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An Active Learning Model - Based Communicative Language Instructional System for English Achievement of Secondary School Students in Phra Nakhon Si Ayutthaya Province

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ABSTRACT

The purposes of this research were 1) to study factors for active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya Province, 2) to develop an active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya Province, and 3) to assess the active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya province. Research and development were designed. The key informants were 12 teachers of lower secondary schools, and the sample group was 100 students in lower secondary schools. The research tools were interview form and questionnaires. Qualitative data was analyzed by analytic induction whereas quantitative data were analyzed by descriptive statistic, pearson correlation coefficient, and advanced statistics of structural equation model (SEM). Results were shown as follows: 1) Factors for active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya Province included 5 factors which consisted of Technological Knowledge, Pedagogical knowledge (Active Learning), Content Knowledge, Buddhist Principles (Bahussutaṅga 5), and Achievement. 2) An active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya Province was developed which showed causal relationship model between 3 exogenous latent variables which were Technological Knowledge, Pedagogical knowledge (Active Learning), Content Knowledge, and 2 endogenous latent variables which were Buddhist Principles (Bahussutaṅga 5), and Achievement. 3) An Active Learning Model - based Communicative Language Instructional System for English Achievement of Secondary School Students in Phra Nakhon Si Ayutthaya Province was validated and the model fit with empirical data by considering Chi-square (χ^2) = 266.18, df = 170, p = .0525, RMSEA = .076. It clearly found that Buddhist principles of Bahussutaṅga 5 is a mediator in the model.

Keywords: Active Learning Model, Communicative Language Instructional System, English Achievement

I. INTRODUCTION

English is an international language being very necessary because it is a medium for exchanging and learning information and knowledge in various fields, and also an important tool for communication, occupation building an understanding of the culture and ideas, possibilities and progress of other nations. Therefore, for developing a country in terms of education to be prosperous and equal to other countries, it is extremely necessary to develop people in the country to have knowledge and ability in English, and able to communicate in English, (Natnaree Ritthirat and Thanyapa Chiramanee, 2014) [1], so the achievement in teaching English that advances from listening, speaking, reading and writing is to be able to communicate in English. The achievement of advanced English learning from listening, speaking, reading, writing or remembering vocabulary is the ability to communicate in English (Dolati I. and Mikaili P., 2011) [2]. However, Thai students spend many years learning

English in school from kindergarten, primary and secondary education but most Thai students' English learning achievements are relatively low compared to other countries. The English proficiency of Thai people is quite low.

English learning loss caused by many factors in the past can be solved with active learning management being the solution to solving the learning loss, for example, is to promote learning and learner quality of learners, motivate learning, set goals, and promote learning, develop teaching techniques and teacher learning, promote learners' integrated learning and connect them to real-world experiences, promote the right use of innovation and technology, promote participation in learning, etc., (Chochaba Chuenban et al., 2022) [3].

The problems above are certainly not an excuse for not implementing communicative language teaching principles. This is just a reflection to recognize about common problems encountered by non-native language teachers. The above problems can be solved by giving more supports for teachers to develop their professionalism. This can be in the form of thorough teachers' trainings in communicative language teaching. The trainings must not only introduce the theories and principles of communicative language teaching but also give variety of communicative classroom activities for teachers to develop.

The main problem in this research is that we are looking for models, system, and approaches that can be used to develop or improve English language teaching and learning for communicative purposes in order to achieve greater educational achievement in English language learning to be useful in formulating policies and practices in the education system and further benefiting the study of English.

II. RESEARCH OBJECTIVE

Research objectives were: 1) To study factors for active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya province 2) To develop an active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya province. 3) To assess the active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya province.

