق
فى تنمية مهارات التحدث أمام الجمهور باللغة الإنجليزية
كلغة أجنبية لدى طلاب المرحلة الثانوية**

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Abstract

The current research tried to examine the effectiveness of a suggested program based on the deep learning strategy in developing secondary stage students' EFL public speaking skills. Participants were 50 second year students from a public secondary school in Egypt, divided into a control group and another experimental one. The quasi experimental pre - post design was used in this research. The groups received the EFL public speaking test, designed by the researcher, before and after the administration of the suggested program based on the deep learning strategy. Two raters scored the test using the scoring rubric, developed by the researcher. Statistical analysis of the participants' test scores revealed that the experimental group excelled the control one in the post administration of the EFL public speaking test. The suggested program based on the deep learning strategy had a large effect size ($d=6.30$) and developed secondary stage students' EFL public speaking skills.

Keywords:

Deep learning, public speaking, secondary stage, EFL

المستخلص

حاول البحث الحالي تحديد فاعلية برنامج مقترح قائم على استراتيجيات التعلم العميق في تنمية مهارات التحدث أمام الجمهور باللغة الإنجليزية كلغة أجنبية لدى طلاب المرحلة الثانوية. شارك في الدراسة ٥٠ طالب في الصف الثاني الثانوي بإحدى المدارس الحكومية في مصر، تم تقسيمهم الى مجموعتين تجريبية و ضابطة. اعتمد البحث على التصميم شبه التجريبي القبلي البعدي. تم تقديم اختبار مهارات التحدث أمام الجمهور قبل و بعد تقديم البرنامج المقترح القائم على استراتيجيات التعلم العميق، و قام اثنان من المقيمين بتصحيح الاختبار باستخدام معيار التقييم الذي أعدته الباحثة. أوضحت نتائج التحليل الإحصائي تفوق طلاب المجموعة التجريبية على أقرانهم في المجموعة الضابطة وذلك في التطبيق البعدي لاختبار مهارات التحدث أمام الجمهور باللغة الإنجليزية. كما كان للبرنامج المقترح حجم أثر كبير ($d=6.30$) مما ساهم في تنمية مهارات التحدث أمام الجمهور باللغة الإنجليزية لدى طلاب المرحلة الثانوية.

الكلمات المفتاحية:

التعلم العميق، التحدث أمام الجمهور، طلاب المرحلة الثانوية، اللغة الإنجليزية كلغة أجنبية .

Introduction

The New Hello for second year secondary stage students in Egypt targets developing students' skills of suggesting solutions to problems, persuasion, communication of opinions, and presentation delivery. Such skills are considered public speaking skills. Secondary stage students need to develop their EFL public speaking skills to be able to join universities. Different universities require admission interviews for applicants. Deep learning depends on eliciting students' high order thinking skills to solve authentic problems.

Public speaking is delivering a formal speech in front of others (Alberts et al., 2011; Aulia, 2022). It is a form of communication where a speaker gives a message to the audience (Sugiyati & Indriani, 2021). There are three types of public speeches: introductory, informative, and persuasive (Sarpourian et al., 2022). The aim of a public speech is either to inform, persuade, stimulate, entertain, or influence the audience (Flair, 2017; Opt, 2019). Public speaking develops students' interpersonal interaction (Pierini, 2020). Teaching EFL aims to develop students' communication skills, like listening and speaking, so the oral English test is an essential part of the international exams and academic exams for higher education students (Qu & Li, 2022).

When EFL teachers use Deep Learning (DL) strategy, they focus on developing students' high order thinking skills rather than low and middle level thinking skills (Wang, 2017). Deep learning is deep understanding and knowledge transfer through solving real life problems. The core of deep learning is students' use of high order thinking skills (Liu et al., 2022). Deep learning means providing students with learning tools to generalize, reason, analyze, synthesize, and evaluate the learning situation. The learning situation is a key question to be solved to achieve the learning objectives of the content (Yang, 2022).

Solving problems and reflecting on learning experiences help students become active learners. The teacher situates learning in real world problems and makes students responsible for their learning (Fahmi

et al.,2021). The use of problems improves students' oral communication skills (Khusain, 2016). Problems in the learning situation enable students to develop their speaking skills as they share ideas and communicate with others to form new ideas (Surif et al.,2013).

Context of the Problem

EFL speaking is a complex skill that receives less attention than it deserves in classrooms (Lewis, 2011). Students who speak the same first language are usually unwilling to participate in EFL speaking activities. Also, teachers offer few opportunities for speaking due to the large number of students as well as curriculum restrictions (Iwaniec 2014; Oroujlou & Vahedi 2011). EFL sessions focus on teaching reading and structure rather than practicing speaking. Speaking requires extended practice so that students can transform their knowledge into speech (Fahmi et al.,2021). Students complain that enabling them to become fluent speakers is neglected in EFL classrooms (Pierini,2020).

