วารสารธรรมเพื่อชีวิต
JOURNAL OF DHAMMA FOR LIFE
ISSN: 2822-048X
https://soo8.tci-thaijo.org/index.php/dhammalife/index

Original Research Article

Integrating KWL-Plus Technique with Cooperative Learning to Develop English Major Pre-Service Teachers' Learning Management Competencies to Promote Thinking Skills through Children's Literature

Wipada Prasansaph[1*]

ARTICLE INFO

Name of Author & Corresponding Author*

1. Wipada Prasansaph
English Department, Faculty of Education, Suan Sunandha Rajabhat University, Thailand
Email: Wipada.pr@ssru.ac.th

Keywords:
KWL-Plus Technique; Cooperative Learning; Learning Management Competencies; Thinking Skills; Children's Literature

Article history:
Received: 15/08/2024
Revised: 21/10/2024
Accepted: 10/11/2024
Available online: 12/11/2024

How to Cite:
Prasansaph, W. (2024). Integrating KWL-Plus Technique with Cooperative Learning to Develop English Major Pre-Service Teachers' Learning Management Competencies to Promote Thinking Skills through Children's Literature. *Journal of Dhamma for Life, 30*(4), 1-23.

ABSTRACT

This research aimed to (1) investigate the competencies in learning management that promote thinking skills through children's literature among English major student teachers after learning via the KWL-Plus technique combined with cooperative learning, and (2) examine the satisfaction of these student teachers with the learning management approach that integrates the KWL-Plus technique and cooperative learning. The study's sample consisted of 30 third-year English major student teachers enrolled in the EEC3321 course titled "Learning Management for Thinking Skill Development through Children's Literature" in the Faculty of Education at Suan Sunandha Rajabhat University, during the academic year 2023. The participants were selected through cluster random sampling, with the entire class serving as the sampling unit. This experimental research utilized two primary instruments: (1) an assessment tool to evaluate the competencies in learning management that promote thinking skills using children's literature, and (2) a questionnaire to assess the student teachers' satisfaction with the learning management approach. Data were analyzed using basic statistics, including mean, standard deviation, and independent sample t-tests.

The results of the study revealed that (1) the English major student teachers demonstrated a high level of competency in learning management that promotes thinking skills through children's literature after participating in the KWL-Plus technique combined with cooperative learning, and (2) the student teachers reported a high level of satisfaction with the learning management approach that integrated the KWL-Plus technique with cooperative learning.

Introduction

Pre-service teacher education in Thailand is critically important for the nation's educational development, particularly as the country seeks to enhance its global competitiveness through comprehensive educational reforms. These programs aim to equip aspiring educators with essential competencies, including subject matter knowledge, pedagogical skills, classroom management, technological proficiency, and cultural awareness. However, despite the rigor of these programs, pre-service teachers face several challenges. According to Sangnapaboworn (2007), the reliance on outdated instructional methods and inadequate practical experience significantly hampers the effectiveness of these programs. Furthermore, Boonsue (2019) highlights the limited access to modern educational technologies as a barrier to fully preparing future teachers. The pressure from high-stakes testing further exacerbates these issues by forcing educators to focus on test preparation rather than fostering deeper learning and critical thinking skills (Hallinger & Lee, 2014).

Among the competencies that pre-service teachers must develop, learning management competencies are particularly crucial. These competencies involve the ability to plan, implement, and assess effective learning experiences that cater to the diverse needs of students. According to Gillies (2016), learning management competencies are essential for creating educational environments that promote critical thinking and problem-solving. This requires teachers not only to possess deep subject matter knowledge but also to be skilled in using a variety of instructional strategies, managing classroom dynamics, and integrating technology effectively. Johnson and Johnson (2009) assert that these competencies are foundational for enabling students to engage in higher-order thinking and apply their knowledge in practical, real-world contexts. As Thailand continues to modernize its education system, the development of these competencies among pre-service teachers becomes increasingly important.

Promoting thinking skills is a central objective of modern education, as it equips students with the ability to navigate an increasingly complex and dynamic world. Critical thinking, creative thinking, and problem-solving are essential skills that empower learners to analyze information, make informed decisions, and generate innovative solutions. According to Gunning (2014), fostering these skills in students is a key component of teacher education, as it prepares future educators to cultivate a classroom environment that encourages deep and reflective learning. The integration of pedagogical strategies such as the KWL-Plus technique with cooperative learning has been shown to significantly enhance these competencies. Ogle (1986) introduced the KWL-Plus technique as an extension of the traditional KWL strategy, which promotes active engagement, goal-setting, and reflective learning. Cantrell et al. (2000) further support the effectiveness of this method in developing metacognitive awareness and improving comprehension. When combined with cooperative learning, which emphasizes collaboration and shared responsibility, the potential for developing higher-order thinking skills in pre-service teachers is greatly enhanced (Slavin, 2011).

Children's literature serves as a powerful medium for promoting thinking skills among learners. Rich in narrative complexity and moral dilemmas, children's literature naturally encourages students to engage in critical and creative thinking. Short (2018) argues that the exploration of diverse perspectives and ethical issues presented in children's literature is instrumental in fostering critical thinking and ethical reasoning among students. This medium provides pre-service teachers with an effective tool to encourage students to question, infer, and draw connections between the text and their own experiences, thereby deepening their comprehension and promoting the development of essential thinking skills. Gunning (2014) also notes that the integration of children's literature with strategies like the KWL-Plus technique and cooperative learning creates an educational environment that nurtures critical thinking and creativity, which are crucial for students' academic and personal growth.

Despite the recognized benefits of these individual approaches, there remains a gap in research regarding their combined impact on the development of pre-service teachers' learning management competencies, particularly in the context of children's literature. Existing studies have largely focused on the separate application of these methods, with limited exploration into their synergistic potential. For example, while the KWL-Plus technique has been widely studied for its impact on reading comprehension (Chan, 2014), and cooperative learning for its role in promoting collaborative skills (Slavin, 2011), there is a paucity of research examining how these strategies together can enhance the learning management competencies of pre-service teachers. This research aims to address this gap by investigating how the integration of the KWL-Plus technique with cooperative learning can be leveraged to promote thinking skills through the teaching of children's literature, thereby contributing to the development of well-rounded, critically thinking educators.

