JOURNAL OF EDUCATION AND INNOVATION

Research Article

A DEVELOPMENT OF AN INSTRUCTIONAL MODEL BASED ON THE INSTRUCTIONAL DESIGN APPROACH AND SOCIAL CONSTRUCTIVISM TO ENHANCE PRE-SERVICE TEACHERS' LESSON PLANNING AND INSTRUCTIONAL MATERIAL DEVELOPMENT ABILITIES

Received: February 19, 2023 **Revised:** April 6, 2023 **Accepted:** April 12, 2023

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Abstract

The research objectives were to: 1) develop and assess the quality of an instructional model, 2) implement and compare pre-service teachers' lesson planning and instructional material development abilities with the committed standard criteria of 80%, and 3) investigate pre-service teachers' satisfaction with the developed instructional model. The research subjects consisted of 65 third-year students from the division of English language, selected using the purposive sampling technique. The research instruments included an instructional model, instructional model manual, instructional model and manual evaluation forms, lesson plan and instructional material development abilities evaluation form, and a satisfaction investigation questionnaire. Data were analyzed using descriptive statistics, percentages, and content analysis.

The results revealed the following: 1) An instructional model was developed with five components: learning principles, learning objectives, learning content, instructional processes, and learning assessment and evaluation. The instructional process consists of steps i.e. learners' and content analysis, collective design, development and evaluation of lesson plans and instructional materials, implementation of lesson plans and instructional materials, collective reflection, evaluation and feedback, lesson plan, and instructional material modification. The instructional model developed had the highest level of appropriateness ($\overline{X}$ = 4.82, SD = 0.08). 2) The students' lesson planning ability and instructional material development skills were 83.03% and 82.09%, respectively, which were higher than the committed criterion of 80%, indicating the effectiveness of the model. 3) Pre-service teachers' satisfaction with the developed model and implementation process was at its highest level ($\overline{X}$ = 4.89, SD = 0.09).

Keywords: Instructional Model, Instructional Design Approach, Social Constructivism, Lesson Planning and Instructional Material Development Abilities

Introduction

As the quality of education determines the state of a nation, teachers are considered vital in societal development because of their role in developing learners. Their teaching competencies and performance can either enhance or mare the nation's growth. Since teachers are considered vital factors in nation building, all teacher development programs and institutions must seek to fully prepare pre-service teachers' professional competencies to prepare them for the field and career challenges. According to Namunga and Otunga (2012), Radford (1998), and Stein et al. (1999), teachers require certain competencies ranging from professional knowledge to pedagogical competencies and confidence for effective career performance, as this leads to high academic achievement in learners. Wei et al, (2009) and Darling-Hammond (2017) proclaimed that teachers play a major role in the process of instruction to improve learners' outcomes and their effects towards learners appear to be progressive. Darling-Hammond (2006) revealed that teachers determine learners' differences, achievements and academic success. All teacher development institutions organize activities to provide pre-service teachers with the required professional knowledge and competencies to keep them useful and successful in the profession. For this reason, teachers' professional development is the pivot of education systems and needs to update their professional competencies and knowledge. The focus of any teacher professional development program is to allow teachers to learn how to learn and transform their learned knowledge into practice for effective learner development (Avalos, 2011).

According to Abernathy et al. (2001), learning to teach from practical lessons is at the core of any teacher development program. Lesson planning is a core task for professional teachers, and all teacher-training programs provide pedagogical, subject-specific, and practical learning opportunities to support pre-service teachers' lesson planning abilities which are desirable competencies for effective teaching (König et al., 2020; Grossman et al., 2009). Effective lesson planning can also contribute to teachers' success and well-being. Teachers teach because they want to support students, and effective lesson planning can contribute to job satisfaction when a lesson is successful or when a student performs well in an assessment. Having a skillfully planned lesson can also make the act of teaching more pleasurable by increasing the teachers' confidence in themselves and letting them focus more on interaction with the students than on what is supposed to happen next. Importantly, well-planned lessons can save time by avoiding last-minute efforts to create materials needed for a day in the classroom as well as providing structure and a sense of purpose for each class period. A lesson plan is a determinant of both effective and ineffective instruction. Lesson planning for classroom teaching is a significant ability that pre-service teachers must gain during their training period. It enables them to reflect on the content to teach, the method of instruction, instructional aids, and evaluation techniques (Yildririm, 2003). According to Tashevska (2008), lesson planning ability is vital to the effective functioning of

pre-service teachers. This is a challenging task for teacher training institutions and programs equipped preservice teachers with these abilities pre-service.

