

An Educational Technology- Integrated instructional System for English Language Teaching and Learning in MCU

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Abstract

The research aimed to study the effectiveness of educational technology-instigated instructional systems in English classes of second-year students at Mahachulalongkornrajavidyalaya University. The study used a research and development (R&D) approach, including a group pre-test and post-test design. The overall average was 4.22, indicating satisfactory participation. The study found that students felt sleepy in the classroom and were reluctant to ask questions. The efficiency of the instructional system manual was 82.25/88.00, higher than the standard level. The students expressed high satisfaction with the development of a learning model, with an overall average of 4.28. The study also found that the activity materials were engaging and fun, with an appropriate difficulty level for students.

Keywords: Educational Technology; Instigated Instructional System

Introduction

The widespread use of English as a lingua franca in countries where it is not an official language has significantly impacted various aspects of society. English has emerged as a vital medium of communication, facilitating interactions among individuals from diverse linguistic and cultural backgrounds (Marlina & Xu, 2018: 94-109). Recognizing its importance, many countries have incorporated English language education into their early schooling systems, aiming to equip students with the necessary skills to navigate the globalized world. Among the countries that have witnessed a substantial influence of English teaching within their educational systems, Thailand stands out as a prime example. English has become an integral part of second language learning in Thailand, reflecting the country's aspiration to enhance its citizens' proficiency in the language. Despite the widespread adoption of English in Thailand's education system, Thai students often struggle to develop a strong command of the language. Unfortunately, Thailand's English

proficiency ranking among non-native English-speaking countries paints a rather discouraging picture. According to the EF English Proficiency Index (EF Education First, 2022: online), Thailand currently ranks 100th out of 112 countries, highlighting the urgent need to address the existing challenges in English language learning among Thai students. This low proficiency level raises concerns about the effectiveness of the English education system and calls for a deeper understanding of the underlying factors contributing to this situation.

Thailand's English proficiency results highlighted significant issues in Thai students' language learning and revealed a negative attitude towards English among some students. They perceive English as unnecessary since it is not the official language in Thailand. Therefore, it is crucial to shift their mindset and emphasize the importance of English as a second language. Additionally, although many Thai students make an effort to study English, they face challenges in understanding the language due to ineffective teaching methods employed in schools (Smith, 2019: 45-62). The effectiveness of English education largely depends on the teaching techniques implemented in educational institutions (Jones, 2020: 78-95). There are numerous approaches to teaching and learning that can be categorized into traditional and modern approaches. In Thailand, the education system primarily relies on the traditional style, where teachers provide instruction through note-taking for primary students. However, the effectiveness of language acquisition is influenced by various factors, and learners' strategies play a crucial role in their success. Language learning strategies are not isolated but interconnected with other factors associated with language learners. Students make efforts to employ diverse learning strategies (Shen, 1989; Lewis & McCook, 2002, as cited in Wariyaporn et al., 2019: 1163-1175). Consequently, it is essential to introduce innovative techniques, such as student-centered approaches, in the classroom. Various innovative approaches to English learning have emerged, including game-based learning, technology-based learning, and activity-based learning. These new methods have shown promising results in enhancing students' comprehension compared to traditional approaches. In particular, educational technology-instigated instructional system not only makes studying enjoyable for students but also facilitates knowledge acquisition through engaging activities. This approach aligns well with the needs of students studying English as a second language. According to Rathee et al. (2016: 143-148), educational technology-instigated instructional system promotes self-directed learning and enables students to study according to their aptitudes and skills.

However, the majority of institutions still employ a passive lecture format, requiring students to passively listen to the information presented (Johnson, 2012: 54). Consequently, teachers must recognize the significance of incorporating active learning techniques, as research has demonstrated their positive impact on the learning process

(Prince, 2004: 223-231). Teachers need to explore and adopt new learning activities that promote student engagement and participation. In the current educational landscape, various teaching methodologies are being discovered and developed. Therefore, it is essential for teachers to carefully select and implement the most effective methodology based on their students' learning levels and interests. Thus, this study aims to shed light on the implementation of educational technology-instigated instructional system towards the participation of students in English classes.

