Fostering Technological University Students' EFL Oral Communication Competences and Their Self Confidence Through Using a Project based Flipped Learning Model

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ABSTRACT

Investigating the effectiveness of using a project-based flipped learning model in fostering technological university students' EFL oral communication competencies and their self-confidence is the aim of this research.

To fulfill this purpose, four instruments were constructed: a semi- structured interview questions (open-ended questions), a pre-post EFL oral communication competences test to assess students' EFL oral communication competences, an EFL oral communication rubric for assessing and scoring the students' EFL oral communication performance included on the EFL oral communication competencies and an EFL oral communication self-confidence scale questionnaire. Participants included 40 students enrolled in the third year of the specialized Food Industry Technology (FOD) program, Faculty of Technology of Industry and Energy, Samannoud Technological University in Gharbia. The quasi-experimental design was adopted in which the participants were assigned into two groups: a control group (studied the English course through the regular instructional methods) and an experimental group (studied through the Project based Flipped Learning Model). Results of the study revealed that the

experimental group students' EFL oral communication competences and self-confidence were significantly fostered and they outperformed their counter parts of the control group in the target competences and self-confidence. It was recommended that a project based flipped learning model should be used in EFL teaching and learning to foster EFL oral communication skills and other language skills. In addition, EFL learners should be provided with EFL oral communication courses in which project based flipped learning model is employed.

KEYWORDS: Project based Learning – Flipped Learning – Project based Filliped Learning Model Oral Communication Competences – Self-Confidence

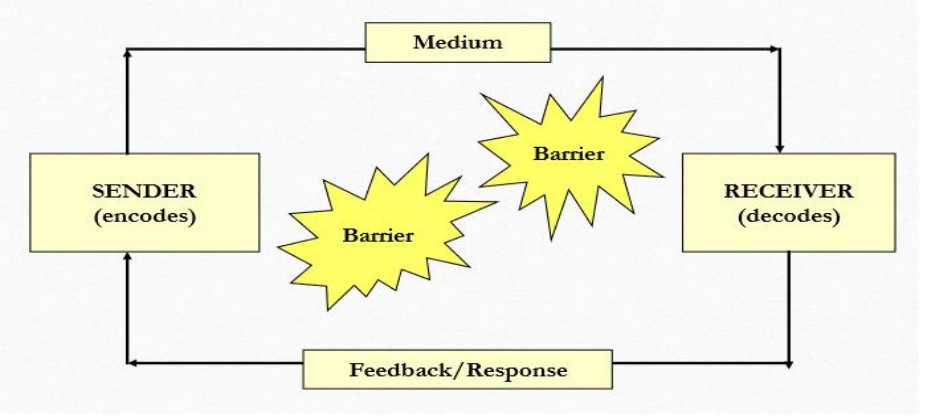
Introduction and background

Effective communication is crucial in personal, professional, and academic spheres. Two common forms are oral and written communication. In the workplace, clear communication enables collaboration and persuasive presentation. Alternative teaching techniques, such as project-based learning, provide students with opportunities to practice oral and written communication skills while creating engaging classes. Integrating technology into education allows students to practice these skills while creating enjoyable and motivating learning environments.

Communication is the exchange of messages between individuals or groups, involving five basic elements: sender, receiver, message, channel, and feedback. The sender encodes the message with intent, while the receiver decodes it and provides feedback. The sender then interprets the feedback and decides whether to resend the message or start a new one (Mahajan, 2015; Velentzas & Broni ,2014; Seema,

2012) *. (See Figure 1).

Figure (1): ***Components of Communication Process***



Communication competences are the abilities to convey information to others effectively. They are characterized as the attributes needed to accomplish objectives, which include social skills, interpersonal and personal attributes. These competencies are called "soft" because they are similar to feelings or images that allow people to "read" other people. These skills are necessary in the workplace because practically

every occupation involves interacting or engaging with people in some kind (Hagmann, 2002; Cleland, Foster & Moffat, 2005; Harlak, Gemalmaz, Gurel, Dereboy, & Ertekin, 2008; Nitonde, 2014; Al- Eiadeh, Al-Sobh, Al-Zoubi, Al-Khasawneh, 2016; Gioiosa & Kinkela, 2019).

Oral Communication is the ability to use the language orally and appropriately in any circumstances as well as shared sociocultural or pragmatic suppositions. It comprises knowledge or competence and the capacity for implementing that competence in appropriate or contextualized communicative language use (Bailey, 2005; Brown,2007; Hedge,2000).

*APA Style version 7 is used for documenting references.

Effective oral communication requires both listening and speaking skills, as they are crucial in both formal and informal situations, ensuring effective communication (Ogunsiji, 2004; Saci, 2012).

EFL oral communication involves expressing information or ideas, encompassing four components: grammatical competence, sociolinguistic competence, discourse competence, and strategic competence, which help compensate for imperfect language knowledge (Murray, 2010). To enhance EFL oral communication ability, learners can use direct or indirect approaches, such as systematic analysis, classroom practice, role-play, simulation, and problem-solving tasks. Contextualized practice, fluency-based activities, personalization of language, and managing classroom interaction are essential. Personalizing language, building social awareness, and fostering confidence are also key. A supportive classroom environment can help students feel prepared for language activities and improve their English oral communication skills (Hedge, 2000; Bailey, 2005; Nunan, 2015).

Being proficient in English and having excellent oral communication competences have been recognized as important criteria employers look for in hiring fresh graduates. Therefore, many researchers clarified the importance of developing oral communication competences such as (Kortsarts, Fischbach, Rufinus & Utell, 2010; Giangrande, 2009; Bakke, 2008; Becker, 2008; Maurino, 2008; Dansdill, Hoffman, Herscovici, 2008; Dugan & Polanski, 2006; Hoffman, Dansdill, Herscovici, 2006; Osborne, 2006; Takeda, Crabtree & Johnson, 2006; Martin, 2005; Owen & Young 2005; Pomykalski, 2005, Kaczmarczyk, 2003; Ladd, 2003; Anewalt, 2003).

