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## **Integrating Gardner and Sternberg Multiple Intelligences Frameworks for Developing EFL Speaking Skills of Students at The Faculty of Education**

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## ABSTRACT

The present study aimed at developing EFL speaking skills through integrating Gardner and Sternberg multiple intelligences frameworks. The study followed the one-group pre-posttest design. The participants of the study were EFL sophomore students enrolled in the English section at the Faculty of Education, Benha university(N=30) during the academic year 2025-2026. A speaking checklist was prepared, and a pre-posttest was prepared to measure the speaking skills. An analytical rubric and an answer key were used for scoring the test. A Paired samples t- test was used to compare the means of the students' scores on the pre-posttest. The participants' post- test results significantly outperformed their pre-test results. Therefore, it can be concluded that integrating Gardner and Sternberg multiple intelligences frameworks is effective for developing the EFL speaking skills.

**Keywords:** *Multiple intelligences frameworks , Gardner and Sternberg, and EFL speaking skills*

## المستخلص باللغة العربية

دمج إطاري الذكاءات المتعددة *Gardner* و *Sternberg* لتطوير مهارات التحدث باللغة

الإنجليزية كلغة أجنبية لدى طلاب كلية التربية

استهدفت الدراسة الحالية تطوير مهارات التحدث باللغة الإنجليزية كلغة أجنبية من خلال دمج إطاري الذكاءات المتعددة لكلا من *Gardner* و *Sternberg* ، وقد استخدمت الدراسة التصميم التجريبي ذو المجموعة الواحدة وقياس قبلي- بعدي وتكونت مجموعته الدراسة من ثلاثين طالب من طلاب الفرقة الثانية شعبة اللغة الإنجليزية بكلية التربية جامعة بنها خلال العام الأكاديمي 2025-2026. وتم اعداد قائمة بمهارات التحدث باللغة الإنجليزية كلغة أجنبية، واختبارًا لمهارات التحدث (قبلي وبعدي) باللغة الإنجليزية كلغة أجنبية ومقياس أداء متدرج لتقديره ومفتاح تصحيح لقياس الأسئلة الموضوعية. وقد تم اختبار مجموعة الدراسة قبل إجراء المعالجة لتحديد مستواها في مهارات التحدث باللغة الإنجليزية كلغة أجنبية ، ثم إعادة اختبار مجموعة الدراسة بعد استخدام المعالجة. وكشفت نتائج الدراسة أن متوسط درجات الطلاب في القياس البعدي مقارنة بالقياس القبلي في مهارات التحدث باللغة الإنجليزية كان لصالح القياس البعدي ولذلك يمكن القول بأن دمج إطاري الذكاءات المتعددة *Gardner* و *Sternberg* كان فعالا في تنمية مهارة التحدث باللغة الإنجليزية كلغة أجنبية لدى طلاب الفرقة الثانية شعبة اللغة الإنجليزية.

## Introduction

The English language consists of receptive skills ( listening and reading) and productive skills ( speaking and writing). Speaking skill is a requisite skill to be mastered by students in a world governed by globalization where English is a medium for communication. As a productive skill, speaking does not only rely on receptive skills, as it also involves real-time cognitive processing. These cognitive processes bridge the gap between speaking and other receptive skills. Consequently, speaking should not be seen as reproduction of the received input. Rather, students should analyze the linguistic input, apply their knowledge in real life situations and find their ways to express themselves.

Speaking is defined by Nunan (2003) as a “productive oral/aural skill that consists of producing systematic verbal utterances to convey meaning “ (p.84). Bygate (1987) highlighted that speaking can be approached as knowledge and a skill. While speaking as knowledge focuses on the recognition of grammatical and lexical aspects, skill deals with how to apply them. In this way, Levelt (1993) highlighted that from knowledge to skill, speech production goes through four stages: conceptualization, formulation, articulation, and self-monitoring. Before the verbalization of the message within articulation stage, speaker plans his message within the conceptualization stage, then he uses appropriate vocabulary and grammar to formulate his message. Finally, he checks the appropriateness of the produced speaking ( Jankowska & Zielińska, 2015). Benati (2020) summarized all of these stages by defining speaking as “an interactive process of constructing meaning that involves producing, receiving, and processing information” (p. 161).

Within their speaking, speakers need to be cognizant about the social and cultural norms to clearly present their messages to the listeners who will react back to them (Shumin, 2002, Sukmayati, 2016; Kurt, 2022). Such relation can be considered through dealing with SPEAKING as an acronym that refers to setting, participants, ends, act sequence, key, instrumentalities, and genre (Rahayu, et al., 2018). Vin (2023) highlighted that while setting deals with the place and time of the speaking, participants and ends tackles the interlocutors and the goals of such interaction. key focuses on the tone of the conveyed message delivered by instrumentalities or channels for completing the speech act and forms of speech affected by Norms of the community (Yuniati, 2020; Mardiana & Simatupang, 2023). Genre, the last word in the acronym, is the category of

what is being talked including proverbs, apologies, prayers, casual chat, discussions about problems, or sharing information (Wanasatya & Muhaimi,2024).

