The impact of teacher regulated versus self-regulated flipped learning

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Abstract

The purpose of this research paper is intended to look into how teacher-mediated flipped learning and student-regulated
learning affect presentation skills. A total of 68 English as Specific Language (ESL) students were chosen for the intervention
trial. In Group-A, 34 students were exposed to teacher-mediated flipped learning, whereas Group-B students were exposed to
student-regulated flipped learning. Before the intervention, the samples were homogeneous. To determine the impact, the
researchers used Levene's Test of Variance. The results of this study clearly illustrate that both teacher-mediated and student-
regulated learning brings potential and obstacles. Both groups showed signs of progress. Students in the teacher-mediated
flipped mode, on the other hand, outperformed those in the self-regulated flipped method.

Key words- ESL, Flipped Instruction, Online Learning, Pedagogy, Self-Regulated Learning

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1. Introduction

In higher education, blended learning and online instruction are becoming increasingly popular; in fact, some education specialists refer to blended learning as the "best of the traditional model." (Alotaibi & Kumar, 2019; Bruggeman et al., 2021). The flipped classroom paradigm is widely used worldwide to achieve excellent learning outcomes. Flipped instruction is a pedagogical style that encourages educators to prioritise active learning in class by sending students' course resources and presentations to watch at home, even outside school. Flipped learning is one of the most interesting developments in the modern classroom. In academic courses, digital technology has become an intrinsic part of the educational process and learning processes (Bredow et al., 2020; Pan et al., 2022). This strategy allows higher education to use current information and communication technologies (ICT) in a spectrum of epistemological and acquisition methods. The awareness of changing the character of education in general, higher education in particular, and the necessity of adequately preparing students for future jobs and continuous learning in the information era has led to the incorporation of digital technology in teaching and learning. Lai and Bower (2019) and Kumar (2020) note that the utilisation of technology can help students build new information by connecting it to what they already know and improve individualised instruction and teamwork.

According to Brownlee (2001), "the concept 'flipped learning' refers to a teaching strategy in which teachers use class time to impart basic knowledge and out-of-class time to have students apply what they've learned or complete homework; in other words, teachers use class time to have students do more hands-on learning activities like projects, discussions, and problem-solving. Out-of-class learning materials, such as video lessons, internet tutorials, or other teaching materials, focus on improving students' recall and comprehension skills. Students in a classroom setting are in charge of their own pace of learning and are held liable for it. Teachers now have more time to create riveting activities that propels students to use higher-order thinking skills" (p.12). An important aspect of flipped learning is the learning process, which reflects students' ability to demonstrate confidence and regulate themselves.

A pedagogical approach referred to in the literature as 'flipped classroom' is an alternative to today's standard course setting, which arose to address a shift in learning related to technology integration. The flipped pedagogy (FC) is a method in which direct instruction is offered outside the school, primarily through videos, leaving class time for in-depth discussions, peer collaboration, and personalised teacher guidance. According to Guo (2019), "While most flipped learning articles focus on K–12 experiences, numerous variants of the FC models have been adopted in postsecondary learning". The discussion over their pedagogical usefulness has been active in recent years. The holistic flipped classroom, for example, refers to learning that takes place in a physical classroom and online asynchronous settings that students can access from home or on their mobile devices, all of which are employed holistically and harmoniously. However, few research studies are comparing teacher-controlled versus self-controlled flipped learning.

In higher education, proponents of the flipped classroom approach have cited a range of benefits connected with flipping the standard e-learning model. This strategy increases lecture attendance and makes more efficient use of available class time, both of which contribute to enhanced learning. According to Foster and Stagl (2018), flipped classrooms allow students to improve skills through collaborative activities and discussions. This mode enables learners to help students learn perceptions from one another with the help of their tutors (Çakmak et al., 2021; Ghahderijani et al., 2021).

