Exploration of Signature Pedagogy Using ICT for English Grammar Learning in Elementary School Education

Wai Ying KWOK
Department of Mathematics and Information Technology,
The Hong Kong Institute of Education,
Hong Kong
waiyingk@ied.edu.hk

Abstract: This research aims to explore a signature pedagogy that addresses the trends toward the pedagogical goals and the technological integration for English grammar learning in the twenty-first century. Based on a twofold literature review, a potential signature pedagogy with three variations in the use of two selected types of information and communication technology (ICT) resources has been designed for supporting English as Second Language (ESL) learners at the elementary school level to learn English grammatical knowledge. An empirical study which combines qualitative and quantitative methods is planned to evaluate the effectiveness of the designed signature pedagogy in a real classroom environment. Three classes of Grade 4 ESL learners will be invited to learn the target topic with the selected ICT resources during a one-month trial teaching, under three settings: inclining to form-focused approach; balancing form-focused approach and communicative approach; or inclining to communicative approach. The empirical study will conduct attainment tests, classroom observations, questionnaire surveys and semi-structured interviews to investigate the impact of the designed signature pedagogy on the achievements, processes and perceptions of students in the learning of elementary English grammar. This research will finally advise a signature pedagogy that fully exploits the use of the two selected types of ICT resources for supporting ESL learners to learn elementary English grammar.

Keywords: Elementary school education, English, grammar, ICT, signature pedagogy

1. Research Motivation

In many Asian cities such as Hong Kong where English language is not the native language of the majority of the population, this language is one of the major subjects that receive much attention in elementary school curriculum. There is a decade-long emphasis on the pedagogical integration of ICT into the delivery of elementary English language curriculum [1, 2]. In Hong Kong, in this curriculum, grammatical topics such as tense and agreement are considered to be the very important but most difficult component due to the inherent differences in the language systems between Chinese and English languages.

A signature pedagogy refers to a collection of discipline-specific teaching methods that focus on preparing learners to think like the experts in the target discipline for a skillful demonstration of discipline-specific knowledge for learning and daily pursuits [3]. Through the routinized approach to classroom teaching, a signature pedagogy could promote learners to habitually bridge abstract knowledge and regular practice for the deep learning of core knowledge in the target discipline. The implementation of signature pedagogy is regarded as important in the learning of rule-based topics. It is therefore good to implement

significant pedagogy in the teaching of English grammar, which is a topic comprised of language rules. This research is motivated to address the emergent need in the field of ESL education for more investigations into signature pedagogies which meaningfully use ICT resources for supporting English grammar learning in ESL classrooms.

2. Research Context

This research aims to explore a signature pedagogy that maximizes the potential of ICT resources for supporting ESL learners at the elementary school level to learn English grammar. This research is comprised of two stages for progressively designing, evaluating and then establishing a signature pedagogy that fully exploits the use of ICT resources for learning elementary English grammar.

2.1 The First Stage: Designing a Potential Signature Pedagogy Using ICT for English Grammar Learning

The first stage of this research focuses on a twofold literature review for designing a potential signature pedagogy that coordinates the pedagogical goals and the technological integration for English grammar learning in the twenty-first century. Based on an in-depth review of research literature on the pedagogical approaches for teaching elementary English grammar in the recent decade, ESL teachers over the world are found to mainly adopt two pedagogical approaches in English grammar lessons. The first approach is the form-focused approach, which focuses on inculcating learners with knowledge about variation forms and usage patterns of diverse types of linguistic units to generalize prescriptive grammar rules. The second approach is the communicative approach, which focuses on engaging learners in authentic learning tasks in the collaborative learning setting for applying grammatical knowledge in classroom interactions.

Based on an in-depth review of research literature on the use of ICT for learning and teaching English grammar system in the recent decade, ESL teachers over the world are found to mainly adopt two types of ICT resources in English grammar lessons. The first type is online learning websites specific for grammar learning. This type of ICT resources typically provides a set of static grammar notes, multimedia illustrative animations and dynamic multimedia simulations for rules explanation. The second type is online communication tools general for daily interaction. This type of ICT resources typically offers a range of written or oral communication software for interpersonal interaction in the synchronous or asynchronous mode.