Within this vein, Mulyanah et al. (2018) clarified that the goal of teaching speaking is to enable students to be good communicators who speak fluently and accurately. Therefore, Wilson (2006) stated that “classroom activities and the learning/teaching environment need to bear directly on students’ performance in speaking” (p. 103). This can be achieved by approaching students’ multiple intelligences. Multiple intelligences is a term developed by Gardner who criticized the superiority of g factor over other cognitive factors (Armstrong, 2009). He, therefore, emphasized that tests need to focus on a variety of culturally and socially relevant skills than focusing on just academic skills (Miller et al., 2003). Consequently, he defined intelligence as "the ability to find and solve problems, the ability to respond successfully to new situations and the capacity to learn from one's past experience (Gardner,1983, p.21). Such definition was redefined by Gardner (1999) as the previous definition did not identify the sources of these abilities or the mechanisms for assessing them. Therefore, he redefined intelligence as “ a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture”( p.33-34).

Gardner’s multiple intelligences views that each person has eight intelligences that work together in more complex ways(Armstrong, 2009). First, verbal intelligence deals with one’s ability to master language’s rules and manipulate its pronunciation, grammar, and semantics and pragmatics. Second, mathematical intelligence focuses on understanding causality relationships between ideas and logically clarify and organize them. Third, spatial intelligence highlights one’s ability to graphically represent visual or spatial ideas. Fourth, bodily-kinesthetic intelligence deals with using one’s whole or part of the body to solve problems or create products. Fifth, musical intelligence tackles one’s sensitivity to use rhythms, tones, and melodies. Sixth, interpersonal intelligence focuses on understanding and interacting with others effectively. Seventh, intrapersonal intelligence focuses on acting adaptively on the basis of his understanding of his inner feelings. Finally, naturalist intelligence refers to the ability to recognize and classify plants, minerals, and animals (Gardner, 1999; Armstrong,2000; Nardi, 2001& Lin, 2023).

Despite the advanced view of intelligence provided by Gardner, Gardner's intelligences are only considered as semi-independent constructs, and it was difficult to specify how they work synergistically on complex tasks (Gardner, 1999; Gardner & Connell, 2000). Consequently, this highlights the importance of Sternberg's triarchic theory of intelligence. Dealing with Sternberg's triarchic theory as a multiple intelligences theory is based on Sternberg's theory views intelligence as consisting of more than a single general factor (Borkowski et al., 2007). Consequently, Goethals et al. (2004) defined it as one of the most recent multiple intelligence theories that view intelligence as composed of three components; componential (analytical), contextual (practical) and experiential (creative intelligence). Unlike Gardner who gives more importance to types of intelligences, Sternberg articulated that intelligence is a result of an interaction between internal world of the individual (problem solving and reasoning) and external world (the environment) (Eysenck, 2014). Furthermore, Sternberg (2003) confirmed that while Gardner's theory specifies the domains or types of intelligences, Sternberg's theory determines ways of thinking or classes of process used within these domains.

Riggio et al. (2001) and Thies and Travers (2001) emphasized that integrating Gardner's and Sternberg's frameworks of multiple intelligences can broaden the diversity of intelligences and fosters deep learning. Nasir et al (2022) clarified that such integration is highlighted by revised Bloom taxonomy that helps learners to apply knowledge to new situations, create new knowledge, break information into parts and examine the relationships among them. Within this context, analytical linguistic intelligence is defined as one's ability to understand and analyze language using analytical abilities such as comparing and contrasting, eliciting personal reactions and analyzing intentions. Practical linguistic intelligence is defined as using language in real life situations by using practical skills such as persuading, advising, and handling dilemmas. Finally, creative linguistic intelligence is using language creatively to express ideas in new ways (Sternberg & Grigorenko, 2007).

Analytical spatial intelligence as pointed by Silton (2011) includes mental rotation, mirroring, translation, comparing shapes, estimating angles and relative distances. Practical spatial intelligence as indicated by Fleetham (2006) allows individual to apply skills related to spatial intelligence in daily life to achieve success. Creative spatial intelligence is emphasized by Suh and Cho (2020) to involve one's ability to create novel and intricate ideas for volumetric forms. Analytical logical intelligence focuses

on connecting the expressed ideas in a more analyzed and logic structure (Jones, 2014). Practical logical intelligence relies on manipulating and applying knowledge in a more logic structure. Creative logical intelligence enables students to extend their knowledge to go beyond what it is already known (Nichols, 2020 & Adeniji et al., 2022).

Analytical intrapersonal intelligence is defined as one's ability to be aware about his own inner thoughts and his reflections about such feelings. Practical intrapersonal intelligence is defined as managing emotions and behaviors while demonstrating a kind of flexibility to the dynamics of the environmental conditions (Antonopoulou, 2024). Creative intrapersonal intelligence is benefiting from internal emotions to achieve goals with creativity, commitment, passion and persistence (Wilding, 2013). Analytical interpersonal intelligence is defined by Singh (2021) as "understanding others' feelings and concerns and taking their perspective; appreciating the differences in how people feel about things" (p.137). Practical interpersonal intelligence includes as highlighted by Taryana et al. (2024) listening attentively, articulating thoughts clearly, responding appropriately, and managing conflicts and social interactions effectively. Creative interpersonal intelligence includes being aware of setting a positive environment in which conflicts can be resolved, communication can be delivered kindly, and teams' individuals can be praised and motivated. (Alaiadi, 2025).