Apart from lesson planning ability, instructional material development skills are another vital aspect of teacher development education, as possessing these abilities directly affects the teaching learning process as well as learners' academic achievement. Acquiring lesson planning and instructional material development abilities is a powerful strategy to bring about effective teaching and learning. The importance of quality and adequate instructional materials in teaching and learning can arise through selection, design, development, and effective implementation during the process of instruction. Instructional materials here include all tools that a teacher can use to make learning more interesting and memorable. Instructional materials or media refer to those things utilized by an instructor or teacher to ease their teaching or bring life to learning. They consist of visual and audio-visual aids and can be either concrete or non-concrete (Yusuf, 2005). Instructional materials change and vary with time, and learners meet instructional objectives and needs. Effective instruction depends on the utilization of effective instructional materials (Ikwuka, 2010). Appropriate instructional materials can help teachers overcome instructional difficulties (Bolick et al., 2003).

Lessons planning and instructional materials development abilities are fundamental and are considered "must have" abilities that all teachers must possess. Lesson planning and instructional abilities enable teachers to plan appropriate lessons and develop materials for effective classroom teaching and performance. It helps teachers and pre-service teachers in planning essential lessons, acts as a guide to teachers, and enables them to reflect on the objectives and design strategies on how the objectives ought to be effectively attained during the process of instruction. Lesson planning and instructional material abilities enable teachers and preservice teachers to plan appropriate lessons and instructional materials, which in turn leads to the achievement of learning objectives. The possession of lesson planning and instructional material development abilities defines one as an effective teacher and helps new or inexperienced teachers in content organization, instructional materials selection, and instructional delivery methods. Good lesson planning and instructional material development certainly contribute significantly to teachers' classroom performance, students' learning, and academic achievement. Teacher development institutions must focus on equipping pre-service teachers with lesson planning skills, instructional design abilities, and instructional material development skills.

It is evident that lesson planning and instructional material development abilities are of great importance to both teachers and students in the instructional process but, an assessment of pre-service teachers' lesson planning and instructional material development ability in the course 383301 (English language teaching methodologies) found that many of them preparing to go out for the professional teaching practice lack lesson planning and instructional material development and implementation abilities. They lack the ability to design or plan appropriate lessons and design appropriate instructional materials with engaging activities for learners. They have problems related to components of lesson plans, stating realistic lesson objectives,

selecting and organizing content appropriately, stating a good learning process and learning activities, selecting appropriate instructional media for a lesson, as well as lack a knowledge of assessment methods and tools.

In addition, assessing pre-service teachers' instructional material development ability for English language instruction in this course (383301: English language teaching methodologies) was very low. They lacked the ability to develop appropriate instructional materials with respect to good physical quality, relationship with the learning and in relation to social aspects or learners' differences, instructional design, competency development, and practicability of the instructional materials. Pre-service teachers have problems developing interesting, content-related instructional materials. These problems stem from the fact that the organization of learning activities is individual and do not give learners the opportunity to interact in analyzing learners, content, and the design of lesson plans and instructional materials. Instructional design in professional teacher development courses, such as instructional design, particularly for English students, focuses on assigning learners to work individually in designing lessons. Working individually leads to a lack of knowledge of the interdependency and interrelatedness of the various components of a lesson plan and instructional materials. Learners are not given the opportunity to work in groups, interact to analyze learners, content, or share ideas in order to generate appropriate lesson plans and instructional materials. This requires us to prepare pre-service teachers to become professional English teachers, especially as they go out for professional teaching practice. According to Harmer (2001), effective teaching requires creating conditions for learners to effectively interact and participate in the learning process, and this is only possible if teachers prepare good lesson plans and instructional materials that will enable them to teach effectively. The instructional design approach and social constructivism can enhance preservice teachers' lesson planning and instructional material development skills.

For this reason, the researchers intend to develop an instructional model based on the instructional design approach and social constructivism to enhance pre-service teachers' lesson planning and instructional material development abilities for effective English language instruction. The development of this instructional model gives pre-service teachers the opportunity to interact systematically in idea sharing where learners work in small groups to analyze learners and content, stating objectives, interacting with peers to develop effective lesson plans and instructional materials, and implementation and collective reflection, evaluation, and modification of the lessons and instructional materials to make them more appropriate.