Research Questions

1. How is educational technology-instigated instructional system in English classes for second-year students of the Bachelor of Education (Teaching English) (International Program), Faculty of Education, Mahachulalongkornrajavidyalaya University?
2. The second-year students of the Bachelor of Education (Teaching English) (International Program), Faculty of Education, Mahachulalongkornrajavidyalaya University is developing educational technology-instigated instructional system in English classes for Grade 5 students. Is it effective according to the 75/75 criteria?
3. How pleased are second-year students of the Bachelor of Education (Teaching English) (International Program), Faculty of Education, Mahachulalongkornrajavidyalaya University with educational technology-instigated instructional system in English classes?

Research Objectives

1. To study educational technology-instigated instructional system in the English class of second-year students of the Bachelor of Education (Teaching English) (International Program), Faculty of Education, Mahachulalongkornrajavidyalaya University.
2. To develop educational technology-instigated instructional system in the English class of second-year students of the Bachelor of Education (Teaching English) (International Program), Faculty of Education, Mahachulalongkornrajavidyalaya University to be effective according to the criteria 75/75.
3. To study satisfaction using educational technology-instigated instructional system in the English class of second-year students of the Bachelor of Education (Teaching English) (International Program), Faculty of Education, Mahachulalongkornrajavidyalaya University.

Research Methodology

This research study aims to examine the impact of educational technology on the instructional systems used by second-year students in the English class of the Bachelor of Education (Teaching English) International Program at the Faculty of Education,

Mahachulalongkornrajavidyalaya University. The study involves three steps: 1) Studying documents, journals, books, and research related to instructional systems influenced by educational technology.

The research instruments include an analytical framework for conceptual documents, theories, research on teaching and learning styles, methods, and the learning management process. Five experts will analyze these documents to calculate the Index of Item Objective Congruence (IOC) and assess content validity. The researcher uses data and expert suggestions to calculate the IOC and considers their suggestions for improving the instruments before analyzing the general information.

Data collection involves examining the Basic Education Core Curriculum of 2008 and analyzing the data using content analysis from five data analysis processes. The target group consists of 85 second-year students from the Bachelor of Education (Teaching English) International Program at Mahachulalongkornrajavidyalaya University. The sample includes forty second-year students selected through purposive sampling.

The research aims to examine educational technology-driven instructional systems for second-year students in the English class at Mahachulalongkornrajavidyalaya University. A questionnaire was created to gather general information about these systems and their impact on student participation in English classes. The questionnaire was divided into two parts: general information and the status of educational technology-instigated instructional systems. The questionnaire was reviewed by an advisor and experts to ensure accuracy and content validity. The Index of Item Objective Congruence (IOC) was used to judge the quality of research tools. The study collected data from a basic class from May to October 2023, collaborating with the school director and teachers to enhance student participation and confidence. The data was analyzed using two questionnaires: a teacher's questionnaire about lesson plans, physiology, and problem-solving, and a student's questionnaire about behavior habits, emotions, and reasons. The research aims to develop a model for educational technology-instigated instructional systems for second-year students in the English class.

The research aims to develop a model of educational technology-instigated instructional systems for English participation in the English class of second-year students at the Faculty of Education, Mahachulalongkornrajavidyalaya University. The model draft is developed, and an instrument for data collection is developed. The model is then tested by five experts. The Index of Item Objective Congruence (IOC) is calculated to examine content validity. The model is used for competency evaluation of activity-based learning and effectiveness experiment of activity-based learning.

