

Best Practices of Flipped Classrooms in TVET English Learning: A Systematic Literature Review

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ABSTRACT

Along with the advancements in technology of the 21st century, the goal in Technical and Vocational Education and Training (TVET) to produce independent, collaborative, and self-directed skilled learners shifts the conventional classrooms from passive learning to active learning. Innovative pedagogy such as the flipped classroom is promising in improving students' self-directed skills and higher-order thinking. However, the research on the application of flipped classrooms in English learning within the field of TVET is limited compared to that in higher education. This study explored the best practices of flipped classrooms in TVET English learning by conducting a systematic literature review of 11 articles from the SCOPUS database. Six dimensions were highlighted, including pre-class preparation, in-class activities, use of technology, assessment and feedback, students' factors and motivation as well as learning outcomes. The findings underscored several valuable insights to improve the flipped classroom efficiency in TVET English education.

Key Words — TVET, Flipped Classroom, English Learning, A Systematic Literature Review, Best Practices

INTRODUCTION

Developing skills to meet the demand of Industry 4.0, providing inclusive, equitable education, and promoting lifelong learning opportunities are the keywords to 21st-century education (González-Pérez & Ramírez-Montoya, 2022). This is particularly true in the Technical and Vocational Education and Training (TVET) area, which underscores the responsiveness to the job requirements and also confronts challenges such as diversified admission backgrounds of students. Furthermore, advancements in technology are reshaping the pedagogy of education. The goal to produce independent, collaborative, and self-directed learners shifts the conventional classrooms from passive learning to active learning environments. Given this context, innovative teaching is prominent in achieving these goals.

English Learning in TVET

In light of this, a mastery of the English language would benefit learners with a global vision, obtain the skills for cross-cultural communication, and further help them with a promotion in their professional development as globalization intensifies competition. Suhaili (2021) discussed the function of English language competency in enhancing TVET graduates' marketability in Malaysia. Rahman et al. (2021) stated the need for English competency in TVET due to a high proportion of English reference books yet in a low English-immersed environment in Bangladesh. Given the English language plays a supporting role worldwide in education, student motivation varies. Zin and Yunus (2020) conclude that TVET students provide a positive attitude and high motivation toward learning English. This is consistent with Sulaiman's (2024) findings and they suggest the need for more engaging teaching methods that align with students' motivation, better preparing them for the workforce. These views on English learning in TVET highlight the application of the English language and its facilitation for students' employability. To this end, innovative teachings are imperative.

Flipped Classrooms

Flipped classrooms, as an innovative teaching pedagogy, are promising in improving students' self-directed skills and higher-order thinking. This teaching paradigm relocates the traditional lectures and skill application. Students could prepare for the lessons more thoroughly by previewing course content and completing the worksheets in the pre-class session, while the in-class time could be maximized for analyses and application, wherein students can achieve deep learning (He, 2020; Lee & Wallace 2018).

However, research on flipped learning has mostly focused on generic subjects and classroom settings, with a much larger number of studies in higher education (Singh et al., 2017). The limitation in the research scope constrains the development of English subjects in TVET.

This study aims to explore the best practices of flipped classrooms in TVET English learning by conducting comprehensive literature reviews. Thus it provides guidance for TVET English teachers on the necessary dimensions regarding flipped learning, such as pre-class preparation, in-class activities, use of technology, assessment and feedback, students' factors and motivation, and learning outcomes.

LITERATURE REVIEW

Theoretical Foundations

Active engagement is crucial in an educational setting. In TVET, it refers to guiding students in exploring their potential. Both Jean Piaget's and Vygotsky's theories of development play roles in the internal development of concepts but diverge in their main goals of development. Piaget's cognitive constructivism underscores learners' internal cognitive development through their informational process after the constant experiences and interaction with the real world, while Vygotsky's social constructivism sees the development of the mind as a life-long process that depends on our capacity to arm and re-arm the human cultural and historical tools as we grow, which indicates the significance of collaborative learning, scaffolding in guiding learners' development (Pedapati, 2022).

The flipped classroom, arguing students must structure information within themselves during their process and be active during class time (Erbil, 2020), is alignment with both of these two theories. Students achieve cognitive development through their self-directed learning and interactive group work.