In the secondary stage, EFL teachers teach for the test which does not include a speaking section (Hekal,2022; Sidky, 2019). EFL speaking skills are usually neglected in the Egyptian classrooms. Students lack the necessary skills for English speaking (Farghaly, 2020). Although public speaking and oral assessments are common in higher education, they cause anxiety and stress for students (Bendak,2019). Secondary stage students have weakness in English oral communication skills (Abdul Samad et al.,2017). Suggesting solutions to problems, persuasion, communicating opinions and beliefs, and delivering a presentation are the main speaking skills included in the New Hello English for Secondary Schools in Egypt (Hart &Adlard, 2020). To the best knowledge of the researcher, there is a paucity of studies on developing secondary stage students' EFL public speaking skills in Egypt.

The Public Speaking Test, developed by the researcher, was administered to 20 second year secondary stage students on October 3, 2022. Two raters scored the students' public speeches using the scoring rubric developed by the researcher. Results indicated that 72% of them were not able to give public speeches.

The problem could be stated as follows:

Second year secondary stage students were weak in EFL public speaking skills.

Research Purpose

The research aimed to investigate the effectiveness of deep learning strategy in developing second year secondary stage students' EFL public speaking skills.

Research Questions

- What are the EFL public speaking skills suitable for second year secondary stage students?
- What are the features of a suggested program based on deep learning strategy to develop second year secondary stage students' EFL public speaking skills?
- What is the effectiveness of the suggested program in developing second year secondary stage students' EFL public speaking skills?

Research Hypotheses

- There was a statistically significant difference, in the content skills of public speaking, between the mean scores of the control and experimental groups at ($\alpha \leq 0.01$) level of significance in the post administration of the EFL public speaking test in favor of the experimental group.
- There was a statistically significant difference, in the delivery skills of public speaking, between the mean scores of the control and experimental groups at ($\alpha \leq 0.01$) level of significance in the post administration of the EFL public speaking test in favor of the experimental group.
- There was a statistically significant difference, in the overall public speaking skills, between the mean scores of the control and experimental groups at ($\alpha \leq 0.01$) level of significance in the post

administration of the EFL public speaking test in favor of the experimental group.

Research Significance

- Developing second year secondary stage students' EFL public speaking skills.
- Offering a program for teaching public speaking skills in the EFL classroom.
- Offering authentic EFL speaking activities related to the learning context and students' culture.
- Paving the way for future research on public speaking skills as well as deep learning according to the findings of the research.
- Encouraging secondary stage English teachers to offer extended speaking practice in classrooms.

Research Delimitations

- Participants were delimited to 50 second year secondary stage students at a public school in Egypt.
- The first term of the academic year 2022/2023, from October 5 to December 5, 2022.
- The following public speaking skills: Capturing the audience attention in the introduction, eliciting students' interest through using relevant supporting ideas, offering final messages in the conclusion, using clear well projected voice, using expressive body language, using accurate spoken grammar, and reflecting confidence while delivering the speech.

Research Terms

Deep Learning Strategy (DL)

Deep learning strategy depends on students using high order thinking skills to solve ill-structured problems (Liu et al., 2022). In this research, the deep learning strategy refers to the steps followed by the teacher to

develop secondary stage students' EFL public speaking skills. Students became responsible for their own learning, they gathered, analyzed, and synthesized information to prepare a speech to be delivered in front of others to solve a problem.

Public Speaking Skills

Public speaking in EFL classrooms refers to a student delivering a speech in English to the teacher and other students (Guest, 2018). In this research, public speaking skills referred to the content and delivery skills used by second year secondary stage students to deliver an effective engaging public speech in EFL classrooms.

Review of Literature and Related Studies

EFL speaking enables students to communicate and express their opinions to others. Students speak to share their ideas and improve their confidence. Speaking English fluently is one of the keys to succeed in life (Nazara, 2011). English teaching focuses on developing students' confidence while communicating in English. Some universities require that students pass an oral English admission test. Also, English speaking is an integral part of the international tests (Qu & Li, 2022). Public speaking is used as an assessment tool, especially in high schools and universities (Quinn & Goody, 2019). Thus, public speaking assessment tasks should be integrated into learning activities (Nash, 2013).

Public speaking involves seven main components: the speaker, message, channel, listener, feedback, noise, and situation. The speaker's credibility depends on his performance in addition to the knowledge accuracy. The message is delivered through words, tone, appearance, and gestures. The channel is the means of communication used to deliver messages, such as online and face-to-face interaction. The listener is the receiver who forms a mental image of the message. The feedback is the listener's responses based on his referential framework. The noise can be internal, like anxiety, or external, like uncomfortable room temperature. Finally, the situation is the setting of delivering the speech and the speaker adapts to its requirements (Matel, 2021).

