

Enhancing Language Proficiency and Critical Thinking: Implementation of the Capstone Project in the EFL Context– Students’ Perspectives

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Abstract: The phenomenon of presenting projects in posters, interviews, and video presentations has been widely spread among educational settings. While secondary and high schools have implemented Project-Based Learning (PBL) into their curriculum, higher education institutions still require students to write research papers upon graduation. This research study aimed to examine the initiation of the Capstone project for senior ELT students as a graduation project at Tishk International University in Erbil, Iraq. It also aimed to explore whether the project piloting is beneficial or detrimental to be implemented in the future. The study employed a mixed-method approach to obtain results from an online survey questionnaire and a face-to-face interview with a total of eight senior ELT students as a focus group. The findings of this research work revealed that respondents favored the implementation of the Capstone project for its contribution to the development and enhancement of their critical thinking skills, self-confidence, and collaboration among peers.

Keywords: Capstone Project, English Language Teaching, Critical Thinking Skills, Self-Confidence, Undergraduate EFL Students.

1. Introduction

In architecture terminology, “capstone” is considered as the keystone on top of an arch which other stones depend on to stand erect and not fall; in educational terminology, “Capstone” refers to the top experience that builds on all what is beneath it from educational structure and which integrates all what is learned from the educational experiences below it (Hauhart & Grahe, 2015, as cited in Pierce et al., 2020). While the word has technically different meanings in the two contexts, it implies the same idea in both: the word suggests that it is the finalizing point in a process. According to Bütt et al. (2022), a Capstone project is an opportunity to implement PBL (project-based learning). As per Boss and Krauss (2022), PBL is an approach developed by Scott Durham to engage students in creating projects by solving real-world problems during their school years and to prepare them for college and future careers. Instead of letting students follow teacher-centered instructions, this method allows them to tackle problems independently (Boss & Krauss, 2022).

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While PBL in school settings engages students in finding solutions and creating products by integrating the learned materials throughout a school semester, a Capstone project should be presented as a research paper, performance, portfolio, or artwork by gathering all knowledge obtained throughout students' entire academic years and by working collaboratively to solve real-world problems. However, sometimes students could face challenges in their pursuit of accomplishing the Capstone projects. In order for the project creation process to flow more smoothly and conveniently, teamwork, design thinking, and risk-taking should be some of the key areas worth considering.

This study will endeavor to assess the implication and the effectiveness of the implementation of teamwork embrace, design thinking, and risk-taking along with the other possible strategies students and instructors adopt in the EFL Capstone project experience. Also, the research aims to explore how those practices would serve to boost students' career skills, like critical thinking and language skills. The research questions this study aims to seek answers to are as follows:

- What is the senior students' standpoint on the implementation of the Capstone project as a final-year project?
- What challenges have graduate students tackled when fulfilling the requirements of the Capstone project?
- Can Capstone project be recommended to effectively enhance both critical thinking and language skills?

The objectives of the research are to find the best approach to coping with Capstone's most encountered challenges in students' perspectives; to explore what ELT graduate students perceive as supportive and enhancing in terms of language development when creating strategies throughout the Capstone mission; and to explore ways to ensure that critical thinking and language usage is integrated and promoted in the Capstone mission.

This study will attempt to make out of senior students' future Capstone journeys success stories, brimming with new skills, and pouring into their future career lives. It will attempt to function as guidance for future college seniors and help them tackle their Capstone projects and make effective usage of language and critical thinking skills throughout that experience, and it will also guide instructors to better manage their students' Capstone journeys.

2. Literature Review

Every project will inevitably stumble over unexpected jolts, and trip over overlooked, unnoticeable obstructions which could ruin an entire plan. No project is exempt from that fact, and particularly, no innovative project idea is. Had it not been for the failure of at least some projects, it would not have been possible for people to learn and guide others to successful strategies in dealing with their projects. As research expands, scholars get their pouches packed with more safeguarding measures to accompany them through their missions. This study's toolkit was loaded with as many as the following:

2.1 Teamwork Embrace

According to Bloom's Taxonomy of critical thinking levels, collaboration and problem-solving is the highest level of critical thinking and it is at the top of the hierarchy (Sobral, 2021). When students work in teams, they need to collaborate to solve problems, which improves their critical and language skills. In fact, according to Onoda (2022), when students do teamwork projects in which they try to produce videos, write theses or solve problems, their critical thinking and language proficiency are boosted. Moreover, by conducting research on EFL tertiary students, Sholikhah (2019) observed that when students prepared a Vlog project that required teamwork and that was depicting a real-life situation, they enhanced their language skills as well as their critical thinking skills. That is because students were spontaneously engaged in team discussions and problem-solving. However, she also noticed that some students would feel "inferior" in team settings; therefore, she made them do peer assessments to ensure collaborative work and peer-value consideration. She also mentioned that the challenge was made to observe not only the quality of the vlog but also the quality of how well students dealt with internal problems among the team members. Even though that was only a project conducted in a classroom setting, it fairly represented a mini-Capstone scenario, so those points fit well with the latter mission as well. Another research by Onoda (2022) was conducted on L2 English major students in a private university and it had remarkably similar findings. The researcher concluded that performing a collaborative problem-solving project significantly improves L2 students' language proficiency as well as their critical, interactional, and creative skills. She also stated that, if teamwork in problem-solving projects is effectively embraced, students could develop competency. Since effective teamwork could result in the attainment of competent skills, we could infer that the presence of factors that disturb effective teamwork could negatively impact the overall work performed and students' acquisition of those skills. Therefore, research was done exploring the potential problems faced during Capstone project teamwork and the ways to avoid those problems.

