# A Proposed Educational Technology Standards of Thailand

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## Abstract

Educational technologist performs as a catalyzer in supporting active and effective learning in an educational system. In Thailand, Educational technologists' roles are delineated in the Chapter IX of 1999 National Education Act 1999 that were practically media profession who analyze, design, develop, and deliver media in a teaching and learning system such as radio, television, text book, and printed media, as well as all types of communication technology, while using research as a tool in the process, and practical professional development as well. None of the study has been done to solid instructional technology standards and its proficiency in Thailand. To strengthen the field of instructional technology, the study is aimed to research standards and competency for Thai instructional technologists.

The study was employed by systematic reviews of current research and existing competency standards of educational technology after year 2010, coupled with an in-depth interview with experts in educational technology filed. The major standards of revision were retrieved from mainly organizations in the United States including: Association for Educational Communications and Technology: (AECT standards, 2012), the International Society for Technology in Education (ISTE standards, 2016), and including such as ISTE Standards for students (2016), and including major standards modified on the basis of ISTE standards namely the Washington State K-12 Educational Technology Standards, and Michigan Educational Technology Standards.

The study was found the proposed educational technology standards including six areas: 1.profound knowledge in technology and its adaptation to education, 2. system design, 3.professional development, 4.learning environment, 5. research and ethics, 6.localized and globalization. The proposed standards should be further developed and will be a potential countrywide implementation.

Keywords: educational technologists, educational technology standards, Thailand

## Introduction

The rapidly changing digital world today has affected to all parts of human society, so we should adapt to these changes in order to survive sustainably. It can be said that the advance technologies affect to all career paths because people have to face to the challenge of changes as well as the educational technology profession. Educational technologists are the one of the top professions that they has the duty to develop education. Their responsibilities are to facilitate and support the educational system and instruction for the teachers to improve the students' learning to be more effective.

The literature review found that educational technology standards were not developed or improved by the main organizations of the educational technology profession. They are just the researches of graduated and doctoral students who develop the standards and competencies of educational technologists. Also, there are a few and most of them are over 10 years. Thus, it shows the lack of continuous development and awareness of the importance about profession which can affect to the role of educational technologists in the society. So, the standard developments of the educational technologists are not developed consistently. This problem has been the same as many educational technologists in many countries. Actually, educational technologists are very important in order to support the development of educational systems and lead them to the good ways. On the other hand, they rarely have role in the society. This is due to the lack of a clear professional structure (Fox and Summer, 2014), or it can be said that this is a concern for the overlap of educational technology roles (Browne and Beetham, 2010). This concern has occurred to the wide educational technologists. The research has reported that the challenges of 21st century technology educators were affected by the advances in technology. How will they guide their educational goals? And how they use the technologies to develop learning and teaching methods in order to improve the student knowledges and skills? (Mayes,

Natividad, and Spector, 2015). According to these problems, the study is aimed to research standards and competencies for Thai instructional technologists.

The development of educational technology standards positively affects to the professionalism of educational technologists in improving the performance and strengthening the educational professional organizations. However, the development of such standards should be continued consistently. This will be beneficial for the development of Thailand's education, which directly affects to the learner's ability.

## Literature Review

### Educational Technology Standards in Other Countries

For the development of international standards, the researcher has studied the standards of educational technology of AECT (2012), which has been defined five standards as follows: standard 1 content knowledge, standard 2 content pedagogy, standard 3 learning environments, standard 4 professional knowledge and skills, and standard 5 research. AECT is one of the world's leading educational technology providers, and Thailand is also one of the members of AECT. Therefore, a trend study of AECT technology standards is necessary.

In addition, the researcher has studied the standards of the International Society for Technology in Education (ISET) which is a nonprofit organization. It focused on providing all educators with the ability to control technology to accelerate innovation in instruction and inspire learners to achieve high potential. It has developed standards for educational groups including educators, coaches, teachers, and learners   as the following details.

ISTE Standards for educators (2017) is a standard that encourages learners to have greater potential for learning. It also promotes peer collaboration and interaction with other educators in finding new approaches. The development of various areas to support the learning of the students to the highest efficiency. It consists of 7 standards, the first standard is a developer of continuous learning by technology, creation and also the participation in local and global learning network, the second standard is a leader who is visionary to impel advancement in developing digital learning and learning that is equal to the student's success, the third standard  is a positive inspiration for learners in the digital world, the fourth standard is a collaborative effort with others using concepts and taking the technology and new digital resources to solve the problems and create a real-world learning experience, the fifth standard  is a truly learning activity designer by using tools, digital technology  in many real-world environments, the sixth standard is a facilitator of learning with the use of digital technology to support the development of learning outcomes according to creative standards, and the last standard  is a knowledgeable and logical analyst who promotes alternative learning, designing and implementing multiple assessments to help learners achieve their learing goals.