To ensure that pre-service teachers in Thailand are well-prepared for the demands of contemporary classrooms, it is essential to address the challenges they face while also enhancing their learning management competencies. By focusing on the integration of innovative pedagogical strategies such as the KWL-Plus technique and cooperative learning, and by utilizing children's literature as a medium to promote thinking skills, teacher education programs can better equip future educators to foster critical thinking, creativity, and problem-solving skills among their students. This approach not only supports the development of competent and reflective teachers but also contributes to the broader goal of improving the quality of education in Thailand, ultimately ensuring that students are prepared to thrive in an increasingly complex world.

Literature Review and Theoretical Framework

1. Learning Management Competencies in Pre-Service Teacher Education

Learning management competencies are a cornerstone of effective teaching, particularly in the context of pre-service teacher education. These competencies encompass a wide range of skills, including the ability to design, implement, and evaluate instructional activities that meet diverse student needs. According to Shulman (1987), the development of these competencies is critical for teachers to effectively manage classroom environments and facilitate student learning. In recent years, there has been growing interest in how specific

instructional strategies can enhance these competencies, particularly among pre-service teachers who are still developing their professional identity and pedagogical skills. This review explores the literature on the integration of the KWL-Plus technique and cooperative learning as methods to enhance learning management competencies, with a particular focus on their application in the context of teaching children's literature to promote thinking skills.

2. KWL-Plus Technique: Enhancing Metacognitive and Comprehension Skills

The KWL-Plus technique is a pedagogical strategy that builds upon the original KWL framework—Know, Want to Know, Learned—developed by Ogle (1986). The traditional KWL strategy was designed to guide students through the process of reading and understanding expository texts by encouraging them to activate prior knowledge, articulate what they want to learn, and reflect on what they have learned. This process inherently promotes metacognitive awareness, as students are required to think about their thinking—identifying what they already know and what they need to understand better.

The "Plus" component introduced in the KWL-Plus technique enhances the original strategy by adding a more structured approach to organizing and synthesizing information. This extension involves additional steps, such as categorizing information, creating summaries, and engaging in discussions that deepen comprehension. This structured approach not only aids in better retention of information but also promotes a more critical engagement with the text. The emphasis on organizing information into categories helps students to see connections between ideas, which is crucial for higher-order thinking and comprehension.

Research has demonstrated the effectiveness of the KWL-Plus technique in improving students' reading comprehension and retention of information. Cantrell et al. (2000) conducted a study that showed significant improvements in students' ability to comprehend and retain expository texts when the KWL-Plus technique was used. The study highlighted that the additional steps of organizing and summarizing information encouraged deeper processing of the text, leading to better understanding and recall. This is particularly important for the development of critical thinking skills, as it moves students beyond surface-level engagement with the text to a more analytical and reflective approach.

In the context of teacher education, the KWL-Plus technique has proven to be a valuable tool for pre-service teachers. One of the key challenges for pre-service teachers is learning how to design and implement instructional activities that not only engage students but also promote deeper learning. Chan (2014) found that pre-service teachers who integrated the KWL-Plus technique into their lesson plans were more successful in engaging students in reflective thinking and goal-setting. These activities are crucial components of learning management competencies, which involve the ability to guide students through complex learning processes and help them develop critical thinking skills.

Moreover, the KWL-Plus technique's emphasis on reflection and organization aligns well with the goals of fostering metacognitive skills among students. Metacognition, or the ability to think about one's own thinking, is essential for effective learning. When pre-service teachers use the KWL-Plus technique, they not only help their students develop these skills but also enhance their own ability to design instruction that encourages self-regulation and independent learning. This dual benefit makes the KWL-Plus technique particularly valuable in

teacher education programs, where the development of both content knowledge and pedagogical skills is essential.

Additionally, the structured nature of the KWL-Plus technique makes it adaptable to various content areas and grade levels. It can be used to support reading comprehension in subjects ranging from language arts to science and social studies. For pre-service teachers, this adaptability is particularly important, as it allows them to apply the technique across different contexts and with diverse groups of students. This flexibility, combined with its proven effectiveness in promoting metacognitive awareness and comprehension, makes the KWL-Plus technique a powerful tool for developing the learning management competencies of future educators.

In summary, the KWL-Plus technique not only enhances students' ability to comprehend and retain information but also serves as an effective tool for developing the instructional skills of pre-service teachers. By promoting metacognitive awareness, encouraging reflective thinking, and providing a structured approach to learning, the KWL-Plus technique aligns with the broader goals of teacher education, which include preparing future educators to foster critical thinking and independent learning in their students. As such, it represents a valuable addition to the repertoire of strategies that pre-service teachers can use to enhance learning outcomes in their classrooms.

3. Cooperative Learning: Fostering Collaboration and Critical Thinking

Cooperative learning is a well-established instructional strategy that has garnered extensive research attention for its positive effects on both academic achievement and the development of social skills. At its core, cooperative learning involves students working together in small groups to achieve shared learning goals. This approach not only enhances academic performance but also promotes the development of interpersonal skills, such as communication, teamwork, and conflict resolution. Johnson and Johnson (2009), pioneers in the study of cooperative learning, assert that this instructional strategy leads to higher academic achievement compared to individualistic or competitive learning environments. Their research indicates that students in cooperative learning settings often perform better on assessments, demonstrate greater retention of material, and are more motivated to learn.

One of the key reasons cooperative learning is so effective is that it actively engages students in the learning process. When students work in groups, they are required to interact with one another, explain their thinking, and listen to the perspectives of their peers. This interaction fosters a deeper understanding of the material, as students must clarify their thoughts and articulate their reasoning to others. Moreover, cooperative learning encourages students to take responsibility for their own learning as well as the learning of their peers. This shared responsibility often leads to higher levels of motivation and engagement, as students feel accountable not only to themselves but also to their group members (Slavin, 2011).

In addition to academic benefits, cooperative learning plays a significant role in the development of social and emotional skills. Working in groups requires students to navigate various social dynamics, such as negotiating roles, resolving conflicts, and making collective decisions. These experiences are crucial for developing skills that extend beyond the classroom, including collaboration, leadership, and empathy. According to Gillies (2016), the

social interactions inherent in cooperative learning help students build a sense of community and belonging, which is essential for creating a positive learning environment. This sense of community can reduce feelings of isolation and anxiety, which are common in traditional, competitive learning settings.