Theory and Practices of the Flipped Classroom

As an innovative pedagogy, flipped classrooms are also named inverted classrooms. It is one of the forms of blended learning and emphasizes the achievement of higher-order thinking by inverting the traditional lectures in class to the pre-class sessions and aims at developing active and deep learning through collaborative work in class. It integrates online autonomous learning and offline collaboration. Students are required to master the knowledge through their independent study, including watching the segmented videos, completing online quizzes, and interacting with the teacher one-on-one. By leveraging the technology, flipped classrooms facilitate differentiated learning by providing personalized instructions and coaching.

Best Practices Regarding Key Dimensions

Pre-learning Preparation

Pre-class preparation activities are a necessary foundation for flipped activities. Only after the objectives of the preparation phase are achieved can students fully utilize classroom time for subsequent teamwork, as well as the in-depth application and transfer of knowledge. Therefore, pre-class preparation can enhance students' readiness for classroom learning. On the other hand, the pre-class preparation phase of the flipped classroom is related to the application of students' independent learning and self-guidance skills. Students need to self-schedule their study time and complete pre-class study according to their learning habits at a steady pace, while also taking pre-set online tests to ensure the achievement of self-study goals. This kind of preparation activity encourages students to take on more responsibility and enhances their sense of ownership, which is an important goal of

21st-century education.

In-class Activities

The in-class activities of flipped classrooms are regarded as peer-assisted learning (Bishop & Verleger, 2013). According to Topping and Ehly (1998), the keywords of peer-assisted learning are actively helping and supporting among equals or matched companions while some researchers also view flipped classrooms as cooperative learning, highlighting five factors: positive interdependence, face-to-face interaction, individual accountability, small groups and interpersonal skills and group self-evaluation (Bishop & Verleger, 2013). The use of a flipped classroom approach can also add elements like problem-based inquiry, project-based learning, gamification, and strategies for differentiation (Singh et al., 2017) which make it more flexible than traditional lecture-based classes.

Use of Technology

Technology is essential to the flipped classroom, facilitating the delivery of instructional materials and enabling interactive learning experiences. According to Bishop and Verleger (2013), the flipped classroom consists of interactive group activities in the classroom and technology-based individual learning outside the classroom. Fuchs (2021) and Edulan et al. (2025) emphasize the importance of Information and Communication Technology (ICT) in creating effective learning environments, particularly in distance education. Such a setting stresses the essential roles of video conferencing and online content as well as online platforms (Nor et al., 2024) in its knowledge preparation and management for subsequent in-class engagement. In the English learning setting, the integration of technology can also strengthen the liaison with the real-world context (Utami et al., 2021).

Assessment and Feedback

Assessment and feedback are crucial elements of effective flipped classroom practices. Apart from examining student learning outcomes, valuable feedback along the learning process can also be collected to guide future improvement (Lam & Chan, 2019). In a flipped classroom, assessment should be aligned with instructional goals and utilize a variety of methods to measure student understanding and engagement. The assessment in the flipped classroom is more process-oriented rather than outcome-driven. Such assessments include pre-class preparation and in-class participation, the former of which is through online quizzes (Lam & Chan, 2019). The online data can also be utilized to track student progress and help to adjust teaching strategies accordingly. Moreover, the data allows teachers to investigate students' engagement which is a key criterion of class success so that the necessary supervision and personalized feedback can be given to facilitate student learning. For collaborative learning during class, the assessment process should involve the teacher and individual students, as well as their peers. Peer-to-peer assessment should cover team problem-solving efforts, the effectiveness of collaborative learning, and other relevant aspects (Kim, 2018). In all, a comprehensive understanding of student learning can be achieved by providing timely feedback and constantly refining teaching strategies.

Students' Factors Influencing Motivation

Student motivation is a critical factor influencing the success of a flipped learning environment. Han (2022) identifies a key challenge as the lack of familiarity and appropriate adaptation of students to the flipped classroom model. The study shows that the flipped classroom has a positive effect on learning, reducing cognitive load and enhancing involvement, accuracy, motivation, satisfaction with the course, and self-efficacy. However, the effectiveness is closely tied to students' preparedness to engage in classroom activities.

Learning Outcomes

Research on the learning outcomes of flipped classrooms presents a nuanced picture. While many studies suggest a positive impact on student academic learning (Han, 2022; Yuan et al., 2024), others indicate mixed results. Moravec et al. (2010) observed a performance increase following the introduction of narrated PowerPoint videos and in-class active learning exercises. Othman (2024) explored learners' decision-making in the flipped classroom and received a positive result.