The part of the ISTE standard for teachers (2008) is defined in five aspects. 1) Teachers facilitate and inspire the students to learn and to think creatively, (2 teachers can design and develop learning experiences and assessments in the digital age, (3 be a professional teacher who can demonstrates competence, skill and expertise in innovation, 4) teachers promote and define responsibilities for digital citizenship, and 5) teachers participate in professional growth and leadership. The ISTE standards for teachers have been applied in the development of standards for students in order to improve their learning in various areas to increase their potential.

Moreover, ISTE standard for student (2016)  developed standards for learners by focusing on student-driven learning processes, consisting of seven standards 1) students use technology to demonstrate their potential to achieve their learning goals, 2)  recognize liberty and rights,  responsibility, opportunities of living, learning and working in the digital world, 3) value learning resources, especially digital tools, to be used in self-learning and others, 4) use a variety of technologies in the design process and solve problems to create new things, 5) develop and use problem-solving and understanding strategies with technology-assisted methods, 6) students can communicate creatively with digital tools and media, and 7) digital tools are used by learners to extend their perspectives and learning. It also works with others effectively in both local and global teams.

However, the ISTE standards are the model used by states in the United States, which will be adapted to the context of their own state, for example the Washington State K-12 Educational Technology Standards (2018) have seven standards.  Apart from that, Michigan adopted the ISTE Standards for Students as competencies for technology integration (MITECS) during the 2017-2018 school year, there are also Kentucky standards for teachers.  Other countries have also adopted the ISTE standards, such as Pakistan.

**Educational Technology Standards in Thailand**

The development of educational technology standards in Thailand has been developed, but is still very limited and lack of continuity. Educational technologists' roles are delineated in the Chapter IX of 1999 National Education Act 1999 That the importance of educational technology has been determined in seven areas as follows: Educational technologists are professionals in the media by analyzing, designing, developing and providing media services in teaching and learning systems such as radio and television, text book, and printed media, as well as all types of communication technology, while using research as a tool in the process, and practical professional development as well.

The study or research on the development of educational technology standards is still low and lack of continuous development. However, there are also those who develop this. Thapanee (2003) has developed performance standard for educational technology in higher education institutions in Thailand consists of 14 standards and 84 indicators; 1) Instructional design and instructional development standard, 2) Instructional media design, 3) Educational technology training, 4)Research and development, 5) Internal and external assessment, 6) Educational technology diffusion, 7) Graphic media production, 8) Printed material production, 9) Video/television production, 10) Audio material/radio production, 11) Computer media production, 12) Education technology consultation service, 13) Instructional media and audio visual aids service, and 14) Planning and management.

In addition, Wasan et al. (2006) developed the national standard for educational technology for the institute of graduate study. It consists of 9 standards, 34 indicators as follows: 1) the institutional leadership in educational technology, 2) the curricular structure of teacher education program, (3) the technology infrastructure of educational technology, 4) the technology innovations fostering the instruction in teacher education institution, 5) the personnel in educational technology, 6) the faculty members' performance in educational technology, 7) the instructional models fostering the pre-service teacher students' uses of educational technology, 8) the professional experiences, and 9) the pre-service teacher students' performance in educational technology.

From literary review by analyzing, synthesizing the research papers related to the standard, it is shown that Educational technology standards need to be developed urgently and should be continually developed to create professional standards for technologists to be strong and up-to-date with the rapidly changing digital technology world. For the benefit of education systems that affect learners' learning and instructor effectiveness to maximum potential.

## Research Objectives

The study is aimed to research standards and competencies for Thai instructional technologists.
### Research Methods
Researchers have developed a study on the development of educational technology standards of each organization both in Thailand and abroad as follows.

1. Study and analysis of educational technology standard documents for educational technologists as well as teachers and educational personnel of foreign agencies.

2. Develop a draft standard for educational technology based on the review of research and educational technology standards from organizations in other countries.

3. In-depth interviews with experts in the field of educational technology were conducted to gather information, opinions and expert advice on the drafting of educational technology standards.

## Research Results

According to studies, it has been found that researchers can synthesize draft standards of educational technology for six standards, as follow.