III. RESEARCH METHOD

This research is Research and Development (R&D) for English achievement of secondary school students in Phra Nakhon Si Ayutthaya province as shown in the research method synthesis table and develop innovations in teaching English for communication as in the following table:

Table 1 Comparing instructional design with instructional research

Instructional design process	**Research and development process**
Analysis steps -Evaluation of necessary needs -Teaching analysis -Student analysis learning environment -Writing learning objectives	**Research stage to assess conditions before development (R1)** -Measurement of learning results -Analysis of teaching and learning problems -Analysis of student needs -Analysis of community needs
Design stage -Development of teaching and learning assessment tools -Designing teaching procedures and tasks for learning - Design to select teaching media and learning resources -Design of measurement and evaluation of learning outcomes	**Research and Development Stage (D1)** -Study of theories and concepts in developing and selecting innovations to solve problems. -Development of innovations and assessment tools -Trial of innovation -Evaluating results and improving innovations
Evaluation stage (D2) -Progress assessment by experts and students for improvement. -Summary evaluation of teaching and learning, such as evaluation of efficiency, effectiveness, satisfaction and expected benefits.	**Research to assess post-development conditions (R2)** - measurement of student learning results after studying -Assessing progress/comparing differences in learning outcomes before and after studying. - Studying problems and obstacles in learning development to find solutions and improvements.

Source: Atsara Prasertsin (2020) [4]

In this research, the researcher divided the study into 2 phases: phase 1, level 1, in-depth interview, to study the success factors in teaching and learning management of educational institutions in Phra Nakhon Si Ayutthaya province that used the teaching-learning process with active learning and Phase 2, correspondence

analysis of the model of effectiveness for empirical data development of English communicative skill of lower secondary school students emphasis is placed on the collection of both qualitative and quantitative data from a two-stage research design. It can be summarized as the following figure:

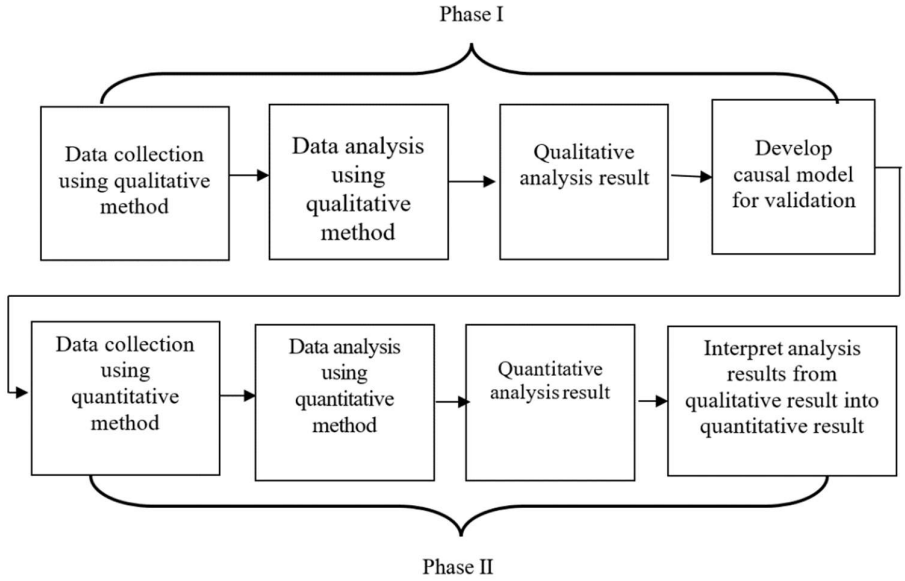


Figure 1 Research process steps

For research design, the sampling design consisted of 12 key informants of administrators and teachers of lower secondary schools, and the sample group of quantitative study was 100 students in lower secondary schools. The measurement design consisted of interview form and questionnaires. For analysis design, qualitative data was analyzed by analytic induction whereas quantitative data were analyzed by descriptive statistic, Pearson correlation coefficient, and advanced statistics of structural equation model (SEM).

IV. RESEARCH RESULTS

Results of the study to answer the research objectives as mentioned above. This chapter can be divided in to 4 parts: 1) Results of factors for active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya province 2) Results of development an active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya province. 3) Assessment results of the active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya province.