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Public speaking includes verbal and non- verbal skills. The verbal aspect of public speaking includes using appropriate sound volume, using tone variations to reflect emotions and attitudes, avoiding repetitive inflexion patterns; whether ascending or descending, varying rhythm to create intended modes and avoid boredom, using pauses to end ideas, and avoiding mispronunciation. Nonverbal messages convey meaning without using words (Khan et al., 2016). They transmit about 70% of the speech meaning (Floyd, 2017; Lucas, 2015).

Gestures, facial expressions, and postures are non-verbal communication techniques. Gestures are hand movements that send positive emotions to the audience (Floyd, 2017). Body movements reflect the speaker's confidence, such as stepping away from the stand, walking around the room, and using natural arm gestures. Hand gestures visualize the ideas and engage the audience. Crossing arms as well as touching the face are inappropriate in public speaking (Chan & Ho, 2021). Eye contact means looking at every audience at some point during the talk. Eye contact reflects the speaker's credibility (Khan et al., 2016). Posture affects the message delivery and determines the audience's attitudes (Zhou et al.,2021).

The public speech includes a statement, evidence, emotion, and demonstration. The statement includes a claim or argument. Evidence means facts and statistics that support the claim. Emotion is the personal impact of the speaker on the audience. Demonstration means eliciting a listener's imagination through visualization (Nie et al.2020). There are four main stages of a public speech: planning, preparing, practicing, and presenting. The content and organization involve the first two stages of a speech: planning and preparation. Body language and paralanguage involve the final two stages of a speech: practice and presenting (Bezzazi, 2019).

The three main parts of a public speech are: introduction, body, and conclusion. The introduction captures the audience's interest by using attention getters, like questions, shocking statements, and narratives. It also includes a credibility statement to elicit the audience positive attitudes and convince them to listen to the speech. The introduction

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offers a preview statement to show the main points and the key message. The body explains the main points and supporting details. It depends on transition sentences to show the logical relationship between ideas. The conclusion consists of a summary statement and clincher. The summary statement summarizes the main points of the speech. The clincher provides the audience with a reminder after the speech. The speaker should end the speech with information, instruction, or inspiration (Kaye,2012; Matel, 2021).

Different psychological characteristics are involved in public speaking, such as self -confidence, self- management, relatedness, and improvisation. Self -confidence is the reflection of thinking clarity during speech delivery (Carnegie, 2017). The speaker's appearance and eye contact, as indicators of self- confidence, enable the speaker to establish rapport with the audience (Khan et al., 2016). Self- confidence minimizes fear, tension, and anxiety during public speaking (Imron & Hantari, 2019). Students with public speaking anxieties suffer from low self-esteem and self-confidence. They avoid videotaped feedback for not watching their speaking performances (Arakawa& Yakura,2020). Video recording is used for reflection to help students improve their public speeches (Zhou et al.,2021).

Glossophobia is the fear of speaking in public (Coskun, 2017). The speaker sweats and the voice fades while delivering the speech (Li, 2020). Rehearsal in a similar environment enables students to overcome Glassophobia and control their behaviors (Zhou et al.,2021). Students become anxious when they feel that they lack the required skills for public speaking (Richmond et al., 2013). In addition, students may also become anxious as they desire to avoid any mistake during public speaking (Sugiyati & Indriani, 2021).

Imron and Hantari(2019) examined students' attitudes towards public speaking and the reasons for being anxious while giving public speeches. Participants were 23 students in a high school in Indonesia who answered The Foreign Language Classroom Anxiety Scale (FLCAS). Findings showed that students had positive attitudes towards public speaking, but they were anxious to give public speeches. The reasons for their anxiety

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were due to feeling discomfort to speak in English in front of others, and the lack of vocabularies and confidence.

Self- management, as a psychological characteristic of public speech, refers to the speaker's ability to manage oneself while delivering the speech. Anxiety management while performing the speech is a public speaking skill (Beebe& Beebe, 2016). Students are anxious and unwilling to communicate in English (Aragão, 2011) They feel afraid to speak in the EFL classroom (Hewitt & Stephenson, 2012; Tran et al., 2013). The speaker should command verbal and non-verbal skills to manage different reactions towards the audience (Carnegie, 2017).Self-affirmation statements, before the speech, may help in reducing speaking anxiety (Shadinger et al.,2020).

Hamzaoğlu and Koçoğlu(2016) tried to examine the effect of podcasts on EFL students' oral performance, speaking anxiety, and the relationship between speaking anxiety and oral performance. Participants were 56 ninth grade students in Istanbul, divided into a control group and an experimental one. Both groups were administered a Speaking Test and an Anxiety Questionnaire. The results of the study showed that students who used podcasts had higher oral performance and lower speaking anxiety levels than the students who did not use podcasts. Besides, there was a negative relationship between the participants' oral performances and speaking anxiety. It was recommended that teachers integrate podcasting into their language classes to help students feel confident and improve their oral performances.