Such integration can be fostered by different strategies. For example, Zimmerman self-regulated learning strategy highlights such integration. It consists of forethought, performance, and self-reflection phases (Nakamura, 2023). Forethought phase enables students to be engaged into task analysis to plan how to achieve the related goals using different strategies, and motivates them to complete the task (Laveault & Allal, 2016). The performance phase focuses on helping students to track their own progress through using self-recording and self-observation strategies (Powers, 2016; Weir & Grainger, 2020). Self-reflection phase is used to help students to assess how well they perform the related task and make reflection about their success and failure (Núñez & Gázquez, 2018). Also, guided discovery learning strategy highlights such integration through its stages. Janssen et al. (2014) defined it as that strategy that focuses on engaging students into the construction of knowledge by imposing challenging questions that can be resolved by providing sufficient support. Ayende and Bleza (2023) numerated the stages of discovery learning: 1) While within introduction and stimulation stage, students were engaged into problem-solving situations that trigger them to explore the study material,

2) data collection stage helps students to connect the problem with the knowledge they already know by allowing them to search different sources to collect data about the problem at hand. 3) Data processing stage focuses on enabling students to transform the collected data into generalizations to reach alternative solutions. 4) Verification stage enables students to balance between what the student thinks and what is it actually true to prepare them to the final stage; generalization stage where they can master the underlying rules and the organization of experiences.

The integration between Gardner's and Sternberg's intelligences can be inferred implicitly within El-Naggar et al. (2020) who investigated the role of Sternberg's theory on developing speaking skills of prospective teachers of English, and Diab (2022) who studied a program based on the successful intelligence theory on developing speaking skills of freshmen students at the Faculty of Education. They concluded that the interaction between Gardner's and Sternberg's intelligences appeared as students become more fluent, describe pictures, analyze situations, and engage into a realistic communicative situations in which they express their suggestions without interruption. Consequently, this helps the researchers to achieve their ultimate goals; developing linguistic intelligence (speaking skills).

## **Context of the problem**

The importance of EFL speaking skills as fundamental competencies within the framework of EFL Teacher Preparation Program was emphasized by the National Academic Reference Standard (NARS). It stated the necessity for preparing students to communicate in different situations, value the function of language and its social aspects, explain the functions and features of the phonetic system, and Identify the oral communication process and skills.

Despite the importance of EFL speaking skills, related studies such as Diyyab et al. (2013) ; Helwa (2013) ; El-Sakka (2016) ; Ghoneim and Elghotmy (2016) ; El-Sakka (2017), El-Sadek(2018),Alnahhas (2024) and Ahmed (2025) confirmed that they lack them. These studies showed that students cannot express themselves, lack opportunities to practice EFL speaking skills in the communicative contexts, tend to memorize vocabulary, and produce incomplete and unclear sentences with ill pronunciation and grammatical mistakes.



Based on the researcher's experience, second-year students' speaking lacks the use of various and precise vocabulary. When they cannot express their intended meaning, they tend to use more filler words in a way that causes listeners to fail to understand what they want to say. They cannot use connected speech, and all their sentences have primary stresses which causes difficulties in discerning the importance parts within the sentences. Additionally, they cannot use vocabulary according to its social context. Furthermore, their spoken discourse includes different ideas without focusing on in-depth explanation of one idea. Additionally, instead of practicing negotiation skills, they are apt to memorize the conversation without showing understanding.

To document the problem of the study, the researcher conducted a pilot study on a group consisting of 20 second-year students enrolled at English section at Faculty of Education, Benha University during the first term of the academic year 2022-2023. The researcher adopted an EFL speaking skills test and rubric to score it from Hussein (2018). The researcher targeted and measured accuracy, fluency and pragmatic skills. The result of the test revealed that second-year students got scores below 50%.

### **Statement of the problem**

The problem of this study could be stated in the low level of EFL speaking skills of second year students enrolled in the English section at Faculty of Education. Thus, this study aims at investigating the effectiveness of integrating Gardner and Sternberg multiple intelligences frameworks for developing EFL speaking skills

### **Questions of the study:**

To face this problem , the present study answered the following questions:

- 1- What are the EFL speaking skills required for second year students at Faculty of Education?
- 2- What is the effectiveness of integrating Gardner and Sternberg multiple intelligences for developing EFL speaking skills.

### **3- Delimitations of the study**

The present study was delimited to the following:

- 1- A group of second - year students (N=30 ) at the English section at the Faculty of Education, Benha University.
- 2- Five main EFL speaking skills: accuracy: vocabulary, grammar and pronunciation; fluency; pragmatic; discourse organization; and comprehensibility skills) including 23 sub-skills required for second - year students enrolled in the English section at the Faculty of Education, Benha University.
- 3- Multiple intelligences frameworks based on integrating Gardner's intelligences (linguistic, logical, spatial, interpersonal and intrapersonal) with Sternberg's intelligences.

### **Participants of the Study**

The participants of the study were chosen from sophomore students during the first semester of the academic year 2025-2026. The study group were 30 students at the English section at Benha Faculty of Education.

### **Instruments and Materials of the Study**

- 1) An EFL speaking skills checklist required for the study participants.
- 2) A pre-posttest to measure students' EFL speaking skills before and after the intervention.
- 3) A rubric for scoring the test and an answer key for measuring objective questions.
- 4) A program for integrating Gardner and Sternberg multiple intelligences frameworks.

