

Applying Flipped Classroom Assisted Learning to English+Normal University Students under TBL Mode: Insights from Bruner's Discovery Learning Theory

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Abstract: In the era of the scientific information network, English teaching in higher education faces numerous challenges under traditional teaching methods. Drawing from Bruner's "Discovery Learning" theory, this paper examines the feasibility of implementing flipped classroom learning for English majors in teacher training colleges within the TBL model. It delves into the current challenges and solutions posed by integrating the TBL model with flipped classroom teaching. To harmoniously meld teaching philosophies, encompassing "teaching and learning" and "tailored instruction," and to amplify teaching efficacy and students' academic achievements, this article aspires to provide innovative avenues and extensive practical orientations for the reform of English education in higher institutions.

1. Introduction

1.1. Concept and Philosophy of the Flipped Classroom Teaching Model

Robert Talbert injected flexibility and innovative thinking into modern education with his flipped classroom teaching model, transitioning from the traditional "teach-first-learn-later" approach to a "learn-first-teach-later" paradigm. This strategy re-calibrates the learning process, swapping classroom content with homework. Students undertake autonomous pre-class learning, engaging in classroom practices, problem-solving, collaborative learning, in-depth discussions, and evaluations. The flipped classroom is a pivotal avenue for deepening English teaching reforms and establishing a high-quality English education system. The successful implementation of this model involves five steps: setting learning objectives, selecting and preparing instructional resources, designing classroom activities, providing feedback and assessments, and reflecting and refining. As a burgeoning trend in both domestic and international educational realms, the integration of the flipped classroom's advantages with English teaching has become a focal point for English educators. The flipped classroom bolsters a robust student-teacher rapport, enhances students' independent learning capabilities, nurtures innovation and practical skills, fosters a positive learning atmosphere, realizes personalized learning goals, and aids students in attaining a deeper

understanding of the subject matter - benefits that traditional models cannot rival.^[1]

1.2. Theoretical Foundation for Flipped Classroom Application

Bruner's cognitive-discovery learning theory champions learners actively uncovering the structure, conclusions, and patterns of knowledge - a process of acquiring unfamiliar knowledge through personal contemplation and exploration. This approach accentuates students' proactive participation, encouraging a scientific approach to understanding uncharted territories. Bruner underscores that knowledge acquisition, transformation, and evaluation occur simultaneously in the learning process, emphasizing the impetus of intrinsic motivation. Amid the current educational reform backdrop, it's essential to incorporate a rational perspective of "discovery learning," emphasizing both "discovery teaching" and "discovery learning." Such an approach aims to enhance educators' teaching proficiency and research acumen, invigorate students' learning zeal, embolden individuality, and foster breakthroughs in thought, ultimately sculpting an effective teaching paradigm.^[1]

The application process of the flipped classroom vividly showcases students' pro-activeness, epitomizing the seamless integration of teaching and learning. Adopting a "self-directed learning + inquiry + reflective improvement" model, it aligns closely with the "discovery learning" theory. Bruner's discovery learning theory emphasizes fostering a positive learning mentality in students, effectively tapping into their potential, empowering them to actively seek information and solutions. Furthermore, the flipped classroom guides the transition from external rewards to intrinsic motivations. Driven by self-rewards, students derive satisfaction from active problem-solving participation, mastering exploration techniques and strategies.

1.3. Analysis of the Blended Innovative Teaching Model Integrating TBL and Flipped Classroom

TBL + Flipped Classroom TBL (Team-Based-Learning) is a learning paradigm centered around teamwork, developed by American educator Michaelsen LK in 2002, based on the PBL (Problem-Based-Learning) method. This teaching model accentuates nurturing students' creativity and practical skills, epitomizing a novel pedagogical method and model. Its strengths lie in effectively integrating online and offline learning, enhancing role-modeling, fostering learning activity design, achieving immersive learning, promoting interactive reflection, and extending the learning experience.^[3] This model is structured into four phases: forming learning groups (considering intra-group heterogeneity and inter-group homogeneity), teachers pinpointing learning focal points, students engaging in pre-class reading and preparations, knowledge assessments (including individual and group tests), teachers evaluating students' readiness and offering timely feedback, culminating in knowledge application (encompassing intra-group and inter-group discussions). To realize flipped teaching and position students as the primary agents, it's imperative to ensure their effective extracurricular learning and in-class guidance. However, the flipped classroom currently grapples with challenges in guaranteeing students' initiative and enthusiasm. The amalgamation of the TBL method with the flipped classroom spawns an innovative teaching model, offering quantifiable and visualizable learning outcomes, and stimulating student motivation. Segregating learning into pre-class, in-class, and post-class phases, it supervises autonomous learning, monitors learning efficacy, and addresses queries. This not only accomplishes educational objectives but also enables tailored teaching. As a modern educational model, TBL combined with the flipped classroom introduces fresh perspectives and directions for educational reforms. By examining the technical requirements of MOOC, micro-courses, and flipped classrooms, there's potential to fortify online course platform constructions, continually refine blended learning classroom quality