Relatedness, as a psychological characteristic of public speech, means gaining the audience interest through establishing respectful social connections (Carnegie, 2017; Matel,2021). Relatedness is achieved through rehearsals, time management, and improvisation (Tsang,2020). Improvisation enables the speaker to maintain communication in challenging situations (Nie et al., 2020).

Bezzazi (2019) examined the effectiveness of flipped learning on EFL students' public speaking. Participants were two intact English Public Speaking classes; a class was the control group and the other was

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the experimental one. Each participant offered a three -minute public speech before and after administering the course. The participants were evaluated on content, organization, body language, and voice. Findings revealed that the experimental group outperformed the control one. It was recommended to add structure and grammar while evaluating the speeches.

Teaching EFL speaking is challenging for students since there are few opportunities to practice outside the classroom. Teachers should avoid interrupting students while speaking to develop their fluency. Teachers should help students negotiate for meaning and explain each other's speeches to express their understanding (Fahmi et al.,2021). Students should practice public speaking skills (Aulia, 2022). Students do not exert efforts to improve their public speaking skills. They avoid public speaking assessments (Hamilton & Creel, 2011). Assessment tasks should be integrated into EFL learning activities (Bendak,2019).

Public speeches are scored according to scoring rubrics, such as the Texas 4-H (2023) public speaking rubric that targets teenagers till age 18. It includes two main sections: material and presentation. Material covers topic, introduction, content, conclusion, and composition, while the presentation section covers voice and manner. For High school students, after 18 years old, their public speaking skills are scored according to Junior High Public Speaking Rubric (2020) that consists of two dimensions: oral communication and response to questions. Oral communication includes persuasive use of evidence, pace, eye contact, gestures, and poise, while response to questions dimension includes organization of thoughts and knowledge of topics.

The use of deep learning strategy develops students' EFL writing, translation, listening, and speaking skills (Guo,2021). Deep learning (DL) is a teaching strategy that depends on transforming the learning content into a key question that students answer to solve a problem. The question reflects the learning objectives of a specific content, and teachers monitor students' learning through offering different learning tools. Students use different thinking skills such as analysis and judgement (Yang,2022).

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The study of Wahyudi (2017) revealed that using the questioning technique developed students' speaking skills in Indonesia. Participants were 29 first year university students enrolled in the English Education Department. Results of the post testing revealed that the questioning technique improved students' accent, grammar, vocabulary, fluency, and comprehension. It also developed students' self-confidence.

Muhammadiyah et al.(2020) highlight how critical thinking develops students EFL speaking skills. Critical thinking enables students to analyze the different aspects of the learning situation and question the data. Students discuss ideas to find evidence of the speaking topics. DL aims at developing students' autonomous learning and problem-solving skills. It depends on the contextual learning theory where students process the new information based on their previous knowledge. Students apply their learning knowledge to their lives (Liu et al.,2022).

Deep learning is an active inquiry-based strategy that encourages students to use creative and critical thinking. Students understand the new knowledge then transfer it to the old knowledge before applying knowledge to new different situations (Guo,2021). DL is the integration of information as students combine both new and old knowledge to be applied in different situations (Abdi et al., 2019).

Montafej et al.(2021) examined the effect of hybrid problem-based learning and pure problem-based learning on developing EFL speaking skills. Pure problem-based learning means that students define and solve the problems by themselves, and the teacher is a facilitator, while hybrid problem-based learning is a mix of traditional lectures and independent student problem solving. Participants were 56 undergraduate students in an Iranian university. They were divided into two experimental groups and a control one. Three groups answered an ILETS speaking section and Rosenberg Self-Esteem questionnaire. Data analysis revealed that the experimental groups, a group received hybrid problem-based learning and the other received pure problem-based learning, outperformed the control one on the speaking skills as well as self-esteem.

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There are different views on the definition of deep learning, while some researchers deal with DL as a strategy, others believe that the DL is a goal to be achieved. Overall, DL is the foundation of understanding. Teachers encourage students to learn new ideas and facts. Then, students integrate them into their existing cognitive structures through connecting ideas and transferring existing knowledge to new situations. Finally, students can make decisions and solve problems. DL is a complex meaningful cognitive process that depends on activating original knowledge, retrieving memories, and integrating new and old knowledge to deal with new situations and problems (Wang,2017).

Fahmi et al.(2021) showed that problem based learning enhanced high school students' speaking skills in Indonesia. Participants of the study were second grade students at a public school, divided into a control group and an experimental group. They answered an oral speaking test and a questionnaire. Results of t-test revealed that students' speaking skills were developed and they were motivated to perform the speaking task based on real-life issues that required solutions.