In reflecting on the importance of oral communication not only to one's career but also to one's life as a whole, several studies such as (Grace & Gilsdorf, 2004; Brown & Morrissey, 2004; Pittenger, Miller & Mott, 2004; Kerby & Romine, 2009;

Lee, 2009; Chan, 2011; Wilkes, 2012; Aliyu,2017; Elsayed, 2017; Jactat, 2017; Fitria and Salwa, 2018; Inkaew & Thumawongsa, 2018; Mahdi, 2024) were conducted to indicate that technical professionals have often not reached the required level for practice EFL oral communication competences after the completion of their education. In addition, they also suggested using different programs for improving learners' EFL oral communication competence such as (language enhancing program, task-based learning, collaborative learning and program based on toastmaster approach).

Furthermore, Alrowayeh (2017) indicated different factors that affect oral communication in the EFL classroom such as: the teachers' attitude towards students' errors, the atmosphere of the class, the students' feel of anxiety and the fear of making mistakes, the lack of using English by students in communication in the class and outside the class, the problem of facing difficulties in speaking English, the great concentration on grammar in the syllabus and the limited use of recording for listening exercises. Additionally, Alenezi, Alazemi, and Alnwaiem (2021) identified factors influencing students' EFL oral communication skills such as discussion topic, the Interlocutor's influence, shyness, self-confidence, and the class's state. Lacking self-confidence is often a barrier for the students to communicate effectively. Therefore, the present research focused on the students' self-confidence as one of its variables.

Self-confidence is essential for effective communication, particularly in public speaking, as it involves an individual's belief in their abilities, self-acceptance, and worthiness for others' esteem (Al-Rifai, 2004). Besides, Perry (2011) defined self-confidence as an assessment of a person's self-perception and confidence in his skills based on prior experiences. According to Perry, Patricia (2011) self-confidence involves a positive belief that one can generally accomplish what one

wishes to do in the future.

More recently, Indrawati (2018) stated that self-confidence is a positive attitude of the individual that enables her/himself to against the environment or situation s/he faces. Therefore, students need to have self-confidence to be able to communicate, especially in the oral presentation and public speaking in front of the class. The students who can communicate fluently in addition to being able to increase their academic achievement in the speaking course because of fulfilling the criteria of the assessment on speaking skill (Salim, 2015).

Accordingly, the current research proposes a project-based flipped learning model for technological university students to enhance their EFL oral communication competences and self-confidence. Based on the connectivism learning theory, this model encourages students to take charge of their education, engage with others, and learn through technology, group participation, and online networks (Siemens, 2004; Downes, 2005; Downes, 2007; Siemens, 2008; King, Goodson & Rohani, 2009; Siemens & Downes, 2009; Stafford, 2015; Bair & Stafford, 2016).

Project based Flipped Learning Model:

Project-based learning (PBL) is a new teaching method that focuses on long-term, interdisciplinary, student-centered activities, integrating real-world issues and practices. It shifts from traditional, short, isolated lessons to a more creative and student-centered approach, enabling faster learning outcomes (Soleimani et al., 2015).

Project-based Learning is a student-centered approach that utilizes three constructivist principles: context-specific learning, active student involvement, and knowledge sharing to achieve goals (Cocco, 2006). According to Wurdinger, Haar, Hugg and Bezon (2007) and Al-Balushi and Al Aamri (2014), it is a specific kind of

inquiry-based learning in which real-world problems and realistic questions offer the learning context and result in meaningful learning experiences (Wurdinger, Haar, Hugg & Bezon, 2007). Fang (2008) defines PBL as learning through experiences, where students work in groups to solve authentic, curriculum-based, and interdisciplinary problems, creating websites and digital media presentations. In addition, Bender (2012) states that project-

based learning involves students working cooperatively on authentic, real-world projects based on engaging questions or tasks to teach academic content.

Project-based learning (PBL) significantly enhances learners' growth and abilities, including cooperation, problem-solving, communication, creative thinking, critical thinking, and self-directed learning. It promotes purposeful communication and real-life application of EFL language skills, making it a valuable tool in third and foreign language acquisition (Baillie & Fitzgerald, 2000).

Project-Based Learning (PBL) has received a lot of attention in English as a Foreign Language (EFL) settings due to its ability to improve students' oral communication abilities. Much research shows that PBL improves different areas of EFL speaking proficiency. According to Torres and Rodríguez (2017), PBL helps ninth-grade EFL learners improve their oral production by building lexical competence, reducing speaking fear, and increasing motivation in learning. Sirisrimangkorn (2018) also found that project-based learning, particularly when presentations or drama were included, greatly enhanced EFL undergraduate students' speaking skills, including fluency, grammar, pronunciation, vocabulary, and content. Mafrudloh and Fitriati (2020) have demonstrated the effectiveness of PBL in enhancing students' speaking abilities, resulting in more active and inventive task completion and class involvement.

Similarly, Purwati et al. (2024) demonstrated that PBL, particularly when combined with Higher-Order Thinking Skills (HOTS) assessment, assisted students in honing their speaking skills by providing more opportunities for practice, increasing confidence, and encouraging active participation and creative thinking. According to several research, PBL generates realistic contexts and relevant assignments that encourage students to apply their language abilities in real-world circumstances, resulting in greater communicative competence. PBL exercises might boost students' confidence in speaking English by shifting the focus from rote memorization to intentional communication (Torres & Rodríguez, 2017; Purwati et al., 2024).

Research on project-based learning in higher education has demonstrated its usefulness. Studies have indicated that self-directed learning preparedness, such as strong self-management abilities, is critical for project-based learning success. Despite challenges such as inequitable divisions of labor and community obligations (Stewart, 2007; Hassan et al., 2008; Ruikar & Demian, 2013; Fernandes et al., 2014; Gibbes & Carson, 2014).

In conclusion, these studies consistently show that Project-Based Learning is a rich and effective environment for developing EFL students' oral communication skills by providing authentic opportunities for language use, promoting collaborative learning and interaction, increasing student motivation and confidence, integrating various language skills in a meaningful way, and reducing speaking anxiety. While the precise methodology and conclusions may differ, the overall conclusion from these research is that PBL has a strong beneficial influence on EFL oral communication development.

Technology integration in education shifts teaching styles from passive to active, offering flexibility and adaptability. Flipped learning, a compatible English learning model offers flexibility and convenience (Evseeva and Solozhenko, 2015, Zainuddin, 2017). According to Educause (2012), **flipped classroom** or **flipped learning** is "a pedagogical model in which the typical lecture and homework elements of a course are reversed".