According to Singh et al. (2017), the flipped classroom in itself does not increase achievement. The flipped classroom's success as an agent of student learning rests on current learning theories and the teacher's employing best practices. Therefore, there is a need to explore the best practices of flipped classrooms for English learning in TVET, thus enhancing TVET students' learning efficiency and holistic skills.

METHODOLOGY

This study employed a systematic literature review of the study of flipped classrooms in TVET, particularly in English.

Search

The database in this study is the SCOPUS, chosen for its high quality of educational research. The following search terms were used and presented in this way: Title OR Abstract contains "flipped" AND "English" AND "vocational". The publication date of the articles ranged from 2015 and 2025. Only peer-reviewed articles published in English, with full texts, were included in the results.

Selection

The following criteria were applied to further refine the selection of the articles: (a) the studies must focus on English; (b) the studies should be set in vocational education rather than higher education; (c) the studies must apply flipped classrooms with their key characteristics; (d) the studies need to be empirical with original data.

The selection adopted the PRISMA Flow.

Identification: 36 records were identified through SCOPUS.

Screening: Duplicated records were removed, and several non-full-text articles were excluded.

Eligibility: The eligibility was assessed and the ones not focusing on vocational education were excluded.

Included: 11 studies were included for the next analysis (the actual studies considered for analysis after applying all inclusion/exclusion criteria).

Analyses

To review the content of the selected articles, a matrix encompassing pre-class preparation, in-class activities, technology, assessment and feedback, students' factors and motivation and learning outcomes, was developed. This analysis aimed to synthesize the findings and identify the best practices to enhance teaching effectiveness within the current literature regarding English language teaching in TVET.

RESULTS AND FINDINGS

This study aims to identify the best practices of flipped classrooms in TVET English language learning. A thorough reading was conducted over 11 articles searched from SCOPUS, with the themes regarding flipped classrooms, vocational education, and English learning. Table 1 demonstrates the findings of each article, including titles, authors, objectives, methodologies, and key findings. Table 2 presents examples of best practices concerning the six dimensions (pre-class preparation, in-class activities, use of technology, assessment & feedback, student factors & motivation, and learning outcomes) summarized from these articles.

Pre-Class Preparation in TVET English

Pre-class preparation consistently represents the key to successful flipped classrooms in TVET English learning. Several studies stressed the need for the use of engaging and relevant materials also for pre-in-class activity preparation of the students, such as culturalised interactive materials. Familiar objects and contexts make students more involved. Chuang et al. (2018) claim that career orientation boosts motivation. Even though Shaari

et al. (2021) deal with cultural adaptation, Guan (2016) highlights micro-teaching that according to his research is the best way to add engaging pre-class content, namely short and focused video segments being a major part of it. Wang (2024) offers the opinion that a clear structure and objectives are the most important in pre-class content. The idea here is to guide the way for the students. For instance, SPOC use drives learning. These observations imply that successful pre-class preparation in TVET English learning should be based on students' needs.

In-class Activities in TVET English

In a review of the literature about in-class activities in flipped classrooms in TVET contexts, several patterns that improve English learning have been identified and recommended. A common theme is the application of Communicative Language Teaching (CLT) and cooperative learning, both of which are known for the effective strengthening of language skills (Shaari et al., 2021; He, 2020; He et al., 2022). What is worth emphasizing is that structured activities are exceptionally useful for students as they give them a roadmap to interact deeply with the content. (He, 2020)

Similarly, the authors focus on the teaching and learning of technology in the classroom. Furthermore, the technology adoption in the flipped class provides support for the introduction of new teaching materials (He et al., 2022). Engaging and real-world tasks are crucial because they stimulate the learners and allow the language abilities to be practiced more practically (He et al., 2022). Group projects and peer teaching are among the innovative elements added to the curriculum not only do these encourage collaboration but they also enable students to learn from each other thus promoting a profound understanding of it (He, 2020; He et al., 2022). At the same time, structured opportunities to interact and support students are also vital for creating a situation where a learning environment is formed with students acquiring the target language (He, 2020; He et al., 2022).

