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# The Development of Learning Management Model for Early Childhood Teachers in Roi Et Province

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**Abstract**

*In order to educate future teachers on how to properly manage student learning, one of the primary purposes of this approach was to make use of handbook for learning management in the 21st century tools. The purpose of this study was to foster learning management competence of early childhood pre- service teachers by utilizing the proper handbook for learning management in the 21st century tools. Participants in this study were 300 pre-service teachers in early childhood education program in Roi Et Province. According to the findings, the learning activities for the handbook for learning management in the 21st century tool include of pattern theory and ideas, with a primary focus on participation in teaching and learning activities as well as hands-on experiences. The establishment of awareness, the stimulation of mental processes, the construction of a participatory process, and the implementation and assessment of the process are the four phases that may be characterized. There was a change that was statistically significant at the 0.05 level, and the end result was that the average score was higher after the learning exercise than it had been before. This was the case because the effect of the shift was that the average score was higher.*

***Keywords:*** *Learning Management in the 21st Century, Learning Management, Pre-Service Teacher.*

## 1. Introduction

The primary emphasis of the social transformation that will occur in the twenty-first century is going to be on the challenges presented by preparing students for life, which are the educational difficulties of the twenty-first century (González-Salamanca et al., 2020; Janpleng and Ruangmontri, 2021; Prachagool and Nuangchalerm, 2021). There are a number of essential skills that students should master in order to be successful in today's world. These skills include critical thinking, creativity and innovation, collaboration, communication, problem-solving, information and technology literacy, and life and career skills. Students should focus on developing these skills in order to be successful in today's world. In addition, the skill of coding has become more important in recent years, and it is now recommended that all students learn it (Popat and Starkey, 2019). The need to foster conceptual understanding of the subject matter while also leveraging soft skills such as creativity, critical thinking, collaboration, and communication among learners is a requirement of all of these teaching methods, despite the fact that classroom practices vary. These "soft skills" are considered to be essential components of effective classrooms in the twenty-first century (Toheri et al., 2020).

As a result of this, the use of computers in educational settings has spread to almost every level and field of study. In the subsequent time period, changes were evident in terms of students generating their own informational content relating to any subject or course. This

was in addition to the usage of computers in the classroom during that time period. The educational programs being offered now include classes dealing with topics related to this field. In the beginning, these classes were known as programming; however, they were renamed to coding in subsequent years. In technological vehicles that have electronic brains, the term "coding" refers to all of the instructions that enable the hardware to work and give advice on how it should act (Gülbahar et al., 2017). These instructions are what make coding possible.

The ability to code is a key new talent for the twenty-first century, and the cultivation of these abilities needs to be a national plan. However, there is currently a lack of understanding and awareness of coding abilities, and there are no clear indications of competencies and behaviors to promote the preparation or evolution of coding skills in early childhood and primary school children. In these unplugged coding exercises, a coding method that is analogous to computer programming is used to design the solution to a problem in a step-by-step manner, which is then represented in a flowchart. However, these techniques of coding do not need the use of computers, and instead of a language that machines can read, they utilize a language that people can comprehend (Küçükkara and Aksüt, 2021). In addition, since unplugged coding makes use of real objects, it is excellent for toddlers who think in concrete terms because of the nature of the activities (Lee and Junoh, 2019).

During the course of programming instruction, students will participate in both connected and unplugged tasks. The term "unplugged programming" refers to the study of computational thinking and subjects related to computer science without the use of computational equipment. On the other hand, "plugged programming" involves the use of computational devices in the learning process (Aranda and Ferguson, 2018). Coding is a fundamental skill for computer science, but it also helps students develop computational thinking skills such as problem solving, communication, collaborative working, planning, decision making, analyzing, critical, and creative thinking. These skills not only support students' long- term success in the workplace, but also help them succeed in the workplace in the short term. Because of this, the ability to code, which is one of the most important aspects of meta cognition and is regarded as a talent for the 21st century, is essential for the achievement of long-term success (Ergina and Ercanb, 2022).