The instructional design approach is the practice of systematically implementing learning experiences and environments that promote the acquisition of specific knowledge and skills by learners (Merrill, Drake, Lacy and Pratt, 1996). It is advantageous in the teaching and learning processes because it provides opportunities for the systematic decision-making process of instructional planning or finding a solution to an instructional problem. It brings about innovations that can translate learning problems into instructional plans so that the quality of instruction is assured. Equally, the instructional design approach focuses on achieving set learning outcomes, and therefore, the instructional objectives show all stakeholders what the intentions of the learning materials are. The instructional design was effective in lesson planning and instructional material development

because all aspects that would influence the design of any instruction were considered, and the final version of the learning materials was revised or modified and tried out until the learning outcomes were met. It enhances and assists in the planning, coordination, and management of various instructional tasks; promotes effective, efficient, and appealing instruction; and promotes learner-involvement, interaction, sharing, and motivation.

Social constructivism focuses on the significance of culture and the value of social context or interaction in cognitive development (Brown, 2007). Social constructivists see both the context in which learning occurs and the social contexts that learners bring to their learning environment as crucial. (Gredler, 1997) It holds that learning is significant when learners through social interaction create basic knowledge by themselves through enquiry, discussion and discovery (O'Donnell & King, 1999). Woo and Reeves (2007) and Azzarito and Ennis (2003) see social constructivism as the basis for effective instructional design, especially through peer interaction and collaboration in authentic situations, as it helps learners solve authentic problems. According to Vygotsky (1978), the process of learning and knowledge development or formation is directly related to other people and becomes effective through collaboration and social interactions. Mvududu and Thiel-Burgess (2012) stated that social constructivism gives learners the opportunity to put their knowledge into practice through interaction. This enables learners to negotiate their understanding in light of what they experience in a new learning situation. Social constructivism gives learners the opportunity to actively participate in real-world problem solving for knowledge creation, collective reflection on what they are doing, and how their understanding is changing. A combination of the instructional design approach and the principles of social constructivism give pre-service teachers the opportunity to interact in analyzing learners and content, designing and developing appropriate lesson plans and instructional materials implementation, collective reflection, evaluation and feedback, and modification of all designed lessons and instructional materials. These activities prepare them fully for effective English language instruction during their teaching practice and in their teaching career.

Research Objectives

This study aimed to enhance pre-service teachers' lesson planning and instructional material development abilities for effective English language instruction. Specifically, this study aimed to:

1. Develop and assess the quality of an instructional model based on an instructional design approach and social constructivism to enhance pre-service teachers' lesson planning and instructional material development abilities.

2. Implement the developed model and compare pre-service teachers' ability in language lesson planning and instructional material development with the committed standard criteria of 80%.

3. Investigate pre-service teachers' satisfaction with an instructional model based on the instructional design approach and social constructivism to enhance their lesson planning and instructional material development abilities.

Literature Review

Lesson planning is essential in the teaching and learning process, as it guides the instructional process (Dunhill, 1965). It gives the instructor an opportunity to reflect on their objectives (Osokoya, 1996; George, 1966; Panton, 1979). Cowley (2006) stated that lesson planning provides an understanding of teaching and a firm foundation for teaching and pedagogy. According to Jones, Jones and Vermette (2011); Tummons, (2010); Rusznyak and Walton (2011), Turner, (1999), lesson planning is a difficult and a complex process for pre-service teachers that takes time and requires a range of abilities. A lesson plan consists of the required components, such as objectives, instructional materials, procedures, strategies, assessments, and conclusions (Drost & Levine, 2015). Harvey (2003) asserted that classroom problems can be dealt with through the preparation of effective lessons. As cited in Azhar and Kayani (2016), Postareff et al. (2007) stated that lesson planning ability is a permanent and continuous process that should be fully enhanced in pre-service teachers. Lesson planning is complex, especially in new situations that may arise during the instructional process (Ediger, 2007). Effective lesson planning processes should consider learners, objectives, content, teaching methods, and evaluations (Gibbs & Coffey, 2004; Harvey, 2003; Holmes, 2004). English language instructional materials are used by teachers in class during the process of instruction to facilitate language learning and acquisition and take many forms, such as linguistic, visual, auditory, and kinesthetic (Richards & Schmidt, 2002). Instructional materials tend to enhance learners' higher-order thinking and intellectual competencies, meaning anything that can be used to facilitate language learning (Tomlinson, 2001) (Gagné et al., 2005). Instructional materials provide a clear and step-by-step illustration and elaborate concepts, all of which have a positive impact on the instructional process. According to Farombi (1998) and Tomlinson (1998), instructional materials include books, audio-visuals, software and hardware of educational technology, graphic materials, three-dimensional materials, still pictures, still-projected pictures, motion pictures, and audio materials. The utilization of instructional materials is perceived by the instructor and learners depending on the stated learning objectives (Beckman and Klinghammer, 2006). Tomlinson (1998) identified the principles in instructional material design including: materials should achieve impact, help learners to feel at ease, develop confidence, enable learners to perceive what is taught as relevant and useful. Brenes (2012) asserted that English instructional materials should seek to provide exposure as well as support learning by stimulating cognitive processes and providing a structure and progress for learners to follow. They should also motivate learners by providing achievable challenges and interesting content, and by providing a resource for self-study in and out of the classroom. Richards (2001) indicated that authentic materials are preferable to created materials because they contain authentic language and reflect real-world language use. Instructional materials can be developed by evaluating learning materials and adapting, supplementing, and creating their own materials (Pinter, 2006). Lesson planning and instructional material development abilities can be enhanced through instructional models.