Use of Technology in TVET English

Research underpins the significant role that technology plays in underpinning the flipped classroom approach and delivering TVET English learning effectively. Several items of technology are involved: Learning Management Systems (LMS), mobile learning apps, e-learning platforms integrated with the flipped classrooms, and Small Private Online Courses.

First, LMS improves learning progress and facilitates progress tracking (Bulut & Kocoglu, 2020; Liu, 2017). Mobile learning apps add convenience and have a positive effect on student liking and time spent outside the lecture hall (He et al., 2022). More so, with the success of the "Double Classroom" model which brings together the e-learning platform and flipped classroom as key strategies for the better use of technology, students became more engaged (Liu, 2017). This method provides a basis for transforming which essentially leads to the accommodation of the different learning needs of the student. Moreover, the use of SPOCs is considered a strategy to allow students to benefit from personalized and flexible learning situations and hence achieve the overall learning outcome (He et al., 2022; Liu, 2017).

Table 1. Key Findings in Articles

Articles	Objectives	Methodology	Key Findings
1:A Predictive Model of Learning Effectiveness in Flipped Classroom Mode: An Exploration of Higher Vocational English Learning	Construct a multi-model fusion prediction model using machine learning to predict student learning effectiveness in a higher vocational English flipped classroom setting.	1)Analyze flipped classroom teaching practice 2)Compare fusion algorithms and implement a Stacking model 3)Construct and test a prediction model	<ul style="list-style-type: none"> ü "Culturalised" content improves engagement in language learning. ü Clear structure in a flipped classroom is the key. ü The pre-class stage involves teachers producing and preparing teaching resources and students learning independently. Transferring knowledge before class is crucial.

Based on Machine Learning Wang (2024)		4)Evaluate model performance	<ul style="list-style-type: none"> ü The in-class stage refers to knowledge clarification, creation, collaboration, communication, and evaluation. ü Evaluation should be conducted by the student himself, his peers, and the teacher. ü Flipped boosts motivation, personalized learning, shifts of roles in teachers, and professional progress in the English language. ü Technology includes mobile phones to watch mini-videos, WeChat groups to post tasks and guidance, and emails to send back answers. ü The study effectively measures learning effectiveness using a combination of three key attributes: certification (success), earned merit points (grades), and total time spent.
2: A Study on the Application of Random Matrix Theory in the Construction of the Evaluation System of Public English Flipped Classroom Teaching in Higher Education Institutions Sun and Lin (2022)	Construct and examine the evaluation system by integrating the random matrix theory.	A pre-test and post-test design with a one-group pre-test-post-test design, a survey, and interviews.	<ul style="list-style-type: none"> ü The pre-class session is for students to complete personalized learning and the in-class session is to achieve the internalization of knowledge through interactive discussion and communication. ü Technology shall be made full use of to create various educational environments and learning tools. ü The flipped classroom changed the traditional lecture-based mode to an application-focused style. ü The process-based assessment is valuable. ü It improves students' ownership and initiative in learning, freeing them to plan the time, content, pace, and learning styles. ü Assessment does not create an unnecessary workload.
3: Investigating the Impact of Flipped Classroom on Dual Language Learners' Perceptions and Grammatical Performance	1)Explore dual language learners' perception towards the flipped classroom model in learning grammar. 2)Identify dual language learners'	Methodology: One group pre-test-post-test design A six-week intervention program Questionnaire:	<ul style="list-style-type: none"> ü It consists of interactive group learning activities inside the classroom and direct computer-based individual instruction outside the classroom. ü Activities in the classroom need to be engaging.