In the context of pre-service teacher education, cooperative learning is particularly valuable for developing learning management competencies. Pre-service teachers who are trained in cooperative learning strategies are better equipped to manage diverse classroom environments, where students have varying needs, abilities, and backgrounds. Gillies (2016) emphasizes that cooperative learning prepares pre-service teachers to create inclusive classrooms where all students can contribute and feel valued. This is especially important in diverse educational settings, where teachers must be adept at fostering a collaborative atmosphere that respects and integrates different perspectives.

Furthermore, cooperative learning helps pre-service teachers develop critical thinking skills, both in themselves and in their students. When students work together to solve problems or analyze complex issues, they are often required to justify their reasoning, critique the ideas of others, and synthesize different viewpoints into a cohesive understanding. This process of collaborative problem-solving is at the heart of critical thinking. As Johnson and Johnson (2009) note, cooperative learning challenges students to go beyond rote memorization and engage in higher-order thinking tasks, such as analysis, evaluation, and creation. For pre-service teachers, mastering the ability to facilitate these types of discussions and activities is crucial for promoting critical thinking in their future classrooms.

Cooperative learning also provides pre-service teachers with practical experience in managing group dynamics, a key component of learning management competencies. Effective cooperative learning requires teachers to skillfully organize groups, monitor interactions, and intervene when necessary to keep students on task. These are essential skills for any teacher, but they are particularly important in classrooms that prioritize active, student-centered learning. By practicing these skills during their training, pre-service teachers become more confident and competent in their ability to manage real-world classroom situations.

Moreover, cooperative learning aligns well with current educational trends that emphasize the development of 21st-century skills, such as collaboration, communication, and critical thinking. In today's globalized and interconnected world, students need to be able to work effectively with others, think critically about complex issues, and communicate their ideas clearly. Cooperative learning not only supports the development of these skills but also prepares students for the collaborative nature of the modern workplace. For pre-service teachers, understanding how to implement cooperative learning strategies effectively is therefore a key component of preparing students for success in the 21st century.

4. Children's Literature as a Medium for Promoting Thinking Skills

Children's literature has long been recognized as a powerful tool for promoting critical and creative thinking in the classroom. According to Short (2018), children's literature provides rich, narrative contexts that naturally invite students to engage in deep thinking, question assumptions, and explore multiple perspectives. The stories often present moral dilemmas and complex characters, which encourage students to reflect on ethical issues and consider diverse

viewpoints. This makes children's literature an ideal medium for developing thinking skills, particularly when used in conjunction with strategies that promote active and reflective learning.

Research has shown that integrating children's literature into the curriculum can significantly enhance students' critical thinking skills. Gunning (2014) argues that when pre-service teachers use children's literature in their teaching, they provide students with opportunities to engage in higher-order thinking, such as analysis, synthesis, and evaluation. This is particularly effective when combined with instructional strategies like the KWL-Plus technique and cooperative learning, which further encourage students to engage with the text in a meaningful way. For example, students might use the KWL-Plus framework to organize their thoughts about a story, discuss their interpretations in cooperative groups, and reflect on how the themes of the story relate to real-world issues.

5. Integrating KWL-Plus and Cooperative Learning to Enhance Learning Management Competencies

While both the KWL-Plus technique and cooperative learning have been shown to be effective individually, there is a growing interest in how these strategies can be integrated to enhance learning management competencies among pre-service teachers. Slavin (2011) suggests that the combination of these approaches can provide a more comprehensive framework for developing critical thinking and collaborative skills. By integrating the KWL-Plus technique with cooperative learning, pre-service teachers can create a classroom environment that not only encourages active engagement and reflective thinking but also promotes social interaction and collective problem-solving.

This integrated approach is particularly relevant in the context of teaching children's literature. As Chan (2014) points out, using the KWL-Plus technique to organize and reflect on literary content, combined with cooperative learning activities that encourage discussion and debate, can significantly enhance students' critical thinking skills. Additionally, this approach aligns with the goals of learning management competencies, as it requires pre-service teachers to plan and implement instructional activities that are both engaging and pedagogically sound. The integration of these strategies provides a valuable opportunity for pre-service teachers to develop the skills needed to effectively manage diverse classroom environments and foster critical thinking among their students.

The literature on the integration of the KWL-Plus technique and cooperative learning highlights the potential of these strategies to enhance learning management competencies among pre-service teachers. Both approaches have been shown to be effective in promoting critical thinking, metacognitive awareness, and collaborative skills, all of which are essential for effective teaching. Moreover, the use of children's literature as a medium for these strategies provides a rich context for developing these competencies in a meaningful and engaging way. However, while the benefits of these individual approaches are well-documented, there is still a need for further research on their combined impact, particularly in the context of pre-service teacher education. This research aims to address this gap by exploring how the integration of the KWL-Plus technique with cooperative learning can be

leveraged to develop English major pre-service teachers' learning management competencies and promote thinking skills through children's literature.

Research Objectives

1. To investigate the competencies in learning management that promote thinking skills through children's literature among English major student teachers after learning via the KWL-Plus technique combined with cooperative learning;
2. To examine the satisfaction of these student teachers with the learning management approach that integrates the KWL-Plus technique and cooperative learning.

Research Methodology

Research Design

This study employs a quasi-experimental research design to investigate the effects of integrating the KWL-Plus technique with cooperative learning on the development of English major pre-service teachers' learning management competencies, specifically aimed at promoting thinking skills through children's literature. The research is conducted over the course of a semester in the academic year 2023, within the context of a course titled "Learning Management for Thinking Skill Development through Children Literature" (EEC3321). The study is designed to measure both the effectiveness of the instructional strategies and the satisfaction of the participants with these methods.

Participants

The participants of this study consist of 30 third-year English major pre-service teachers enrolled in the aforementioned course at the Faculty of Education, Suan Sunandha Rajabhat University, during the academic year 2023. The participants were selected using cluster random sampling, with the class group serving as the sampling unit. This method was chosen to align with the Teachers' Council of Thailand's guidelines, which limit the number of students per instructional group to a maximum of 30. The sample size is also reflective of a practical constraint in this research, which is the need to adhere to institutional policies regarding class sizes.

Research Instruments

Two primary research instruments were developed and utilized in this study:

1. **Learning Management Competency Assessment Tool:** This tool was specifically designed to evaluate the competencies related to learning management that promote thinking skills through children's literature. The competencies assessed include planning, classroom management, creating a learning atmosphere, assessment of learning outcomes, and communication skills. The assessment tool contains 25 items distributed across these five competency areas, with each area containing five items. The tool uses a Likert scale with five levels ranging from "needs improvement" to "excellent." The development of this tool involved a thorough review of relevant theories, literature, and existing competency frameworks,

particularly drawing on the work of Likert (1932) and the guidelines for educational assessment. The tool's validity was confirmed through expert review and the Index of Item Objective Congruence (IOC), which ranged from 0.67 to 1.00, indicating strong alignment with the research objectives.