One of them, by Mostafapour & Hurst (2020), was done by surveying both the students and the instructors of a Capstone project mission, in the quest of extracting the possible teamwork-related issues. When they interviewed the students undergoing the Capstone mission, they found out that students were worried about "workload imbalance" among the team members, emerging conflicts, and project planning. As for the issue of "uneven member effort," peer evaluation that naturally flows in the Capstone system had previously been assumed as the solution; however, the research suggests that this is not an effective measure if it is graded. Students would not be honest with the way they grade their peers, because giving a team member a low grade would negatively affect the overall grade of the entire team. Therefore, as an alternative, research suggests that Capstone peer evaluation should not be weighted with grades (Mostafapour & Hurst 2020). When they interviewed the instructors, they were given eight reasons that would cause conflicts in the Capstone teamwork: discrepancy in team members' expectations of the outcome of the project, "unresponsive" team members, poor work quality, internal disagreements on methods, personal conflicts, and team-members ego. According to Mostafapour & Hurst (2020, p.5), the instructors also provided advice for decent quality teamwork: "managing conflicts, using team contracts, decision making, role definition and assignment, and project management," they said, would make more effective teams. The research concluded that when team members have "clear roles, a high degree of a match between students' interests and skills with their assigned tasks, similar expectations about the

outcomes, a clear project management plan, and lower levels of conflicts in student teams,” they work more successfully (Mostafapour & Hurst, 2020, p.1)

Another study, by Ismail et al. (2020), was conducted on Capstone project students to assess teamwork by examining peer evaluation and coursework performance. This study suggests that trust among team members, commitment to project plans, effective leadership, and professional peer evaluation are among the critical areas to establishing an ideal Capstone team. More research was conducted on Capstone performers in their final year of college, and among the lessons learned from a particular study by Bütt et al. (2022) was the fact that organized teamwork in the Capstone project prepares students for their future careers (where they are also expected to work in teams.) To wrap up, studies were made on EFL and Capstone project students where teamwork was the main point of focus. Literature suggests that collaborative problem-solving in teamwork strengthens both language and critical thinking efficiency. For the sake of fruitful teamwork, however, certain milestones need to be met, like adequate peer evaluation, trust among team members, student-oriented assigned roles, and commitment to a project plan.

2.2 Design Thinking

While teamwork is an essential stepping stone to creating a Capstone project, students also need design thinking to structure their projects by following an organized problem-solving format. According to Scramim et al. (2024), this process consists of several stages: empathize, define, ideate, prototype, and test. As the authors explained, to empathize means to ask the targeted individuals (in need of the project) about the problems they experience (which would be addressed by the project.) After collecting enough information from those targeted individuals, one needs to “define” the common problem that was shared among all those who were interviewed. Afterward, one needs to “ideate” or contemplate possible solutions to the problem. Scramim et al. (2024) explained that to choose the best idea here, one needs to filter ideas using the “idea funnel” illustrated by their study. In this process, the ideas need to get filtered as they go through the following questions:

- Are you familiar with the subject?
- Does the idea solve or minimize the problem?
- Are the technical and financial needs available?
- Do you have enough time for it?
- Are the data and information necessary for the development of the project available?

After the idea is filtered, it should be modeled (prototyping). Lastly, the modeled solution needs to be “evaluated.”

Cleminson & Cowie (2021) conducted their research on an EFL classroom where students had to create creative test projects using the design thinking process. Firstly, they allowed each student to make their definition of “creativity” (empathize.) Secondly, students were organized into groups where they had to agree on a singular definition of creativity (define). Thirdly, they had to think about different ways to be able to measure or test creativity(ideate). Then, they had to build the chosen creativity test (prototype). Lastly, they had to take their English creative tests (test) and get feedback on their creatively created tests! The creative tests aimed to use English in a new way, by making language puzzles or constructing unusual

English phrases. They observed that design thinking could improve 21st-century skills like “empathy, creativity, cognitive flexibility, and critical thinking” (Cleminson & Cowie, 2021, p.2). Also, according to the authors, using design thinking in a class environment helped develop students’ skills in finding solutions to real-world problems as well as in engaging creatively in language usage.

Again, this PBL activity could be thought of as a mini-Capstone project scenario. Hence, design thinking could even be used for Capstone projects. In fact, students undergoing a Capstone project usually find it challenging to produce a research problem and they need a more structured method to do that (Knight and Botting, 2016 as cited in Scramim et al., 2024). Therefore, Scramim et al. (2024) suggested students utilize the design thinking method in the Capstone project to formulate a more structured approach to their projects, keeping in mind that it is considered more effective if students have an “active role” in choosing their Capstone project problems. Apart from that, Scramim et al. (2024) support the fact that when design thinking is used in education, students foster skills like critical thinking, teamwork, and creativity. Scramim et al. (2024, p.11) further elaborate that in the phase of prototyping, students can turn an abstract idea into a concrete one, like “physical models, storyboards, wireframes, or infographics”. In general, design thinking proved effective in honing students’ critical thinking skills and language skills, and it could proficiently pave the path during the Capstone project creation process.