Flipped Learning or Flipped Classroom, an ICT-supported teaching methodology, inverts traditional in-class and out-of-class elements, becoming popular worldwide teaching strategy. Flipped learning methodology places students at the center of study, with teachers providing guidance and resolving doubts (Jenkins et al., 2017). However, the approach's popularity is not well understood, prompting urgent research into its impact on learning and its implementation, as it lacks clear definition and implementation (Abeysekera and Dawson, 2015; O'Flaherty & Phillips, 2015).

Flipped Learning Model restructures traditional classroom activities, allowing students to conduct lectures and notes at home, using technology and video resources. This approach promotes personalized learning, student-centered learning, and constructivism, allowing students to acquire knowledge differently (Herreid & Schiller, 2013; Basal, 2015).

Numerous research shows that flipped learning helps students strengthen their EFL oral communication abilities. The central concept of flipped learning—shifting direct instruction outside of the classroom to free up class time for interactive activities—gives students additional opportunity to practice speaking and receiving feedback. The flipped learning approach, which facilitates interaction and context-based language application, promotes the development of general communicative competence, including grammar, vocabulary, fluency,

pronunciation, and discourse competence (Lertcharoenwanich and Soontornwipast, 2024). Pre-class learning and low-stakes practice can help students prepare for classroom tasks (Dariyemez, 2023; Sheerah & Yadav, 2022).

According to, (Webb & Doman, 2020; Tadayonifar & Since, 2024) flipped learning allowed for more communicative activities in class, increasing practice chances. According to Lertcharoenwanich and Soontornwipast (2024), integrating flipped learning with role-playing enhanced EFL oral communication abilities among business English students. Yesilçinar (2019) demonstrated that the flipped classroom approach increased speaking skills, motivation, and satisfaction among adult EFL learners. Furthermore, Alkhoudary and AlKhoudary (2019) found that the flipped classroom approach considerably increased students' speaking skills and confidence. Furthermore, Santhanasamy and Yunus (2022) stated that flipped learning can increase students' speaking abilities by emphasizing self-regulated learning, interaction, motivation, and accomplishment. Other studies hypothesized that flipped learning may help reduce EFL students' speaking fear, which is a major obstacle to oral competence.

To conclude, a growing body of research supports the effectiveness of flipped learning in fostering EFL oral communication skills by providing more opportunities for practice, reducing anxiety, boosting engagement, and promoting deeper learning through interactive

classroom activities.

Based on the literature review mentioned above, lecturers and instructors have to pay attention to the increasing demands of higher education learners to communicate effectively and confidently. Thus, the aim of this research is to foster technological university students' EFL oral communication competences and their self- confidence. A project based flipped learning model is able to encourage EFL

learners to communicate in English confidently. In addition to encouraging students to arrive at class prepared, project-based flipped learning allows students to spend more time working and collaborating together, which is why several research suggestions support the necessity for educators to incorporate this approach into their teaching. Therefore, the research sought to determine how well a project-based flipped learning paradigm fosters technological university students' EFL oral communication competences and their EFL oral communication self-confidence.

Statement of the Problem

"Third year technological university students need to foster their EFL oral communication competences and self-confidence" was the stated problem of the current research, which was based on the previous review of the literature, the researcher's experience teaching English for various stages and levels for about 20 years, and the researcher's direct contact with students at technological universities, teaching them several English courses for two years. Accordingly, the current research examined the effectiveness of implementing a project-based flipped learning model in fostering technological university students' EFL oral communication skills and self-confidence.

Questions

The present study attempted to answer the following main question:

"How far can a project based flipped learning model foster third year technological university students' EFL oral communication competences and their self- confidence?'

For research purposes, the following sub-questions were derived from the main question.

1) What are the criteria for designing an effective project based flipped learning model?

2) What are the components of the proposed project based flipped learning model required
   for fostering third year technological university students' EFL oral communication
   competences and their oral communication self-confidence?
3) What is the effectiveness of implementing a project based flipped learning model in fostering third year technological university students' EFL oral communication
competences?

What is the effectiveness of implementing a project based flipped learning model in fostering third year technological university students' EFL oral communication self-confidence?

Purpose

The main purpose of the present research was to foster third year technological university students' EFL oral communication competences and their EFL oral communication self-confidence via using a proposed project based flipped learning model. Along with examining how far the suggested project-based flipped learning model fosters those students' EFL oral communication competencies and self-confidence.

Delimitations

The study was delimited to the following:

1) A sample of students enrolled in the third year (Fifth semester) of the specialized
   Food Industry Technology (FOD) program, Faculty of Technology of Industry and Energy, Samannoud Technological University in Gharbia.

2) Some EFL oral communication competences necessary for graduate technological universities students (**1. Strategic competences**: a. Using avoidance and circumlocution. **2. Sociolinguistic competences**: a. Selecting appropriate words

and sentences according to the proper social setting b. Organizing speech in a meaningful and logical sequence (introduction-body-conclusion) c. Using language as a means of expressing values and attitudes. e. Listening actively to give/get feedback **3. Non-linguistic competences:** a. Using body language, gestures, and facial expressions to best convey the intended meaning). Those competences were identified by analyzing the needs of the target participants.

3) Employing project based flipped learning model apps (Gmail, Google Classroom, Google Drive, Google Meet and Google Form) while using the project based flipped learning model for teaching the target EFL oral communication modules.

Operational definition of Terms

Communication Competences

For the purpose of this research communication competences are those competences which are needed to communicate clearly and effectively sharing thoughts, feelings and ideas through spoken written words.

EFL Oral Communication Competences

For the purpose of this research EFL oral communication competences refer to some EFL oral communication competences necessary for graduate technological universities students namely; (**1. Strategic competences**: a. Using avoidance and

circumlocution. **2. Sociolinguistic competences**: a. Selecting appropriate words and

sentences according to the proper social setting b. Organizing speech in a meaningful and logical sequence (introduction-body-conclusion) c. Using language as a means of expressing values and attitudes. e. Listening actively to give/get feedback **3. Non-linguistic competences:** a. Using body language, gestures, and facial expressions to best convey the intended meaning). Those competences express the ability to understand the spoken language of others in addition to expressing oneself verbally by putting words and ideas into sentences and engaging appropriately in different social situations.