Standard 1 Profound knowledge in technology and its adaptation to education. There are three indicators include: 1.1) profound knowledge of both theoretical and practical education technologies, 1.2) profound knowledge about education, 1.3) knowledge of new technologies.

Standard 2 System design. There are 2 indicators include, 2.1) design of teaching and learning system, 2.2) design of media system.

Standard 3 Professional development. There are three indicators: 3.1) expertise in media production skills, 3.2) leadership in new technologies applied in teaching, 3.3) be a consultant to develop learning by using advanced technology.

Standard 4 The learning environment. There are two indicators: 4.1) the development of a learning environment that uses technology in various ways, 4.2) the organization of a diverse learning environment based on real conditions.

Standard 5 Research and ethics. There are two indicators: 5.1) Applied research in education and educational technology, 5.2) Research in development of media, 5.3) Ethics of Educational Technology and rese.

Standard 6 Localized and globalization. There are two indicators: 6.1) the application of knowledge in the field of technology and the use of local networks, 6.2) the creation of a broader network to the global network.

In terms of in-depth interviews of experts with interesting issues, as detailed below.

Standard 1 Profound knowledge in technology and its adaptation to education. "Standards 1 should identify indicators of educational attainment in relation to teacher professional standards and student performance in Thailand as teachers and learners are key target groups for educational technology. Therefore, standards of educational technology need to be consistent with the standards and competencies of teachers and learners." (Experts 1, 4 and 5)

Standard 2 Design System "should include theories of learning, psychological theory, perception theory, media characteristics in design." (Experts 3, 4 and 7)

Standard 3 Professional development "Identify skills, expertise in thinking, creativity, use of all learning materials, and technology in advanced platforms." (Experts 2, 5 and 6)

Standard 4 Learning environment "The ability to utilize the atmosphere and suitability of the classroom and other learning facilities should be discussed." (Experts 3, 4 and 7)

Standard 5 Research and ethics "Standard 2 should focus on innovative research to be in line with the Thailand 4.0 policy and should include research ethics, progressive thinking, application and contemporary thinking." (Experts 1, and 3)

Standard 6 Localized and globalization "Identify the actual implementation. In accordance with the policy of Thailand 4.0, but consistent with the culture of culture in the context of Thai society."
(Experts 2, and 5)

In addition, experts have proposed that additional standards or clear indications be added.

1) Ladership standards should be added as most educational technologists play the role of a leader that is not as clear as it should be. Therefore, it should be defined as one standard that will improve the performance of educational technologists to a higher level. (Expert 2, 3 and 6)

2) The standard of the role counselor or facilitator of educational technology should be identified. (Experts 1, 3, 4 and 7)

## Discussion

The standards developed by the researcher consist of six standards which 1, 3, 4 and 5 standards are consistent to the AECT (2012) standards, but differ in their metrics and focus. Standard 1 Content Knowledge has a different focus: Standard: 1, which develops profound knowledge in technology and its adaptation to education, focuses more on the knowledge of the educational system that involves teachers. Next, standard: 3 professional development, for example, defines an indicator that identifies media production skills, being a consultant, and a technology leader, which are not the same thing. Standard 4: the learning environment is focused on the environment where technology is used to learn and the learning environment is realistic. And standard 5: research and ethics, the emphasis is on the name of the standard, the code of ethics, which shows the ethics is important and the research has two indicators, namely, applied research and development research.

While standard2: system design, conforming to standard 2 of ISTE for Teachers (2008) Some of the design, development, evaluation, and learning outcomes of learners. It does not mention the system. The standard 6: localized and globalization complies with ISTE standards for educators (2017) in Standard: 1 and Standard: 7 for students. However, based on expert interviews, some ideas need to be added to the standards that define the role of educational technology more clearly: the standards of leadership and the standards of counsel and facilitation. In accordance with the ISTE Standards for Teachers (2008) and ISTE for Educators (2017).

## Conclusion

The standard of educational technology in Thailand consists of 6 standards; 1) profound knowledge in technology and its adaptation to education, 2) system design, 3) professional development, 4) learning environment, 5) research and ethics, and 6) localized and globalization Based on interviews with experts, it was found that the experts gave more suggestions on adjusting standards for greater coverage. The researcher has to take this effect to

further study and make appropriate adjustments. The results of this study are consistent to the recommendations of the panel of experts to ensure that the educational technology standards are fulfilled before proceeding with the research.

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