It is not easy to compare statistical data from multiple studies, but Boekaerts (2011) and Bacha et al. (2021) found that education in a flipped classroom setting provided excellent benefits. Previous academics have enumerated the advantages of flipped learning. They are as follows: 1. Ensures a secure education system 2. Increases pupil involvement. 3. Enhances comprehension 4. Learners have more control over their education. 5. Instructors can make good use of their time. 6. Students' progress can be monitored. In a flipped classroom, students get teaching outside of class and then apply what they've learned through collaborative learning activities during in-class instruction time. Students consider what they have learnt and make an attempt to apply it in order to become better students overall. Despite the numerous research studies, it can be much more beneficial if adequately controlled. As a result, this research combines two modes: teacher-controlled flipped learning, and self-controlled flipped learning. Pedagogically sound theories and models could help in improving flipped learning.

Teachers and policymakers strive for irrefutable evidence and a theory or methodology that appears faultless. According to Mohammadi et al. (2020) and Kumar et al. (2021), researchers know little about assisting children in developing learning outcomes by using the right combination of flipped learning and academic knowledge. The available information on the impact of flipped learning on self-medicated and teacher-mediated pedagogy is inconclusive. To determine which intervention is most beneficial, substantial evidence is required. Nwokeji and Holmes (2017) and Kumar (2021) note that the flipped technique was predicated on pedagogical practice and real-world observations at first. Still, scientific reviews of flipped pedagogies demonstrate that it is far more effective than other prevalent blended instruction models, a result shared by the vast majority of researchers. Many teachers, however, do not employ the strategy well and implement it randomly.

1.1. Conceptual or Theoretical Framework

Theoretical Model for Self-Regulated Learning

It is thought that "self-regulated education is possible learning processes that can help students learn and reflect on their educational process, thereby contributing to their learning resolution. Students can learn complex subjects in depth with self-regulated learning. In the meantime, their self-confidence is bolstered by their actions and attitudes that are consistent with self-regulated learning" (Devolder, et al., 2012; p.8). When it comes to self-regulated learning, technology has made it possible for individuals' emotional perspectives and learning to interact with digital innovations and behavioural patterns during their educational process. "Traditional classroom instruction has been replaced by a teaching method that teaches students how to apply what they've learned as well as help them achieve higher-order thinking learning objectives" (Wolters, et al., 2011; p.14).

The ability to monitor one's learning and think integratively is called self-regulated learning. Learners employed various tactics, including strategic planning, tracking, and multitasking while completing self-regulation activities. Vasu et al. (2020) and Benyo and Kumar (2020) note that the students must analyse learning conditions organise information processing, set meaningful learning goals, figure out how to achieve them and manage their efforts. Students should reflect on their learning process, regularly analyse their performance, modify their grasp of the issue and monitor their learning using these metacognitive tactics. The components of self-regulated learning are shown in figure-1.

Figure 1: Self-regulated Model. Adapted from Zimmerman and Moylan (2009)

External norms enforced by educational institutions, as well as other environmental influences, can trigger self-regulated learning. As a result, there is a need to investigate learning environments that allow students to control their learning while performing certain tasks. The tactics that flipped learners adopt to participate in learning activities have been the topic of previous study initiatives. For example, findings from interview sessions revealed thirteen participants' distinct note-taking practices when attending video lectures from various platforms. Because it was used "to support studying, taking quizzes, or finishing writing tasks," note-taking promoted learner engagement as a task management method.

Using a survey, Winter (2018) explored the effects of self-regulated learning in five different flipped learning contexts in a larger-scale study. According to the findings of the study, goal-setting and strategic planning were the most effective ways to assist students in flipped scenarios in achieving their learning objectives. Kwon (2021) conducted another study that discovered differences in learners' self-regulatory levels in flipped environments. They used a questionnaire and structured interviews with 32 people to look into the learning habits of 400 flipped participants. Significant disparities in SRL scores were linked to learners' motivation and techniques for interacting with flipped settings.