The difference between surface learning and deep learning is that the first focuses on memorization and recitation of isolated information, while the second focuses on comprehension (Dargan et al.,2020; Qu & Li, 2022). Surface learning is a low-level cognitive process of retrieval and shallow understanding. It is a passive way of learning that ignores the connection of knowledge and its transfer. In contrast, deep learning is a multistep cognitive process of deep knowledge understanding. It depends on old and new knowledge interaction to master unstructured knowledge, like tacit knowledge and complex concepts (Guo,2021; Liu et al.,2022). Deep learning depends on using critical thinking, concept association, meaning extraction, and comprehension (Qu & Li, 2022).

In 2008, Eric Jensen and LeAnn Nickelsen developed the deep learning model that consists of the following steps. First, developing learning contents and goals based on the curriculum standards. Second, designing a positive learning environment where teachers use different strategies, such as questioning and discussion, to activate students' prior knowledge. Teachers encourage in-depth processing of knowledge

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through knowledge integration. Finally, offering immediate feedback as the final evaluation of student learning through teacher's reflection and peer evaluation to improve future teaching (Niu & Liu,2022).

Ali (2021) examined the effect of a program based on the questioning techniques on developing EFL speaking skills. Participants were 40 first year secondary stage students in a public school in Egypt, as the study group. They received the Speaking Test before and after the administration of the program and the test focused on the following sub skills: pronunciation, fluency, grammar, and vocabulary items. Participants' scores on the post testing outperformed their scores on the pre-testing which revealed the effectiveness of the program based on the questioning techniques in developing EFL speaking skills.

Wu and Qiu (2022) suggest the following steps for applying DL in the classroom: Analysis, construction, and evaluation. The first step, analysis, focuses on analyzing students' needs and learning content. The second step, construction, refers to setting learning goals, designing the learning environment, and implementing activities. The learning activities depend on inquiry for knowledge construction. Finally, evaluation of students' learning in addition to teachers' reflection. DL depends on continuous evaluation and feedback to engage students in the learning activities.

Deep learning is based on the situated learning theory (Wu & Qiu, 2022). Situated learning theory, suggested by Jean Lave in 1988, depends on using authentic activities related to the learning context and students' culture. Situated learning highlights how learning occurs daily through real situations related to students' lives. The theory claims that knowledge is a dynamic construction of different learning situations according to the social context (Kumar,2021).

Situated learning theory means offering authentic learning. The learning environment depends on everyday situations where students construct knowledge in contexts. Students cooperate to generate new knowledge (Souza & Clare, 2018). Situated learning environments are based on authentic learning situations that replicate real world problems

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and students solve them using high order thinking skills (Lu, 2019). Modeling is essential in situated learning, students learn from an expert's performance before performing collaborative activities. Students construct their knowledge through using high order thinking skills. They negotiate, defend, and generalize their knowledge while collaborating with others (Ozudogru & Ozudogru, 2017).

In DL based EFL classrooms, conversations and public speeches are daily activities for students to express their views. Students analyze new ideas and facts to be reconstructed according to previous knowledge. They connect old and new knowledge to transform their existing knowledge to the natural ways of solving problems. Speaking activities depend on logical reasoning and critical thinking for language expressions in different occasions (Qu & Li, 2022).

DL strategy depends on analysis of students' needs, construction of speaking learning activities, continuous evaluation of students' learning and teachers' feedback. Students are engaged in learning activities using high order thinking skills. Public speaking depends on high order thinking skills, like analysis and evaluation. There are four main stages of a public speech: planning, preparing, practicing, and presenting which depend on students' abilities to judge different information. Since deep learning depends on using different complex cognitive processes, public speeches can be prepared and delivered by such processes.

Method

Research Design

This research depended on the quasi-experimental pretest-posttest design. An experimental group and another control one were administered the Public Speaking Test, before and after the implementation of the suggested program.

Participants

Participants were 50 second year secondary stage students at a public school in Egypt. Participants were divided into two equal groups: control

and experimental. The t-test ($t=1.18$) showed that there was not a statistically significant difference between the mean scores of the control and experimental groups on the pre-administration of the EFL Public Speaking Test. The two research groups were equivalent.

Instrumentation

Public Speaking Skills Checklist

The checklist was developed based on literature review and previous studies already mentioned, like Lucas (2014), Matel (2021), and Nie et al. (2020).

Checklist Purpose

The purpose of the checklist was to determine the EFL public speaking skills suitable for second year secondary school students.

Checklist Description

The initial form of the checklist consisted of 28 skills categorized into content, manner, structure, subject matter, response to questions, and official dress (Appendix A). The jury members recommended the deletion of the skills related to response to questions and official dress. The skills of response to questions were considered advanced for the participants, besides they dressed in the school uniform so there was no need to score their official appearances. They suggested focusing on the public speaking skills related to content and delivery categories. Public speaking skills related to content were capturing the audience's attention in the introduction, eliciting students' interest through using relevant supporting ideas, and offering final messages in the conclusion. Public speaking skills related to delivery were using clear well projected voice, using expressive body language, using accurate spoken grammar, and reflecting confidence while delivering the speech (Appendix A).