2. **Satisfaction Questionnaire:** This instrument was developed to gauge the satisfaction levels of the pre-service teachers with the integration of the KWL-Plus technique and cooperative learning in their instructional experiences. The questionnaire includes 25 items across five dimensions: understanding and application of the KWL-Plus technique, understanding and application of cooperative learning, the overall learning management by the instructor, learning outcomes, and overall satisfaction. Like the competency assessment tool, this questionnaire also uses a five-point Likert scale. The tool's reliability was tested using Cronbach's Alpha, yielding a high reliability score of 0.97, indicating that the questionnaire is a consistent measure of student satisfaction.

Instrument Development and Validation

The development process for these instruments involved several stages:

1. Literature Review and Initial Draft: The initial items for both instruments were drafted based on an extensive review of literature related to learning management, cooperative learning, and the KWL-Plus technique. These drafts were designed to cover all relevant aspects of the competencies and satisfaction metrics being measured.

2. Expert Validation: The draft instruments were reviewed by three experts in English language teaching and educational assessment to ensure content validity. Feedback from these experts led to revisions aimed at improving the clarity, relevance, and coverage of the items.

3. Pilot Testing and Reliability Analysis: The revised instruments were pilot-tested with a small group of students who were not part of the main study to assess their clarity and reliability. The pilot data were analyzed to calculate the reliability of the instruments, with Cronbach's Alpha being used to ensure internal consistency.

4. Final Implementation: After making the necessary adjustments based on the pilot test, the final versions of the instruments were administered to the actual study participants. The collected data from these instruments provided the basis for evaluating the effectiveness of the instructional strategies and the participants' satisfaction with the learning experience.

This comprehensive methodology ensures that the research tools are both valid and reliable, allowing for a robust analysis of how the integration of the KWL-Plus technique with cooperative learning impacts the development of learning management competencies and overall satisfaction among pre-service teachers.

Data Collection

In this study, the data collection process was meticulously conducted by the researcher following the approval from the Human Research Ethics Committee at Suan Sunandha Rajabhat University. The data collection was carried out in several detailed steps to ensure the accuracy and reliability of the research findings.

1. Orientation and Explanation: Initially, the researcher provided the participating pre-service teachers with a clear explanation of the research objectives and the learning activities involved. This included an overview of the KWL-Plus technique and cooperative learning strategy that would be employed throughout the study. The researcher also outlined the tasks the participants would need to complete and the roles they were expected to assume during the study.
2. Implementation of Learning Activities: The researcher conducted six learning sessions, each consisting of three periods, as part of the EEC3321 course, "Learning Management for Thinking Skill Development through Children Literature." These sessions covered essential topics such as the definition and types of children's literature, the components and characteristics of children's literature, and strategies for using children's literature to promote thinking skills in English language instruction. Throughout these sessions, the KWL-Plus technique combined with cooperative learning was integrated into every class to provide a consistent learning experience for the participants.
3. Satisfaction Survey: After completing the instructional sessions, the participants were asked to complete a satisfaction questionnaire regarding their experiences with the KWL-Plus technique and cooperative learning. The completed questionnaires were then collected by the researcher for statistical analysis, which included interpreting and presenting the levels of satisfaction among the participants.
4. Lesson Plan Design: The participants were then paired and tasked with collaboratively designing a learning management plan aimed at promoting thinking skills through the use of children's literature. Each pair was required to create a 50-minute lesson plan, selecting different children's literature texts independently, ensuring no repetition among the pairs. These plans had to be submitted to the researcher at least three working days before the scheduled teaching demonstration.
5. Teaching Demonstrations: During the teaching demonstrations, the other participants who were not presenting acted as students and engaged attentively in the learning activities. After each demonstration, the participants used a competency assessment tool to evaluate the teaching pairs' ability to manage learning and promote thinking skills through children's literature.
6. Competency Assessment: The researcher also independently assessed the competency of each teaching pair using the same assessment tool. This evaluation was conducted for all 15 pairs, ensuring a comprehensive assessment of each participant's learning management competencies.
7. Data Analysis: Finally, the data collected from both the participants' self-assessments and the researcher's evaluations were analyzed using statistical methods. The results were interpreted, and the findings were presented systematically, providing insights into the effectiveness of the KWL-Plus technique

and cooperative learning in enhancing learning management competencies and promoting thinking skills among English major pre-service teachers.

This thorough and systematic data collection process ensured that the research outcomes were both credible and reliable, contributing valuable insights into the integration of innovative teaching strategies in teacher education.

Data Analysis

In this study, data analysis was conducted using statistical methods to interpret the data collected on two primary aspects: the learning management competencies aimed at promoting thinking skills through children's literature and the satisfaction levels of pre-service teachers with the integration of the KWL-Plus technique and cooperative learning. The analysis was methodically carried out as follows:

1. **Analysis of Satisfaction Data:** The satisfaction data, collected through a questionnaire designed to assess the pre-service teachers' satisfaction with the learning management approach using the KWL-Plus technique combined with cooperative learning, was analyzed by calculating the mean and standard deviation for each item. The satisfaction levels were categorized as follows: a mean score of 4.51-5.00 indicated Very High Satisfaction, 3.51-4.50 indicated High Satisfaction, 2.51-3.50 indicated Moderate Satisfaction, 1.51-2.50 indicated Low Satisfaction, and 1.00-1.50 indicated Very Low Satisfaction. This categorization provided a detailed understanding of the participants' perceptions, allowing the researcher to evaluate the effectiveness and reception of the instructional strategies used in the study.
2. **Analysis of Learning Management Competency Data:** The second set of data focused on evaluating the pre-service teachers' learning management competencies, particularly in promoting thinking skills through children's literature. This data was analyzed by calculating the mean and standard deviation for each competency area. The competency levels were categorized as follows: a mean score of 4.51-5.00 represented the Highest Competency Level, 3.51-4.50 represented a High Competency Level, 2.51-3.50 represented a Moderate Competency Level, 1.51-2.50 represented a Low Competency Level, and 1.00-1.50 indicated that Competency Needs Improvement. This classification provided clear insights into the effectiveness of the instructional strategies in enhancing the targeted competencies among the pre-service teachers.