Students learning a second language are immersed in communication circumstances that challenge them to put their language skills to the test. Through the use of flipped learning, students are able to strengthen their language skills by participating in content and activities that are presented in the target language. In contrast, self-regulated learning in the flipped method challenges students' perceptions of their level of knowledge while simultaneously allowing them to improve their language skills. Flipped users are expected to control their learning by selecting the materials they want to communicate with and how they want to connect with them. Language students must also assume accountability for their language learning through cognitive and metacognitive processes. Integrating flipped learning models into language instruction components could lead to impactful learning. As a result, it's critical to understand students' self-regulatory strategies in flipped activities, as these can

help them govern their knowledge in and out of the language classroom. Previous studies clearly show that a comparative analysis between teacher-regulated and self-regulated flipped learning is not found in the research literature. Based on the problems discussed, the following null hypothesis was formulated.

The null hypothesis: H_0- The students trained using the Teacher-mediated flipped learning group did not perform better than those exposed to self-regulated learning groups.

1.2. Related Research

Researchers have created a complete schedule of revolutionary and innovative blended learning research topics to boost efficacy. Generally, evidence shows that flipping the classroom improved academic success and satisfaction (Lin et al., 2019; Benyo et al., 2022). The necessity of infrastructure provision for course development and planning is stressed by those who have had the most success with flipped learning programmes. The existing research topics are long and hard, with different definitions of 'flipped learning', promoting the need for more in-depth study on instructional approaches and assistance to optimise accomplishment and success.

The flipped classroom paradigm, as previously noted, reverses standard teaching and learning procedures. In the classic flipped classroom paradigm, students gain new subjects independently at home before coming to the classroom. In contrast, in traditional instruction, new knowledge is acquired in the school, and practice is completed at home. Students in Flipped class can access a new curriculum through multimedia mode.

Shi, et al. (2020) performed a thorough meta-analysis on the notion of flipped research. According to them, flipped research has sparked tremendous attention in the educational community, particularly in higher education. The primary goal of this research was to find high-quality empirical articles that looked at college students' learning outcomes. The meta-analysis revealed that self-regulated flipped improved cognitive learning outcomes in college students when compared to regular lectures. Based on the synthesis of currently available multidisciplinary study studies, they found that the flipping style aids college students in improving their cognitive learning. Instructors that use personalised, effective collaborative pedagogical techniques in the flipped environment were shown to be more effective.

Bishop and Verleger (2013) conducted a comprehensive review of previous and continuing flipped classroom research. According to the results of the survey, the vast majority of research conducted up to this point has employed single-group study designs and focused on the opinions of students. Although student responses to the flipped classroom concept have been diverse, they have always been positive. Despite the fact that interactive classroom activities are more successful than lectures, students continue to prefer attending lectures in person over viewing them online. Students are able to learn more effectively in flipped classes as opposed to traditional ones, according to anecdotal evidence. However, there has been little objective research into student learning results. They suggest that future studies use controlled experiments or quasi-experimental approaches to evaluate objective learning outcomes.

According to Loveys and Riggs (2019), the flipped model has several benefits for teaching and learning processes. In contrast to the typical classroom's one-time explanation of a new topic, the flipped model allows students to study recorded or textual learning resources multiple times or skip topics they have already learnt. Learning outside the classroom is flexible because students can access learning information quickly. Based on their proficiency levels and individual requirements, it can occur at any time and place that the learners choose.

The flipped model promotes the development of self-regulation techniques for at-home learning processes. Students indulge in inquiry-based activities, create their knowledge, communicate with colleagues, and reflect on the learning process throughout in-class learning. These techniques make richer learning possibilities and deeper study of the topic during in-class learning. As a result, the flipped model frees up time for student engagement, exercising, debate, asking questions, and teamwork by decreasing the time spent on lecturing.