According to Saylor, Alexander and Lewis (1982); Anderson (1997), instructional models are teaching patterns designed to help learners attain stated objective. It is a systematic process in which every component (instructor, learners, instructional materials, and learning environment) is important and directly affects each

other (Dick et al., 2001). Joyce and Weil (2000), define an instructional model as a plan or patterns that can be used to shape curricular, design instructional materials and to guide classroom instructions which aim at improving instructional effectiveness through an integrative learning atmosphere. Effective instruction helps learners acquire specific skills, knowledge, and attitudes (Reiser & Dick, 1996). Instructional models are designed based on learning theory and learner analysis. The instructional model should consist of learning principles, objectives, content, processes or activities, and assessment.

Instructional design refers to the systematic process of developing instructional products to achieve effective learning outcomes (Crawford, 2004). This translates general learning principles and instruction into plans for instructional materials, learning activities, information resources, and evaluation (Morrison et al., 2004). This simply means structuring an effective and appealing environment for learning facilitation and effectiveness (Gustafson & Branch, 1997). According to Branch (2009) and Gustafson and Branch (2002), an appropriate instructional model should be developed according to the ADDIE model, consisting of steps such as Analysis, Design, Development, Implementation and Evaluation. Diamond (1989) describes two phases: “Project Selection and Design” and “Production, Implementation, and Evaluation. According to Andrews and Goodson (1980), Reigeluth (1999), and Smith (2001), a systematic instructional design approach improves the management of instructional design and development processes, evaluation, and testing, builds on associated learning or instructional theories, and involves the application of theory to create effective instruction focusing on what learners are to know. Gropper (1977) has provided an analysis of instructional design models used in higher education environments. Extending Gropper’s list, Andrews and Goodson (1980) analyzed 40 models and concluded that instructional design models can improve learning and instruction through systematic processes, instructional design and development procedures, instructional management, and evaluation processes. Dick and Carey (1990) and Smith and Ragan (2004) used a systems approach in designing learning and instructional materials in designing a model consists of various steps such as identifying learning goals and learners’ need analysis. The instructional design approach also involves processes such as analyzing the subject matter to be taught, the method of instruction, piloting and review, and assessing whether learners do learn (Gustafson, 1996). The instructional design approach consists of analysis, design, development, implementation, and evaluation.

Social constructivism is an instructional approach to learning that holds that people actively construct their own knowledge, and that reality is determined by the experiences of the learner (Elliott et al., 2000; Mascolol & Fischer, 2005). It posits that learners actively participate in the creation of their own knowledge through interaction and knowledge sharing with others (Schreiber & Valle, 2013; Shunk, 2000; McMahon, 1997). According to Fuhrman (1992) and Hutchinson and Huberman (1994), social constructivism is a theory of knowledge formation that focuses on how individuals come to construct and apply knowledge in socially mediated contexts. Kapur (2018) observed that the social construction of knowledge occurs in various ways and at different locations. It could be achieved through group discussion, teamwork, or any instructional interaction in an educational or training institution or social media forum. In relation to the context of social

constructivism, Fuhrman (1992), Aliki et al. (2011), Vygotsky (1978), and Feuerstein (1991) state that knowledge creation occurs through social and environmental interactions, and emphasize that knowledge sharing takes place in a mutually created social context where learners are active participants and working in small groups rather than solely within the individual with instructors acting as a facilitator to harness the flow of knowledge creation and problem solving (Powell & Kalina, 2009; Schreiber & Valle, 2013; Johnson & Bradbury, 2015). Prawat (1992), Gredler (1997), Prawat and Floden (1994), Gredler (1997), and Wertch (1991) state that social constructivism is a successful teaching and learning approach that is heavily dependent on interpersonal interaction, with emphasis on learners' understanding of a situation to devise an appropriate solution through negotiation within the communicating groups. Instructional models based on the social constructivist perspective emphasize the need for collaboration among learners (McMahon, 1997; Lave & Wenger, 1991). Lave and Wenger (1991) and Gredler (1997) assert that a society's practical knowledge is situated in relations among practitioners, their practices, and the social organization. Social constructivism can include reciprocal teaching, peer collaboration, cognitive apprenticeships, problem-based instruction, web quests, anchored instruction, and other methods that involve learning with others (Shunk, 2000). Based on the principles of social constructivism, learning occurs when individuals collaborate and reality is constructed through human activity (Schreiber and Valle, 2013; Gee, 2008). This suggests that the instructor is important in the learning process, as he/she guides learners in understanding and mastering knowledge and skills that they would not be able to on their own (Schreiber and Valle, 2013). A combination of the instructional design approach and social constructivism enhances pre-service teachers' lesson planning and instructional material development abilities, which, in turn, will lead to effective English language instruction and learners' achievement.