monitoring and feedback mechanisms, and progressively shift from a teacher-centric to learner-centric paradigm.^[4]

2. Problems Faced in English Pedagogy in Domestic Universities

2.1. Uniformity of English Teaching Methods

In many tertiary institutions, traditional classroom teaching remains the predominant instructional method. Much of the class time is consumed by the instructor's lecture, with students in a passive "receptive learning" mode, unable to assert themselves as central participants. Edgar Dale introduced the Learning Pyramid in 1946, visually representing the relationship between various learning types and retention rates.^[5] Passive learning methods—listening, reading, audio-visual, and demonstration—have average retention rates of 5%, 10%, 20%, and 30%, respectively. In contrast, active learning methods—discussion, practice, and teaching others—show retention rates of 50%, 75%, and 90%. Thus, a singular passive teaching style struggles to produce high-quality graduates. Classes are sparsely interactive; students predominantly listen and focus on theoretical knowledge, leading to weak practical skills. This singular mode often fails to engage students or foster their initiative and enthusiasm.

2.2. Difficulty in Offering Targeted Guidance

Furthermore, higher education English instruction frequently lacks customization. Given the wide disparity in students' English proficiency, a one-size-fits-all approach may hinder some from truly understanding and mastering the language. Yet, many educators continue traditional teaching methods, resulting in subpar classroom outcomes.^[6] Most universities still rely on "homework correction" to provide student feedback, and time constraints prevent teachers from offering tailored guidance during classes.

3. The Imperative of Implementing TBL and Flipped Classrooms for English Pedagogy Students

3.1. Necessity Arising from Specialized Characteristics

The English Pedagogy field is multifaceted. The innovative advantages of the flipped classroom benefit the cultivation of linguistic educators. English, a language discipline, requires extensive practice to enhance listening, speaking, reading, writing, and comprehension skills, while emphasizing grammar, phonetics, and vocabulary.^[7] As future educators, English pedagogy students need exposure to diverse teaching methods. The incorporation of TBL and flipped classrooms serves as an innovative pathway, offering platforms for integrating multimedia teaching techniques.

3.2. Needs of the Virtual Attention Phase

According to Ye Lan's "self-renewal" oriented teacher development theory, university English pedagogy students are currently in what's termed the "virtual attention phase." This phase is seen as a critical juncture in a future teacher's career. This accurately portrays the developmental stage of pedagogy students, positioned at the inception of teacher education. Especially in the 14th Five Year Plan and the 2035 long-term goal, it is proposed to build a high-quality and professional teaching team.^[8] Therefore, exploring the nurturing program for these students during this phase is

significant. Implementing TBL and flipped classroom learning fosters the mastery of multimedia teaching, presentation, and other professional skills, meeting the unique requirements for a blended teaching-learning experience. The adoption of the flipped classroom in university English instruction reflects both the evolution of contemporary pedagogical reforms and technological advancements, further championing a student-centric educational ethos.^[9]

3.3. Enhancing Students' Initiative and Encouraging Peer and Teacher Interactions

Within the flipped classroom paradigm, the teacher's role evolves from the traditional "duck-filling" mechanical teaching leader to the collaborator and facilitator in the student's knowledge internalization process. In line with Bruner's cognitive structure-discovery learning theory, the most salient feature of the TBL-Flipped classroom model is its enhancement of student interactions and teacher-student engagements, clarifying classroom objectives. The implementation of flipped classrooms is set to revolutionize the traditional teaching model, which is centered around the teacher. This application fully embodies the bilateral teaching principle and highlights the student's role as the primary learner. Therefore, in the flipped classroom teaching model, students' enthusiasm is stimulated, allowing them to have more opportunities for critical thinking and interactive classroom time.