Through this structured statistical analysis, the researcher was able to draw significant conclusions about the effectiveness of the instructional methods applied in the study. The results highlighted the satisfaction levels and competency achievements of the participants, offering valuable insights that could inform improvements in teacher education programs aiming to integrate innovative teaching strategies such as the KWL-Plus technique and cooperative learning.

Research Results

1. Results of the Study on the Competency in Learning Management that Promotes Thinking Skills through Children's Literature Among English Major Student Teachers After Instruction Using the KWL-Plus Technique Combined with Cooperative Learning

The researcher compiled all the data collected from the competency assessment questionnaires on learning management that promotes thinking skills through children's literature, which were evaluated by both the student teachers and the course instructors. This data was then analyzed to determine the mean ($\bar{X}$) and standard deviation (S.D.). The results of the data analysis are presented in the following table.

Table 1 Results of Competencies in Learning Management that Promotes Thinking Skills Through Children's Literature among English Major Student Teachers

Learning Management Competencies (LMCs)	The Evaluation Results of LMCs					
	Rated by Peers			Rated by an instructor		
	$\bar{X}$	S.D.	Meaning	$\bar{X}$	S.D.	Meaning
1. Competency in Learning Management Planning	**3.80**	**0.54**	**High**	**3.51**	**0.84**	**High**
1. Clarity of Learning Objectives Related to Thinking Skills	3.93	0.57	High	3.45	0.89	Moderate
2. Selection of Appropriate Literature for Children's Development and Interests	3.80	0.54	High	3.51	0.88	High
3. Alignment of Learning Activities with Selected Literature	3.67	0.47	High	3.53	0.85	High
4. Sequencing of Activities to Support Systematic Thinking	3.60	0.49	High	3.44	0.76	Moderate
5. Preparation of Learning Materials and Tools	4.00	0.52	High	3.62	0.79	High
2. Competency in Classroom Learning Management	**3.87**	**0.57**	**High**	**3.58**	**0.87**	**High**
6. Using Literature to Stimulate Analytical Thinking in the Classroom	3.87	0.62	High	3.53	0.89	High
7. Posing Challenging Questions to Promote Critical Thinking	4.00	0.52	High	3.54	0.84	High
8. Organizing Activities to Encourage Discussion and Collaborative Thinking	3.93	0.57	High	3.62	0.86	High

Learning Management Competencies (LMCs)	The Evaluation Results of LMCs					
	Rated by Peers			Rated by an instructor		
	$\bar{X}$	S.D.	Meaning	$\bar{X}$	S.D.	Meaning
9. Creating Opportunities for Students to Express Ideas and Creativity	3.73	0.57	High	3.61	0.85	High
10. Adapting Teaching Methods Based on Students' Needs and Progress	3.80	0.54	High	3.58	0.89	High
3. Competency in Creating a Learning Environment	**3.87**	**0.47**	**High**	**3.55**	**0.87**	**High**
11. Creating a Safe and Supportive Classroom Environment for Thinking	3.73	0.44	High	3.54	0.89	High
12. Using Media and Technology to Enhance Thinking and Learning	3.93	0.44	High	3.56	0.88	High
13. Encouraging Student Participation in Learning Activities	3.80	0.54	High	3.57	0.87	High
14. Building Confidence in Students to Express Their Ideas	3.87	0.50	High	3.59	0.87	High
15. Designing Activities Focused on Experiential Learning	4.00	0.37	High	3.48	0.84	Moderate
4. Competency in Learning Assessment	**3.93**	**0.52**	**High**	**3.50**	**0.92**	**Moderate**
16. Utilizing Diverse Assessment Tools to Measure Thinking Skills	4.00	0.37	High	3.59	0.88	High
17. Assessing Thinking Skills Through Practical Application	3.93	0.57	High	3.60	0.87	High
18. Using Assessment Data to Improve Learning Management	4.07	0.57	High	3.35	0.95	Moderate
19. Providing Constructive Feedback to Develop Thinking Skills	3.87	0.50	High	3.51	0.93	High
20. Summarizing and Analyzing Learning Outcomes to Enhance Thinking Skills	3.80	0.54	High	3.43	0.93	Moderate
5. Competency in Language Use for Communication	**3.89**	**0.58**	**High**	**3.53**	**0.90**	**High**
21. Clarity in Language Use When Communicating with Learners	3.93	0.57	High	3.50	0.89	Moderate

Learning Management Competencies (LMCs)	The Evaluation Results of LMCs					
	Rated by Peers			Rated by an instructor		
	$\bar{X}$	S.D.	Meaning	$\bar{X}$	S.D.	Meaning
22. Ability to Adjust Language Level to Suit Learners' Understanding	4.13	0.50	High	3.52	0.89	High
23. Appropriate Use of Questions and Responses to Learners' Queries	3.87	0.62	High	3.51	0.93	High
24. Using Language to Encourage Participation and Expression of Ideas	3.80	0.54	High	3.58	0.88	High
25. Using Language Suitable for Explaining Complex or Difficult Content	3.73	0.57	High	3.53	0.92	High
Overall mean	**3.87**	**0.54**	**High**	**3.53**	**0.88**	**High**

Based on the results presented in Table 1, it is evident that the competency in learning management that promotes thinking skills through children's literature among English major student teachers was rated highly in both peer and instructor evaluations. The overall mean score for peer evaluations was 3.87, with a standard deviation of 0.54, indicating a high level of competency. Similarly, instructor evaluations yielded an overall mean score of 3.53, with a standard deviation of 0.88, also reflecting a high level of competency.

Specifically, the competency in learning assessment was rated the highest by instructors (Mean = 3.93, S.D. = 0.52), followed closely by competency in language use for communication (Mean = 3.89, S.D. = 0.58). These findings suggest that student teachers are particularly adept at assessing learning outcomes and effectively using language in instructional contexts. Conversely, the lowest ratings in instructor evaluations were observed in competencies related to summarizing and analyzing learning outcomes to develop thinking skills (Mean = 3.43, S.D. = 0.93), suggesting a need for further development in this area.

Peer evaluations, on the other hand, indicated the highest competency in classroom learning management (Mean = 3.87, S.D. = 0.57) and creating a conducive learning environment (Mean = 3.87, S.D. = 0.47). This consistency across different competencies highlights the effectiveness of the KWL-Plus technique combined with cooperative learning in fostering essential teaching skills. The alignment between peer and instructor evaluations reinforces the robustness of the findings and underscores the overall success of the instructional approach in enhancing the student teachers' competencies.