Sharri et al.(2021)	grammar achievement through a flipped classroom model.	Interviews Paired sample T-test	<ul style="list-style-type: none"> ü Communicative Language Teaching (CLT) enhances engagement and skills development. ü Culturalized learning material and grammar instructions ü Career-relevant content improves engagement
4: Multivariate Research on Satisfaction Influencing Factors of Flipped Classroom Teaching Mode He (2022)	Design the satisfaction questionnaire of flipped classrooms in college English in China. Examine learners' satisfaction. Seeks its influencing factors.	<p>130 students majoring in preschool education, Chinese education, and primary education at a higher vocational college</p> <p>A flipped classroom experiment</p> <p>A questionnaire based on the Technology Acceptance Model (TAM) and the American Customer Satisfaction Scale (ACSL)</p> <p>Statistical analyses including factor analysis regression analysis and reliability testing to identify and assess the influencing factors in student satisfaction</p>	<ul style="list-style-type: none"> ü SPOC with mobile platforms increases satisfaction and is mainly composed of micro-videos, real-time online practice, online interactive discussions, quizzes, and other elements. ü The classroom should include at least four aspects: the development and production of curriculum video, self-study and mutual learning before class, classroom absorption and internalization, and summary of report and discussion. ü High-quality design is the key, including: determining the teaching objectives, screening out the knowledge points and the difficulties, putting forward the inspiration and guidance, and designing online learning tasks and closed exercises. ü The implementation of the whole teaching process of the flipped classroom teaching mode cannot be separated from the extensive and in-depth use of information technology. ü Learners' expectations are the driving factor influencing the effectiveness of the flipped classroom, while learners' acceptance is the main factor. ü If the pre-class knowledge learning and initial absorption internalization cannot be completed in advance, it is difficult to ensure the effective implementation of the presentation and in-depth discussion in class.
5: Research and Practice of Flipped Classroom Teaching Mode Based on Guidance Case He (2020)	Examine the effectiveness of flipped classrooms in stimulating students' interest in learning English, in improving students' cooperative and autonomous	<p>Methodology</p> <p>144 higher vocational college students in preschool education</p> <p>A flipped classroom experiment</p>	<ul style="list-style-type: none"> ü Cooperative learning enhanced skills. ü Structured activities are helpful. ü Quizzes ensure accountability. ü Flipped boosts motivation.

	learning, and students' English level.	Questionnaire surveys Statistical analysis including t-tests	<ul style="list-style-type: none"> ü Flipped improves autonomous & cooperative learning and academic outcomes. ü Flipped classrooms result in improved interest by focusing on strengthening students' subjective experience. ü It suggests that probably behindhand teaching means and teaching techniques are another important reason for a low teaching effect. ü Knowledge and exercise quantities of the autonomous learning stage before class are appropriate and moderate.
<p>6: Research on the Influence of Flipped Classroom on Self-Efficacy in English Language Learning of Chinese Higher Vocational College</p> <p>Students</p> <p>Han and Hamzah, (2024)</p>	<p>Investigate whether the flipped classroom teaching model has a positive impact on self-efficacy in the English language</p> <p>learning of the students of Chinese higher vocational colleges.</p>	<p>Methodology:</p> <p>A quasi-experimental approach</p> <p>An English Learning Self-Efficacy questionnaire survey</p> <p>semi-structured interviews</p>	<ul style="list-style-type: none"> ü Addressing weaknesses (TVET students' weaker academic performance than undergraduates, anxiety and nervousness, lack of confidence and motivation) through flipped classrooms boosts self-efficacy, according to Bandura's four principal sources of self-efficacy: mastery experiences, vicarious experiences, social persuasion, and physiological and emotional states. ü Flipped classrooms contribute to academic achievement, and enhance motivation and confidence in English learning. ü The flipped classroom teaching model includes two stages: pre-class self-study and in-class collaboration. ü The key section is group collaboration in class. ü Giving students the chance to become familiar with the learning materials before class is a crucial component.
<p>7: Study on the Application of Learning Portfolio</p> <p>Evaluation in the Development of English Subject</p> <p>Literacy of Vocational College Students</p>	<p>Explore the application of learning portfolio evaluation in developing English subject literacy among vocational college students within a "Rain Classroom + Flipped Classroom" (Double Classroom) teaching mode</p>	<p>A two-year college English teaching practice</p> <p>A reading and writing portfolio assessment</p> <p>3) Evaluation of portfolios</p>	<ul style="list-style-type: none"> ü Learning portfolios, a collection of materials based on students' learning and growth processes, aid self-reflection on their efforts, progress, and achievements and also provide the basis for formative evaluation. ü The content arrangement should fully reflect the ladder type. ü Teachers should set different levels of difficulty and