2.3 Risk Taking

This is where literature reaches a parting road. Unlike the case of teamwork and design thinking, not all parties agree that risk taking is important in Capstone projects. Risk-taking in academic atmospheres is usually abhorred by both students and instructors because no student wants to put their grades or their future at risk. Research by Pierce et al. (2020) suggests that when students try a capstone project, they better choose a problem that is not challenging but that has broad solutions. While this is a reasonable and more convenient approach for students to undertake, opposing perspectives are also convincing and worth considering. Goldberg (2019) explains that when people tend to avoid risky concepts due to the consequences they would have to encounter upon the projects’ failure, they create a society or a culture that is not innovative. He also implies that people nowadays should learn to “fail fast,” which means companies should encourage people to take risks and accept the fact that risk could lead to failure, which also means that innovative projects and ideas are those that are risky and prone to failure. He also states that the sooner that failure takes place and is corrected, the sooner that innovative ideas flood the market. He also mentions in his article that companies are encouraged to focus not on failure, but on what was learned from failure. In this process, he suggests that cultures of innovation and creative thinking sprout. Later in his article, he bridges risk-taking with students making Capstone projects, highlighting that students need to be encouraged to seek innovative ideas in their projects to enhance their learning experiences and to get prepared to work in a creative culture. He also urges that the Capstone mission should become a failure-tolerant environment. He suggests that it is not proper to consider a prototype that is not operational as a “failure;” instead, he encourages instructors to consider the cause of the failure rather than the failure itself. If the failure stems from students’ laziness, they deserve the low grade, but it is not the case if students demonstrate commitment towards making it work. He then concludes that if he, as an instructor, is in the position of grading a defective prototype, he would ask for the reasons behind

that failure and what the students' alternative measures would be if they were to redo it. The final grade, therefore, should reflect, in his point of view, what the students learned from the project's failure.

Supportive of this mindset was the research conducted by Bütt et al. (2022) which allowed Capstone project students to self-sponsor their projects throughout the year. At the end of the paper, all the lessons learned from the experience were documented. Among the lessons learned was the fact that instructors should normalize student failure and reassure it; not to mention that instructors should persuade them to take the challenges and let them know that when they fail, they only learn. Having all this in perspective, we cannot deny that literature had slightly conflicting standpoints. However, overall, risk-taking is certainly a bold step towards more innovative outcomes. Even though students prefer projects that are within their comfort zones, a fair amount of evidence promises a better learning experience from challenging project problems.

2.4 Conclusion

If the Capstone project is approached efficiently, it could foster students' critical, creative, and language skills among EFL students as well as any other field students. It is not an easy task; it is a challenging problem-solving mission that requires sufficient collaboration from each team member and is designed to prepare students for real-world career settings. Literature endeavors to produce factors that would enhance building the necessary cognitive skills among students when they embark on their Capstone projects. According to research, effective teamwork, design thinking, and risk-taking are among the most prevalent areas of project creation, which, if embraced by students, could highly impact the quality of their Capstone journeys. However, there could be other factors out there, unaddressed by the literature, which could enhance the development of students' skills during their Capstone missions; and there could be factors that suppress the growth of their skills. To be able to develop one's skills through the Capstone project, it is as crucial to follow the influencing factors as it is to avoid any potentially hindering ones.

3. Methodology

3.1 Research Design

The data was collected in the context of Tishk International University in Erbil, KRG, Iraq. A questionnaire made up of 16 questions was administered online through Google Forms. Apart from the survey questionnaire, which was fully in the English language, a face-to-face interview with the Kurdish translation of questions was conducted to collect more detailed information. Due to the limited English language proficiency of the respondents, the interview in the Kurdish language was incorporated.

3.2 Research Participants

This study employed eight senior students from the ELT department who were assigned to complete a Capstone project instead of research writing. They came from two different demographic backgrounds – Kurdish and Arab. To keep the participants' names and contacts anonymous, we did not include any information about them during the interview nor were they asked to include their Google accounts or emails to fill out the survey questionnaire.

3.3 Data Collection

Data was collected by sharing online questionnaires on Google Forms and by interviewing participants at the university campus in September 2023. To gain a deeper understanding of the respondents' perspectives on the Capstone project, the online survey questionnaire included various types of questions, such as open-ended, multiple-response, multiple-choice, and Likert scale questions.

3.4 Data Analysis

We implemented a mixed methods approach to enhance the data analysis. SPSS (version 26) was used to analyze the quantitative data, including the frequency and percentages of responses. For the qualitative part of the study, a thematic narrative analysis was conducted to present the participants' feedback. The responses were translated into English and were categorized (coded) based on similar content, phrases, and words, which were later transformed into four themes: *holistic educational development, teachers' support, students' challenges while working on the capstone project, and the differences between capstone project and research writing project*. The summary of the narrative responses was eventually reported with direct back-up quotes from the respondents.

4. Results and Discussion

The study aimed to see whether the capstone project enhanced students' language skills or not. It also aimed to see students' perception toward this project. In this chapter, the result of the study presented which were analyzed quantitatively and qualitatively. Quantitative data was obtained through online survey questionnaire to text students' language skills enhancement and the qualitative data was gathered through a semi- structural focus group interview to get a rich and in-depth understanding on the s participants' perception about integration capstone project. First students' finding in the online questionnaire is presented in tables. Then the focus group interview data is analysed.

4.1 Quantitative Findings:

Table 1: Capstone Project type

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Video lesson	6	75.0	75.0	75.0
	Poster presentation	1	12.5	12.5	87.5
	Project blueprint	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Table 1 shows the frequency of the distribution of different project types. The dominance was taken by the video lesson project. 75% of the majority of the respondents preferred the video lessons. While 25% of the results show that both poster presentations and project blueprints are less common to the participants.

The data shows a positive result, and it highlights that the participants preferred favor video lessons, as it is preferred for auditory and visual learning methods. It suggests that participants can choose a capstone project over research writing.