### **The EFL Speaking Skills Checklist**

The EFL speaking skills checklist was prepared to determine the EFL speaking skills required for the sophomore students in the English section at the faculty of Education. The researcher reviewed the National Academic Reference Standards (NARS) for the colleges of Education sector, related literature and previous studies related to EFL speaking skills, and Some EFL speaking skills books. In its initial form, the EFL speaking checklist consisted of six main-skills: Accuracy with seven sub-skills,

complexity with four sub-skills, fluency with two sub-skills, pragmatic with four sub- skills , discourse organization skills with three sub-skills, and comprehensibility with four sub-skills. The checklist of the EFL speaking skills was submitted to a panel of jury members; EFL specialists in the faculty of education (n=9) to determine the appropriateness of each skill for the study participants. After making the jury modifications, the checklist at its final form consisted of five main skills with 23 EFL speaking subskills:10 for accuracy, 2 for fluency, 4 for pragmatic, 3 for discourse organization, and 4 for comprehensibility.

### **The EFL Speaking Skills Pre-Posttest**

The purpose of the EFL speaking skills pre-posttest was to assess EFL sophomore students' speaking skills before and after the intervention. The test consisted of five questions. The first question measured pronunciation skills, the second one dealt with pragmatic skills: (i.e., Use language effectively to express different functions and use appropriate intonation patterns) ; the third one focused on fluency, vocabulary, grammar skills and pragmatic skill(use idioms and expressions that are related to the topic); the fourth and fifth questions focused on pragmatic skills, discourse organization, and comprehensibility skills.

## **Validity**

### **Jury validity**

To ensure the validity of the pre-post EFL speaking skills test, it was submitted to a panel of jury members specializing in curricula and methods of teaching English (N=12). They were tasked to assess the test's clarity and appropriateness for the sophomore students in the English Section at Benha Faculty of Education. Additionally, they were asked to determine whether the items effectively measured the intended EFL speaking skills. They confirmed the test's appropriateness, clarity and its alignment with its main objectives and that the questions were coherent with those objectives. They suggested several modifications, including integrating some test's skills with certain questions. The researcher carefully considered their modifications and finalize the test.

### **Internal consistency**

The internal consistency between participants' scores in each subskill and the score of the main skills to which that skill belongs was calculated. The results

showed that the correlation coefficient is significant at 0.01 level. Consequently, there is an internal consistency between the subskills that the test measured.

## **Reliability**

To measure the reliability of the EFL speaking skills test, Cronbach's Alpha method and test-retest method were employed. The Cronbach's Alpha method resulted in a correlation coefficient of 0.864 demonstrating a high level of reliability. Similarly, the Test-retest method produced a correlation coefficient of 0.835, further validating the strong reliability of the test.

## **Rubric for scoring pre-post speaking skill test**

The rubric consisted of five parts which are accuracy skills (vocabulary and grammar and pronunciation (Emphasize the correct stress within sentences), fluency skills, pragmatic skills, discourse organization skills, and comprehensibility skills. The five main skills include 21 sub-skills. It was scored on a four points Likert scale ranging from "4" (being the highest) "1" being the lowest

## **Description of the answer key**

An answer key was used for measuring objective questions. It was used to measure (Pronunciation skills (1) pronounce vowels, consonants, and diphthongs accurately and clearly, 2) apply elision, assimilation, linking and intrusion in their articulation of sounds, and 3) emphasize the correct stress in individual words). The correct answer within these questions was given "1" while the incorrect one was given "0". Consequently, the total score for the speaking test was "101"

## **The Teacher's Guide for Integrating Gardner and Sternberg multiple intelligences frameworks**

To achieve the objective of the present study, the researcher used five types of Gardner's intelligences (linguistic- interpersonal- intrapersonal -logical and visual intelligence). Each intelligence was incorporated with Sternberg's related dimensions based on the goal of each session. For example, analytical and practical intelligences were incorporated with Gardner's intelligences. That is because the aim of the initial sessions was to build a solid knowledge that motivated students to apply in real life situations before engaging into creative tasks. Once students developed their knowledge base, analytical and practical thinking skills, the

researcher integrated creative intelligence with Gardner's multiple intelligences. The implementation of such integration was presented through fourteen sessions. At the beginning of each session, the researcher presented the skills, objectives, procedures, teaching aids and materials and the role of the teacher and students. Within each session, the researcher used formative assessment focusing on measuring students' progress during sessions.

### **Principles for Integrating Gardner and Sternberg multiple intelligences frameworks**

1. Intelligence is about processing information not about receiving it.
2. Intelligence is a product based on mental processes such as analysis, problem solving, and creativity.
3. Learning becomes meaningful when students use it to achieve success in their daily lives.

### **Duration of the Administration of the treatment**

The treatment started at the first semester of the academic year 2025-2026 from 14<sup>th</sup> of October to 6<sup>th</sup> of December. It lasted for 14 sessions.

### **Results of the Study**

Results of the present study confirmed that the participants' EFL speaking skills were significantly developed as a result of being taught using the integration. There was a statistically significant difference between the mean scores of study participants in the pre-post assessment of the overall EFL speaking skills and its subskills in favor of the post assessment.