Research Hypothesis

Pre-service teachers' lesson planning and instructional material development abilities after the implementation of the instructional model based on the instructional design approach and social constructivism were higher than the stated criterion of 80%.

Research Methodology

This study was conducted according to the procedures involved in Research and Development (R&D) as presented in the flowchart as follows:

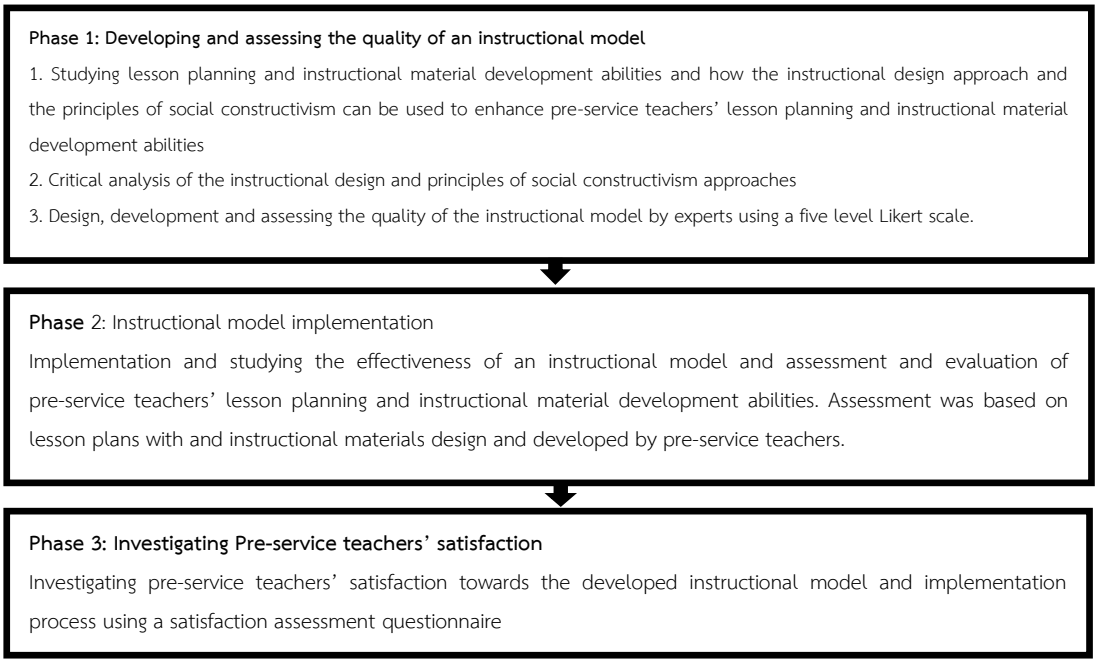

Figure 1 Summary of research flowchart

Instructional Model Development, Implementation and Evaluation

The instructional model development, implementation and evaluation was done as follows:

Phase 1: Developing and assessing the quality of an instructional model based on the instructional design and principles of social constructivism to enhance pre-service teachers' lesson planning and instructional development abilities

1.1 The development of an instructional model to enhance pre-service teachers' lesson planning and instructional material development material ability was characterized by studying lesson planning and instructional material abilities and how the instructional design approach and social constructivism can be used to enhance pre-service teachers' lesson planning and instructional material development abilities for English language instruction. A focus group discussion was held with seven experts to study aspects of lesson planning and instructional material development ability, as well as how the instructional design and social constructivism approaches can be used to enhance pre-service teachers' lesson planning and instructional material development abilities for effective English language instruction.

1.2 The instructional design approach and social constructivism were critically analyzed, taking into consideration the principles, instructional steps, learning activities, and assessment methods. This information was combined with the information obtained from the focus group discussion on lesson planning and instructional material development abilities and was used as a basis for instructional model development.