Table 2: Capstone Project Objectives

		Responses		Percent of Cases
		N	Percent	
Objectives	Develop English language proficiency	6	46.2%	100.0%
	Enhance critical thinking	1	7.7%	16.7%
	Enhance and apply teaching methodology	4	30.8%	66.7%
	Design assessments and evaluation	1	7.7%	16.7%
	Curriculum integration and alignment	1	7.7%	16.7%
Total		13	100.0%	216.7%

Table 2 shows the objectives of the different project types with different objectives. 46% of the respondent preferred the objectives of the capstone project that developed their English language proficiency due to more efforts to improve their skills like speaking, self-confidence, and listening. While 30% preferred that capstone enhanced communication skills and helped them to practical application in their teaching skills. Enhance critical thinking skills, design assessments and evaluation, and curriculum integration and alignment were less common, for each of them 7% remained. It recommends that the students' objective was to improve their language skills like speaking and listening particularly through capstone projects.

Table 3: Motives Behind Choosing the Capstone Project

		Responses		Percent of Cases
		N	Percent	
Motives	A passion for teaching and education	2	15.4%	66.7%
	Interest in applying teaching methodologies	2	15.4%	66.7%
	A commitment to improve the learning experience	2	15.4%	66.7%
	Personal growth and development as a future educator	2	15.4%	66.7%
	Influence from teacher	3	23.1%	100.0%
	Personal growth and development as a manager	2	15.4%	66.7%
Total		13	100.0%	433.3%

In this analysis, what/who motivates students to choose the project type is discussed. As the results in Table 3 suggest, the respondents were influenced by their teachers, making it 23% of the total. This significance indicates that the teacher has a great role in helping and guiding them to choose their project types. In contrast, the other five options have less influence on students to choose project types, each representing 15.4%.

In brief, the data suggests that teachers know their students' levels and interests, and they can guide them in choosing the projects. Teachers' awareness of students' backgrounds helped them to develop language skills generally and teaching skills through the project. The result highlights how this project is crucial to students' needs while choosing their interest types of capstone project.

Table 4: Process of working on the Capstone project

		Responses		Percent of Cases
		N	Percent	
Process of working on the project	Initial project planning and topic selection	2	14.3%	40.0%
	Research and literature review	2	14.3%	40.0%
	Data collection analysis	2	14.3%	40.0%
	Presentation or demonstration of project materials	3	21.4%	60.0%
	Recording video sessions and editing them	5	35.7%	100.0%
Total		14	100.0%	280.0%

This dataset reveals that the process of working on a project was recording video sessions and editing them, accounting for 35.7% of the total working process. Presentation or demonstration of project material accounted for 21.4%, and it was the second process. This trend shows that these two processes took much time and effort for the participants to perform their projects. In contrast, initial project planning and topic selection, research and literature review, and data collection analysis each constituted 14.3% much less working on the process of the projects.

This breakdown emphasized that video recording and presentation processed more than the rest of the processes. The results showed that the majority of the participants preferred them, and they easily went with these two processes in their capstone project.

Table 5: The Main Tasks Involved in the Project

		Responses		Percent of Cases
		N	Percent	
Main tasks	Lesson planning	6	20.7%	100.0%
	Students' assessment	5	17.2%	83.3%
	Data collection analysis	1	3.4%	16.7%
	Collaboration with peers	3	10.3%	50.0%
	Presentation or demonstration	4	13.8%	66.7%
	Report or documentation writing	6	20.7%	100.0%
	Project planning	4	13.8%	66.7%
Total		29	100.0%	483.3%

Table 5 presents the percentage of distribution of the main tasks and activities involved in their capstone project process. Lesson plans and reports or documentation writing are the predominant tasks and activities involved in the project and each represents 20.7% of all other tasks and activities. This significance indicates the majority of the tasks were lesson plans and reporting their projects. An additional 17.2% of the study results reported that students' assessment was another main task due to their prepared lesson plan, and as it was mentioned previously most of them chose video recording projects over others. Another 13.8% reported that the main tasks were project planning and presentation or demonstration. It means that participants had fewer tasks on this when compared to the lesson plan and report of the writing project. On the other hand, collaboration with peers is less emphasized as a task or activity in their projects (10.3%.) Lastly, only 3.4% reported that data collection analysis was included as their project's main task.

The result highly addressed that participants' projects required lesson plans and report tasks mostly. It is matched to the project types of the project that respondents chose. It is a kind of source for teachers and researchers on what to choose, and what the main tasks for their project types.

Table 6: Capstone Project Enhances Language Proficiency Skills

		Responses		Percent of Cases
		N	Percent	
Enhance language proficiency skills	Speaking	5	17.2%	62.5%
	Listening	4	13.8%	50.0%
	Reading	2	6.9%	25.0%
	Writing	2	6.9%	25.0%
	Vocabulary	4	13.8%	50.0%
	Teaching methodology	4	13.8%	50.0%
	Self-confidence	8	27.6%	100.0%
Total		29	100.0%	362.5%

Table 6 shows capstone projects' enhanced language proficiency skills. 27.6% all of eight participants reported that capstone projects enhanced their self-confidence in their language skills while working on their projects. It recommends that all the participants benefitted from the project because it helped them to develop their self-confidence skills. Additionally, 17.2% declared that speaking skills also improved when they worked on their projects, as they had to speak and interact with students and teachers while recording their video lessons. It is also a positive result and aligned with the project-type results. Listening, vocabulary, and teaching methodology improved through the project time working with 13.8 % represented for each, which improving these skills is required. Conversely, 6.9% represented reading and writing skills, which means that enhancing these two skills is highly recommended as they need to read and document their capstone projects.