Arnott and Planey (2017) note that the comparison between active learning in the FC model using self-directed learning strategies versus teacher regulated instruction has not been investigated before. The authors think that the acquisition value in both cases was more likely due to the instructional approach than the model itself. However, changing the teaching technique can be unpleasant and lead to misunderstanding among teachers and pupils. Teachers who find it difficult to let go of their conventional role as "information bearers" and instead see themselves as "transmitters of information" to their students may have difficulty encouraging independent learning. Students intimately acquainted with traditional instructions do not demonstrate a desire to accept responsibility for their learning and track their progress. There is concern that pupils who do not prepare before the class may not fully participate in educational processes during the lesson. Furthermore, studies have indicated that if pedagogy in the FC isn't well-structured, it will lead to frustration and a lack of enthusiasm to learn.

Bergmann and Sams (2012) evaluated learning results and student perceptions across two randomised studies subjected to either independent classroom instruction or classroom style pedagogy in a flipped setting. To guarantee consistency of experience, each group had identical demographics and performance, and they all got the same curriculum, with the only variable being the methodology used. For three successive sessions, group A got flipped classroom pedagogy while group B received standard lecture pedagogy, after which the groups were switched. After the crossover, group A got standard lecture pedagogy for four more sessions, while group B received flipped instruction. When exam performance was compared, no differences were found. According to the findings, while student confidence in their talents was initially low, it rebounded by the research conclusion. In this study, flipped classroom techniques did not substantially impact student performance or perception when taken as a whole.

There are some contradictory revelations in the study. Therefore, an exhaustive investigation is needed to arrive at a consensus.

Research Gap

According to Cleary, Callan and Zimmerman (2012), "Although the teaching method (FC) has been prevalent in academia for the past two decades, there is a scarcity of research on how it has been executed and what has been learned in the field of self-regulated learning" (p.9) The majority of studies either focus on adaptation and instructional methods with higher education institutions and fields other than education, or the latter techniques with elementary and secondary school students. This study offered a first-of-its-kind comparative intervention study comparing teacher-directed versus self-directed learning. According to our earlier research findings, flipped learning implementation studies were mostly done in Western nations. The majority of the research undertaken in Asian nations was in STEM education. There has never been systematic research of self-regulated learning in language education. As a result, this research is unique. Furthermore, most research used a combination of methodologies, with questionnaires being the most prevalent data collection tool. But this study has used an intervention methodology.

1.3. Purpose of the Study

The study primarily aims to find which method effectively achieves learning outcomes. Is it self-mediated flipped learning or teacher-mediated flipped learning? It is intended to look into how teacher-mediated flipped learning and student-regulated learning affect presentation skills.

2. Method and Materials

2.1. Research Model

An experimental research design was employed in this study. The rationale for choosing a experimental design is mentioned here. An experiment is a form of research in which the relationship between two variables, referred to as the dependent variable and the independent variable, is explored. Experiments show a correlation between an entity's specific characteristics and the predictor being studied. The teacher-mediated and the self-mediated variables are the focus of this investigation. Because of this, an experimental design was the best fit for this study. Justifying the use procedure, and model of experimental research design Fraenkel, Wallen, and Hyun (2012) have the following opinion:

> "Experimental analysis is a method for optimising the experimental settings to gain the most meaningful information with the fewest trials possible, like procedures that modify one element at a time; Experimental design is a way to optimise the experimental settings to gain the most meaningful information with the fewest number of trials possible. Unlike procedures that modify one element, adequate experimental designs may handle factor interactions. Experimental studies generate transportable outcomes that are not reliant on experimental rigour. It is a viable substitute for comprehensiveness, which might be difficult to trust in educational studies. After analysing the outcomes of experiments with a critical eye, English academics must determine if and how the findings will be adopted. They may even expand on previous research by reproducing studies to generate fresh discoveries and access diverse viewpoints. These findings will either support or refute the study's findings" (Fraenkel et al., 2012)

The above statement justifies the rationale and application of the experimental research design.

2.2. Participants

The two sections had identical class sizes. The teacher-directed flipped section had 34 students, whereas the self-directed flipped group had 36 students. Two students were randomly removed from the self-directed flipped learning environment to ensure consistency. As a result, both groups had the same sample size of 34. When the students signed up for the class, they had no idea there was a distinction between them.