Self-Confidence

This research defines self-confidence as an individual's belief in their ability to achieve goals, make correct decisions, and perform tasks skillfully.

EFL Oral Communication Self-Confidence

This research explores EFL oral communication self-confidences, which refer to an individual's belief in their ability to communicate positively, express ideas clearly, persuade others and handle constructive feedback.

Flipped Learning (FL)

This research utilizes flipped learning (FL) as a methodology to enhance active learning during lectures by assigning students lecture materials and presentations to be watched before the lecture through Google Classroom and Google Drive. Meanwhile the lecture time is used for discussion, interactive collaborative activities and projects.

Project based Learning (PBL)

Project-Based Learning (PBL) is an innovative approach that enables learners to drive their own learning through inquiry, collaborate on research, and create projects that reflect their knowledge in the twenty first century.

Project based Flipped Learning Model (PBFLM)

This research uses PBFLM, a student-led model, where learners collaborate in classrooms and online using Google classroom, Gmail, Drive, and Meet to achieve projects, enhance EFL oral communication competences, and boost self-confidence.

Hypotheses

This study tested the following hypotheses:

1) There is a statistically significant difference at (0.05) level between the mean ranks of the control group and that of the experimental one on the post administration of the EFL oral communication competences test in favor of the experimental group.
2) There is a statistically significant difference at (0.05) level between the mean ranks of the experimental group on the pre-post administration of the EFL oral communication competences test in favor of the post one.
3) There is a statistically significant difference at (0.05) level between the mean ranks of the control group and that of the experimental one on the post administration of the EFL oral communication self- confidence scale questionnaire in favor of the experimental group.
4) There is a statistically significant difference at (0.05) level between the mean ranks of the experimental group on the pre-post administration of the EFL oral communication self-confidence scale in favor of the post one.

Method of the research:

Participants

The study involved forty third-year technological university students specializing in Food Industry Technology at Samannoud Technological University in Gharbia. They were trained in implementing a project-based

flipped learning model using Google collaborative educational tools. The participants were divided into two groups: control and experimental, each with twenty students. The experimental group was taught using the project-based flipped learning model, while the control group studied through traditional lecture methods.

Design

The research used a quasi-experimental design with two groups: experimental and control. The experimental group received five modules using a project-based flipped learning model, while the control group received regular instructions. Both groups received pre-post EFL oral communication competences tests and self-confidence scale questionnaires.

Instruments

The following instruments were designed and used to achieve the purpose of the current research:

1) An open-ended interview question.
2) An EFL oral communication competences checklist questionnaire.
3) A pre- post EFL oral communication competences test.
4) An analytic EFL oral communication competences scoring rubric.
5) An EFL oral communication self- confidence scale questionnaire.

All the previous instruments were created and administered through google forms. A detailed description of each one of these instruments is presented in the following section.

1) **An open-ended interview questions to assess the students EFL oral communication competences level in addition to assessing their EFL oral communication competences level.**

The interview was structured in a way that allowed the participants to provide their responses in their own words. "**What obstacles do you face while communicating in English orally?"** was the open-ended interview question that

the researcher asked each student prior to evaluating them **(See appendix A)**. This question served as a sort of informal check to make sure that the project based flipped learning model would be built around specific EFL oral communication competences that addressed the demands of the participants. The following is how the researcher

framed some of the participants' answers to the question:

Student 1: I feel anxious when speaking English and I don't understand some words in the questions which leads me to give different answers than what is required I also don't pronounce the words correctly, and so on."

Student 2: "I do not understand some of the words in the question, and therefore I give a different answer than what is required, and I do not pronounce the words correctly."

Student 3: "One of the problems I face while speaking orally in English is correct word pronunciation."

Student 4: "Those problems are linguistics aspect such as lack of vocabulary, grammatical error and poor pronunciation and psychological aspect, such as lack of self-confidence, shyness, fear of making mistake, anxiety, mother tongue language and lack of motivation to learn."

Student 5: "I believe I know the correct grammar and vocabulary that would enable me to communicate in English. However, I feel my mind is frozen when I am invited to speak in public; I find it a very heavy task for me."

Student 6: "I face several obstacles when communicating in English orally, such as feeling nervous or anxious when speaking in front of others. I also have difficulty understanding fast speakers and sometimes feel nervous or anxious when speaking in front of others."

Student 7: "The problems I face when speaking English orally if I have to answer a question or present content are not knowing the appropriate words to express ideas and fear of evaluation or criticism from others which affects

self-confidence while speaking."

able (1) Participants' EFL oral communication obstacles

EFL oral communication obstacles	Percentage of participants
Lack of self confidence	64%
Lack of Fluency	49%
Mispronunciation	60%
Lack of vocabulary	65%
Anxiety	45%
Shyness	50%

2) **An EFL oral communication checklist questionnaire to determine the necessary EFL oral communication competences required for third year technological university students.**

The questionnaire aimed to identify the EFL oral communication competences required for third-year technological university students. It was adapted from literature and distributed to specialists to identify the necessary competencies (See Appendix B). The purpose of the research was explained to them, and based on their feedback, modifications were made to the final list, which includes the following:

1. Strategic competences:

a. Using avoidance and circumlocution.

2. Sociolinguistic competences:

a. Selecting appropriate words and sentences according to the proper social setting.

b. Organizing speech in a meaningful and logical sequence (introduction- body-conclusion).

c. Using language as a means of expressing values and attitudes.

d. Listening actively to give/get feedback.

3. Grammatical competences:

a. Producing well-structured language.

4. Non-linguistic competences:

a. Using body language, gestures, and facial expressions to best convey the intended meaning.

3) **A pre-post EFL oral communication competences test.**

This pre-post-test was designed to: 1) identify the extent of homogeneity of the control and experimental groups, 2) identify the participants' pre-level in

mastering the target EFL oral communication competences under investigation before the treatment (pre-test), and 3) measure the effectiveness of the suggested project based flipped learning model in fostering students' EFL oral communication competences (post-test).