Table (1)

*Results of Paired Samples t-test Comparing Pre-and Post-test Scores of EFL Speaking Skills*

| (n= 30) (df) =29 |            |             |      |      |      |         |         |          |
|------------------|------------|-------------|------|------|------|---------|---------|----------|
| Main Skills      | Sub Skills | Total Marks | Test | Mean | SD   | t-value | P-value | $\eta^2$ |
| Vocabulary       |            | 4           | Pre  | 1.77 | 0.77 | 12.042  | 0.01    | 0.833    |

|                           |                                                       |    |      |       |      |        |      |       |
|---------------------------|-------------------------------------------------------|----|------|-------|------|--------|------|-------|
|                           | Employ precise vocabulary to clearly articulate ideas |    | Post | 3.60  | 0.56 |        |      |       |
|                           | Utilize varied expressions                            | 4  | Pre  | 1.77  | 0.77 | 9.685  | 0.01 | 0.764 |
|                           |                                                       |    | Post | 3.50  | 0.68 |        |      |       |
|                           | Use many lexical variation                            | 4  | Pre  | 1.73  | 0.74 | 9.685  | 0.01 | 0.764 |
|                           |                                                       |    | Post | 3.47  | 0.73 |        |      |       |
|                           | Use more content words                                | 4  | Pre  | 1.77  | 0.77 | 10.143 | 0.01 | 0.780 |
|                           |                                                       |    | Post | 3.63  | 0.61 |        |      |       |
| <b>Overall Vocabulary</b> |                                                       | 16 | Pre  | 7.03  | 3.02 | 11.108 | 0.01 | 0.810 |
|                           |                                                       |    | Post | 14.20 | 2.23 |        |      |       |
| Grammar                   | Apply appropriate tense                               | 4  | Pre  | 1.93  | 0.83 | 13.771 | 0.01 | 0.867 |
|                           |                                                       |    | Post | 3.97  | 0.18 |        |      |       |
|                           | Arrange words in the correct order                    | 4  | Pre  | 2.13  | 1.07 | 9.182  | 0.01 | 0.744 |
|                           |                                                       |    | Post | 3.80  | 0.55 |        |      |       |
|                           | Create complex and compound sentences                 | 4  | Pre  | 1.47  | 0.68 | 13.191 | 0.01 | 0.857 |
|                           |                                                       |    | Post | 3.47  | 0.68 |        |      |       |
| <b>Overall Grammar</b>    |                                                       | 12 | Pre  | 5.53  | 2.29 | 14.729 | 0.01 | 0.882 |
|                           |                                                       |    | Post | 11.23 | 1.22 |        |      |       |
| <b>Pronunciation</b>      | Pronounce vowels,                                     | 6  | Pre  | 3.30  | 1.02 | 9.522  | 0.01 | 0.758 |
|                           |                                                       |    | Post | 5.23  | 0.73 |        |      |       |

|                       |                                                                            |    |      |       |      |        |      |       |
|-----------------------|----------------------------------------------------------------------------|----|------|-------|------|--------|------|-------|
|                       | consonants, and diphthongs                                                 |    |      |       |      |        |      |       |
|                       | Apply elision, assimilation, linking and intrusion                         | 6  | Pre  | 0.90  | 0.76 | 19.258 | 0.01 | 0.927 |
|                       |                                                                            |    | Post | 4.53  | 0.68 |        |      |       |
|                       | Emphasize the correct stress in both individual words and within sentences | 9  | Pre  | 3.23  | 1.07 | 24.731 | 0.01 | 0.955 |
|                       |                                                                            |    | Post | 8.60  | 0.62 |        |      |       |
| Overall Pronunciation |                                                                            | 21 | Pre  | 7.43  | 1.68 | 33.286 | 0.01 | 0.974 |
|                       |                                                                            |    | Post | 18.37 | 1.35 |        |      |       |
| Overall Accuracy      |                                                                            | 49 | Pre  | 20.00 | 4.76 | 23.762 | 0.01 | 0.951 |
|                       |                                                                            |    | Post | 43.8  | 4.02 |        |      |       |
| Fluency               | Use the target language smoothly demonstrating reasonable rate of speech.  | 4  | Pre  | 1.97  | 0.85 | 7.718  | 0.01 | 0.673 |
|                       |                                                                            |    | Post | 3.60  | 0.62 |        |      |       |
|                       | Use strategic devices appropriately                                        | 4  | Pre  | 1.67  | 0.80 | 10.778 | 0.01 | 0.800 |
|                       |                                                                            |    | Post | 3.63  | 0.61 |        |      |       |
| Overall Fluency       |                                                                            | 8  | Pre  | 3.63  | 1.54 | 9.893  | 0.01 | 0.771 |
|                       |                                                                            |    | Post | 7.23  | 1.17 |        |      |       |
| Pragmatic             | Use idioms and expressions that are related to                             | 4  | Pre  | 1.00  | 0.00 | 16.803 | 0.01 | 0.907 |
|                       |                                                                            |    | Post | 3.30  | 0.75 |        |      |       |