2.3. Data Collection Tools

The study was conducted using a statistical research approach based on the participants' performance. This statistical approach leads to a better understanding of the behaviour in its context, and data analysis was carried out using the paired t-test principles. Data analysis exposes several primary themes in this technique, which aid in developing the initial conceptions.

The Ethics Committee of the university-sanctioned the study. Students were aware that their observations would be reviewed during the course to confirm their answers' sincerity. Students were emailed informed consent before their course. The learners were told that involvement in the study was their choice and that their intention to withdraw had no bearing on their academic performance. Surprisingly, all the students agreed to reflect on the course and their individual learning experience analysed. The term "teaching-learning practices" usually refers to the teaching, learning, and assessment processes.

Furthermore, the context of hybrid technology-enhanced learning highlights the necessity to address the function of technology in these processes and the importance of student regulation. The coding was done by research assistants who had been briefed by the researcher but had no knowledge of the research topics or the participants' identities. A comparative analysis of teacher regulated flipped learning and self-regulated flipped learning are presented in Table-1

Table 1: Teacher Mediated and Self-regulated flipped learning: A comparison

Teacher Regulated	Self-regulated
Teacher initiates	The student supports other group members
Teacher and student	Student to student
Teachers plans	Collaborative planning
Guided tasks	Individual self-regulation
Co-regulation	Shared regulation
Teacher and student discussion	Virtual teams
Performance assessment	Performance assessment

2.4. Data Collection Process

The study was conducted with two sections of a Mechanical Engineering class at the crescent institute of science and technology India. Both sections of the student's language proficiency were at the moderate level. The two groups had the same instructor, were given the same resources, including course materials and in-class problem sets, and were assessed in the same way. The biggest distinction was in the manner of delivery. Teacher-directed flipped learning was used in group A, while self-directed flipped learning was used in group B. Both parts had 30 instructional hours. A pre-test was given to both groups before the start of the investigation. Figure 2 depicts the steps involved in the research.
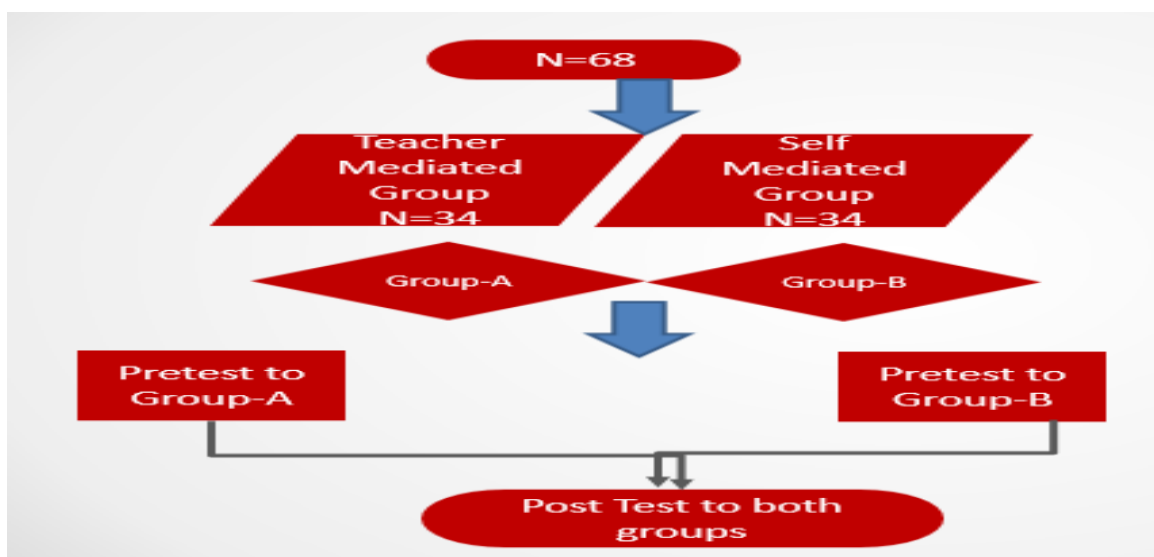

Figure 2: Flowchart of the experimental study

3. Results

The Teaching Component

Students will learn how to prepare and give presentations in a corporate setting in the presentation skills course. Learners are expected to participate in conversations, provide comments on the presentation of their peers and participate in activities to learn optimally. Table two compares the skill-focused components on teacher-mediated and student-regulated flipped learning.