The researcher uses a learning process model to integrate teaching and learning using an educational technology-instigated instructional system model. This process

includes seven stages: principles, objectives, expected study, content, social system, supporting, and evaluation. The instructional stage involves two steps: the instructional preparation stage, which prepares learners for learning content, and the instructional stage, which integrates teaching and learning using an educational technology-instigated instructional system model.

The process of knowledge identification involves students assessing their knowledge of each unit, while knowledge capture involves seeking, managing, and implementing knowledge. Knowledge creation involves analyzing and synthesizing knowledge through collaborative learning and self-directed learning. Knowledge storage involves summarizing learning processes and storing knowledge gained from studying and exchanging it with others. Knowledge sharing involves students sharing, disseminating, and learning together. Knowledge evaluation assesses the effectiveness and efficiency of knowledge management and provides feedback.

The social system involves students analyzing thinking by themselves and others, finding various sources to study. Supporting methods include the internet, library, and sound lab room. The model must be evaluated before and after teaching and learning.

A questionnaire was created using the model of Thisana Khammanee, 2007, Keeves, 1997, consisting of 18 items divided into two sections. The model's validity was evaluated using the Index of Item Objective Congruence (IOC), which is between 0.80 and 1.00. The research aims to experiment with the model of educational technology-instigated instructional systems in English classes of second-year students at Mahachulalongkornrajavidyalaya University.

This research study focuses on the use of educational technology-instigated instructional systems in English classes for second-year students at the Faculty of Education, Mahachulalongkornrajavidyalaya University. The experiment involves preparing teachers and learners to understand the model and its benefits. The teacher is trained to motivate and have confidence in the system, while the learners are given instructions and objectives. The activity is organized for five weeks, with the teacher and teacher cooperating to teach and manage the learning process.

The data collection instrument includes the competency of the educational technology-instigated instructional systems and the test of the effectiveness of the system. The researcher experimented with forty students from the Bachelor of Education (Teaching English) (International Program) at the Faculty of Education, Mahachulalongkornrajavidyalaya University, using a pretest and posttest. The study used a manual of the model and consulted an advisor and five experts to assess content validity. The study obtained an Index of Item Objective Congruence (IOC) between 0.80 and 1.00, indicating the effectiveness of the system.

The pretest and posttest consisted of 20 items, and the experiment of satisfaction consisted of 10 items. The results showed that the model effectively incorporated technology into the English class, enhancing student engagement and motivation.

The study aims to evaluate the effectiveness of an educational technology-instigated instructional system for English class participation among second-year students at the Faculty of Education, Mahachulalongkornrajavidyalaya University. The model of activity-based learning will be evaluated through pretest and posttests, with the competency and satisfaction of the students being assessed. The data will be analyzed using the Index of Consistency (IOC) evaluation and a questionnaire consisting of 50 items. The questionnaire will be submitted to the supervisor for consistency and development. The difficulty and discrimination ratings will be analyzed using a difficulty rating score between 0.40-0.75 and a discrimination rating score between 0.50-0.80. The reliability will be calculated using the KR-20 test. The objective is to develop the model effectively for English class participation. The experiment process involves analyzing the results from competency evaluation, achievement experiment, and satisfaction evaluation. The results will be used to develop the model and improve its effectiveness. The study aims to develop a more effective educational technology-instigated instructional system for English class participation among second-year students at Mahachulalongkornrajavidyalaya University.

Research Results

The study aimed to assess the effectiveness of educational technology-instigated instructional systems in the English class of second-year students of the Bachelor of Education (Teaching English) (International Program) at the Faculty of Education, Mahachulalongkornrajavidyalaya University. A questionnaire was developed from Phatthalung school and consists of ten items. The questionnaire was checked for accuracy by the advisor and experts, and the quality result was found to be related to 1.00.

The sample consisted of 24 female students and 16 male students. The overall average was 4.22, with the highest average being students feeling sleepy in the classroom, refusing to raise their hands when asked for participation, talking with friends in the classroom, and refusing to ask questions. The study concluded that the educational technology-instigated instructional system was at a satisfied level.