|                                       |                                                                                 |    |      |       |      |        |      |       |
|---------------------------------------|---------------------------------------------------------------------------------|----|------|-------|------|--------|------|-------|
|                                       | the topic,<br>situation and<br>audience                                         |    |      |       |      |        |      |       |
|                                       | Use language<br>effectively to<br>express<br>different<br>functions             | 4  | Pre  | 2.07  | 0.78 | 12.042 | 0.01 | 0.833 |
|                                       |                                                                                 |    | Post | 3.73  | 0.45 |        |      |       |
|                                       | Use appropriate<br>intonation<br>patterns related<br>to the topic,<br>situation | 4  | Pre  | 1.60  | 0.62 | 15.894 | 0.01 | 0.897 |
|                                       |                                                                                 |    | Post | 3.77  | 0.43 |        |      |       |
|                                       | Use relevant<br>vocabulary<br>related to the<br>topic, situation                | 4  | Pre  | 1.00  | 0.00 | 22.604 | 0.01 | 0.946 |
|                                       |                                                                                 |    | Post | 3.72  | 0.65 |        |      |       |
| <b>Overall Pragmatic</b>              |                                                                                 | 16 | Pre  | 5.63  | 1.22 | 31.672 | 0.01 | 0.972 |
|                                       |                                                                                 |    | Post | 14.53 | 1.20 |        |      |       |
| Discourse<br>organization             | Structure<br>conversation<br>logically                                          | 4  | Pre  | 1.00  | 0.00 | 26.664 | 0.01 | 0.961 |
|                                       |                                                                                 |    | Post | 3.77  | 0.57 |        |      |       |
|                                       | Speak<br>coherently and<br>cohesively                                           | 4  | Pre  | 1.00  | 0.00 | 27.840 | 0.01 | 0.964 |
|                                       |                                                                                 |    | Post | 3.80  | 0.55 |        |      |       |
|                                       | Participate<br>effectively by<br>taking turns                                   | 4  | Pre  | 1.00  | 0.00 | 64.459 | 0.01 | 0.993 |
|                                       |                                                                                 |    | Post | 4.00  | 0.00 |        |      |       |
| <b>Overall Discourse organization</b> |                                                                                 | 12 | Pre  | 3.00  | 0.00 | 21.745 | 0.01 | 0.942 |
|                                       |                                                                                 |    | Post | 11.57 | 0.73 |        |      |       |
|                                       |                                                                                 | 4  | Pre  | 1.00  | 0.00 | 27.643 | 0.01 | 0.963 |



|                         |                                             |       |      |       |      |        |        |       |
|-------------------------|---------------------------------------------|-------|------|-------|------|--------|--------|-------|
| Comprehensibility       | Deepen ideas with detailed explanations     |       | Post | 3.50  | 0.63 |        |        |       |
|                         | Direct the conversation by clarifying needs | 4     | Pre  | 1.00  | 0.00 | 21.073 | 0.01   | 0.939 |
|                         |                                             |       | Post | 3.70  | 0.53 |        |        |       |
|                         | Ask for further explanation                 | 4     | Pre  | 1.00  | 0.00 | 21.875 | 0.01   | 0.943 |
|                         |                                             |       | Post | 3.33  | 0.61 |        |        |       |
|                         | Confirm understanding                       | 4     | Pre  | 1.00  | 0.00 | 37.105 | 0.01   | 0.979 |
|                         |                                             |       | Post | 3.20  | 0.55 |        |        |       |
|                         | Overall Comprehensibility                   |       | 16   | Pre   | 4.00 | 0.00   | 40.196 | 0.01  |
|                         | Post                                        | 13.73 |      | 1.44  |      |        |        |       |
| Overall Speaking skills |                                             | 101   | Pre  | 36.27 | 5.87 | 40.196 | 0.01   | 0.982 |
|                         |                                             |       | post | 90.87 | 5.93 |        |        |       |

***The findings of the first hypothesis as clarified in table (1) indicated that :***

- There is a statistically significant difference between the mean scores of the study participants in the pre-post assessment in favor of the post assessment at the level of  $p \leq 0.01$  with an effect size of the intervention 0.982. indicating a large value greater than 0.14
- Also, there is a statistically significant difference between the mean scores of the study participants in the pre-post assessment of the EFL speaking main and sub skills in favor of the post assessment at the level of  $p \leq 0.01$  with an effect size ranged from (0.673-0.982). Suh value was greater than 0.14.

## Discussion and Interpretation of the Results

Based on the previous results, it was clear that integrating Gardner's and Sternberg's intelligences proved to be effective on developing EFL speaking skills of the sophomore students at the faculty of Education. Such development is illustrated in figure (1) , figure (2) and figure (3) below.

Figure (1 )

*Difference between the mean score of the study participants in the pre-post assessment of the overall EFL speaking skills*