Liu (2019)			gradient tasks.
8: The Design and Evaluation of "Flipped Classroom" English Teaching Model Supported by Micro Teaching Guan (2016)	Analyze the influencing factors Determine the weighted score of each influencing factor. Provide a scientific reference for the continuous development of College English.	Multivariate analysis employing factor analysis, correlation analysis, and gray relational methods	ü Content specialization, curriculum rationality, and classroom attractiveness are the largest influencing factors on the teaching of college English Micro classes.
9: The Effect of Project-Based Learning and Project-Based Flipped Classroom on Critical Thinking and Creativity for Business English Course at Higher Vocational Colleges Hao et al., (2024)	Examine the effects of project-based learning and project-based flipped classrooms on critical thinking and creativity in higher vocational colleges.	Methodology 120 business students Disparity and Comparative analysis between the two approaches A between-group quasi-experimental study The Ennis-Weir Critical Thinking test and District creativity test Analyses of covariance and paired-sample t-test	ü The flipped classroom may be a complementary approach to project-based learning, addressing the weakness of being “time-consuming” and “lacking knowledge coverage”. ü Project-based flipped classroom boosts critical thinking & creativity.
10: The Flipped Classroom’s Effect on EFL Learners’ Grammar Knowledge Bulut & Kocoglu, (2020)	Determine the effect of the flipped classroom in teaching grammar to EFL learners.	Participants in 2 English courses in a vocational school Two intact groups of pre-test and post-test designs were used. A flipped classroom perception survey A semi-structured focus group interview	ü Instructional and engaging videos are very important for effectiveness and building up confidence. ü Keeping the videos accessible benefits students for review. ü Use LMS for material delivery & progress tracking.
11: Which Students Benefit Most from a Flipped Classroom	Identify how motivational variables, beliefs, and self-efficacy influence	Methodology	ü Students with high instrumentality motivation followed quiz mechanisms, while students with high belief improved without quizzes; the design focus of the

Approach to Language Learning? Chuang et al. (2016)	learning outcomes in flipped classrooms.	85 students in a 7-week flipped classroom Four instruments for data collection A cross-sectional correlational analysis by controlling for pre-test scores and covariates such as gender, grade, and experience using structural equation modeling.	flipped classroom should not merely be on the in-class activities but also on multiple strategies for regulating learners of different personal traits to preview the online course content before coming to the classroom.
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Table 2. Summary of Best Practices in TVET English

Dimension	Examples of Best Practices	Source Articles
Pre-class Preparation	Transfer knowledge before class (1); tailor materials to vocational contexts (3); design online learning tasks (4); provide structured resources (5); ensure knowledge and exercises are appropriate and moderate (5); short, focused micro-teaching content (8); explicitly connect content to career goals (11).	1,3,4,5,8,11
In-class Activities	Focus on knowledge clarification, creation, collaboration, communication, and evaluation (1); focus on internalization of knowledge by interactive discussion and communication (2); implement CLT approaches (3); activities need to be engaging (3); design engaging, real-world tasks (4); incorporate group projects and peer teaching (5); provide structured opportunities for interaction & support (5).	1,2,3,4,5
Use of Technology	Use technology to create various educational environments and learning tools (2); explore mobile learning options (4); consider the “Double Classroom” approach (Rain Classroom + Flipped) (7); use SPOC (4); use LMS for material delivery & progress tracking. (10).	2,4,7,10
Assessment and Feedback	Use certification, grades, and time as metrics for online evaluation(1); self, peers, and teacher evaluation (1); process-based assessment (2); provide clear guidance & support with learning plans & feedback (5); use regular quizzes (5, 11); integrate learning portfolios (7).	1,2,5,7,11
Student Factors and Motivation	Design flipped classroom activities to boost motivation (1); provide personalized learning experiences (6); address individual needs (6); emphasize career benefits of English proficiency (3,11); foster positive beliefs (11).	1,3,5,6,11
Learning Outcomes	Design for autonomous & cooperative learning (5); target specific language skills (5); use project-based flipped classroom (9); focus on specific skills (e.g.: grammar) (10).	5,9,10

Assessment & Evaluation in TVET English

Learning portfolios greatly prompt metacognition (Liu, 2017), and the execution of process-based assessments significantly benefits (Sun & Lin, 2022). Quizzes are one of the instrumental ways to ensure student

accountability and multiple assessment metrics such as practice quizzes, exams, and time management (He, 2020) are found to be beneficial (Liu, 2017).

To evaluate students' performance more accurately, it is necessary to combine learning portfolios into class activities, use clear instructions for study calendars, check pupils' progress by providing regular quizzes, and apply multiple assessment approaches such as display, practical, and classroom effort.