The EFL oral communication competences test was evaluated by TEFL specialists for its validity, appropriateness, and clarity of language. The test was found to measure the target competences, and its reliability was estimated using the coefficient of internal consistency (α Cronbach). A piloting sample of twenty students was selected, and the total test reliability was 0.75, indicating its reliability and suitability for research. The final version of the test is available. (See Appendix C).

4) An analytic EFL oral communication competences scoring rubric.

The EFL oral communication competences scoring rubric was designed to assess and score the participants' performance in the pre – post EFL oral communication competences test. The EFL oral communication scoring rubric contained the six EFL oral communication competences and five scoring items (**1. Very Poor, 2. Poor, 3. Good, 4. Very Good and 5. Excellent**) to identify the students' level in each question in the EFL oral communication competences test. The rubric was used while the correction of the pre- post EFL oral communication competences test. To establish the rubric validity, it was given to a number of TEFL specialists. Jurors recommended that some sentences need to be changed. Modifications were made according to the jurors' comments. The rubric in its final version can be seen in (Appendix D).

5) A pre-post EFL oral communication self-confidence scale questionnaire.

The EFL oral communication self-confidence scale questionnaire was designed to: 1) assess the students' EFL oral communication self-confidence pre- level, 2) assess the students' EFL oral communication self-confidence post- level, and 3) identify the effect of the proposed project based flipped learning model on students' EFL oral communication self-confidence (post administration). The questionnaire in its final version can be seen in (Appendix E).

The Project based Flipped Learning Model

After reviewing the literature on project-based learning, flipped learning, EFL oral communication competences and self-confidence, the project based flipped learning model was constructed. This model was designed based on the principles of connectivism theory. Those principles were reflected throughout the application of the target modules as students were able to choose what to learn, interact and form a long-term learning environment, share ideas and thoughts, and store information in a digital way.

The model employed some Google Workspace for Education Applications (formerly G Suite) namely; Gmail account, Google Classroom, Google Meet, Google Forms and Google Drive. Google collaborative educational apps were used as follows:

- Gmail was used to enable the students to use all the Google educational apps. Each student receives an invitation to join the google classroom. S/he would be asked to login using her/his Google account and password. In addition, it was used to enable the researcher and the students to send and receive email.
- Google classroom was used to create flipped learning class, distribute assignments, communicate and stay organized. The Google Classroom app

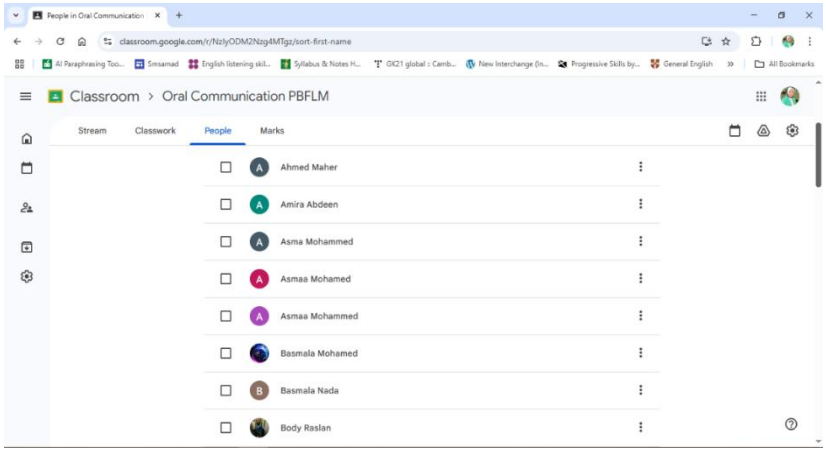
can improve the flipped learning pedagogical concept as it allows the students to get easily the assignments through an internet connection by different devices: laptop, PC, smartphone...etc. The assignments can be created in different ways

such as presentations, worksheets and videos. These tasks can be scheduled and a deadline can be included in them. The students can also upload all the required files and assignments by smartphones. The student teacher's feedback is enhanced by the possibility of making comments to all the class or in private.

- Google Drive was used to store all the files needed during the oral communication course (e.g. videos, presentations, worksheets and handouts), as it is free personal storage.
- Google Meet was used to create online interactive lectures and discussions.
- Google Form was used to create online oral communication quizzes for assessing the students' EFL oral communication competences performance during and after each module. The following figures illustrate some screen shots of the PBFLM.

Figure (2): ***Screenshot of the first lecture video and reading via Google Classroom.***

Figure (3): Screen Shot of the experimental group students joining Google Classroom.



The Model General Aims:

The general aims of developing the project-based flipped learning model were to encourage students to communicate effectively and confidently, to present several oral communication tasks and assignments that addressed learners' individual differences, to give students the opportunity to hold a conversation, make a small talk, give a presentation, and record a video in order to foster students' EFL oral communication competences and self-confidence.

Model Learning Outcomes:

Students were expected to achieve the following learning outcomes through the project based flipped learning model;

- Use avoidance
- Use fillers and hesitation devices
- Use circumlocution
- Use appeal for help
- Select appropriate words and sentences according to the proper social setting.

- Organize speech in a meaningful and logical sequence (introduction-body-conclusion).
- Use language as a means of expressing values and attitudes.
- Listen actively to give/get feedback
- Use attention grabbers
- Use pitch, stress, and intonation appropriately to convey the intended meaning
- Employ body language, gestures, and facial expressions to best convey the intended.

The Experimental Treatment

An quasi-experimental design with one experimental group and one control group was used through the present study. The experimental treatment took place in Faculty of Technology of Industry and Energy, Samannoud Technological University in Gharbia Governorate. The experimental treatment was carried out through using some Google educational apps. The project based flipped learning model was presented in five EFL oral communication modules adopted from (Oral communication Handbook for International Students 3rd Edition, Food Production Student's Handbook 1sT Edition, and Career Path for Agriculture Book) in addition to an introductory module. The introductory module was explained in the computer lab. It lasted for two hours. The proposed project based flipped learning model was administered during the first semester of the academic year (2024-2025). Following-up on the students and giving them feedback was done face to face inside the classroom and online through the Google Classroom (https://classroom.google.com/c/NzIyODM2Nzg4MTgz?).The following steps were followed:

Pre- administration:

Pre- administration was at the beginning of the first semester of the (2024-2025)

academic year. Homogeneity between the control group and the experimental group was establishshed through administering the EFL oral communication competences test to the participants before administering the project based flipped learning model.