The study's results showed that self-confidence is the most favorable and enhanced skill among the others. It suggests that capstone projects can develop language skills and encourage participants to choose as their graduation projects, as it is proven how it helped their language skills.

Table 7: Capstone Developed Students' Critical Thinking

		Responses		Percent of Cases
		N	Percent	
Enhance critical thinking	Problem-solving	5	22.7%	83.3%
	Analytical thinking	2	9.1%	33.3%
	Evaluation of information	6	27.3%	100.0%
	Creativity	4	18.2%	66.7%
	Decision-making	5	22.7%	83.3%
Total		22	100.0%	366.7%

Table 7 indicates the development of students' critical thinking skills via working on the capstone project. 27.3% of the study participants emphasized the evaluation of information. This recommends that most of the sample of the study has enhanced students' evaluation of information a lot while working on their projects. In addition, 22.7% of the sample stated that they developed problem-solving and decision-making in their working projects process. Furthermore, creativity has improved in this process, which made up 18.2% of all other options. A significant difference exists in the respondent's response that 9.1% indicated that they did not enhance their analytical thinking at all. These declare that those respondents are required to put more effort into the projects and work on this skill for their entire studying journey.

The study addressed that most of the students have developed their critical thinking skills in their projects. It recommends providing such kinds of projects that help students improve their critical thinking skills, particularly in 21st-century learning.

Table 8: Students' Challenges on Working Capstone Project

		Responses		Percent of Cases
		N	Percent	
Challenges in working project	Time constraints	1	16.7%	50.0%
	Language barriers	1	16.7%	50.0%
	Technical issues	2	33.3%	100.0%
	Resource eliminations	1	16.7%	50.0%
	Student engagement	1	16.7%	50.0%
Total		6	100.0%	300.0%

Table 8 revealed the students' challenges in working on capstone projects. 33.3% of the sample of the study stated that they were challenged with technical issues in the process of working on the projects. Although there were improvements in language and teaching skills, they faced some challenges as 16.7% represented time constraints, language barriers, resource elimination, and student engagement. The sample of the study faced fewer challenges while working on the projects. This shows that participants of the study did not face any tremendous obstacles when completing their projects.

This study results highlighted most of the students tackled fewer challenges while working on the project. It proposes that integrating a capstone project into a language learning curriculum will be helpful and productive.

Table 9: Specific Aspects of The Project Found Particularly Challenges

		Responses		Percent of Cases
		N	Percent	
Any specific aspect found challenges	Developing materials	3	21.4%	100.0%
	Data analysis	1	7.1%	33.3%
	Presentation skills	1	7.1%	33.3%
	Assessment and evaluation	1	7.1%	33.3%
	Collaboration with peers	1	7.1%	33.3%
	Managing the class	2	14.3%	66.7%
	Giving instruction when teaching activity	2	14.3%	66.7%
	Planning the project from scratch	1	7.1%	33.3%
	no problem	2	14.3%	66.7%
Total		14	100.0%	466.7%

Table 9 shows the specified aspects found as challenges particularly. Developing materials is one of the specified aspects that the majority of the study sample stated, which makes up 21.4%. It is quite clear that preparing and developing materials is specified as a challenge in the project, as it is linked to the chosen

video recording projects. This suggests that almost half of the participants had this problem while working on their projects. Additionally, 14.3 reported they faced challenges in managing the class and giving instruction when teaching activities, whereas 14.3% stated that they did not face any problems. In addition, 7.1% stated that data analysis, presentation skills, assessment and evaluation, collaboration with peers, and planning projects from scratch were less specified as challenges to them while working on their project.

The result highlighted developing materials as one of the challenges that the sample of the study had faced while working on their projects.

Table 10: Supervisor’s Feedback

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	helpful	2	25.0	25.0	25.0
	very helpful	6	75.0	75.0	100.0
	Total	8	100.0	100.0	

Table 10 revealed to what extent the supervisor provided necessary feedback to respondents. 75% of the respondents reported that the supervisors were very helpful in providing the necessary feedback on their projects. This suggests that the participants were very satisfied with their feedback on the process of the project to delve into a great one. A significant difference of 25% of the study respondents indicated that supervisors helped deliver their constructive and necessary feedback to the supervisees, which is also a positive result from the data.

The result highlighted that almost all the participants were very satisfied with their supervisors and their supervisors’ feedback was very helpful. It highlights that the supervisors’ feedback is crucial to get the students to improve the work they have been assigned.

Table 11: Distribution of Responses on Confidence and Motivation in Teaching

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	agree	2	25.0	25.0	25.0
	strongly agree	6	75.0	75.0	100.0
	Total	8	100.0	100.0	

Table 11 indicates the project improved my confidence and motivated me to teach. 75% of the respondents of the study strongly agreed that the improvement of confidence motivates them in teaching. It showed that the reported that the project enhanced confidence. While 25% remained, agreed that the project motivated them in teaching and improved their confidence. There are no strong disagreements or neutral responses in the data. It approves a strong optimistic agreement among the entire sample of the study.

The questionnaire’s result shows a positive agreement among all of the respondents. This suggests a very strong perception and support for the project that improved their confidence and motivated them to teach language courses.