1.3 After design and drafting the instructional model, a model manual was developed and summited with three experts for quality assessment and validity check using a 5-level Likert rating scale. An evaluation of the model by experts was based on the components of the instructional model: learning principles, learning

objectives, learning content, instructional process, and assessment and evaluation. A feasibility assessment pilot study was conducted with a class of 25 fourth-year students (section 1) majoring in the English language, Faculty of Education, Naresuan University selected by using the clustered random sampling technique.

Phase 2: Compare pre-service teachers' ability in language lesson planning and instructional material development ability with the committed standard criteria of 80%.

2.1 The instructional model was implemented with a purposively selected sample of 65 third-year pre-service teachers majoring in the English language, Faculty of Education, Naresuan University. These are students who were studying course 383301 (English language teaching methodologies) in the second semester of the 2022 academic year. The instructional model implementation process was divided into two parts: theoretical explanations (six hours) and practical aspects involving lesson planning and authentic instructional material development (18 hours), giving a total of 24 hours. Lesson planning and instructional material development involve students' group interactions and collaboration in designing and developing lesson plans and instructional materials. The instructional process consisted of the analysis of learners and content, collective design and development of lesson plans and instructional materials, implementation of lesson plans and instructional materials, collective reflection evaluation and feedback, and modification.

2.2 After the instructional model implementation process, the students' lesson planning and instructional material development abilities were assessed through an evaluation of the developed lesson plans and instructional materials collaboratively designed and developed by the students. An evaluation of the lesson planning ability was based on components of the lesson plan, lesson objectives, learners' competencies, content selection and organization, learning process, learning activities, instructional materials and assessment of learning outcomes while an assessment of instructional material development ability was based on the physical quality of instructional materials, relation with objectives, relation with content, social considerations, instructional design, practicability and flexibility, competency development and materials are learner-centered.

Phase 3: Investigating pre-service teachers' satisfaction towards an instructional model based on the instructional design approach and the principles of social constructivism to enhance pre-service teachers' lesson planning and instructional material development abilities

An investigation of pre-service teachers' satisfaction with an instructional model and the instructional model implementation process was conducted using a systems approach. A satisfaction assessment questionnaire with emphasis on input (content and instructional materials), process (instructional process), and output (lesson planning and instructional material development abilities) was used. The questionnaire was completed immediately following the instructional model implementation process.

Population

The study population comprised all students or pre-service teachers from the Faculty of Education, Naresuan University. The target population consisted of third- and fourth-year students from the department of education (majoring in English language) me who were preparing to go out for professional teaching practice.

Sample and Sampling Procedure

The developed instructional model, based on the instructional design approach and the principles of social constructivism to enhance pre-service teachers' lesson planning and instructional material development abilities, was implemented with 65 purposively selected pre-service teachers (sec. 1 = 33, Sec. 2 = 32) majoring in English language in the Faculty of Education, Naresuan University, who were studying 383301 "English Language Teaching Methodologies."

Research Instrument

The research instruments used were as follows: 1) An appropriate instructional model based on the instructional design approach and the principles of social constructivism consisting of five components: learning principles, learning objectives, learning content, instructional process, learning assessment and evaluation; 2) an instructional model manual showing how the instructional model can be implemented effectively; 3) instructional model and manual evaluation forms to assess the appropriateness of the instructional model and manual components; 4) lesson planning assessment form with a focus on Components of the lesson plan, learners' competencies, content selection and organization, learning process, learning activities, instructional materials and assessment and evaluation; 5) instructional materials development ability evaluation forms; with a consideration of components such as physical quality of instructional materials, relation with objectives, relation with content, social considerations, instructional design, materials are learner-centered, competency development, practicability and flexibility; and 6) a satisfaction assessment questionnaire consisting of nine items with an emphasis on assessing the inputs, processes, and output. All research instruments were systematically developed and checked by three experts to ensure their appropriateness. After evaluation by experts, corrections were made, and a pilot study was conducted to study the feasibility of the research instruments.

Data Analysis Procedure

Data from the instructional model and instructional model manual evaluation and satisfaction assessment questionnaire were analyzed using the mean and standard deviation, whereas data from lesson planning and instructional material development ability evaluation were analyzed using the mean, standard deviation, and simple percentages.