Results of development an Active Learning Model - based Communicative Language Instructional System for English Achievement of Secondary School Students in Phra Nakhon Si Ayutthaya Province:

1. An Active Learning Model - based Communicative Language Instructional System for English Achievement of Secondary School Students in Phra Nakhon Si Ayutthaya Province consisted of 5 latent variables and 21 observed variables. There are 3 exogenous latent variables which are 1) Technological Knowledge that can be measured by 3 observed variables consisted of Ability to use various technologies, Ability to use technological tools, and Ability to use associated resources; 2) Pedagogical knowledge (Active Learning) that can be measured by 4 observed variables consisted of understanding of student learning styles, classroom management skills, lesson planning, and assessments; 3) Content knowledge that can be measured by 4 observed variables consisted of knowledge of concepts, knowledge of theories, knowledge of evidence, knowledge of organizational frameworks.

2. There are 2 endogenous latent variables which are 1) Buddhist principles of Bahussutaṅga 5 that can be measured by 5 observed variables consisted learned many ideas, remembered them, having frequently practiced them verbally, having looked over them with the mind, having thoroughly penetrated them by view; 2) English Achievement that can be measured by 5 observed variables consisted listening skill, speaking skill, reading skill, and writing skill, and Communicative skill. The Active Learning Model - based Communicative Language Instructional System for English Achievement of Secondary School Students in Phra Nakhon Si Ayutthaya province is shown as below figure.

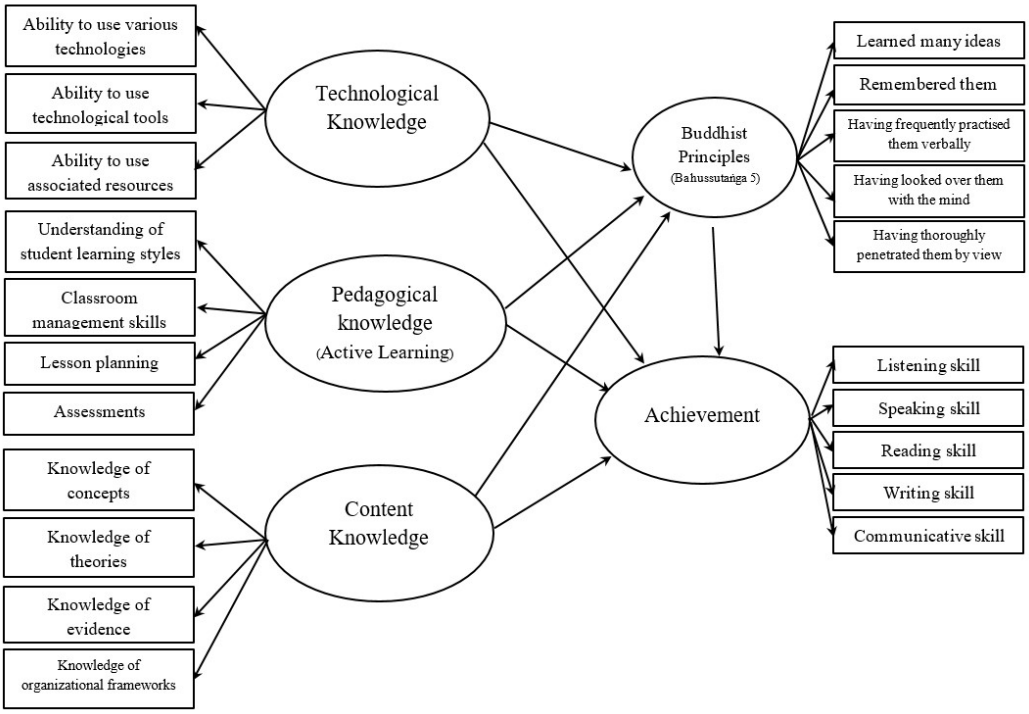
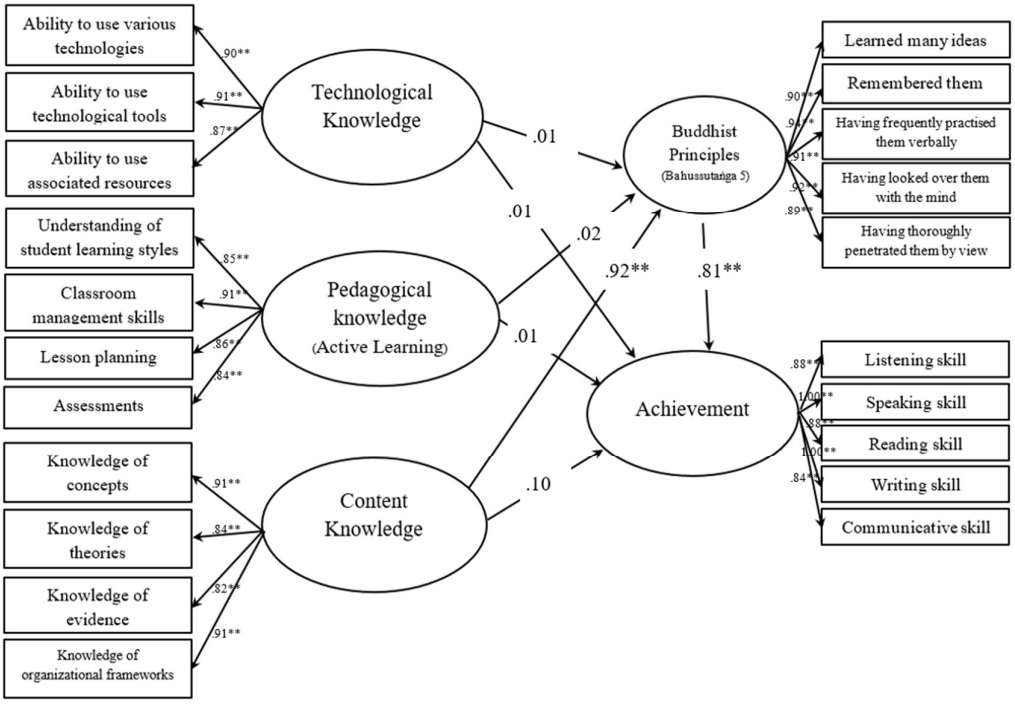