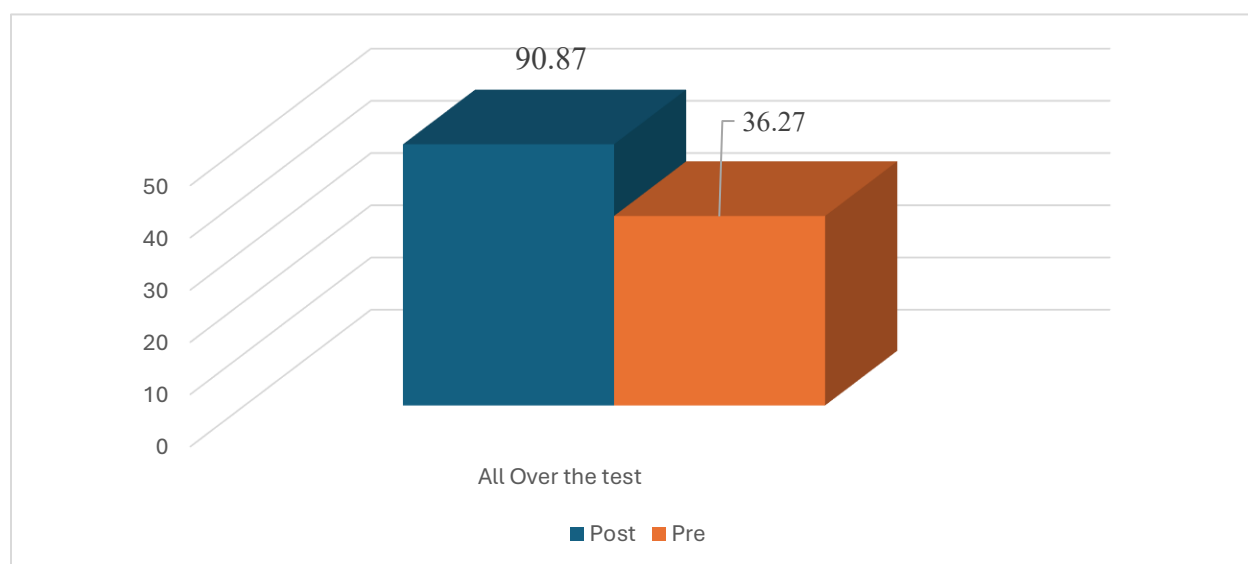


Figure (2)

*Difference between the mean score of the study participants in the pre-post assessment of the EFL speaking main-skills*

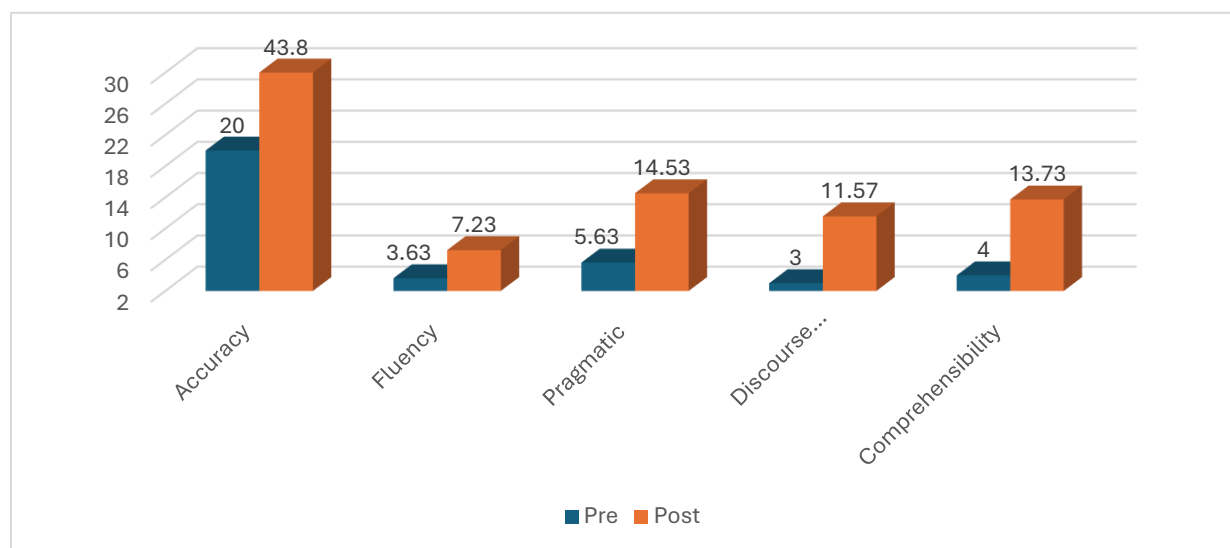
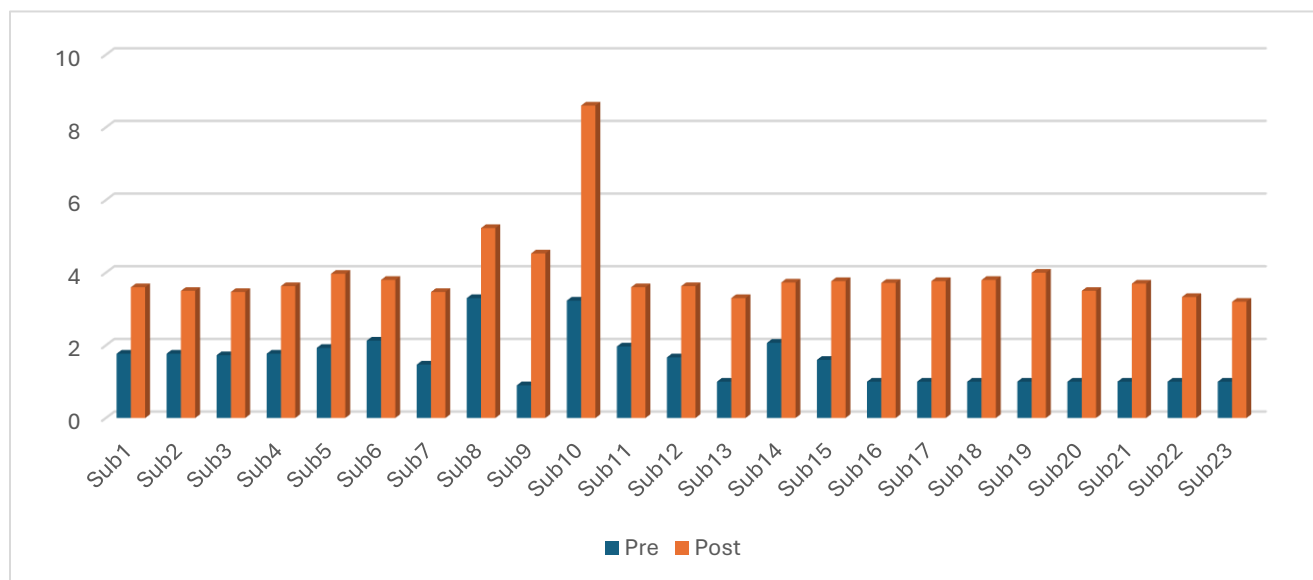