Results and Discussion

The research results and discussions are presented according to the research objectives as follows:

1. The results of development and assessment of the quality of an instructional model based on the instructional design and principles of social constructivism to enhance pre-service teachers' lesson planning and instructional development abilities

The results of the instructional model development based on the instructional design approach and principles of constructivism to enhance preservice teachers' lesson planning and instructional material development ability revealed that the developed model consisted of five components: learning principles,

learning objectives, learning content, instructional process, and assessment and evaluation. The instructional process consisted of analysis of learners and content, collective design, development and evaluation of lesson plans and instructional materials, implementation of lesson plans and instructional materials, collective reflection evaluation and feedback, and modification (Figure 2). The results of the instructional model evaluation revealed that the model was generally at the highest level of appropriateness ($\overline{X}$ = 4.82, SD = 0.08). The results of the pilot study revealed that the instructional model was feasible for enhancing pre-service teachers' lesson planning and instructional material development abilities, indicating that the model was in line with the criteria of instructional model development and effective in enhancing pre-service teachers' lesson planning and instructional material development abilities. The highest appropriateness level and feasibility of the instructional model resulted from various factors. Before the development of the model, basic information was obtained by studying lesson planning and instructional material development abilities. Instructional design and social constructivism approaches can be used to enhance pre-service teachers' lesson planning and instructional material development abilities. The instructional design approach and principles of social constructivism were critically analyzed for instructional model development. This information forms the basis for instructional model development. After the systematic design and development of the instructional model, an evaluation was conducted by experts, and corrections were effected based on comments and corrections provided by experts. A pilot study was conducted and modifications were made during and after the pilot study. All of these factors make the model more appropriate and feasible. The research findings were in line with Kittichet (2015) who developed a training model to enhancing ability in online learning media production for primary school teacher and the results of model evaluation through focus group discussion revealed that the model was accurate, appropriate, practical and beneficial in implementing at the highest level. The results were also in accordance with Anchunda (2021) who developed a teacher development model based on coaching and Professional Learning Community (PLC) to enhance foreign teachers' effective teaching ability in Thailand and the result of quality assessment revealed the developed model was at the highest level of appropriateness ($\overline{X}$ = 4.58, SD = 0.06) with the pilot study revealing that the model was suitable for teacher development.

Figure 2 Conceptual framework for Instructional model to enhance lesson planning and instructional materials development abilities

2. The results of instructional model implementation to enhance lesson planning and instructional material development ability.

Table 1 Comparison of pre-service teachers' lesson planning and instructional material development ability after instructional model implementation

Assessment	Evaluation	n	Full score	$\bar{X}$	SD	Percentage	*P*
Lesson Planning ability	After	65	100	83.03	1.85	83.03	.000
Instructional material development ability				82.09	1.73	82.09	.000

From Table 1, the results of the instructional model implementation revealed that pre-service teachers' lesson planning and instructional material development abilities were 83.03% and 82.09%, respectively, which were higher than the committed criteria of 80%, indicating that the instructional model was effective in enhancing pre-service teachers' lesson planning and instructional material development abilities. The research findings were consistent with the principles of the instructional design approach and the principles of social constructivism, which state that lesson planning and instructional material development abilities are enhanced when learners interact to create knowledge and idea sharing in order to better understand situations. The instructional design approach and principles of social constructivism provide an effective instructional process, such as content analysis, collective design and development of lesson plans and instructional materials, implementation of lesson plans and instructional materials, collective reflection, evaluation and feedback, and modification, which leads to effective development of lesson planning and instructional material development abilities. The effectiveness of the model in enhancing pre-service teachers' lesson planning and instructional material development was because the learning process gave learners the opportunity to effectively interact in analyzing learners and content, the design and development of lesson plans and instructional materials, implementation and collective reflection, evaluation and feedback from students and the instructor, and modification. All of these learning steps gave learners the opportunity to share and work together in planning and designing lesson plans and instructional materials, thereby developing learners. Moreover, all theoretical concepts were explained during the instructional model implementation process, which provided learners with comprehensive pedagogical knowledge on lesson planning and instructional material development. Pre-service teachers worked together to design lessons and develop instructional materials to enhance their abilities. The research findings were in accordance with previous studies conducted by Knop (2008), who developed student teacher skills in lesson planning and self-critiquing and found that "overall analysis and evaluations of teaching effectiveness," gathering data on teacher/student activities and interactions will aid student teachers in looking for recurring patterns of behavior that need changing to improve learning, and those behaviors that were effective with activities and instruments presented were seen to be useful for student teachers in their practicum training and for experienced teachers in self-evaluation.

The findings were also in line with Chen and Zhang (2019), who conducted a study with the aim of improving prospective teachers' lesson planning knowledge and skills through lesson study. The results revealed that the participants demonstrated significant improvement in thinking about learning objectives, analysis of content and students, anticipation of students' solutions, and sequencing mathematics tasks with the teachers, confirming that they gained lesson planning knowledge from the process. Also, the findings were consistent with Muenjaem (2020) who conducted research on "teacher development in learning media production to promote analytical thinking skills of students by using local wisdom and found that the average knowledge level in learning media production of the teachers after the workshop was higher than before the workshop at 27.78% and also in line with the research finding conducted by Askin (2018) who found that collaborative work, pre-service teachers and classroom teachers practiced developing instructional materials and integrating technology in subject content areas, became more comfortable with the technology and developed greater proficiency in their computer use after conducting a research on pre-service teachers' use of technology for instructional materials creation.