To improve the system, the model draft was developed, which involved taking the data results from step 1 and indicating the expected results. The model was developed to be effective according to the criteria 75/75. The study highlights the need for improved educational technology-instigated instructional systems in English classes for second-year students.

This study aims to develop an educational technology-instigated instructional system model for English class participation in second-year students at the Faculty of Education, Mahachulalongkornrajavidyalaya University. The model will be developed using Keeves' method and Joyce, Weil, and Calhoun's learning management model. The sample group is fifth-grade students in the first semester of the 2022-2023 academic year, who have used the Basic Education Curriculum B.E. 2551 (2008). The goal is to develop a model for teaching English to improve English learning outcomes and promote learning competencies.

The design process involves seven processes: Theories, Objectives, Expected of Study, Content, Social System, Supporting, and Evaluation. The principle is to integrate teaching and learning using an educational technology-instigated instructional system model. The objectives are to integrate and evaluate classroom activities using an educational technology-instigated instructional system model. The content of the lesson is to use the English on Excellent English book.

The instructional process consists of two steps: instructional preparation and instructional stage. In the experimental section, learners conduct learning activities using knowledge management processes within groups. The steps include knowledge identification, knowledge capture, knowledge creation, knowledge storage, and knowledge sharing.

In conclusion, this study aims to develop an effective educational technology-instigated instructional system model for English class participation among second-year students at Mahachulalongkornrajavidyalaya University.

Knowledge evaluation is a crucial activity for students to assess the effectiveness and efficiency of knowledge management, societal acquisition, and feedback. Students learn from various sources and administrators support teaching and learning through various tools such as the internet, library, and sound lab room. The model of teaching and learning using educational technology-instigated instructional systems must be evaluated before and after teaching and learning.

The researcher created a questionnaire using the model of Thisana Khammanee, 2007, Keeves, 1997, consisting of 18 items divided into two sections. The model was evaluated for its validity and appropriateness and consistency. The overall average was 4.24, with the highest average being for lesson content suitable for teaching time, teacher-student feedback, alignment with learning objectives, and classroom learning activities.

The researcher conducted a pre-experimental research using pre and post-tests with forty fifth-grade students in the first semester of the 2023-2024 academic year at the Faculty of Education (Teaching English) (International Program), Faculty of Education, Mahachulalongkornrajavidyalaya University. The process involved obtaining a letter from the Master of Education program to submit to the director of the Bachelor of Education

(Teaching English) (International Program), Faculty of Education, Mahachulalongkornrajavidyalaya University for permission to experiment with the model.

The study aimed to develop an educational technology-instigated instructional system for English class participation in second-year students at Mahachulalongkornrajavidyalaya University. The model involved preparing teachers and learners, organizing the activity for five weeks, and conducting a post-test with questionnaires. The researcher tested the model with forty fifth-grade students before and after testing, evaluating its competency and effectiveness.

The study used a pretest and post-test with 20 items and 10 items for student satisfaction. The efficiency of the model was found to be 75/75, with a score of 82.25% during the semester and 88.00% post-test, indicating a higher level of efficiency than the standard level.

Students' satisfaction levels were high, with the highest satisfaction levels being related to engaging and fun activity materials, teacher selection, student interaction, and appropriate difficulty level of materials

In conclusion, the students' satisfaction levels were very satisfied with the development of a learning model for using educational technology-instigated instructional systems in English classes. The study highlights the importance of incorporating technology in education to enhance student engagement and motivation in English classes.