4. Feasible Methods

Integrating the TBL model with the flipped classroom approach, this pedagogical strategy redefines the process of knowledge acquisition. Instead of the traditional "in-class teacher-led instruction followed by post-class student practice," this method emphasizes "pre-class self-study and in-depth classroom discussion," transitioning from "knowledge delivery" to "knowledge internalization," a truly innovative feature of the flipped classroom.^[9] This diversified teaching approach has revitalized higher education English instruction. Integrating advanced multimedia internet technology with this model in traditional teaching systems to assist English education university students is a pivotal issue worthy of collective exploration across institutions.

Under the Pre-While-Post (P-W-P) framework, suggestions for implementing the TBL and flipped classroom model for English education university students are as follows.

4.1. Pre-class Learning (Self-Learning Stage)

4.1.1. Implementation Basis

First, the practical execution of the flipped classroom based on the TBL model relies on personalized learning environments powered by modern IT cloud platforms. Educators, as the designers of this process, should master multimedia teaching tools, proficiently utilize contemporary online equipment, and possess the "soft skills" needed for micro-course research and development. Institutions should provide training for educators, support in researching and developing new course materials, keep library databases up-to-date, facilitate communication and collaboration between in-house educators and those from other universities, and assist educators in managing educational tasks and curriculum.

4.1.2. Establishing Learning Targets

Leveraging the Yerkes-Dodson Law regarding motivation and learning efficiency, educators should avoid excessively difficult or simple tasks when assigning learning activities. Instead, they should select tasks appropriate for students at various learning stages to enhance motivation and

realize the goals of pre-class learning in the flipped classroom. Clearly defined learning objectives are crucial for formative assessment. Educators must articulate the outcomes they anticipate students will achieve, which might encompass specific knowledge, skills, or proficiency, as well as a deep understanding and practical application of topics or courses. Constructing these objectives aids educators in choosing suitable content and resources for the flipped classroom and ensures students understand the tasks they must engage in. As such, educators need to provide comprehensive learning guides in advance to clarify specific tasks and key challenges.

4.1.3. Selecting and Preparing Teaching Resources

With the emergence and widespread adoption of platforms like Super Star Cloud, MOOC, and others, a robust software foundation for online teaching has been established. Authorities actively endorse and promote blended learning, combining online and traditional methods, providing policy support for flipped classroom endeavors.^[11] In the flipped classroom model, students acquire new knowledge through online videos or other resources. Therefore, teachers need to select and prepare suitable teaching materials for students to learn independently, such as instructional videos, online textbooks, classroom notes, or other learning materials. In this model, the transfer of knowledge is primarily accomplished by the course lecturer's self-recorded instructional videos or high-quality open education resources available on the internet. Institutions like MIT initiated the Open-Course-Ware movement, followed by Harvard, Yale, Khan Academy, and others, reflecting a global trend.^[12] Educators must ensure these resources are accurate, comprehensible, aligned with learning objectives, and consider students' access and utilization methods. These resources can be integrated into online platforms or shared directly with students. Moreover, before releasing learning materials, educators should thoroughly evaluate their content, source, quality, and alignment.

4.1.4. Students Independently Watch Instructional Videos (Input Phase)

Flipped classrooms based on the TBL model require students to view instructional videos online and make notes aligned with their learning styles, such as mind maps. Digital cloud classroom notebooks are provided, allowing students to jot down and ponder their cognitive challenges and questions. Complementary learning materials can include cloud resources, micro-videos, MOOC, audio files, and reading materials. Traditional teaching often spends significant classroom time on reading materials, but the problem addressed by the TBL-based flipped classroom.

4.1.5. Targeted Pre-class Exercises

Building upon pre-class content, students should engage in relevant exercises to memorize and master the introduced concepts. Assessments in the flipped classroom prioritize student autonomy. For instance, educators can employ cloud management platforms to create "pop-up question" segments within videos, requiring student answers before proceeding. Such methods enable educators to monitor student comprehension and track their progress effectively.^[13] Implementing targeted exercises during the self-Learning in pre-class phase not only supervises and encourages task completion but also enables students to recognize their challenges. This proactive approach primes them for purposeful and targeted in-class learning.

4.2. While-Learning in Classroom (Collaboration & Inquiry)

4.2.1. Formative Assessment for Learning Progress

Based on the pre-class content and teaching emphasis, educators design brief assessments for

students. The objective of these evaluations isn't to rank by scores but rather serves as a formative assessment, aiding educators in understanding current student comprehension and concerns.