A successful outcome may be achieved by developing a learning management system with the use of coding tools; nevertheless, in order for learners to advance, all relevant stakeholders will need to work together. Role-playing, the manipulation of real-world objects (such as sticky notes, cards, and wooden blocks), and physical exercise are all possible components of unplugged coding (Aranda and Ferguson, 2018). When it comes to this coding lesson, children in special education have the same challenges to overcome as other pupils. The vast majority of research and programs pertaining to special education are geared at very intelligent people (Lee, 2011; Hagge, 2017). Activities that are entertaining are ones that may aid in the development of engaging techniques to teach children to code that do not merely contain the act of typing code. In order to pique children's interest in computer science and encourage them to start coding at an early age, coding activities are made to be fun and engaging.

When children are taught the principles of code at an earlier age, it will be much simpler for them to learn, grasp, and use coding as they become older. They are at the perfect age and skill level to start their education. It has been suggested that some aspects of precoding would be more important to preschoolers than they would be to other children because preschoolers lack the ability to make responsible decisions and reason algorithmically (Sukbunpant et al.,

2013; Onsee and Nuangchalerm, 2019). According to the findings of the literature review, the cooperative learning model is widely used across all levels of education; however, the number of studies for the preschool period is limited (Büyüktaşkapu et al., 2012).

In Thai society, the development of learning management models via the use of early childhood handbook for learning management in the 21st century tools is feasible; all sectors of Thai society should join forces to drive change utilizing the capital and resources that are now available. It is essential to alter the way people think and inculcate in them a new feeling of responsibility for the sake of the community. At the same time, the engagement of the government has to be coordinated in order to encourage new lifestyle attitudes that have a reduced impact on the environment. It's possible for communities and municipalities to work together to increase the value of local resources via increased knowledge and increased use. In addition, scorecards need to be constructed in order to depict the results of sustainable development on both the local and the national levels.

## 2. Method

The study conducted 4 steps to foster learning management competence in pre-service teachers.

Step 1: Study relevant documents and research: the first step started with analyzing concepts and possible ways of 21st century learning approaches and management and learning management with coding tools. The research team summarized it in conditions, teacher guidelines, and learning management problems of early childhood pre-service teachers about professional experiences. Then conceptual framework was generated in the next step.

Step 2: Develop a learning management model with handbook for learning management in the 21st century tools: learning management with handbook for learning management in the 21st century tools developed based on theoretical support. The learning management model was approved and validated by 3 experts.

Step 3: Collecting data and experimenting with learning management with handbook for learning management in the 21st century tools: the program of study to early childhood pre-service teachers and young children from professional experiences were selected for implementation within 1 semester practicum.

Participants consisted of 300 early childhood pre-service teachers and kids during the period of professional experiences in Roi Et Province.
Research tool consisted of learning management organization and learning management competency assessment instrument.
Data were collected by before and after professional experiences in the first semester, academic year 2023.

Step 4: Analyzing data and report. One group pretest-posttest design employed, descriptive statistics was used for basic data investigation. The hypothesis was tested by dependent-test and ANOVA. The step of research procedure can be described by following details in Fig. 1.
Step 1: Study relevant documents and research.
Studying 21st century learning approaches and management and learning management with handbook for learning management in the 21st century tools.
Summarizing research on 21st century learning management and learning management with handbook for learning management in the 21st century tools.
Exploring the conditions, guidelines, and learning management problems of early childhood pre-service teachers about professional experiences.

Conceptualizing framework about learning management, 21st century skills, learning management with handbook for learning management in the 21st.

Step 2: Develop a learning management model with handbook for learning management in the 21st century tools.

Creating a learning management model with coding tools based on information from Step 1

Checking quality of learning management and other research tools.

Improving and revising a learning management with handbook for learning management in the 21st century tools.

Step 3: Collecting data and experimenting with learning management with handbook for learning management in the 21st century tools.

Implementing the program of study to early childhood pre-service teachers and young children.

Summarizing intervention of learning management with handbook for learning management in the 21st century tools.

Step 4: Analyzing data and report

One group pretest-posttest design employed and dependent-test and ANOVA were used for data analysis

## 3. Result

The creation of a learning management system for early childhood education students and early childhood education teachers that makes use of handbook for learning management in the 21st century tools. It was discovered that the handbook for learning management in the 21st century tool learning activity model consists of the theory, principles, and concepts of the model that focuses on hands-on and participating in teaching and learning activities. These activities have crucial stages by starting with awareness formation, thought process stimulation, hands-on and participation in teaching and learning activities, and implementation and evaluation as shown in Fig. 2.