Student Factors & Motivation in TVET English

Combating weaker areas has been shown to improve self-efficacy (Han & Hamzah, 2024), while the development of positive attitudes leads to a great improvement in learning outcomes (Chuang et al., 2016). The information collected from the survey conducted for the teachers shows that the model of the flipped classroom tends to motivate the students to learn (He, 2020; Wang, 2024). To prevent the loss of motivation and if you want your students to make strong efforts, you should emphasize the importance of positive beliefs (Chuang, 2016), make the learning processes personal (Han & Hamzah, 2024), be aware of student needs (Han & Hamzah, 2024), and design the interactive flipped classroom activities (He, 2020; Wang, 2024). Also, mention the career advantages of being proficient in English to inspire students.

Learning Outcomes in TVET English

Hao et al. (2024) reported critical thinking and creativity could be significantly improved by project-based flipped classrooms. This flipped model is also proven to be influential in improving academic level regarding English language skills, including grammatical comprehension (Bulut & Kocoglu, 2020). Students benefit in their self-directed learning and collaborative learning (He, 2020). Regarding student interest and motivation, it is proven to be effective as well (He, 2020).

The authors' consensus supports the concept of including the use of modern technology in English learning as a supplement to traditional pedagogy and to boost the overall educational experience in TVET settings.

DISCUSSION

This review identified several best practices for implementing flipped classrooms in TVET English learning. Six dimensions are referred to. The following is the discussion on the role of pre-class preparation, interactive and collaborative learning, and students' self-efficacy.

Pre-Class Preparation: Foundation of Flipped Classrooms

The pre-class stage is the crucial phase of flipped classrooms. As the bottom stage of Bloom's Taxonomy, memorization and comprehension lays the foundation for other higher cognitive levels. The knowledge application and internalization can not happen without a thorough comprehension. In the traditional English classroom, lectures and rigid drills take up a large proportion of class time. When they are moved before the class, it requires ownership of learners to take the initiative to accomplish pre-class work, during which self-directed learning could be improved.

During the self-directed learning process, the differences among student groups inevitably lead to varying areas of focus. Unlike students in higher education, TVET students tend to show a stronger preference for hands-on concerns. Compared to general courses such as English, a more divergent theme design and task-oriented professional content may align better with the training models that these students encounter in their daily lives. Furthermore, the emphasis that TVET students place on independent practice during hands-on activities in other disciplines may enhance their sense of efficacy in self-directed learning, thereby boosting their confidence in this process. However, the generally weak English proficiency and persistent feelings of anxiety among vocational education students could significantly diminish the effectiveness of this self-learning approach. Therefore, it is essential to implement various preparatory measures to motivate, encourage, and guide students in completing their pre-class self-study.

First, a structured design is required for engaged learning in this autonomous phase (Bergmann, 2012). This

challenges teachers to consider appropriate design and levels of content. Most importantly, add elements as task-oriented. Moreover, it would be superficial if the content is too easy. Conversely, complexity in the content may increase student cognitive load while difficulty would cause anxiety and nervousness (Karaaslan & Çelebi, 2017). Therefore, it is important for teachers to carefully consider the content and tailor it to the different learning needs.

Second, available resource is a must, including online scaffolding provided to assist students in knowledge comprehension, short, concise, and interesting videos submitted to engage them in their independent learning, and platforms convenient to handle for online teacher-student interaction.

Third, an effective shift in the teacher's role is a fundamental condition for facilitating all of the above. Traditionally, teachers are responsible for imparting knowledge and resolving doubts, but in innovative learning models such as the flipped classroom, multiple additional responsibilities are required. For example, teachers must adjust teaching objectives, integrate content, design effective tasks, create engaging and concise videos, track platform data, and supervise and monitor student progress. In terms of emotional interaction, they also need to encourage students, understand their feelings during online self-study, and engage in online communication with them. Because of this, the workload, as noted in some research, is often highlighted as a concern. Nonetheless, teachers can still optimize their responsibilities and alleviate their burden through various strategies while promoting students' self-learning outcomes from both a cognitive design of the teaching content and an emotional intervention perspective.

Interactive and Collaborative Learning: Key Component of Flipped Classrooms

Moving into classroom activities, the core of flipped learning emphasizes collaborative learning and peer support. Research suggests that effective cooperative learning should contain several key elements, including positive interdependence, individual and group accountability, good interpersonal communication skills, and face-to-face facilitated interactions with group processing (Laal & Laal, 2011). These elements contribute to a favorable learning environment.