First, concerning the EFL oral communication competences test, Table (2) shows that there were no significant differences between the control and experimental groups in the test pre-administration.

Table (2): Establishing Homogeneity of the Control and Experimental Groups on the Pre-Administration of the EFL Oral Communication Competences Test

Group	*N*	*Mean Rank*	*Sum of Ranks*	*Mann-Whitney U*	*Sig. (2-tailed*
Control	20	15.53	248.50	112.5	Not
Experiment	20	17.47	279.50		Sig.
Total	40				

Table (2) illustrates that there was no significant difference between the mean ranks of the control and the experimental group students in the pre-administration of the EFL oral communication competences test. Consequently, results of Table (2) verify the homogeneity between the control and the experimental group students.

Second, concerning the EFL oral communication self-confidence scale questionnaire, it was pre-administered to indicate the control and experimental groups' students' EFL oral communication self-confidence before administering the PBFLM. Table (3) presents the Mann-Whitney test results of

the two groups in the pre-administration of the EFL oral communication self-confidence scale.

Table (3): Establishing Homogeneity of the Control and Experimental Groups on the Pre-Administration of the EFL Oral Communication Self-Confidence Scale

Group	*N*	*Mean Rank*	Sum of *Ranks*	Mann-Whitney U	*Sig. (2-tailed*
Control	20	24.12	603.00	378	Not
Experiment	20	26.88	672.00		Sig.
Total	40				

Table (3) shows that U-value was not significant in the two groups. This means that there was no statistically significant difference between the experimental

and control group on the pre-administration of the EFL oral communication self-confidences scale questionnaire. In other words, the two groups were homogeneous

in their EFL oral communication self-confidence level at the beginning of the study.

Thus, any difference in their EFL oral communication self-confidence level after the experimental treatment could be ascribed or attributed to implementing the experimental treatment.

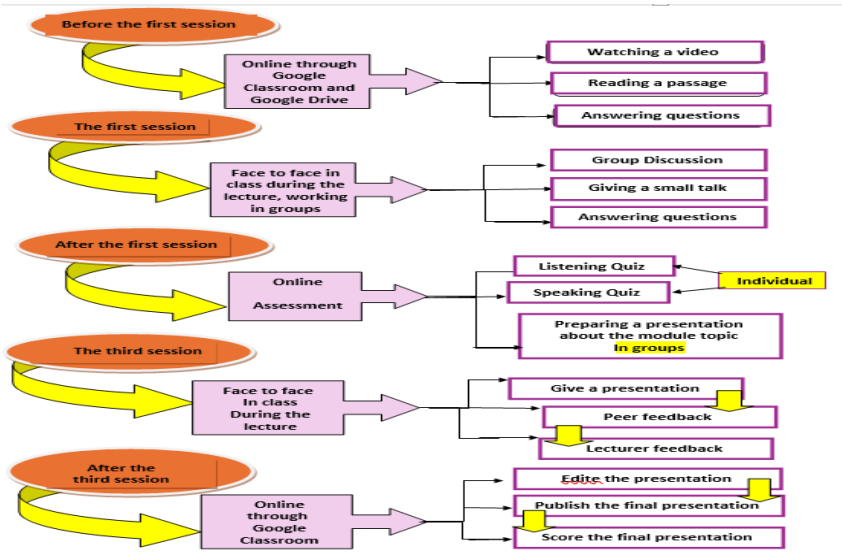
The administration

The proposed project based flipped learning model was implemented to the participants of the experimental group. Meanwhile, the control group students learn the target EFL oral communication modules through regular teaching and learning instructional methods and activities. Treatment was conducted during the first semester of the (2024/2025) academic year from the 28th of

September up to the 20th of December. The treatment lasted for twelve weeks, two sessions per week. The due dates for submitting the assignments were posted and pinned on Google classroom stream channel. Procedures of the experimental treatment were:

1) An orientation session was conducted for the target experimental group students to raise their awareness concerning the EFL oral communication course; its objectives and phases of each session in addition to familiarizing the students with the target competences of their EFL oral communication course. Students were told that this course would be taught in a flipped learning manner (watching the explanation videos at home, doing some exercises at home. Then doing some group activities in class).
2) Training the experimental group students on how to create a good presentation on a topic then post it on the google classroom.
3) The following figure presents the steps of implementing the proposed PBFLM in teaching each EFL oral communication modules. (See Figure 4).

Figure (4): Project based Flipped Learning Model (PBFLM) Steps for Each Module.



Post- administration

The post-administration of the instruments (the EFL oral communication competences test and the EFL oral communication self-confidence scale questionnaire) was conducted after the experimental treatment on Thursday 20th of December 2024 to examine the changes in the students' EFL oral communication competences and self -confidence for both the control and experimental groups. In addition, the experimental group assignments were assessed and the best assignments were published. So, the post- administration aimed at measuring the effectiveness of the proposed project based flipped learning model in fostering third year technological university students' EFL oral communication competences and their EFL oral communication self-confidence.

Results and Discussions

The results of the study were statistically analyzed in terms of its hypotheses and they were discussed in the light of the theoretical background and related studies. Results of the study were reported as follows:

Testing the First Hypothesis

The first hypothesis stated that " *There is a statistically significant difference at 0.05 level between the mean ranks of the control group and the experimental group students on the post administration of the EFL oral communication competences test in favor of the experimental group."* A Mann-Whitney U Test for independent samples was used to compare the difference between the mean ranks of the experimental and control group students in the EFL oral communication test after administering the project based flipped learning model.