Figure (3)

*Difference between the mean score of the study participants in the pre-post assessment of the EFL speaking sub-skills*



As shown by figures (1) and (2), and (3) there were remarkable developments from pre-post assessment in the EFL overall speaking skills and its main and subskills. These differences in the post assessment could be attributed to the integration between Gardner's and Sternberg's intelligences which helped the

researcher to focus on the mental processes neglected by Gardner. These processes were neglected by most of researches focusing on multiple intelligences such as Abdallah(2010); Salem(2013); Ibrahim (2019); Rizqiningsih and Hadi (2019) and Al-Ghazu(2022). Although they confirmed the importance of using multiple intelligences-based activities on developing speaking skills, they did not clarify how these strategies provoke the mental processes responsible for developing linguistic intelligence. Such confirmation result was pointed by Hairudin et al. (2023). This study emphasized the necessity of conducting studies for clarifying the role of internal factors for developing the target intelligences.

Within this vein, guided discovery learning played also important role in fostering the mental processes on developing pronunciation skills. *Introduction and simulation, problem statement, generating ideas and data collection* triggered students' abilities for analysis, and practical production. Students were asked to analyze the audio-transcription, compare the listened phonemes to their cognitive schemata and searched for the differences between confused phonemes. Data processing and exploration and verification stages and clean up and care of materials helped students to refine their own understanding. Sharing exploratory work and Generalization phase enhanced students' phonological awarenesses by providing students with a new transcription exercise. Putting students into groups within this stage developed students' ability for negotiation skills and helped them to stimulate their critical thinking

The use of Zimmerman's self-regulated learning strategy (SRL) enhanced speaking skills by stimulating students' mental processes within SRL's stages. Within the forethought phase, the researcher targeted analytical intrapersonal intelligence, analytical logical, analytical linguistic, and analytical visual intelligence. Students were engaged into analyzing independently the given task, organizing their thoughts, and preparing their way to clarify their ideas. Within performance stage, attention focus strategy was used to help students pay attention to their mistakes through using pdf, videos and PPT provided by the researcher. Self-reflection and self-evaluation phases targeted creative linguistic intelligences, creative intrapersonal intelligence, analytical, practical and creative spatial intelligences and creative logical intelligences. Students were asked to write a well-organized essay about their spoken topic, then presented their ideas in a creative way that differentiated their written text from spoken text. Therefore, some discourse

organization skills, comprehensibility skills, grammatical skills, pragmatic and fluency skills were developed. This result is compatible with that of Ghaleynov and Kareshki (2017) and Alnahhas (2024).

The integration between Gardner and Sternberg can be best inferred by relating it to Levelt's (1993) model of the processes of speaking. For example, the conceptualization process enabled students to analyze the main communicative message (analytical and spatial intelligences) into different communicative speech, and reshaped the message using the practical, creative, logical, linguistic and interpersonal intelligence. Within formulation process, analytical, practical, creative, linguistic and intrapersonal intelligences developed accuracy skills along with other skills. Within self-monitoring, all of these intelligences were aligned with intrapersonal intelligence to enable students to monitor and reframe and deliver their speech. Consequently, it can be concluded that integrating Gardner's and Sternberg's intelligences proved to be effective for developing EFL speaking skills.

### **Recommendation of the study**

In the light of the study results, it is recommended that EFL teachers should put in mind that enhancing students' repertoire of linguistic knowledge does not mean that they can practice speaking to achieve comprehension and negotiate ideas. Hence, speaking should be viewed as a productive skill that is taught to achieve success in real life situations using analytical and creative abilities. For EFL researchers, the study recommended that multiple intelligences should be viewed as a framework that includes different theories that go beyond one single factor to be included with that of Gardner's theory.

### **Suggestions for further researches**

Based on the findings of the present research, the following suggestions for further research can be suggested:

- Investigating the effectiveness of integrating Gardner's multiple intelligences and Sternberg's triarchic theory on developing critical speaking skills.
- Investigating the effectiveness of integrating Gardner's multiple intelligences and Sternberg's triarchic theory on developing productive skills.

- Highlighting the effectiveness of integrating Gardners' multiple intelligences and Sternberg's triarchic theory on developing 21st century skills

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