Table 12: The Project Changed my Perception of the Field of ELT

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	strongly disagree	1	12.5	12.5	12.5
	agree	1	12.5	12.5	25.0
	strongly agree	6	75.0	75.0	100.0
	Total	8	100.0	100.0	

Table 12 showed the project changed the respondents’ perception of the field of English Language Teaching. 75% of the study samples reported themselves as strongly agreeing about changing their perceptions on the field of ELT. It means that they had different perceptions about being English Language teacher. It suggests a strong positive agreement among the entire study sample. In addition, 12.5% agreed that the project changed my perception of the field of ELT. Only 12.5% of the study sample reported strongly disagreeing about changing perceptions on the field of ELT. There are no neutral responses in the data. It supports a solid positive agreement among the whole sample of the study.

In the end, the survey results advocate a very strong perception and provision for the capstone project that changed their perceptions in the field of English Language Teaching.

Table 13: Collaboration with Peers

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	disagree	2	25.0	25.0	25.0
	neutral	1	12.5	12.5	37.5
	agree	4	50.0	50.0	87.5
	strongly agree	1	12.5	12.5	100.0
	Total	8	100.0	100.0	

Table 13 revealed that collaboration with their peers helped the respondents a lot to finish their projects. 50% of the respondents stated that collaboration with their peers helped to finish the project and made the task easier than doing it individually. In addition, one out of the participants of the study strongly agreed that collaboration helped them to finish their projects, which is 12.5% of the data. In contrast, 25.5% reported disagreed that collaboration did not help them to finish their projects. It proposes to provide this collaboration and cooperation to those who are required. Only one participant was not sure (neutral) whether collaboration with peers helped or not, which shows that the participant did not get the question clearly or was not ensure about how collaboration helped. There is no strongly disagreeing option selected in the data result. It means that none of the participants strongly disagreed with the concept of collaboration with peers.

Overall, a positive result agreed collaboration helped them to finish the project. There was great collaboration and cooperation among the members of the project during the project process. It also proves how collaboration helped a lot to finish, and supervisors need to provide this chance for their supervisees.

Table 14: How do You Perceive the Significance of a Research Project?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	neutral	1	12.5	12.5	12.5
	somewhat valuable	2	25.0	25.0	37.5
	very valuable	5	62.5	62.5	100.0
	Total	8	100.0	100.0	

Table 14 shows how students perceived the significance of the project as writing research. 62.5% of most of the respondents perceived the capstone project to be very valuable. While 25% preferred the project as somewhat valuable, they approved that the capstone project was valuable and significant for them as their writing research. There is no disagreement or strong disagreement shown in the data result. It shows that the participants perceived the significance of the project as their graduation writing research.

The data results show a positive agreement among all the participants that they perceived it as a valuable project rather than writing a research paper. Their performance displays the willingness to have a capstone as writing research.

Table 15: Which Capstone or Research Paper Contributed to Language Proficiency

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	both were equally beneficial	1	12.5	12.5	12.5
	The capstone project was somewhat more beneficial	2	25.0	25.0	37.5
	The capstone project was more beneficial	5	62.5	62.5	100.0
	Total	8	100.0	100.0	

Table 15 presents the distribution of capstone or research papers on language proficiency. 62.5% of the study sample reported themselves that capstone enhanced their language proficiency like speaking and listening rather than a research paper. It suggests that most of them stated capstone was more beneficial than the research paper in language skills such as speaking, listening, reading, and writing. In addition, 25% of the study sample stated that a capstone project was somewhat more beneficial than a research paper. In contrast, 12.5% reported that capstone and research papers were equally beneficial. It proposes

how capstone contributed to language proficiency in their skills generally, particularly speaking and listening.

The positive result highlighted that the capstone contributed more to language proficiency compared to the research paper. It recommends contributing such types of projects to language skills courses can enhance students' language skills.

Table 16: Which Capstone or Research Paper Enhanced Critical Thinking Skills?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	The capstone project was more beneficial	3	37.5	37.5	37.5
	Both were equally beneficial	1	12.5	12.5	50.0
	Research paper writing was somewhat more beneficial	2	25.0	25.0	75.0
	Research paper writing was more beneficial	2	25.0	25.0	100.0
	Total	8	100.0	100.0	

Table 16 indicates the contribution of the capstone or research paper on critical thinking skills. 37.5% of the participants stated that capstone enhanced their critical thinking more than research paper writing did. It suggests that a capstone project was more beneficial than a research paper writing to them regarding critical thinking skills. In addition, 25% represented for each research paper writing was somewhat more beneficial and research paper writing was more beneficial to the sample of the study. The capstone project developed a sample of the study's critical thinking skills while they were contributing to their project's tasks. It made them criticize the tasks to improve the projects more. Only 12.5% of them reported that capstone and research paper writing were equally beneficial in developing critical thinking skills.

There are positive results that highlighted the capstone project was beneficial rather than a research paper writing. It suggests that the capstone project enhanced participants' critical thinking skills.

Table 17: Would You Recommend a Capstone Project for Future Students?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	selected	8	100.0	100.0	100.0

Table 17 shows the recommendation of the capstone project to future students. Almost the entire sample of the study recommended the capstone project as a graduation project for future students. Participants

benefitted from the capstone project in terms of language proficiency and critical thinking skills, self-awareness, and independent learning. The data shows the positive result that the capstone project enhanced participants' language proficiency and critical thinking skills. It is a source for capstone project designers to integrate more language and critical thinking skills.

4.2 Qualitative Findings:

4.2.1 Students' Perception Toward Implementing the Capstone Project

To reach a thoughtful understanding of students' perception toward implementing a Capstone project as a graduation research project in their final semester, a semi-structured interview was carried out. There were four major themes via the interview transcription after many, which merged from various and numerous codes from the qualitative data analysis. Holistic educational enhancement via capstone project, students' challenges while working on the project, teachers' support to students' working process, and comparing and recommendations were the main themes.