Table (4): Results of the Control and Experimental Groups on the post Administration of the EFL Oral Communication Competences Test

Oral Communication Competences	Group	N	Mean Rank	Sum of Rank	Mann-Whitney U	Sig. (2-tailed)
Use avoidance and circumlocution	Control	20	13.12	328.00		Sig. at 0.05
	Experiment	20	37.88	947.00		
Select words and sentences according to social setting.	Control	20	13.10	327.50		Sig. at 0.05
	Experiment	20	37.90	947.50		
Use language as a means of expressing thoughts and ideas.	Control	20	13.62	350.50		Sig. at 0.05
	Experiment	20	37.38	934.50		
Organize speech in a meaningful and logical sequence	Control	20	15.09	375.00		Sig. at 0.05
	Experiment	20	35.78	900.00		
Listen actively to give and get feedback.	Control	20	13.16	329.00		Sig. at 0.05
	Experiment	20	36.84	946.00		
Use body language, gestures and facial expressions to best convey intended meaning.	Control	20	13.23	355.00		Sig. at 0.05
	Experiment	20	37.33	905.00		
Total	Control	20	13.64	325.00		Sig. at 0.05
	Experiment	20	**38.35**	**950.00**		

Mann-Whitney U-values for the target EFL oral competences are (3.2, 2,8, 14.5, 20, 4 and 3.5 respectively) and they all are significant at sign level 0.05. This indicates that there is a statistically significant difference

between the mean ranks of the control and experimental groups students' level at (0.05) on the post administration of the EFL oral communication test in favor of the experimental group. These differences are due to using the project based flipped learning model. Thus, the experimental group students outperformed their counterparts of the control group who studied through the regular instructional methods. Therefore, the first hypothesis of the study is verified and accepted.

Testing the Third Hypothesis

Results of testing the third hypothesis stated that "There is a statistically significant

difference at 0.05 level between the mean ranks of the experimental group on the pre-post administration of the EFL oral communication test in favor of the post one. "

AWilcoxon Signed Ranks-Test for dependent samples was used to compare the difference between the mean ranks of the experimental students in the EFL oral communication test before and after administering the project based flipped learning model.

Table (5): Results of the Experimental Group on the Pre-post- Administration of the EFL Oral Communication Competences Test

Oral Communicatior Competences	Ranks	N	Mean Rank	Sum of Ranks	Z	Sig. (2-tailed)
Use avoidance and circumlocution	Negative	0	.00	.00	4.325	Sig. at 0.05
	Positive	20	13	325		
	Ties	0				
	Total	20				
Select appropriate word	Negative	0	.00	.00	4.332	Sig.

Oral Communicatior Competences	Ranks	N	Mean Rank	Sum of Ranks	Z	Sig. (2-tailed)
and sentences to proper	Positive	21	12.5	300		at 0.05
social setting.	Ties	1				
	Total	20				
Use language as a mean	Negative	0	.00	.00		
Of expressing thoughts	Positive	20	13	325	4.671	Sig.
ideas.	Ties	0				at 0.05
	Total	20				
Organize speech in a	Negative	0	.00	.00		
meaningful and logical	Positive	20	12	276	4.296	Sig.
sequence (introduction,	Ties	2				at 0.05
body, conclusion)	Total	20				
Listen actively to give ar	Negative	0	.00	.00		
get feedback.	Positive	20	13	325	4.351	Sig.
	Ties	0				at 0.05
	Total	20				
Use body language,	Negative	0	.00	.00		
gestures and facial	Positive	20	12	276	4.273	Sig.
expression to best conv	Ties	0				at 0.05
the intended meaning.	Total	20				
Total	Negative	0	.00	.00		
	Positive	20	13	325	4.382	Sig.
	Ties	0				at 0.05
	Total	20				

Wilcoxon Z-values for the target EFL oral communication competences are (4.325, 4.332, 4.671, 4.296, 4.351 and 4.273 respectively) and they are all significant at the level 0.05. Comparing the mean ranks in the pre- post administration of the EFL reading skills test reveals that there are statistically significant differences between the mean ranks of the pre-post-administration of the EFL oral communication competences test in the total score. These significant differences are in favor of the post-test.

The mean ranks of the experimental group students' post-test implies that the experimental group students' level in the overall EFL oral communication competences test fostered due to the project based flipped learning model presented via Google Educational Apps (Gmail, Google Classroom, Google Drive, Google Form and Google Meet). All these tools were used to teach the target modules in addition to the extra oral communication activities (speaking and listening activities). This increase indicates the effectiveness of the project based flipped learning model. Accordingly, the third hypothesis of the present study is proved and verified.

Testing the third hypothesis

The third hypothesis stated that "There is a statistically significant difference at 0.05 level between the mean ranks of the control group and the experimental group students on the post administration of the EFL oral communication self-confidence scale questionnaire in favor of the experimental group." A Mann-Whitney U Test for independent samples was used to compare the difference between the mean ranks of the control and experimental group students in the post administration of the EFL oral communication self-confidence scale questionnaire as shown in Table (6).

Table (6): Results of the Control and Experimental Groups on the Post Administration of the EFL Oral Communication Self-Confidence Scale Questionnaire

Domain	Group	N	Mean R	Sum of Ra	Mann-Whitney U	Sig. (2-tail
Self-Confidence	Control	20	13.00	325.00	0	Sig. at 0.05
	Experiment	20	38.00	950.00		

Table (6) indicates that there is a significant difference between the mean ranks of the control and experimental groups in the post administration of the EFL oral communication self-confidence scale questionnaire.

Comparing the mean ranks of the experimental and control groups on the post administration of the EFL oral communication self-confidence scale questionnaire reveals that the experimental group students' mean ranks in the post EFL oral communication self-confidence scale questionnaire is (38), while the control group's mean rank in the post EFL oral communication self-confidence scale is (13). These values indicate the significant improvement of the experimental group students concerning their EFL oral communication self-confidence over the control group. This implies the effect of the project based flipped learning model on third year technological university students' EFL oral communication self-confidence. Based on the results shown in Table (5), the third hypothesis of the study is proved and accepted.

Testing the Fourth Hypothesis

The fourth hypothesis stated that *"There is a statistically significant difference at 0.05 level between the mean ranks of the experimental group students on the pre-post administration of the EFL oral communication self-confidence scale in favor of the post one."* A Wilcoxon Signed Ranks Test for dependent samples was used to compare the difference between the mean ranks of the experimental group

students on the pre- post administration of the EFL oral communication self-confidence scale questionnaire as shown in Table (7).