2. Results of the Study on the Satisfaction of English Major Student Teachers with Learning Management Using the KWL-Plus Technique Combined with Cooperative Learning

After the learning activities, 30 English major student teachers completed a satisfaction questionnaire on the use of the KWL-Plus technique combined with cooperative learning. The questionnaire, covering five areas—KWL-Plus application, cooperative learning,

instructional management, learning outcomes, and overall satisfaction—was analyzed statistically. The results are presented in the following table.

Table 2 Results of Student Teacher Satisfaction on KWL-Plus and Cooperative Learning

Satisfaction Evaluation List	Level of Satisfaction		
	$\bar{X}$	S.D.	Meaning
Section 1: Understanding and Application of the KWL-Plus Technique	**4.03**	**0.80**	**High**
1. I understand the objectives and approach of the KWL-Plus technique used in class.	4.03	0.75	High
2. I believe that using KWL-Plus enhances my understanding of the course material.	4.07	0.81	High
3. I find that KWL-Plus increases my interest and engagement in the lessons.	3.97	0.84	High
4. I am confident that I can apply the KWL-Plus technique in my future teaching.	4.10	0.79	High
5. I think KWL-Plus is beneficial for learning and promotes analytical thinking.	4.00	0.77	High
Section 2: Understanding and Application of Cooperative Learning	**4.00**	**0.81**	**High**
6. I believe that cooperative learning allows for the exchange of ideas with classmates.	4.00	0.82	High
7. I feel that cooperative learning helps me feel part of the group and responsible for my tasks.	3.97	0.80	High
8. I think working with others enhances my understanding of the content.	4.07	0.81	High
9. I believe cooperative learning builds teamwork skills.	4.03	0.80	High
10. I am confident that I can apply cooperative learning techniques in the future.	3.93	0.81	High
Section 3: Instructional Management by the Teacher	**4.39**	**0.58**	**High**
11. The teacher effectively prepared and managed the lessons.	4.33	0.60	High
12. The teacher appropriately applied the KWL-Plus technique and cooperative learning.	4.40	0.55	High
13. The teacher created an open learning environment that encouraged participation.	4.47	0.50	High
14. The teacher provided clear and understandable guidance and answered questions effectively.	4.43	0.50	High
15. The teacher demonstrated expertise in using the KWL-Plus technique and cooperative learning.	4.33	0.70	High
Section 4: Learning Outcomes	**4.31**	**0.61**	**High**

Satisfaction Evaluation List	Level of Satisfaction		
	$\bar{x}$	S.D.	Meaning
16. I feel that using KWL-Plus and cooperative learning has increased my knowledge and skills.	4.30	0.64	High
17. I find that this learning management has developed my analytical thinking skills.	4.40	0.55	High
18. I feel more confident in applying the knowledge gained from this course.	4.27	0.63	High
19. I believe KWL-Plus and cooperative learning have enhanced my communication skills.	4.33	0.60	High
20. I feel more confident in applying the knowledge to real-world situations.	4.23	0.62	High
Section 5: Overall Satisfaction	**4.42**	**0.54**	**High**
21. I am overall satisfied with the learning management using the KWL-Plus technique and cooperative learning.	4.33	0.65	High
22. I believe this learning management approach is appropriate for the subject matter.	4.50	0.50	High
23. I feel that this approach effectively promotes learning.	4.47	0.50	High
24. I would like to use the KWL-Plus technique and cooperative learning in the future.	4.37	0.55	High
25. I would recommend the KWL-Plus technique and cooperative learning to other students.	4.43	0.50	High
Overall mean satisfaction	**4.23**	**0.70**	**High**

Based on the data presented in Table 2, it is evident that the student teachers expressed a high level of satisfaction with the learning management approach that utilized the KWL-Plus technique combined with cooperative learning. The overall mean satisfaction score of 4.23, with a standard deviation of 0.70, underscores the effectiveness of this instructional strategy.

The highest levels of satisfaction were observed in the section on Instructional Management by the Teacher, which achieved a mean score of 4.39 and a standard deviation of 0.58. This indicates that the student teachers particularly valued the teacher's ability to effectively prepare and manage the lessons, apply the KWL-Plus and cooperative learning techniques appropriately, and foster an open and participatory classroom environment.

Furthermore, the Overall Satisfaction section received a mean score of 4.42 (S.D. = 0.54), reflecting a strong endorsement of the approach's relevance and effectiveness in promoting learning. Notably, the item assessing the appropriateness of the learning management for the subject matter achieved the highest individual score (Mean = 4.50, S.D. = 0.50), indicating that the student teachers found this approach highly suitable for the content being taught.

These results suggest that the integration of KWL-Plus with cooperative learning is highly effective in enhancing both instructional quality and student engagement, making it a valuable strategy for teaching and learning in this context.

Discussion

The integration of the KWL-Plus technique with cooperative learning yielded significant improvements in the learning management competencies of English major pre-service teachers, particularly in their ability to promote critical thinking skills through children's literature. This discussion examines several crucial aspects that contributed to these improvements:

1. Effectiveness of the KWL-Plus Technique: The KWL-Plus technique, designed to facilitate effective learning through systematic reflection and analysis, was instrumental in enhancing critical thinking. By encouraging learners to identify what they know and what they aim to learn, the technique promotes deeper inquiry and critical reflection. This aligns with the findings of Ogle (1986) and Novak & Gowin (1984), who emphasized the importance of connecting new information with prior experiences. The combination with cooperative learning further enhanced this process by fostering peer interaction and collaborative problem-solving, which are essential for developing deep analytical skills (Johnson & Johnson, 1989; Slavin, 1995).
2. Promotion of Active Learning and Engagement: The combination of the KWL-Plus technique with cooperative learning significantly boosted active learning and engagement among pre-service teachers. This approach allowed students to take a more active role in their learning by posing questions and exploring information based on their goals. The active engagement fostered by this method is crucial for developing systematic thinking skills, as supported by Loes and Pascarella (2017), who found that cooperative learning enhances both engagement and critical thinking. Moreover, modern technologies, such as AI, can further stimulate this engagement in a tech-supported learning environment (Chiu, 2023).
3. Fostering Meaningful Learning: The KWL-Plus technique, when integrated with cooperative learning, played a critical role in fostering meaningful learning experiences. By helping students connect new information with their existing knowledge and personal experiences, this approach deepened their understanding and enhanced their analytical thinking skills. Cheng and Wan (2021) and Tienken (2020) have similarly highlighted the importance of linking new information to familiar contexts to promote critical thinking and deeper understanding.
4. Competency in Learning Management: The analysis of learning management competencies, evaluated by both peers and instructors, revealed that pre-service teachers were highly effective in planning, managing, and assessing learning activities. Effective planning, characterized by clear objectives and appropriate material selection, is crucial for successful learning outcomes. Research by Clark and

Peterson (1986) and Shavelson and Stern (1981) supports the notion that well-structured learning plans and clear objectives significantly impact the quality of teaching and learning.