4.2.2 Holistic Educational Development:

The respondents consistently stated that the capstone project had a great impact on their language skills, and they had a positive perception of the capstone project. They believe that capstone has been beneficial for various educational skills like language skills, critical thinking skills, and self-development. Most participants in both groups reported positively that they enhanced their language skills. To reflect this, "capstone enhanced our language skills particularly the teacher who does not know Kurdish language, it made us practice daily and improve our language skills, especially listening and speaking skills. It was obligatory to speak in English". The result declares that choosing a capstone project was to improve their language skills. It is also clear how capstone worked to develop their language skills in general, vocabulary particularly. To reflect this, both groups stated "We had to have enough vocabulary to teach was another point that helped us to improve". It approves that capstone developed their skills and they got benefits from it. In addition, participants also added that capstone not only improved their language skills but helped to improve their critical thinking skills. As both groups stated, "Capstones lead me to feel responsibility and how to manage my work and be a leader in the project". The study found that the capstone project enhanced their critical thinking skills students were able to manage their tasks in some contexts without their supervisors' guidance and they also reported self-awareness of being responsible for their tasks at the same time. Similarly, both groups raised that "capstone project lead us to know how to prepare lesson plan to a lesson that we want to teach, it also helped me to have self-observation after watching my video recording lesson". It shows that capstone leads students in their work and being aware of how to plan their lesson and it practically helped them to do the project. Interestingly, both groups stated that "capstone changed their perception in terms of teaching skills, it made them love teaching and change their perception to love teaching". The respondents found that the application of capstone helped them to love teaching for those who were not interested in teaching before the project.

Remarkably, the respondents stated the importance of self-development via teamwork, activity integration, peer feedback, and notes from the first class to the last class. "Group 1 emphasized the significance of panel discussions in improving language skills"

They also highlighted self-education and guidance by the teachers. Group 2 stated that capstone helped with self-confidence and managing their leadership skills, particularly in a school or kindergarten. They also showed their readiness to support and guide others based on their experience.

4.2.3 Challenges Faced:

The structure of the project impacted students' work and they faced some challenges while working on their capstone projects. As, Group2 claimed, “firstly because we were not aware of the project process, it was tough for us”. Similarly, Group 1 also highlighted that “the process of working on the project was very complicated”. It shows that they faced the working projects as they didn't have any sample of the project before or any students that have done the project previously, however; they could overcome these challenges at the end of it. Additionally, both groups added, “There was not any other previous project to guide and help us to follow. It was difficult, but we could overcome with the teachers' support and guidance in the end”. The result shows that the respondents had difficulties while working on the project. Fortunately, they were overwhelmed by the end of the project.

Another challenge was being a teacher in the normal class and invigilating the exam hall. Students reported that invigilating the exam hall and monitoring was very hard for them, but they could practice a lot and perform well in class. Group1 “Invigilation was very new for us, but we could overcome this challenge. The challenge of teaching and invigilation is nice but not easy to do so. Not easy to control and manage them all”. From the interview analysis, capstone helped them a lot to prepare themselves for their future career, as invigilation and delivering class lessons is a part of their duty.

4.2.4 Teachers' Support:

In addition to students' perceptions, teachers' support played a crucial role in the process of working on the capstone project. The respondent said that teachers and supervisors were supportive and helpful while working on the project. To reflect this, one of the group members stated, “I never forget how the supervisors and viva members supported and helped me during the process.” They also expressed how they got benefits from teachers' support and feedback in the process. Both group stated that “Supervisors helped a lot and guided us with 75%. Supervisors guided us to go back to the previous course that we had during four years of studying”. This rate of support shows how the supervisors were ready to guide and assist the students. This result showed that teachers are always there, to support their students to perform better.

4.2.5 Comparison with Research Writing:

The study's participants compared the capstone project with the research project as they took both projects. They raised that the capstone project was easier and more connected to their desires and skills than the Research Writing project groups 1 and 2 reported: “In writing a research project, we had to read a lot, but capstone was connected to my skills and ability, it was easier to me”. Students could find the capstone easier and friendlier to them, as they enhanced their skills, too. It shows that they found that capstone was much easier than research writing due to practical application in the process.

Curiously, the participant also pointed out that the capstone allowed them to work independently and take responsibility compared to the writing research project. To reflect this group 2 reported, “Capstone allowed us to work independently and feel responsibility”. It shows that the respondent took responsibility in their process of capstone project work. Surprisingly, both groups indicated that “capstone taught us not to copy from any other sources or get a ready-made project, as it was our desire topic that was chosen for us to work on the project”. It found that capstone is different from the research paper in terms of getting ready-made projects and copying and pasting from internet sources, it shows that capstone is more applicable than the traditional research paper. It also mentions that they found capstone more beneficial than the research paper, particularly for those who are low at the language’s skills background. In addition, the participant reported that they became self-learner and self-director in their projects as both group mentioned “Capstone allowed us to be self-director while writing a research project is different, we cannot do the thing by ourselves at all, and most of the students cannot write alone that’s why they do it in another way, like buying the research paper or asking someone to write or copy and paste from the internet”. It found that capstone is different from the research paper in terms of getting ready-made projects and copy and paste from the internet sources, it shows that capstone is more applicable than the traditional research paper. It also mentions that they found capstone more beneficial than the research paper particularly for those who are low at the language’s skills background. It shows that capstone enhances their skills and leads them to take responsibility and manage their tasks alone while writing research papers does not allow them to work alone and take responsibility.