Table 2: Skill-based presentation activities in both modes

Skill Focus	Teacher Directed	Self- Directed
Speaking	Teacher-directed lab sessions	**Self-Directed Lab sessions**
	Lecture videos with worksheets	**Videos and Lectures from the archive**
	Teacher initiated quiz	**Online quiz**
	The instructors' explanation of speaking rubrics	**You are viewing assessment rubrics with video explanations for every parameter.**
	Mock evaluation	**Online evaluation**
	Assessment of Learning Outcomes	

Assessment of Student Learning

Students' learning was graded out of a possible 50 points in all sections. The components of the test were created to assess course goals. The performance was evaluated based on key ideas, the flow of ideas, message clarity, topic understanding, organisation, effective opening and closing, and audience involvement. The checklist for speaking was generated using the rate speeches checklist generator. Table-3 depicts the assessment rubric. The scoring rubric has ten parameters. Each parameter has five points. The overall score is 50 points. The details of the scoring criteria are shown in table 3.

Table 3: Assessment Rubrics

Scoring Criteria	Total Points	Score
The audience and presenting style are suitable for the subject.	**5**	
The information is presented in a manner that is consistent with logic.	**5**	
The introduction captures the reader's interest, clarifies the topic, and establishes the context for the presentation.	**5**	
Audience-appropriate language is used.	**5**	
The incorporated content is pertinent to the broader message or purpose.	**5**	

The presentation is summed up at the conclusion.	**5**
The speaker keeps a strong connection with the members of the audience.	**5**
This person has a very audible voice and very precise pronunciation.	**5**
The delivery is confident, in control, and unruffled.	**5**
The length of the presentation fits inside the given time.	**5**
Total Points	**50**

Analysis

The null hypothesis: H_0- The students trained using the Teacher-mediated flipped learning group did not perform better than those exposed to self-regulated learning groups.

The null hypothesis described in the study is that the students who were trained using the Teacher-mediated flipped learning group did not perform better than those exposed to self-regulated learning groups.

Statistical analysis is a popular way of approaching the question. The t-test is a frequently used statistical technique for comparing two groups with different values. A pooled variance t-test is a type of equal variance t-test. The analysis of the performance of both groups, namely, teacher mediated flipped learning and self-directed flipped learning is presented in table-3.

The output has two sections (boxes): Group Stats and Independent Sample Test. The first section, Group Stats, includes the representative sample (n), average, standard error, and standard deviations for both groups. There are 34 students in teacher-directed flipped learning and 34 students in self-directed flipped learning in this scenario. The mean scores for Teacher Mediated Flipped Learning were 38.42, whereas the mean score is 32.65 for Self –Directed Flipped learning. The SPSS output of group statistics is presented in table-4. The group statistics show that the students in the teacher mediated flipped learning group have performed better than the students of self-directed flipped learning as the mean difference between groups is 5.768

Table 4: Group Statistics

Which is statistically effective	N	Mean	Std.Dev	Std.Error Mean
Teacher Mediated Flipped Learning	34	38.421	2.34	0.93
Self –Directed Flipped learning	34	32.653	2.29	0.97

There are two portions to this document, each with its own set of facts: The Levene's Test for parity and the t-test for comparing means are two methods for determining the equality of variances. This section shows the results pertinent to the study. Table-5 shows that the t values were significant in the teacher-mediated flipped group compared to the self-directed group. T is the computed test statistic, using a homogenous test statistic formula. The confidence interval in table -5 complements the significance of the test results.