5. Creating a Positive Learning Atmosphere: A key factor in promoting critical thinking is the ability to create a learning environment that encourages open dialogue and creative expression. The high ratings in this competency area suggest that the pre-service teachers were successful in fostering a supportive atmosphere, which is essential for student confidence and engagement. Vygotsky (1978) and Dewey (1938) both emphasized the role of social interactions and a conducive environment in the development of cognitive skills.
6. Effective Learning Assessment: The use of diverse and reflective assessment methods was also highly rated, indicating that pre-service teachers were adept at evaluating and enhancing students' thinking skills. High-quality assessments, as noted by Black and Wiliam (1998), are critical for providing constructive feedback and supporting student development. The KWL-Plus technique further facilitated this by encouraging continuous reflection and the development of analytical thinking (Ogle, 1986).
7. Competency in Language Use for Communication: Effective communication is vital for facilitating understanding and learning in the classroom. The ability to use language clearly and appropriately not only helps students grasp complex content but also encourages participation and critical thinking. The role of language in developing cognitive skills has been emphasized by Swain (1985) and Vygotsky (1978), while Cummins (2000) noted that adapting language to the learning context enhances student engagement and understanding.

The integration of the KWL-Plus technique with cooperative learning has proven to be an effective approach for enhancing the learning management competencies of pre-service teachers. These competencies, particularly in promoting critical thinking through children's literature, were evident in the high evaluations from both peers and instructors. The findings underscore the importance of incorporating innovative teaching strategies into teacher education programs to foster higher-order thinking skills and active learning.

The research findings indicate that English major pre-service teachers were highly satisfied with the integration of the KWL-Plus technique and cooperative learning. This satisfaction can be attributed to several key factors:

1. Engagement Through KWL-Plus: The KWL-Plus technique effectively engaged students by encouraging them to reflect on their prior knowledge, set clear learning goals, and connect new information with existing knowledge. This method, as noted by Ogle (1986), enhanced participation and contributed to higher satisfaction in the learning process.
2. Supportive Cooperative Learning: Cooperative learning fostered a collaborative environment that encouraged idea exchange and teamwork, essential for developing critical thinking and social skills. Johnson and Johnson (2019) highlighted

that such collaboration leads to greater satisfaction by creating a supportive learning atmosphere.

3. Active Participation and Confidence: The combination of these techniques allowed students to actively participate in their learning, explore topics of interest, and build confidence in applying knowledge. Slavin (2019) emphasized that this active involvement and the practical application of learning are crucial to student satisfaction.
4. Effective Instruction: High satisfaction with the learning management reflects the instructor's ability to implement these strategies effectively, promoting deeper engagement and critical thinking. This aligns with findings from Tienken (2020) and Mayer (2017) on the importance of connecting learning to real-life applications.
5. Skill Development: The pre-service teachers felt equipped to apply both the KWL-Plus technique and cooperative learning in their future teaching, underscoring the success of these methods in fostering meaningful learning and practical skills, as supported by Chiu (2023).

In summary, the high satisfaction among pre-service teachers underscores the effectiveness of integrating the KWL-Plus technique with cooperative learning in enhancing engagement, confidence, and practical skill development, making these approaches valuable in teacher education.

Pedagogical Implications

To maximize the effectiveness of integrating the KWL-Plus technique with cooperative learning in developing the learning management competencies of English major pre-service teachers, especially in promoting thinking skills through children's literature, the following pedagogical implications are recommended:

1. Continuous Practice of KWL-Plus: It is crucial to encourage ongoing practice of the KWL-Plus technique. Regular use helps students become familiar with reflecting on prior knowledge (Know), setting learning goals (Want to know), and summarizing what they have learned (Learned). This consistent practice enhances students' ability to apply the technique effectively across different contexts, fostering critical thinking and active engagement in their learning.
2. Development of Analytical Thinking through Reflection: Promoting regular reflection after learning sessions is vital for deepening analytical thinking skills. Reflection allows students to evaluate their learning and make connections between new and prior knowledge. By integrating reflection consistently into the curriculum, students can achieve more meaningful and sustained learning outcomes.
3. Alignment of Content with Learner Levels: Tailoring content and activities to match the students' knowledge levels and interests is essential for creating meaningful learning experiences. Instructors should consider students' abilities and needs when designing activities and selecting children's literature. Differentiated instruction,

which adjusts teaching to the learners' needs, enhances engagement and motivation, thereby improving overall learning effectiveness.

4. Support for Teamwork and Cooperative Learning: Encouraging teamwork and cooperative learning is key to developing social skills and critical thinking. Working in groups allows students to exchange ideas and learn from their peers, deepening their understanding of the material. A learning environment that supports collaboration is crucial for fostering in-depth learning and problem-solving skills.
5. Encouragement of Active Participation: Actively involving students in the learning process through inquiry and exploration based on their interests significantly enhances engagement and satisfaction. By allowing students to take ownership of their learning, instructors can create a more interactive and participatory classroom environment, essential for developing independent and motivated learners.

Conclusion

The findings from the study on the integration of the KWL-Plus technique with cooperative learning to enhance the learning management competencies of English major pre-service teachers in promoting thinking skills through children's literature can be summarized as follows:

1. High Level of Competency Achievement: The research demonstrated that English major pre-service teachers significantly developed their learning management competencies, particularly in promoting thinking skills through children's literature, after participating in learning sessions that integrated the KWL-Plus technique with cooperative learning. The results indicated that these competencies were consistently rated at a high level by both peers and instructors, suggesting that the instructional strategies employed were effective in fostering the desired educational outcomes.
2. High Level of Satisfaction: In addition to the improvement in competencies, the study also found that the pre-service teachers expressed a high level of satisfaction with the learning management approach that combined the KWL-Plus technique and cooperative learning. This satisfaction reflects the participants' positive reception of the instructional methods, highlighting their perceived value in enhancing both their teaching skills and their ability to promote critical thinking in students through the use of children's literature.