4.2.6 Recommendations to Future Students:

Interestingly, the participants provided their suggestions to future students. Both groups recommended the following suggestions:

1. Continuing this kind of project and found that it is very beneficial for those students who had difficulties with language skills. “Yes, we recommend it to other students it was easy and beneficial. My suggestion is to integrate it a lot for those students who have language skills issues”.
2. Additionally, they also suggested that capstone had an impact on their teaching skills. “We recommend it to future students. It will help them, how to teach, how to relate to students, how to teach at different levels and situations, and how to manage classes”.
3. They raised that capstone led them to enjoy the working process. It was a more authentic and practical task. They were more enthusiastic about doing the tasks and preparing themselves. “Capstone is more authentic and leads us to do everything ourselves”.
4. Finally, they suggested that the capstone can be improved by integrating students' ideas, giving seminars and workshops for teachers and students, and giving more time. In conclusion, they recommended capstone to future students due to its benefits and its applications.

Overall, the qualitative data shows how the capstone project enhanced students’ language and critical thinking skills. Not only language skills, but it also students’ self-development, too. Teacher support was another factor that helped students to enhance their language skills. Although they improved, they faced some challenges, too, via the integration capstone project. They also provided some recommendations. It

is a kind of source that capstone worked a lot. In addition, the quantitative data presented significant results on the students' language skills improvement.

Our study explores students' viewpoints regarding the Capstone project. Students' perspectives indicated that they prefer this project over the traditional research project to finalize their senior year, highlighting its contribution to developing their language skills. The respondents demonstrated the willpower to perform presentations and videos, hence their favor of Capstone. Also, students confirm that the project positively influences their critical thinking skills, their confidence, and their collaboration skills. Therefore, these results demonstrate that students have a significantly positive view of Capstone projects in their senior years.

The Capstone project has a very positive impact on students. Considering the abundant literature proving Capstone's benefits on students' skills while simultaneously having students endorse it makes it a worthwhile experience. For example, Onoda's (2022) emphasis on the impact of video creation and student collaboration on students' language proficiency aligns with students' desire to make videos, cooperate, and eventually improve their language skills. This further proves that the Capstone project befits students' preferences while at the same time benefits the students' learning needs.

Our study also investigated the challenges faced by graduate students when performing their Capstone projects. The responses showed that most students find material preparation to be the most challenging part of the project. Material preparation refers to the "prototyping" phase of the project. As mentioned previously, prototyping is the design thinking phase which requires students to create models or materials. This is the most challenging phase as risky decisions could be made in it, leading the project either to failure or success. The fear of failure is probably what makes students think that this phase is the most challenging one. Similarly, Goldberg (2019) suggests that many prototypes fail due to risk-taking, making it a challenging phase. However, he also states that risky situations leading to inefficient prototypes are still praiseworthy. Hence, even though this is the phase considered most challenging by students, it should not raise a great concern. Additionally, students reported that teachers were supportive and provided useful feedback. Therefore, teachers' feedback during the prototyping phase could be immensely helpful. This shows that students' and teachers' interaction during this project is vital.

Lastly, our study examined the extent to which the Capstone project improves critical and language skills. Again, the responses were very positive. Students' perspectives demonstrate that they consider Capstone to be more effective in enhancing their language skills than the ordinary research project. They also confirm that it positively promotes their critical thinking skills. This is no surprise, as these two skills are correlated. Liaw (2007, as cited in Betadine, 2018) makes the same assertion. This proves that Capstone is a project that is enormously profound in developing these two skills.

To add to the tools that we were loaded with in the beginning, we have found out that among the factors that contribute to the Capstone experience is teachers' collaboration in choosing a Capstone project that aligns with the student's proficiency and their academic needs. Moreover, since lesson planning and report tasks are considered some of the demanding tasks of the project, careful selection and consideration are recommended. Finally, confidence appears to have a great impact on students' achievements in the project.

5. Limitations

Alongside mentioning the positive impact of the project on the study respondents, it is worth pointing out its limitations. Our small sample might not have represented the general opinions of students regarding this matter. Interviewing a greater number of participants would have helped retrieve more varying responses, leading to more accurate, generalizable results. Also, if teachers were interviewed as well, they would have given us greater insights; teachers' backgrounds in the field of education as well as their amassed experiences in supervising student Capstone projects could make them perceive the Capstone project differently. It is, thus, more valuable to examine and compare the perspectives of both parties. Not to mention that, had we surveyed students from different universities, we would have been able to discover certain intriguing patterns in the implementation of this kind of project. However, none of this was possible due to our limited time. This gap can be considered as a venue for future researchers to examine the implementation of the Capstone project in various educational settings and across different disciplines to explore more diverse perspectives regarding its effectiveness.

6. Conclusion

To wrap up, Capstone is an essential experience in senior students' lives due to its prolific, unlimited benefits including improving language and critical thinking skills as well as preparing the students for their future careers. Our survey results demonstrated students' positive attitudes towards this project. The responses we got, combined with the literature, indicated that the Capstone project meets students' learning needs. Most challenges students claimed to face were in the material creation process of the project, which is also referred to as the "prototyping" phase. This finding aligns with the literature, which suggests that risky actions in prototyping could lead to failure. However, the same literature also encourages risk-taking in that challenging phase and prompts students to embrace failure. Lastly, most students confirmed the effectiveness of the Capstone project in enhancing both critical thinking and language skills. This is heavily endorsed by the literature, stating that the Capstone project involves many factors which could lead to an effective Capstone project experience when well-managed, such as teamwork, design thinking, and risk taking. Overall, undergoing the Capstone project proved to be a worthwhile experience and a core stepping stone to brighter future careers.

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