3. The Results of investigating pre-service teachers' satisfaction with the instructional model based on the instructional approach and principles of social constructivism to enhance pre-service teachers' lesson planning and instructional material development skills.

An investigation of pre-service teachers' satisfaction with the instructional model based on the instructional design approach and principles of social constructivism for lesson planning and instructional material development ability enhancement revealed that pre-service teachers' satisfaction with the model and implementation process was at the highest level ($\overline{\mathbf{X}}$ = 4.89, SD = 0.09). The highest level of satisfaction was due to systematic development of the instructional model. All necessary concepts related to lesson planning and instructional material development were systematically explained. The instructional model implementation process emphasized learners' interaction, giving pre-service teachers an opportunity to work in groups and interact with peers in knowledge creation, idea sharing, and learning from each other. Learners were assigned to work in groups to analyze learners and content and to design and develop lesson plans and instructional materials. Working together reduced stress, and the learning environment was fun, friendly, and relaxed. The instructor guided the students to complete their assigned tasks. All learning activities focused on preparing pre-service teachers for effective professional practice through lesson planning and instructional material development activities. The finding where consistent Anchunda (2021), who developed a teacher development model based on coaching and Professional Learning Community (PLC) to enhance foreign teachers' effective teaching ability in Thailand and the results of studying teachers' satisfaction with the model, found that teachers' satisfaction and perceptions towards the model were positive and at the highest level ($\overline{\mathbf{X}}$ = 4.57, SD = 0.19) and also consistent with Muenjaem (2021), who found that teachers' satisfaction with the development was generally at the highest level after studying teachers' satisfaction with the study on" teacher development in learning media production to promote analytical thinking skills of students by using local wisdom.

Conclusion

The objective of this study was to enhance pre-service teachers' lesson planning and instructional material development abilities for effective English language instruction. The research findings revealed that an appropriate instructional model positively enhanced pre-service teachers' lesson planning and instructional material development abilities. The study was based on three research objectives: developing, implementing, and investigative pre-service teachers' satisfaction with the model and the implementation process. The results revealed that the developed instructional model was highly appropriate and effective in enhancing pre-service teachers' lesson planning and instructional material development abilities, with preservice teachers' satisfaction at the highest level. The instructional design approach and social constructivism give learners the opportunity to interact and learn together; analyze and state learning objectives; interact in designing and developing lesson plans and instructional materials; and implement and collectively reflect, evaluate, and receive feedback for further modification. The implementation of this instructional model revealed that preservice teachers' lesson planning and instructional material development abilities were 83.03% and 82.09%, respectively, which were all higher than the stated criteria of 80% for preservice teachers' satisfaction at the highest level ($\overline{\mathbf{X}}$ = 4.89, SD=0.09). As such, effective enhancement of pre-service teachers' lesson planning and instructional material development abilities requires a comprehensive theoretical explanation of concepts and students' interactions in idea sharing, discussions, knowledge creation, design, and development of effective lesson plans and instructional materials.

Suggestions

Suggestions for implementation

The research findings revealed that the developed instructional model based on the instructional design approach and the principles of constructivism was effective in enhancing pre-service teachers' lesson planning and instructional material development abilities. Based on these research findings, the development of pre-service teachers' lesson planning and instructional material development abilities should start with the study and identification of necessary skills for effective instructional design. Enhancing pre-service teachers' lesson planning and instructional material development abilities involves a comprehensive explanation of instructional design processes, collaborative interaction and knowledge sharing by learners, and collaborative design and development of lesson plans and instructional materials for effective language instruction. Teacher development institutions should encourage learning and social interaction among learners to make learning more meaningful.

Suggestions for Further Research

This study focuses on enhancing pre-service teachers' lesson planning and instructional material development abilities for effective English language instruction. Further studies should focus on developing pre-service teachers' effective teaching abilities that are not limited to lesson planning and instructional

material development abilities. Further research should focus on enhancing pre-service teachers' effective and innovative teaching abilities, classroom research skills, and differentiated instructional abilities. To generalize these research findings, further research should focus on comparing the effects of this instructional model with other approaches as well as expand the sample by implementing this model with other teacher training institutions, as this study considered only a small sample of 65 pre-service teachers from the division of English language, Faculty of Education, Naresuan University.

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