Checklist Validity

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The content validity of the checklist was proved through the jury members who determined the EFL public speaking skills to be included in the checklist, see Appendix (A).

EFL Public Speaking Test

Test Aim

The test measured secondary stage students' EFL public speaking skills.

Test Description

The test consisted of two topics: Staying healthy or the future of food. Students were asked to prepare and deliver a three-minute speech on one of the topics. Students read the test instructions before answering (Appendix C).

Test Piloting

On October 3, 2022, the EFL Public Speaking Test was piloted on 20 second year secondary stage students at a public school in Egypt. The test piloting aimed to examine the clarity of the test instructions and its statistical features.

Test Timing

Students' speech durations were divided by their total number. The mean of the time spent by students to deliver the speech in the test piloting was 3 minutes.

Test Scoring

A scoring rubric was designed by the researcher based on two main categories: content and delivery. Each category had its criteria. Content criteria were introduction, body, and conclusion; while the delivery criteria were voice, body language, spoken grammar, and confidence (Appendix C). The total score of the test was 35 depending on a (1-5) scale. To avoid bias, two raters scored, and the statistical analysis depended on the mean scores. The criteria included in the scoring rubric

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depended on literature and previous studies, such as Imron & Hantari(2019), Kaye (2012), Matel(2021), Texas 4-H (2023), and Junior High Public Speaking Rubric (2020).

Test Reliability

The test was piloted on 20 second year secondary stage students in a public school in Egypt. According to the results, the Split-Half Coefficient (0.82) was accepted.

Test Validity

The jury members approved the content validity through determining the suitability of the assigned speaking topics, clarity of instructions, and precision of the scoring rubric (Appendix C). The discriminatory validity, the critical ratio (2.96), was statistically significant at (0.01).

Pre-testing

Both research groups were pretested on the EFL public Speaking Test on October 5, 2022, before the implementation of the suggested program based on the deep learning strategy to determine the participants' levels on EFL public Speaking skills.

Post-testing

Both research groups were post tested on the EFL public Speaking Test on December 7, 2022, to examine the effectiveness of the suggested program based on the deep learning strategy in developing secondary stage students' EFL public speaking skills.

The Suggested Program Based on Deep Learning Strategy

The suggested program aimed to develop second year secondary stage students' public speaking skills using the deep learning (DL) strategy.

The objectives of the suggested program were as follows:

- 1- Develop secondary stage students' English public speaking skills.

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- 2- Develop secondary stage students' high order thinking skills.
- 3- Encourage secondary stage students to use deep learning in different experiences.
- 4- Enable secondary stage students to combine new and old knowledge to be applied in different situations.
- 5- Enhance the confidence level of secondary stage students for assessing their English public speaking skills according to a specific scoring rubric.

Program Rationale

The program was based on the DL strategy developed by Wu and Qiu in 2022. The DL strategy is based on Eric Jensen's and LeAnn Nickelsen's DL Model developed in 2008. Wu and Qiu (2022) suggested the following steps for applying DL in the classroom: Analysis, construction, and evaluation. Analysis of students' needs and learning content. Construction of learning goals and activities. The learning activities depended on inquiry for knowledge construction. Finally, continuous evaluation of students' learning and teachers' reflection of the learning situations for improvements.

Program Content

The program depended on The New Hello English for Secondary Schools, Year Two. Speaking exercises in every lesson gave students the opportunity to use the vocabulary and language learned to communicate with other students. Speaking, integrated within each unit, helped students think for themselves about the topics introduced in the reading and listening activities and put the language from the unit into use (Hart & Adlard, 2020). The speaking activities in the first six units of the textbook were adopted in this program, besides YouTube videos related to the topics of the units accompanied by a written script were displayed. Examples of the speaking activities were first aid, boosting the immune system, being healthier, special meals around the World, the future of farming, sources of food, and social media Apps (Appendix D).

Program Framework

The experimental group received 18 sessions based on deep learning strategy, each session lasted for 45 minutes. The sessions were given twice a week. The first session was an orientation session to give students a general overview of the suggested program. The second session discussed public speaking and its importance for secondary stage students. The third session differentiated between the content and delivery skills of public speaking. Then, three sessions covered the public speaking skills of the speech content. The seventh session was a revision on the content skills. Four sessions were offered on the four skills of speech delivery and followed by a revision session. Students received two sessions on the scoring rubric developed by the researcher. A revision session was offered followed by four sessions for practice. The topics of public speech were adopted from units 1,2, 3, 4,5,&6 in the New Hello, year two. Most YouTube videos introduced in the suggested program had written scripts that appeared on the screen so that students could easily follow the speakers.