Learning management systems that include handbook for learning management in the 21st century tools provide pre-service instructors with the ability to personalize the activities in their classrooms. They get the ability to develop and assess how students acquire information via their experiences in the various settings. The development of learning activities for early childhood pre-service teachers and young students allowed for four steps in proper order, beginning with the stimulation of thought process, moving on to the creation of a participatory process, and finally concluding with the implementation and evaluation of the activities.

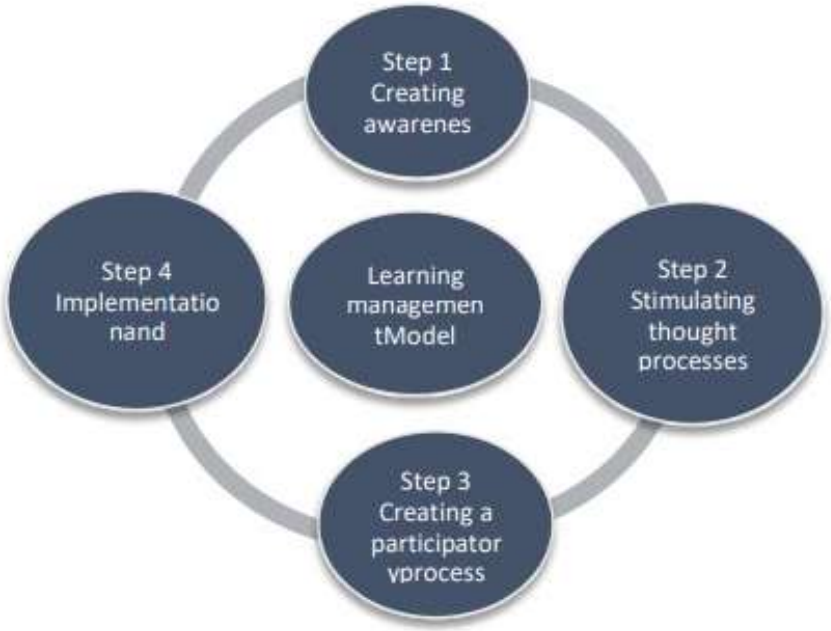


Fig. 2: Learning management Model.

The dependent t-test can be employed to both calculate and analyze the results of a comparison of learning activities and handbook for learning management in the 21st century tools for pre-service preschool teachers. The score was 10.53 before learning, but it can rise to 16.79 after learning. The statistical testing suggested that they had a posttest score greater than their pretest score at a level of significance of .05. (Table 1).

The following Table presents the findings of a comparison of abilities for structuring learning activities using various methods. Tools used by teachers of early childhood education. After conducting learning activities on the development of learning management skills using handbook for learning management in the 21st century tools for early childhood education students and early childhood education teachers, it is clear that these abilities may be improved. After the competition, there was a difference of 0.05 points that was statistically significant with the average score. The level of learning has increased in comparison to before the learning activity.

Table 1: Comparison of learning activities with 21st century tools of early childhood teachers

| Test | N | $\bar{X}$ | SD | t | p |
|---|---|---|---|---|---|
| Before | 300 | 10.53 | 1.68 | 32.681 | 0.00* |
| After | 300 | 16.79 | 1.23 | | |

* Statistical significance at the level of 0.05

Organizing learning activities with handbook for learning management in the 21st century tools for early childhood teachers and students in all three groups of early childhood education subjects. These include early childhood teachers affiliated with the Office of the Board of Education; Basic teachers affiliated with the Office of the Commission on Private Education; and students enrolled in early childhood education programs. By doing a one-way analysis of variance, as shown in Table 2, each of the three groups investigated how actively they took part in the process of arranging learning activities using handbook for learning management in the 21st century tools.

Table 2: Comparison pre-service preschool teachers by differences province

| Variance sources | SS | df | MS | F | p |
|---|---|---|---|---|---|
| Between groups | 1.842 | 2 | 0.921 | 0.609 | 0.546 |
| Within a group | 146.748 | 97 | 1.513 | | |
| Overall | 148.590 | 99 | | | |

According to Table 2, evaluations of activities that contribute to instrumental learning were carried out. There were no discernible changes in 21st learning management across two distinct work experiences in different regions. The administration of learning across all three groups Engage in activities that will help you learn more effectively. 21st learning management does not have any differences that are statistically insignificant at the threshold of 0.05. This demonstrates that pre-service instructors do not vary from one another in their level of engagement in the process of planning learning activities using handbook for learning management in the 21st century tools.