Discussions

The study explores the use of educational technology in English classes for second-year students at Mahachulalongkornrajavidyalaya University. The research found that the overall satisfaction level was 4.22, with the highest-level being students feeling sleepy in the classroom. The study also found that outdoor English language learning activities were the most popular, followed by listening to English songs, reading aloud, reading signs, announcements, or billboards, and setting the language on the computer in English. The most effective activities for English language development were searching the Internet in English, translating English texts into Thai, speaking English with teachers, participating in English camp, and listening to English songs. The study also found that English communicative skills were high for students at Mahachulalongkorn Rajavidyalaya school, but there were some problems with communication, such as students lacking words and meanings. The researchers suggest that teachers should use remedial teaching techniques, simplify topics, and apply technology to suit individual differences effectively. The study also found that English learning management problems at Kamphaengphet Affiliated School included a lack of fixed curriculum, teachers having many teaching tasks, and teaching materials used were word cards, sentences, games, pictures, and textbooks.

The most common problems were teachers having less time to prepare, frequent Affiliated School activities, and students lacking confidence and language laboratories. In conclusion, the study highlights the importance of incorporating educational technology in English classes to improve student engagement and language skills. The study focuses on the effectiveness of educational technology-instigated instructional systems in English classes for second-year students at Mahachulalongkornrajavidyalaya University. The efficiency of the system was found to be 75/75, with a score of 82.25% during the semester and 88.00% post-tests. The students' learning achievement after the intervention was higher than before, and their satisfaction with the activities was at the highest level.

Knowledge from Research

An Educational Technology-Integrated Instructional System for English Language Teaching and Learning (ELT) is a dynamic approach that integrates technology into language instruction to enhance the teaching and learning experience. This system combines traditional pedagogical strategies with cutting-edge technology tools, resources, and platforms to create an engaging, interactive, and personalized learning environment for both teachers and students. Key components of an ELT include digital learning tools and platforms like Learning Management Systems (LMS), online resources, multimedia and interactive tools, speech recognition software, collaborative and communication tools, adaptive learning technologies, data analytics, gamification and simulation tools, and mobile learning apps. Benefits of an ELT include accessibility and flexibility, enhanced engagement and motivation, personalized learning, real-world language practice, data-driven instruction, and skill development beyond language. Benefits of an ELT include anytime, anywhere learning, support for remote learning, enhanced engagement and motivation, authentic language exposure, global interaction, performance analytics, and progress tracking. Additionally, technology helps students develop essential digital literacy skills and critical thinking. Instructional strategies in Technology-Integrated ELT include flipped classroom, blended learning, project-based learning, and task-based language teaching. Flipped classroom involves introducing new topics, active participation, and combining face-to-face and online learning. Blended learning combines traditional classroom activities with online resources, while project-based learning involves collaborative projects and digital presentations. Task-based language teaching (TBLT) facilitates practical tasks where students complete real-world tasks using English as the medium of communication. However, challenges and considerations arise when implementing an ELT system in the classroom. These include ensuring adequate resources, addressing student needs, and ensuring effective communication and collaboration between teachers and students. The digital divide affects students' access to technology,

affecting their ability to benefit from technology-integrated learning. Teachers must ensure equal participation in technology-enhanced activities. Continuous professional development is crucial for teachers to use technology effectively. Technology should be integrated into pedagogy to support language learning goals. Distractions and overload from non-educational content can negatively impact learning. Curating and guiding students in using effective digital tools is essential.

Conclusion

An Educational Technology-Integrated Instructional System for English Language Teaching and Learning significantly enhances the effectiveness and accessibility of English education. By leveraging digital tools, platforms, and strategies, this approach caters to diverse learners, encourages active participation, and provides rich, authentic language experiences. When properly implemented, it leads to improved language proficiency, greater student engagement, and the development of essential 21st-century skills. However, careful planning, teacher training, and consideration of access and equity are crucial for the successful integration of technology in language instruction.

Suggestions

The research study suggests two suggestions for teaching and learning: 1) taking an exam to assess students' knowledge, 2) studying students' reasons for not participating in English classes, and 3) adding more health-related questions to questionnaires. For further research, the researcher should observe students' interactions and use materials to facilitate group consultation, ensuring the effectiveness of the activities for students to perform independently.

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