However, there may be differences in the quality of interactions among groups of students, which are closely related to student personalities, cultural backgrounds, and prior relationships (Almajed, 2016).

While peer learning can create a positive learning experience for students and facilitate the internalization of knowledge and transfer of skills, the key to success lies in the teacher's ability to effectively guide the collaboration and ensure that each student's voice is heard (Hattie, 2009). In this learning environment, students need to not only share tasks but also learn to communicate effectively and solve problems that may arise. This highlights the importance of incorporating diverse language teaching methodologies, such as the Communicative Language Approach, which has been a prevalent strategy. As noted by Alamri (2018) and Ahmed (2024), the choice of teaching approach should align with specific learning objectives, of which the flipped classroom is just one among many.

To align with this, some research has enriched the concept of the flipped classroom by adding other elements of teaching strategies, such as project-based learning (Singh et al., 2017). According to Hao et al. (2024), the flipped classroom may be a complementary approach to project-based learning, addressing the weaknesses of being "time-consuming" and "lacking knowledge coverage." For TVET students, having clear project activity objectives and providing task content related to the workplace or profession will enhance their sense of real-world experience. This further illustrates the flexibility and inclusiveness of the flipped classroom model, which, through reasonable design and optimization, can benefit students by helping them gain more skills beyond professional knowledge, including teamwork, communication, information technology, as well as critical thinking, and problem-solving abilities.

Students' Self-efficacy: Cornerstones of Flipped Classrooms

Students' self-efficacy plays an important role in the successful implementation of the flipped classroom. At the same time, an effective flipped classroom can also promote students' self-efficacy. As noted before, many TVET students commonly face psychological barriers and intimidation when learning English. In addition, Wan (2021)

also noted that East Asian students are often accustomed to passive learning and lack active participation in the classroom.

According to Bandura (1997), sources of self-efficacy include mastery experience, vicarious experience, social persuasion, and physiological and emotional states. In a flipped classroom, the use of effective collaborative learning strategies can significantly enhance students' positive experiences, thereby increasing their self-efficacy. For example, through group discussions and project tasks, students can gradually accumulate successful experiences in practice, and such successful experiences can enhance their confidence in their own abilities. At the same time, when students see the progress of their peers in the learning process, this alternative experience will also motivate them to participate in learning more actively.

The positive learning experience helps students in recognizing their self-identity, which is especially worthwhile noting while 21st-century students commonly present characteristics such as being open-minded but also sensitive (Sharri et al., 2021)

Today's students live in a fast-changing information society, and when faced with pressure and challenges, a strong sense of self-efficacy can not only support their academic progress but also help them deal effectively with setbacks in a complex and changing environment. In vocational education, it is particularly important to develop students' sense of self-identity and stress resilience, because these abilities can directly affect their future performance and adaptability in the workplace.

CONCLUSION

This study explored the best practices of flipped classrooms in TVET English learning by conducting a systematic literature review of 11 articles from the SCOPUS database. Six dimensions were highlighted, including pre-class preparation, in-class activities, use of technology, assessment and feedback, students' factors and motivation, as well as learning outcomes.

The findings highlight the crucial role of structured pre-class preparation in facilitating effective knowledge transfer and ensuring student readiness for classroom activities. Engaging and interactive classroom activities are essential for internalizing knowledge, developing skills, and employing collaborative learning and real-world task applications. The strategic integration of technology is underscored to create diverse learning environments, enhance student engagement, and provide accessible educational resources. Furthermore, comprehensive assessment and feedback mechanisms, encompassing both traditional and innovative approaches, are vital for monitoring student progress and fostering self-reflection. Finally, student motivation emerges as a key factor that can be enhanced through personalized learning experiences, cultural relevance, and strategies aimed at boosting self-efficacy while addressing individual weaknesses. In conclusion, the findings suggest that flipped classrooms should be designed to be flexible, student-centered, and responsive to the varied needs and motivations of vocational English language learners.

LIMITATION

This review is primarily based on articles retrieved from SCOPUS. This limits the comprehensiveness of the review. Future research should expand the search to include other databases to provide a broader view, and incorporate empirical studies with diverse TVET contexts to validate the effectiveness of the identified best practices.

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