Table (7): Results of the Experimental Group on the Pre- post Administration of the EFL oral communication self-confidence Scale

Domains	Ranks	N	Mean Rank	Sum of Ranks	Z	*Sig. (2-tailed)*
EFL oral communicatic self-confidence	Negative Ran	0	.00	.00	4.378	Significant at 0.05
	Positive Rank	20	13	325		
	Ties	0				
	Total	20				

As Table (7) illustrates, Wilcoxon Z-values for the EFL oral communication self-confidence scale questionnaire is (4.378) and it is significant at level (0.05). Comparing the mean ranks on the pre- post administration of the EFL oral communication self-confidence scale questionnaire indicates the significant difference between the mean ranks before and after the administration of the EFL oral communication self-confidence scale in favor of the post one. The greater mean rank of the experimental group's post-test implies that the experimental group students' level in overall EFL oral communication self-confidence scale questionnaire fostered due to the project based flipped learning model.

Such result of the present research is consistent with Abdullahi, Salleh, and Alwan (2018). The findings of their study showed that there was a statistically significant difference in learning using project based flipped learning (CBLS) when compared with traditional method. Such results showed that students solve programming problems in less time when using CBLS. The study also found out that CBLS is effective for improving students' self-efficacy.

The Effectiveness of the Project based Flipped Learning Model (PBFLM)

First, the effect size of the project based flipped learning model on the students' EFL oral communication competences was measured. The formula was:

$$r = z/\sqrt{N}$$ (Cohen,1988).

The following Table (8) illustrates the effect size of the project based flipped learning model on the experimental group students' EFL oral communication competences.

Table (8): Level of the effect size of the PBFLM on the students' EFL oral - communication competences

Independen variable		Domains of the dependent variable	Z	N	Valu of (r)	Level of Effect Si
The proposed project based Flipped Learning Moc (PBFLM)	EFL oral communication competences	Use avoidance and circumlocution	4.316	20	0.981	High
		Select appropriate words and sentences to proper social setting.	4.307		0.896	
		Use language as a means Of expressing thoughts and ideas.	4.728		0.942	
		Organize speech in a meaningful and logical sequence (introduction, body, conclusion)	4.277		0.902	
		Listen actively to give and get feedback	4.304		0.826	
		Use body language, gestures and facial expressing to best convey the intended meaning.	4.523		0.921	
		Total	4.382		0.876	

Results in Table (8) the effect size for each EFL oral communication competence. The effect size (r) values are (0.981, 0.896, 0.942, 0.902, 0.826 and 0.921 respectively). It is obvious that all these values exceeded (0.50) ,which reflects a high effect size for all the target EFL reading sub-skills. The effect size can be explained as follows:

The effect size (r) values which ranged between (0.826 and 0.981) for the target EFL oral communication competences show the high effect of the experimental treatment in this research. The project based flipped learning model fostered third-year technological university students' EFL oral communication competences significantly.

Table (9): Level of the Effect Size of the Project based Flipped Learning Model on the Students' EFL Self -Confidence

Independent variable	Dependent variable	Z	N	Value of (r)	Level of th Effect Siz
The Project based flipped learning model	EFL oral Com. Self-confidence	4.326	20	0.895	High

Results in Table (9) illustrate the effect size values for the self-efficacy scale towards EFL reading and writing skills. The effect size value is (0.895). This value is high, which reflects the effect size of the project based flipped learning model on fostering the experimental group students' EFL oral communication self-confidence.

To sum up, all the effect size values mentioned in Table (8) and Table (9) are higher than (0.5) which show the great effect of the project based flipped learning model on fostering third year technological university students' EFL oral communication competences and their EFL oral communication self-confidence.

Conclusions

The results of this research revealed the effectiveness of using a project based flipped learning model in fostering higher technological university students' EFL oral communication skills and their EFL oral communication self-confidence. These findings lend support to previous research that has emphasized the influence of project-based learning on learners' EFL oral communication. Torres and Rodríguez (2017) found that PBL improved EFL learners' oral production by improving lexical competence, lowering speaking anxiety, and raising motivation. Sirisrimangkorn (2018) discovered that project-based learning, especially when presentations or drama were integrated, significantly improved EFL undergraduate students' speaking skills, such as fluency, grammar, pronunciation, vocabulary, and content. Mafrudloh and Fitriati (2020) established PBL's efficacy in improving students' speaking abilities, resulting in more active and innovative assignment completion and class participation.

Similarly, these findings reflect earlier research focusing on the impact of the flipped learning approach on learners' EFL oral communication. (Webb & Doman, 2020; Tadayonifar & Since, 2024) shown that flipped learning allows for more communicative activities in the classroom, hence increasing practice opportunities. Lertcharoenwanich and Soontornwipast (2024) discovered that integrating flipped learning and role-playing enhanced EFL oral communication abilities in business English students. Yesilçinar (2019) discovered that the flipped classroom technique enhanced speaking skills, motivation, and satisfaction among adult EFL learners. Furthermore, Alkhoudary & AlKhoudary (2019) observed that using the flipped classroom technique considerably improved students' speaking skills and confidence. Furthermore, Santhanasamy and Yunus (2022) indicated that flipped learning helps students enhance their speaking abilities by emphasizing

self-regulated learning, interaction, motivation, and accomplishment.

To sum up, it was concluded that using collaborative blended learning environment could improve higher education students' EFL oral communication competences and their self-confidence. With reference to the results of this research, the following points were revealed:

1) Using project based flipped learning model was effective in fostering technological university students' EFL oral communication competences.
2) Using project based flipped learning model was effective in fostering technological university students' EFL oral communication self-confidence.
3) A curiculum developed based on project based flipped learning can improve technological university students' achievement in general and their EFL oral communication competences in particular.

Recommendations

A number of recommendations based on the results and the conclusions could be made as follows:

- EFL learners should implement project based flipped learning to develop their EFL oral communication competences and their EFL oral communication self-confidence.
- EFL teachers should be trained in using project based flipped learning to improve their EFL oral communication in addition to their EFL oral communication self-confidence.
- EFL Curriculum designers should take into consideration the importance of embedding project based flipped learning model in the course syllables of different stages.

Suggestions for further research

The following areas are suggested for further research:

1) Using project based flipped learning model to foster EFL learners' oral communication competences.
2) Using project based flipped learning model to foster EFL learners' written communication competences.
3) Improving other language skills among EFL learners such as reading and writing through project based flipped learning.
4) Conducting new research to investigate the effectiveness of project based flipped learning on EFL learners' achievement.

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