Figure 2 An Active Learning Model - based Communicative Language Instructional System for English Achievement of Secondary School Students in Phra Nakhon Si Ayutthaya Province (Research Framework)

3. An Active Learning Model - based Communicative Language Instructional System for English Achievement of Secondary School Students in Phra Nakhon Si Ayutthaya Province was validated and the model fit with empirical data by considering Chi-square (χ^2) = 266.18, df = 170, p = .0525, RMSEA = .076. It clearly found that Buddhist principles of Bahussutaṅga 5 is a mediator in the model which can be shown as below figure.



Chi-square = 266.18, df = 170, p = .0525, RMSEA = .076.

Figure 3 An Active Learning Model - based Communicative Language Instructional System for English Achievement of Secondary School Students in Phra Nakhon Si Ayutthaya Province (Fit Model)

V. DISCUSSION

Discussions were shown 3 issues of research results as following:

1. This discussion explores the factors that contribute to the effectiveness of an active learning model-based communicative language instructional system for English achievement among secondary school students in Phra Nakhon Si Ayutthaya Province. The focus is on five key factors: Technological Knowledge, Pedagogical Knowledge (Active Learning), Content Knowledge, Buddhist Principles (Bahussutaṅga 5), and Achievement. Technological tools have become integral to language instruction, offering a wide range of resources and opportunities for interactive learning. Studies have shown that teachers' proficiency in using technology can significantly impact student engagement and outcomes (Mishra, P., and Koehler, M. J., 2006) [5]. Active learning strategies, such as cooperative learning, problem-based learning, and inquiry-based learning, have been shown to enhance student engagement and understanding. Teachers who possess strong pedagogical knowledge can effectively implement these strategies to create a dynamic and interactive learning environment (Prince, M., 2024)[6]. Teachers' depth of understanding of the English language, including grammar, vocabulary, and cultural context, is essential for effective instruction. Studies have demonstrated a strong correlation between teacher content knowledge and student achievement (Ball, D. L., Thames, M. H., and Phelps, G., 2008) [7]. The integration of Buddhist principles into education has gained increasing attention. Studies have suggested that these principles, such as mindfulness, compassion, and wisdom, can create a positive and supportive learning environment, fostering student motivation and well-being. (Winky Lee, Christopher T. McCaw, Nicholas T. and Van Dam, 2024) [8]. Student achievement, as measured by standardized tests, classroom assessments, and other indicators, is a critical outcome of any instructional system. Studies have shown that factors such as teacher quality, curriculum design, and student engagement can significantly influence achievement (Hattie, J. A., (2009) [9]. These factors are interconnected and mutually influential. For example, teachers with strong technological knowledge can leverage active learning strategies through the use of digital tools, while Buddhist principles can create a conducive environment for effective learning. Additionally, content knowledge and pedagogical skills are essential for designing and implementing engaging and meaningful language instruction. By considering these five factors, educators can develop an effective active learning model-based communicative language instructional system that promotes English achievement among secondary school students in Phra Nakhon Si Ayutthaya Province. The integration of technological knowledge, pedagogical skills, content knowledge,

Buddhist principles, and a focus on achievement can create a dynamic and meaningful learning experience for students.

2. This discussion explores a causal relationship model that examines the impact of Technological Knowledge, Pedagogical Knowledge (Active Learning), and Content Knowledge on Buddhist Principles (Bahussutaṅga 5) and Achievement among secondary school students in Phra Nakhon Si Ayutthaya Province. The model posits that these exogenous variables influence the endogenous variables, suggesting a causal relationship. Technological Knowledge is the ability of teachers to effectively utilize technology tools and platforms for language instruction (Mishra, P., and Koehler, M. J., 2006) [10]. Pedagogical Knowledge (Active Learning) refers to teachers' understanding and implementation of active learning strategies (Prince, M., 2004) [11]. Content Knowledge refers to teachers' depth of understanding of the English language (Ball, D. L., Thames, M. H., and Phelps, G. (2008) [12]. For Endogenous Variables, Buddhist Principles (Bahussutaṅga 5) refers to the integration of Buddhist principles into the teaching and learning process (Winky Lee, Christopher T. McCaw, Nicholas T. and Van Dam., 2024) [13]. Achievement refers to students' English language proficiency and overall academic success (Hattie, J. A. (2009) [14]. The proposed causal relationship model suggests that Technological Knowledge and Pedagogical Knowledge directly influence Buddhist Principles and Achievement. Content Knowledge directly influences Buddhist Principles and Achievement. Buddhist Principles indirectly influence Achievement through its impact on Technological Knowledge, Pedagogical Knowledge, and Content Knowledge. To test the causal relationships, a quantitative research design using structural equation modeling (SEM) can be employed. Data can be collected through surveys administered to teachers and students in secondary schools in Phra Nakhon Si Ayutthaya Province. The SEM analysis will allow for the estimation of the direct and indirect effects of the exogenous variables on the endogenous variables. For implications, the findings of this research can provide valuable insights for educators and policymakers in Phra Nakhon Si Ayutthaya Province. If the model is supported by the data, it suggests that investing in teacher training to improve technological knowledge, pedagogical skills, and content knowledge can lead to better English language outcomes. Additionally, integrating Buddhist principles into the educational system can create a more conducive learning environment and enhance student achievement. The proposed causal relationship model offers a framework for understanding the factors that influence English achievement among secondary school students in Phra Nakhon Si Ayutthaya Province. By investigating the relationships between technological knowledge, pedagogical knowledge, content knowledge, Buddhist principles, and achievement, this research can contribute to the development of more effective language instructional systems.