Procedures

The experimental and control groups were pretested on the EFL public Speaking Test on October 5, 2022, before the implementation of the suggested program based on the deep learning strategy. The experimental group received 18 sessions on public speaking skills using the speaking activities in the Student Textbook, New Hello units 1,2,3,4,5,&6; while the control group received the units traditionally. Both research groups re-administered the EFL Public Speaking Test on December 7, ٢٠٢٢, for data statistical analysis.

Data Analysis

The 26th version of the Statistical Package for Social Sciences (SPSS) was used in data analysis. Descriptive and inferential statistics were used to assess the effectiveness of the deep learning strategy in developing students' EFL public speaking skills.

Results

Results were based on hypotheses testing as follows:

Testing the 1st Hypothesis

There was a statistically significant difference, in the content skills of public speaking, between the mean scores of the control and experimental groups at ($\alpha \leq 0.01$) level of significance in the post administration of the EFL public speaking test in favor of the experimental group.

The following table showed the data analysis of this hypothesis:

Table 1
t Value for the Content Skills of Public Speaking

| Skills | Group | N | Mean | Std. Deviation | T-Value | Result |
|------------------------|--------------|----|-------|----------------|---------|----------------------|
| Introduction | Control | 25 | 1.40 | 0.50 | 15.34 | Significant at 0.001 |
| | Experimental | 25 | 4.20 | 0.76 | | |
| Body | Control | 25 | 1.52 | 0.51 | 14.75 | Significant at 0.001 |
| | Experimental | 25 | 4.08 | 0.70 | | |
| Conclusion | Control | 25 | 1.28 | 0.46 | 13.73 | Significant at 0.001 |
| | Experimental | 25 | 4.12 | 0.93 | | |
| Overall content skills | Control | 25 | 4.20 | 0.91 | 18.34 | Significant at 0.001 |
| | Experimental | 25 | 12.40 | 2.04 | | |

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The calculated “t” (18.34) for the content skills of public speaking was more than the tabulated “t” (3.922), so hypothesis one was accepted.

Testing the 2nd Hypothesis

There was a statistically significant difference, in the delivery skills of public speaking, between the mean scores of the control and experimental groups at ($\alpha \leq 0.01$) level of significance in the post administration of the EFL public speaking test in favor of the experimental group.

The following table showed the data analysis of this hypothesis:

Table 2
t Value for the Delivery Skills of Public Speaking

| Skills | Group | N | Mean | Std. Deviation | T- Value | Result |
|-------------------------|--------------|----|-------|-------------------|-------------|-------------------------|
| Voice | Control | 25 | 1.48 | 0.51 | 16.62 | Significant at 0.001 |
| | Experimental | 25 | 4.16 | 0.62 | | |
| Body language | Control | 25 | 1.40 | 0.50 | 17.25 | Significant at 0.001 |
| | Experimental | 25 | 4.16 | 0.62 | | |
| Accurate spoken grammar | Control | 25 | 1.40 | 0.50 | 11.76 | Significant at 0.001 |
| | Experimental | 25 | 3.64 | 0.81 | | |
| Confidence | Control | 25 | 1.44 | 0.51 | 16.02 | Significant at 0.001 |
| | Experimental | 25 | 4.12 | 0.67 | | |
| Overall Delivery skills | Control | 25 | 5.72 | 0.98 | 20.66 | Significant at 0.001 |
| | Experimental | 25 | 16.08 | 2.31 | | |

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The calculated “t” (20.66) for the delivery skills of public speaking was more than the tabulated “t” (3.922), therefore hypothesis two was accepted.

Testing the 3rd Hypothesis

There was a statistically significant difference, in the overall public speaking skills, between the mean scores of the control and experimental groups at ($\alpha \leq 0.01$) level of significance in the post administration of the EFL public speaking test in favor of the experimental group.

The following table showed the data analysis of this hypothesis:

Table 3
t Value for the Overall Public Speaking Skills

| Group | N | Mean | Std. Deviation | T-Value | Result |
|--------------|----|-------|----------------|---------|----------------------|
| Control | 25 | 9.92 | 1.50 | 21.06 | Significant at 0.001 |
| Experimental | 25 | 28.48 | 4.14 | | |

The calculated “t” (21.06) for the delivery skills of public speaking was more than the tabulated “t” (3.922), hence the hypothesis three was accepted.