## 4. Discussion

Learning management systems that contain handbook for learning management in the 21st century tools provide pre-service teachers the option to customize the programs they use in their classes. They get the capability to construct and evaluate how students acquire knowledge via the numerous experiences that they have in a variety of situations (Carless and Boud, 2018; Wisetsat and Nuangchalerm, 2019). The creation of learning activities for preschools pre-service teachers and young students allowed for the completion of four steps in the correct order. These steps began with the stimulation of thought process, continued with the creation of a participatory process, and finally concluded with the implementation of the activities and an evaluation of their effectiveness (Weins et al., 2021).

A fundamental component of thinking is the process of solving a problem by breaking it down into its component elements and tackling it in an abstract and algorithmic manner. This method is now available to each and every person. The next generation of youngsters can be equipped with information that will assist them in achieving success in our increasingly technology environment if they begin learning to program at an early age (Adler and Beck, 2020). Even though prior knowledge of programming is not required to use computing technology, getting a head start by studying programming at an early age can assist improve one's ability to use computing technology. in order to get more teachers into classrooms where they will eventually work. In addition, students majoring in education came up with a wide array of innovative strategies to execute projects of a similar sort in the classrooms where they would one day teach.

The research revealed that people using handbook for learning management in the 21st century tools may be able to enhance their abilities in learning management, that handbook for learning management in the 21st century tools include multiple techniques for problem resolution, and that handbook for learning management in the 21st century tools enable people to build solutions that are suitable for classroom settings (Prachagool, 2021). On the other hand, pre-service teachers need to be able to grasp how to deal with strategies and tools that are based on positive experiences in addition to the culture of the school and the surroundings of the classroom (Torbeyns, et al., 2020). Young children frequently learn via imaginative play and cognitive engagement because they are required to freely think and

interact with nature. This makes creative play and cognitive engagement ideal learning environments for young children.

Ma and Kim (2019) analyzed the pre-service teachers' knowledge availability as well as their worries and attitudes on the subject of coding instruction for young children. The required perception, the content perception, and the contextual perception all indicated that the perception of coding instruction for young children was higher than the mean. Despite this, the operational viewpoint was not very strong. Personal concern was found to have a positive correlation with information awareness as well as levels of smart phone usage as well as the utility of use. This was the case for each different type of information ability. On the other hand, there was an inverse connection between the management's worry and the employees' ability to get information. The necessity of receiving coding training was linked to the requirement of having information awareness. It was discovered that a positive correlation exists between content coding education and both the practicality of training and the ease with which it may be put into practice.

The findings of a study that compared various methods of performance and novel ways to organize learning activities employing a number of different approaches to learning. It became clearly clear, after early childhood education students and early childhood education instructors participated in learning activities, the instruments that are utilized by educators dealing with young children. On the subject of the development of abilities pertaining to the administration of learning, the utilization of handbook for learning management in the 21st century tools that these capabilities may be increased after engaging in these learning activities Following the incident, there was a shift in the average score that was significant according to statistical analysis (Bowen et al., 2021). The level of learning is substantially higher now than it was before the activity of learning, which is a comparison that can be made. Using various coding techniques to organize learning activities for early childhood educators and the children they teach. All three topic areas that are required to be covered throughout early childhood education will be addressed through these activities. They contributed to the process of organizing learning activities by making use of various coding tools in the classroom.

## 5. Conclusion

According to the findings, the learning activities for the handbook for learning management in the 21st century tool include of pattern theory and ideas, with a primary focus on participation in teaching and learning activities as well as hands-on experiences. The establishment of awareness, the stimulation of mental processes, the construction of a participatory process, and the execution and assessment of the process are the four phases that may be characterized. The purpose of this study was to make a comparison between the teaching methods and academic skills of early childhood pre-service teachers and those of early childhood teachers with professional experience by utilizing the proper handbook for learning management in the 21st century tools. There was a change that was statistically significant at the 0.05 level, and the end result was that the average score was higher after the learning exercise than it had been before.

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