Overall, the study confirms that the integration of the KWL-Plus technique with cooperative learning is an effective approach for developing essential teaching competencies in pre-service teachers. The findings suggest that such instructional strategies not only contribute to the professional growth of future educators but also align well with the goals of modern education, particularly in cultivating critical thinking skills among learners. These results underscore the potential benefits of incorporating innovative teaching methods into teacher education programs, ultimately contributing to the preparation of more competent and confident educators.

Further Research Recommendations

Based on the findings and discussions of this study, the following recommendations for future research are proposed to further explore the effectiveness and application of the KWL-Plus technique combined with cooperative learning:

1. Longitudinal Study of KWL-Plus and Cooperative Learning: Future research should investigate the long-term effects of the KWL-Plus technique and cooperative learning on students' analytical thinking and academic success. A longitudinal study tracking students over several years would provide deeper insights into the sustained impact of these methods and whether the skills developed continue to influence higher-level learning outcomes over time.
2. Comparative Analysis of Learning Techniques: Future studies should compare the effectiveness of the KWL-Plus technique with other instructional strategies by dividing students into different groups based on the technique used. This comparative research could include using interviews, focus groups, and observations to gain a comprehensive understanding of how each method impacts learning outcomes, critical thinking skills, and student satisfaction. Such an approach would help identify the relative strengths and weaknesses of KWL-Plus in comparison to alternative techniques.
3. Exploration of KWL-Plus in Various Disciplines: Expanding research to include the application of the KWL-Plus technique in disciplines such as science, mathematics, and social studies would provide valuable insights into its adaptability and effectiveness across different fields. This research should also incorporate observational studies to capture real-time interactions and behaviors, helping to assess how well the technique supports learning in diverse academic settings.
4. Investigation of Success Factors for KWL-Plus Implementation: Further research should examine the factors that contribute to or hinder the success of the KWL-Plus technique. This could include using interviews and focus groups with both students and instructors to explore the roles of teaching styles, student motivation, and the nature of the content being taught. Understanding these factors would provide a nuanced view of the conditions necessary for the successful implementation of KWL-Plus in various educational contexts.
5. Impact of Digital Integration and Alternative Data Collection Methods: Future research should explore the integration of digital tools with the KWL-Plus technique and cooperative learning, assessing how technology can enhance these methods. Additionally, employing alternative data collection techniques such as interviews, focus groups, and observations would provide a richer, more detailed understanding of how digital platforms influence student engagement, critical thinking, and learning outcomes in technology-enhanced learning environments.

References

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. *Assessment in Education: Principles, Policy & Practice, 5*(1), 7-74.

Boonsue, C. (2019). Digital divide in education: A challenge for Thailand's pre-service teachers. *Journal of Educational Technology Development and Exchange, 12*(2), 89-101.

Cantrell, S. C., Almasi, J. F., Carter, J. C., & Rintamaa, M. (2000). The effects of KWL on students' achievement in expository text comprehension. *Reading Research Quarterly, 35*(2), 194-206.

Chan, K. K. (2014). The effectiveness of the KWL strategy in enhancing reading comprehension of middle school students. *Educational Research and Reviews, 9*(23), 1328-1334.

Chiu, M. M. (2023). Technology-enhanced learning: Engaging students through AI and collaborative tools. *Journal of Educational Technology, 34*(2), 145-160.

Clark, C. M., & Peterson, P. L. (1986). Teachers' thought processes. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (pp. 255-296). Macmillan.

Cummins, J. (2000). *Language, power, and pedagogy: Bilingual children in the crossfire*. Multilingual Matters.

Dewey, J. (1938). *Experience and education*. Kappa Delta Pi.

Gillies, R. M. (2016). Cooperative learning: Review of research and practice. *Australian Journal of Teacher Education, 41*(3), 39-54.

Gunning, T. G. (2014). *Creating literacy instruction for all students*. Pearson.

Hallinger, P., & Lee, M. (2014). Mapping instructional leadership in Thailand: Has education reform impacted principal practice? *Educational Management Administration & Leadership, 42*(1), 6-29.

Johnson, D. W., & Johnson, R. T. (1989). *Cooperation and competition: Theory and research*. Interaction Book Company.

Johnson, D. W., & Johnson, R. T. (2009). An educational psychology success story: Social interdependence theory and cooperative learning. *Educational Researcher, 38*(5), 365-379.

Johnson, D. W., & Johnson, R. T. (2019). Cooperation and the use of cooperative learning. *The Annual Review of Psychology, 70*, 631-654.

Loes, C. N., & Pascarella, E. T. (2017). Collaborative learning and critical thinking: Testing the link between participation in collaborative learning and students' critical thinking skills. *The Journal of Higher Education, 88*(5), 726-753.

Mayer, R. E. (2017). How knowledge construction impacts learning: The role of cognitive processes in making connections. *Educational Psychologist, 52*(2), 71-83.

Novak, J. D., & Gowin, D. B. (1984). *Learning how to learn*. Cambridge University Press.

Ogle, D. M. (1986). KWL: A teaching model that develops active reading of expository text. *The Reading Teacher, 39*(6), 564-570.

Sangnapaboworn, W. (2007). Education reform in Thailand: Towards quality improvement and equity in education. *International Journal of Educational Development, 27*(1), 53-68.

Shavelson, R. J., & Stern, P. (1981). Research on teachers' pedagogical judgments, plans, and decisions. *Review of Educational Research, 51*(4), 455-498.

Short, K. G. (2018). Children's literature as a resource for teaching critical thinking. *Journal of Language and Literacy Education, 14*(1), 1-13.

Shulman, L. S. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review, 57*(1), 1-22.

Slavin, R. E. (2011). Cooperative learning and achievement: Theory and research. In R. E. Mayer & P. A. Alexander (Eds.), *Handbook of Research on Learning and Instruction* (pp. 344-360). Routledge.

Slavin, R. E. (2019). Cooperative learning and achievement: Theory and research. In G. W. Fry & T. Husén (Eds.), *International Encyclopedia of Education* (3rd ed., pp. 223-227). Elsevier.

Tienken, C. H. (2020). The impact of high-order thinking skill development on academic achievement. *Journal of Educational Research, 113*(1), 19-34.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.