To calculate the effect size for the deep learning strategy on the public speaking skills, Eta square (η^2) and Cohen’s (d) were calculated using t value for the differences between the mean scores as displayed in this table:

Table 4
The Effect Size for the Deep Learning Strategy on the Public Speaking Skills

| Skills | Test | N | Mean | Std. Deviation | T-Value | Result | Eta Squared (η^2) | | Cohen’s d |
|----------------|------|----|-------|----------------|---------|----------------------|--------------------------|-------------|-------------------|
| | | | | | | | Value | Effect Size | Value Effect Size |
| Overall Public | Pre | 25 | 9.60 | 1.22 | 21.36 | Significant at 0.001 | 0.95 | large | 6.30 |
| | Post | | 28.48 | 4.14 | | | | | large |

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The effectiveness of the suggested program based on the deep learning strategy was calculated by applying the modified Blake's gain ratio on the pre-post test means of the experimental group scores as presented in the following table:

Table 5

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| Variable | Pre-Mean | Post-Mean | Max-Score | Blake's M G R | Effectiveness |
|--------------------------------|----------|-----------|-----------|---------------|---------------|
| Overall content skills | 3.88 | 12.40 | 15 | 1.33 | Exist |
| Overall delivery skills | 5.72 | 16.08 | 20 | 1.24 | Exist |
| Overall public speaking skills | 9.60 | 28.48 | 35 | 1.28 | Exist |

As shown in the previous table, there was statistically acceptable effectiveness of the deep learning strategy in developing public speaking skills. The value of Blake's modified gain ratio for the suggested program showed its effectiveness as it was (1.28) and existed in Blake's range of effectiveness (1-2). The suggested program based on the deep learning strategy was effective in developing second year secondary stage students' public speaking skills.

Discussion of Findings

Based on the statistical analysis, the deep learning strategy was effective in developing secondary stage students' EFL public speaking skills. The effect size values for the deep learning strategy Eta squared ($\eta^2=0.95$) and Cohen's ($d= 6.30$) were large. The calculated t value for the overall public speaking skills ($t=21.06$) was more than the tabulated ($t= 3.92$). The calculated t value for content as well as delivery skills were more than the tabulated t value (3.922). The calculated t value for the overall content skills of public speaking ($t=18.34$) was less than the calculated t value for the overall delivery skills of public speaking ($t=20.66$). Thus, the deep learning strategy developed the following public speaking skills: Capturing the audience attention in the introduction, eliciting students' interest through using relevant supporting ideas, offering final messages in the conclusion, using clear well projected

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voice, using expressive body language, using accurate spoken grammar, and reflecting confidence while delivering the speech.

The steps of deep learning strategy were integrated through the process of planning, preparing, practicing, and presenting the public speech. In the analysis step of DL, the teacher assessed students' needs using different techniques, like K-W-L, brainstorming, and different types of questionnaires. Students identified their needs and plan for satisfying them. The construction step of DL depended on a teacher designing learning activities to enable students to prepare their public speeches. The evaluation step of DL was based on using the scoring rubric for peer evaluation and self -evaluation of students' speeches in the practice stage. Finally, the teacher's reflection depended on students' performances in speech delivery.

The most developed skill in the content public speaking skills was capturing the audience's attention in the introduction ($t=15.34$). Students practiced using different speech openers in the construction step of DL strategy. They assessed their speeches in the evaluation step to ensure that their introductions offered preview statements to show the main points and the key messages. They used the scoring rubric as a guide to hook the audience's interest by using attention getters, like questions, shocking statements, and narratives. DL focused on integrating students' previous knowledge to the new knowledge. Speakers analyzed the listeners' needs and persuaded them to receive the message delivered in the public speech.

The most developed skill in the delivery public speaking skills was using expressive body language ($t=17.25$). Students enjoyed focusing on their posture, hand motions, and eye contact. They watched an interview with the author of the book entitled "Human Lie Detection & Body Language 101". In the construction stage of DL, students practiced stepping away from the stand, walking around the room, and using natural hand gestures. They used eye contact to reflect trustworthiness and credibility. They also avoided inappropriate gestures, like crossing arms and face touching while delivering public speeches. They used the scoring rubric to improve their performances.

Conclusions

There was a paucity of research on examining the effectiveness of the deep learning strategy in developing secondary stage students' public speaking skills, to the best knowledge of the researcher. Since the deep learning strategy was an inquiry-based strategy, the findings of this research were aligned with those of Wahyudi (2017) and Ali (2021). Wahyudi (2017) revealed that using questioning techniques developed university students' EFL speaking skills in Indonesia, and Ali (2021) concluded that using questioning techniques developed secondary stage students' EFL public speaking skills in Egypt.

The deep learning strategy depended on integrating students' new and old knowledge to solve problems, therefore these results coincided with those of Fahmi et al.(2021) and Montafej et al.(2021). Fahmi et al.(2021) showed that problem based learning enhanced high school students' speaking skills in Indonesia, and Montafej et al.(2021) showed that using different types of problems developed university students' EFL speaking skills in Iran.

Recommendations and Suggestions for Further Research:

- Examining the effect of deep learning strategy on developing students' EFL writing skills.
- Inspecting the effectiveness of deep learning strategy in developing primary stage students' high order thinking skills.
- Investigating teachers' perceptions on the integration of deep learning in EFL classrooms.
- Examining the effect of an EFL public speaking course on developing students' self-confidence and self-esteem.
- Exploring the use of deep learning strategy on students' EFL receptive skills

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