3. This discussion examines the validation of a causal relationship model that explores the impact of Technological Knowledge, Pedagogical Knowledge (Active Learning), and Content Knowledge on Buddhist Principles (Bahussutaṅga 5) and Achievement among secondary school students in Phra Nakhon Si Ayutthaya Province. The focus is on the model's fit with empirical data by considering Chi-square (χ^2) = 266.18, df = 170, p = .0525, RMSEA = .076. While the chi-square test is not significant at the .05 level, the RMSEA value indicates a reasonable fit between the model and the data. An RMSEA value below .08 is generally considered acceptable. It clearly found that Buddhist principles of Bahussutaṅga 5 is a mediator in the model. The analysis revealed that Buddhist principles act as a mediator in the relationship between the exogenous variables (Technological Knowledge, Pedagogical Knowledge, and Content Knowledge) and Achievement. This suggests that the positive impact of these variables on Achievement is partially mediated through the integration of Buddhist principles into the teaching and learning process. The validation of the model and the identification of Buddhist principles as a mediator have several implications: 1) Teacher Training: Educators should prioritize teacher training in technological skills, active learning strategies, content knowledge, and the integration of Buddhist principles; 2) Curriculum Development: Curricula should be designed to incorporate active learning approaches and align with Buddhist principles; 3) School Culture: Schools should foster a positive and supportive learning environment that reflects Buddhist values; 4) Policy Development: Educational policies should support the implementation of active learning models and the integration of Buddhist principles. The validation of the causal relationship model provides strong evidence for the importance of technological knowledge, pedagogical knowledge, content knowledge, and Buddhist principles in enhancing English achievement among secondary school students in Phra Nakhon Si Ayutthaya Province. The mediating role of Buddhist principles highlights the significance of creating a positive and supportive learning environment that aligns with these principles. By implementing strategies to improve teacher training, curriculum development, school culture, and educational policies, educators can foster a more effective and meaningful language learning experience for students.

VI. MODEL OF KNOWLEDGE FROM RESEARCH

Model of knowledge from research on "An Active Learning Model - based Communicative Language Instructional System for English Achievement of Secondary School Students in Phra Nakhon Si Ayutthaya Province" can be explained by the concept of Technological Knowledge, Pedagogical knowledge (Active Learning), Content Knowledge which integrated by Buddhist principles of Bahussutaṅga 5 in order to develop English Achievement of Secondary School Students. It can be shown as below figure:

Model of knowledge from research on "An Active Learning Model - based Communicative Language Instructional System for English Achievement of Secondary School Students in Phra Nakhon Si Ayutthaya Province" can be explained by the concept of Technological Knowledge, Pedagogical knowledge (Active Learning), Content Knowledge which integrated by Buddhist principles of Bahussutaṅga 5 in order to develop English Achievement of Secondary School Students. It can be shown as below figure.