Table 5: Levene's Test

	Levene's test for equality of variance		t-test for equality of means							
	F	Sig	t	df	Sig. (2-tailed)	Mean Difference	Std Error Difference	95 % confidence interval of the difference		
								Lower	Upper	
Performance Equal variance assumed	4.349 07	.000	.3547 5	34	.000	2.7206	0.009	1.453 3	4.096 7	
Equal variance is not assumed		001	.2965 5	34	.001	1.6837	0.007	1.291 1	4.076 6	

Based on the study results, we can conclude that the mean difference between self–regulated flipped learning and teacher-mediated learning is significantly different. The results of this study concur with the previous findings of (Sun, et al., 2016; Wang & Hwang, 2012). The results indicate that :

The average mean difference between teacher mediated flipped and teacher mediated flipped groups is 5.468, favouring teacher-mediated flipped learning. Therefore, there is conclusive evidence for teacher-mediated flipped learning.

The study found that the inverted educational environment promotes self-regulated learning in two ways: encouraging personalised learning and student involvement in learning. The results have shown that the learners in this model are more fully independent, active participants in the learning because they would be believed to orchestrate their tasks at their own pace and recognise what needed to be done to complete the tasks without much help from their instructors. Their narratives offer valuable student perspectives on what participation in learning entails in reality, as articulated, for example, in terms of "machine learning a notion linked to more effective learning in the research. Unlike in a traditional classroom setting, it is possible to study at one place. Unlike in a traditional classroom setting, it is possible to study in one place. The student may spend quality time investigating things they don't understand, which is rarely available while learning in a classroom setting. In this context, developing the potential for self-expression and self-learning required to take advantage of the flexibility offered by a flipped learning unit while simultaneously meeting the learning requirements and the unit's other requirements is an aspect of self-regulated learning. The respondents revealed that flipped learning's flexibility might help students engage in self-regulated learning processes, including thinking, development, and structuring.

5. Discussion

Flipped classrooms have become progressively prevalent. According to previous empirical research by Zimmerman (2002), "Students' learning has been shown to benefit from flipped classrooms. Although some researchers have argued for the value of good guidance and the presence of students in flipped learning, others have argued for the absence of these factors. In the preceding research study, a self-regulated constructivist learning strategy was developed to aid students in understanding active learning and self-regulated knowledge within this mode of learning. At a postsecondary institution of higher education, a research study with intervention was conducted to determine the efficacy of this unique approach of instruction. The experimental group used self-regulated flipped classrooms, whereas the control group used conventional flipped classrooms. Both groups received identical instruction. Student learning outcomes, as well as self-efficacy and self-regulation, were found to significantly improve in tests when the proposed framework was implemented.

This study shows that the intended process of education and cognitive strategies can benefit students through self-regulated learning strategies. "Students in a flipped learning environment can keep track of their learning progress and determine which methods are most effective for them using this metacognitive strategy" (Schultz et al., 2014; p.3). The students' personality was boosted due to this study's active learning and individualised reviews, which was based on their educational status. According to the findings, self-regulated students had already figured out how to plan and use their study time effectively and learn more efficiently on their own. Students who can self-regulate are more likely to be motivated to learn. Teachers who want to engage their students in class activities but are concerned about their students' ability to self-regulate might do so with greater consideration for these students. When compared to students in the control group, individuals in the experimental group performed significantly better on tests of self-regulation.

This confluence of factors shaped our revamped approach to flipping learning in university education. This part provides a re-imagined approach to teacher-mediated flipped learning in postsecondary learning, based on the principles indicated in Figure 3.1, a simplified version of the existing flipped models. To assess this new model, we first explore the influence of performance in teacher-mediated and student-regulated learning in relation to the study question. Based on the findings, we stress the need to master teacher-controlled flipped learning practices that was competitive in the flipped classroom during the course.