4.2.2. Clarifications & Understanding (Knowledge Internalization Phase)

Under this mode, educators have two methods for guiding students: group guidance or individualized instruction. Group guidance involves addressing commonly mistaken topics based on students' pre-class autonomous video responses. Individualized guidance entails personalized problem-solving based on prior assessments, helping students choose a tailored learning plan. Enhanced classroom interaction affords educators more one-on-one guidance, addressing student misconceptions and alleviating stress.

4.2.3. Brainstorming - Group Discussions

In a flipped classroom context, classroom time is primarily allocated for hands-on practice, problem-solving, and in-depth discussions. Therefore, educators need to devise a range of classroom activities, encouraging active student participation and collaboration. Activities can include group discussions, case studies, experiments, role-playing, or any task aligning with learning objectives. Educators must ensure these stimulate student thought and interaction while offering apt guidance and support. The main procedure for these discussions revolves around focus topics, group formation, thematic discussions, fluid movement, consistent engagement, interconnected viewpoints, and results sharing. Under the TBL model for flipped classrooms, students are provided a "collaborative learning" platform. Through intra-group and inter-group dialogues and brainstorming, students foster innovative thinking and abilities.

4.2.4. Presentation & Feedback

Students predominantly use methods like PPT presentations and role-playing for classroom presentations. They integrate audio-visuals and texts in PPT, utilizing multimedia skills and interdisciplinary knowledge, and present orally. Educators provide immediate feedback, evaluations, and on-spot queries. These assessment mechanisms serve as powerful tools for understanding student progress and depth of understanding, guiding subsequent teaching adjustments. Moreover, educators can refine teaching content and techniques based on student feedback, optimizing learning outcomes.

4.2.5. Multifaceted Evaluation Approach

Within the TBL flipped classroom pedagogy, a comprehensive evaluation dossier is crucial. This approach emphasizes a diversified evaluation comprising self-reflection, peer review, and educator evaluations. Not only is the richness and accuracy of the content considered, but also the logical flow of PPT, verbal articulation, and innovation. Evaluation also encompasses task-setting and completion phases, offering a comprehensive and diverse evaluation mechanism for student development and pedagogical approaches.

4.3. Post-class Learning (Reflection & Improvement)

4.3.1. Educator's Perspective

The flipped classroom is an evolving pedagogical model. Educators must continually reflect on their practices, analyze student outcomes and feedback, and evaluate instructional effectiveness. Based on this introspection and evaluation, educators can refine their instructional designs and

methodologies. They can incorporate student feedback and insights from fellow educators to enhance the efficacy and quality of the flipped classroom.

4.3.2. Student's Perspective

Students, immersed in the TBL+ flipped classroom paradigm, can identify areas of improvement and garner constructive feedback from peers and educators. Post-class, they should intensify their reflections, addressing shortcomings, continually updating their cognition and knowledge, and making advancements in the flipped classroom environment.

5. Challenges & Solutions for Implementing TBL Model + Flipped Classroom in Higher Education for English Teaching

Flipped classrooms are not only a medium for the integration and innovation of scientific networks and curriculum teaching models, but also a transformation and innovation of teaching concepts and personalized talent incubation processes. Its broad implementation opens innovative avenues for curriculum reforms in an information-driven, globalized context.^[14] Applying the flipped classroom pedagogy to tertiary-level English teacher education poses both opportunities and challenges. These challenges include scientifically developing micro-course cloud platforms, selecting appropriate high-quality pre-class materials, strengthening educators' guidance during student activities, adeptly designing learning tasks, leveraging information technology, and assessing flipped classroom outcomes. On the one hand, flipped classrooms originated from abroad and need to be optimized to better serve China's education industry. The optimization plan for flipped classrooms needs to be discussed, as different universities have different faculty and student sources; On the other hand, successful deployment of flipped classrooms relies on mature modern multimedia facilities, smart classrooms, and interactive learning spaces. Furthermore, university teachers need to improve their ability to use and process Internet information, and master diversified modern multimedia teaching methods and techniques.

6. Conclusions

In summary, leveraging Bruner's "Discovery Learning" theory, the amalgamation of TBL with the flipped classroom rejuvenates traditional pedagogy, introducing innovative concepts and thought processes for English Normal University Students. Under the new era of network background, this model explores a new path for the reform of English pedagogy in universities.

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