The findings of the twofold literature review, concurred with the advocacy by established academics (such as [4]), suggest that a potential signature pedagogy for English grammar learning should make a strategic combination for leveraging the effect of the form-focused approach and the communicative approach. On the one hand, there should be inquiry learning activities under the form-focused approach, in which learners browse the selected online learning websites with topic-specific notes and worksheets to realize and conceptualize usage conditions of grammatical rules. On the other hand, there should be collaborative learning under the communicative approach, in which learners use the selected online communication tools to share and discuss target knowledge, and then to integrate and apply knowledge about grammatical rules. It should be noted that there is flexibility for varying the proportion of these two types of learning activities during English grammar lessons according to the learning needs of students.

2.2 The Second Stage: Evaluating the Designed Signature Pedagogy for English Grammar Learning

The second stage of this research will be an empirical study which focuses on evaluating the designed signature pedagogy in a real classroom environment. Three research questions are made for the empirical study:
(i) What are the achievements of elementary ESL learners toward English grammar learning under the designed signature pedagogy?
(ii) What are the processes of elementary ESL learners toward English grammar learning under the designed signature pedagogy?
(iii) What are the perceptions of elementary ESL learners toward English grammar learning under the designed signature pedagogy?

An elementary school that has rich experience in ICT in education will be purposefully sampled in Hong Kong as the partner school for the empirical study. A trial teaching in the form of one-month supplementary course, which amounts around 20 one-and-a-half-hour lessons, will be arranged in the partner school. Three classes of Grade 4 students, each consisting of around 30 students with similar learning ability, will be randomly selected and then assigned to one of the following three settings varying in the proportion of learning activities during lessons:
• Setting 1: The proportion of inquiry learning activities under the form-focused approach is higher than that of collaborative learning under the communicative approach.
• Setting 2: The proportion of inquiry learning activities under the form-focused approach is the same as that of collaborative learning under the communicative approach.
• Setting 3: The proportion of collaborative learning under the communicative approach is higher than that of inquiry learning activities under the form-focused approach.

The proportion of inquiry learning activities under the two approaches will be further delimited by taking the empirical findings of research on digital classrooms (such as [1] and [4]) and the current practice in ESL classrooms in Hong Kong into consideration. During the trial teaching period, students in each of the three settings will be grouped into pairs to learn English grammar, with the use of the two selected types of ICT resources and tailor-made learning worksheets. In each lesson, students will first be taught the target knowledge by the teacher and then, they will explore this topic with the assigned learning materials in pairs. The author will take charge of the classroom instruction for the one-month trial teaching.

Four methods will be adopted in the evaluation work to investigate the effect of the designed signature pedagogy. First, students in all the three settings will sit for identical pre-test and post-test [5] before and after the trial teaching, respectively. The test papers will include a series of questions that assesses knowledge of the students about key grammatical knowledge of English language, such as tense and agreement. Second, an interaction analysis [6] will be conducted to investigate the effect of the designed signature pedagogy on the learning process of students in each of the three settings. Two student groups will be randomly selected in each setting. The six selected student groups will be observed and videotaped in all lessons throughout the teaching period for collecting data on the learner-learner and learner-technology-learner interactions in the learning activities. A systematic analysis of the interactions for constructing target knowledge will follow to trace the learning process among students under the designed signature pedagogy.

Third, a questionnaire survey [5] will be conducted at the end of the trial teaching. All students will be asked to complete a self-administered questionnaire to indicate their perceptions of the implementation of the designed signature pedagogy for English grammar lessons. Fourth, one-fifth of the students in each of the three settings will be randomly selected for the semi-structured, individual interviews [5] to further investigate their perceptions of the implementation of the designed signature pedagogy. The selected students will be asked to describe the changes in their process, motivation and achievement in the learning of English grammar through the lessons that implement the designed signature pedagogy.

The empirical study is going to be conducted in a real classroom environment. The evaluation results obtained at this stage will contribute to the establishment of a signature pedagogy that uses ICT resources for maximizing the learning effectiveness among ESL learners in English grammar learning in elementary school education.

3.　Research Contribution

In the Asian cities where English language is not the native language of the majority of the population, local ESL teachers in elementary school education, in general, lack sufficient evidence-based recommendations which support them to plan and implement effective and efficient methods for the pedagogical use of ICT in English grammar lessons. In addition, there is a lack of comprehensive research on technology-mediated signature pedagogy for the field of ESL education [4, 7].

This research contributes to the pedagogical advancement in the use of ICT in ESL education. It will not only help to enhance the learning of grammatical knowledge among ESL learners, but also help to cover the lack of comprehensive research in the field. The outcome of this research will be a potential signature pedagogy to maximize the effectiveness of ICT resources on the learning of elementary English grammar among ESL learners. This can provide ESL teachers with insights into the innovative design of technology-mediated pedagogies for the teaching of the target topic.

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