Previous research has found both advantages and downsides to flipped models. Kim, et al., (2014) gave a more comprehensive view of flipped learning, arguing for greater use of technology to encourage fluid knowledge acquisition and "learning by networking". In the teacher-mediated paradigm, students learn new knowledge through viewing videos and receiving information from the instructor via technology. In contrast, the course examined in this study encouraged students to participate in active learning both in and out of class, and students constructed knowledge throughout the lessons. The instructor's direction and scaffolding aided extensive autonomous learning, paired with ongoing conversation and collaborative exchanges among peers. Students' engagement in the process of learning is increased. The teacher-mediated approach of flipped learning, according to our findings, leads

to the acquisition of new knowledge, primarily through videos online and lectures. Clearly, the results show that teacher-mediated and student regulated presents opportunities and challenges.

This pedagogy challenges many assumptions regarding the most effective approach to support the educational environment. For example, teacher-mediated flipped learning offers pupils a unique and personal experience. As a result, it should be no surprise that most of what we refer to as flipped learning is blended teaching based on pedagogical frameworks. The most we can do is to leverage indicators like success, grades, assessment protocol outcomes, and student testimonials regarding their learning experiences to gauge the effect. It's still up in the air whether such gadgets are reliable indications.

The researchers sought to address theoretical notions and empirical data concerning flipped learning and its link to the new status quo as it grows. The flipped classroom appears to be a forerunner of significant change in higher education, and it will have an equal influence on K-12 education and industrial training. "Because of its versatility, hybrid learning allows us to optimise various good educational functions. The future of mixed learning should make us optimistic about the changes ahead"(Rahman, et al., 2014; p.17).

6. Conclusion

With the emergence of more student-centred approaches to learning, desires for customisable flipped models are predicted to become increasingly popular. Technological advancements make this possible, allowing students to study utilising digital tools and resources from areas far away from their university. Even though flipped learning has been around for more than two decades, there has been little effort to explore the impact of this learning model on self-regulated learning.

The findings show that flipping preserves or enhances access for most student groups and boosts success rates for students. However, according to a more in-depth investigation of those judgments, external and demographic determinants have little influence on the essential components students consider significant in their learning. The students feel clear formulation, continuous progress toward learning goals and creating an ideal learning environment to be key aspects. If those characteristics of a course are met in their opinion, students are almost certain to rate their learning environment as good, regardless of other factors. These findings are intriguing because they promise to enhance classroom instruction in an educational setting where demand is mounting to become more sensitive to modern student lifestyles. Future quantitative and qualitative research in this area is recommended to truly comprehend how the suggested model promotes or hinders self-regulated learning the differences in flipped educational opportunities. Learning outcomes between individual learning styles and the possibilities in which self-regulated strategy can be significantly boosted.

7. Recommendations

Rather than being a thorough analysis, this review research should be seen as an attempt to analyse studies on the efficacy of flipped learning. Even though just 20 articles were referred by scanning the databases such as the web of science and Scopus, the studies fit well. Therefore, the quality of the previous research studies was ensured. Furthermore, to screen

identified publications, this study used a particular framework. Overallinclusion and exclusion criteria. The authors were able to reduce the scope of their search by using these criteria to find the most representative research.

On the other hand, different search conditions may have yielded somewhat different search results. For example, if book chapters had been included, the data analysis may have been different. More studies should be done on the review research discovered by scanning more databases and expanding to include other forms of publications, such as books and conference proceedings.

Overall, this research effectively generated a wealth of information about the performance of undergraduate students in a flipped learning unit. However, some limitations to the study must be considered when interpreting the results. The findings are primarily applicable to the language teaching context in higher education and cannot be applied to other learning settings. Despite efforts to employ a random sampling procedure, the study's limited sample selection is an additional drawback. According to the research findings, the sample did not contain a varied spectrum of individuals from different disciplines and learning behaviours. Furthermore, given this sample choice, it's quite likely that a different sample of people would have produced a different set of results. This does not negate the study's importance in revealing a wide range of self-regulated learning experiences in the flipped learning environment, as well as the sorts of factors that influence them.

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