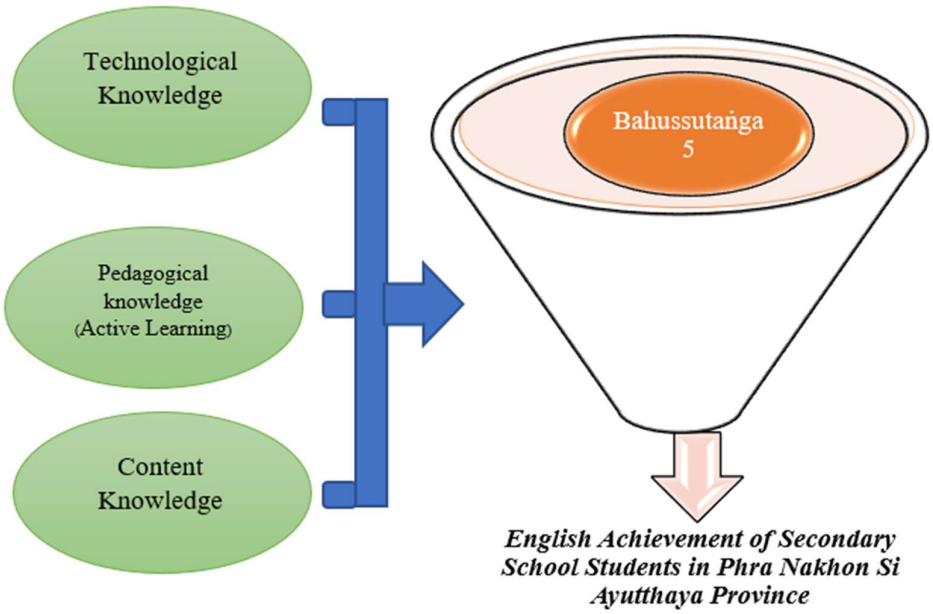


Figure 4 Model of Knowledge from Research

VII. RECOMMENDATIONS

A. RECOMENDATION FOR THE POLICY

1. Teacher Training and Professional Development, implement comprehensive training programs for English teachers in Phra Nakhon Si Ayutthaya Province, focusing on active learning strategies, technology integration, and the application of Buddhist principles. Provide opportunities for ongoing professional development, including workshops, conferences, and online resources, to keep teachers updated on the latest teaching methods and best practices including establish mentorship programs to pair experienced teachers with less experienced ones, fostering knowledge sharing and support.

2. Curriculum Development and Implementation, ensure that the English language curriculum aligns with active learning principles and incorporates the use of technology to enhance student engagement, grant teachers' greater autonomy in curriculum planning and implementation to allow for flexibility and adaptation to individual student needs, and develop innovative assessment methods that measure not only language proficiency but also critical thinking, problem-solving, and collaborative skills.

3. School Culture and Environment, foster a school culture that reflects Buddhist values, such as mindfulness, compassion, and wisdom; create a supportive and inclusive learning environment that encourages student participation, collaboration, and risk-taking; promote collaboration between schools, families, and the community to create a shared commitment to student success.

B. RECOMENDATION FOR UTILIZATION

1. In technology integration, utilize a variety of digital tools, such as interactive whiteboards, online platforms, and mobile apps, to enhance language learning and create engaging activities; Ensure that all students have access to technology devices and internet connectivity; and Provide teachers with ongoing training and support in using technology effectively for language instruction.

2. In collaborative learning activities, implement group projects that require students to work together to solve problems or complete tasks; encourage students to teach each other concepts or skills; and organize language exchanges with students from other schools or countries to promote cultural understanding and language practice.

3. In personalized learning, implement differentiated instruction to cater to students' individual needs

and learning styles; use adaptive technology tools to provide personalized support and feedback to students; and encourage students to take ownership of their learning by setting goals and tracking their progress

C. RECOMMENDATION FOR FURTHER RESEARCH

1. Longitudinal Studies, conduct longitudinal studies to track the long-term impact of the active learning model on student English achievement and other outcomes, such as motivation, engagement, and critical thinking skills; investigate the effectiveness of the model in improving students' retention of English language knowledge and skills over time.

2. Comparative Studies, compare the effectiveness of the active learning model to traditional language teaching methods, such as grammar-translation and audio-lingual approaches; conduct cross-cultural comparisons to examine the applicability of the model in different educational contexts and cultural settings.

3. Conduct research by using technology integration, explore the potential of emerging technologies, such as artificial intelligence and virtual reality, to enhance language learning and personalize instruction; evaluate the effectiveness of different technology tools and platforms in supporting active learning and improving English achievement.

CONCLUSION

Factors for active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya Province included 5 factors which consisted of Technological Knowledge, Pedagogical knowledge (Active Learning), Content Knowledge, Buddhist Principles (Bahussutaṅga 5), and Achievement. An active learning model - based communicative language instructional system for English achievement of secondary school students in Phra Nakhon Si Ayutthaya Province was developed which showed causal relationship model between 3 exogenous latent variables which were Technological Knowledge, Pedagogical knowledge (Active Learning), Content Knowledge, and 2 endogenous latent variables which were Buddhist Principles (Bahussutaṅga 5), and Achievement. An Active Learning Model - based Communicative Language Instructional System for English Achievement of Secondary School Students in Phra Nakhon Si Ayutthaya Province was validated and the model fit with empirical data by considering Chi-square (χ^2) = 266.18, df = 170, p = .0525, RMSEA = .076. It clearly found that Buddhist principles of Bahussutaṅga 5 is a mediator in the model.

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