

## Problems State and Expectations with Use Sign Language Learning Management base Intelligent of Hearing Impaired to Effectiveness

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### ABSTRACT

Being a learning society to use sign language, which educational technology media of hearing impaired it's an important tool for enhancing the potential of learning management. Specific purpose to analyzed the problems state and expectations with use sign language learning management base intelligent of hearing impaired to effectiveness. A mixed method research to take action with key informant and sample to collection were study employed of qualitative in documentary study, interview, quantitative to survey by questionnaire. Problems state including a use of educational materials, and educational technology media. Expectations with use sign language learning management base intelligent of high levels. Learning management base intelligent to effectiveness of high levels. From the predictive equation of learning management base intelligent to effectiveness to could jointly explain 75.1% of the variance to significant at level of .01. Finally, the atmosphere and learning environment of intelligent that to appropriate to be something as encourages students to feel that they want to study.

### Keywords

Problems state and expectations, use sign language, learning management base intelligent, effectiveness, hearing impaired.

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### Introduction

Education movement for Thailand 4.0, 2<sup>th</sup> National economic and social development plan A.C.2017-2021 (B.E. 2560-2564) the major guidelines in human capital building and development strategy were adjusting values in Thais' have to the moral and ethics, disciplined and public minds, desirable behaviors, developing potential regarding knowledge, skills and capacities in well-being, shifting quality of education and life-long learning. Education is regarded as a key success factor in driving Thailand 4.0 especially the human capital building and development. (Office of the Education Council, Ministry of Education, 2017) Education announced the National education plan A.C. 2017-2036 (B.E. 2560-2579) there are four major objectives in education to, (a) developed to effective education system and process, (b) developed to good citizen with desirable characteristics, skills and competencies as stated in the constitution of the Kingdom of Thailand, National Education act, and national strategy, (c) developed to knowledge-based society living with moral and in harmony for sustainable development of country with sufficient-economy, (d) bring Thailand overcome "middle income" and "inequality" traps. (Kasam Masintree, 2017) The effectiveness of education for directing an impact to

development dimensions of humanism and society.

Today, it is known that teachers of instruction need than just having subject matter knowledge in understanding, planning, and enacting stage of teaching. A direction of education management in Thailand 4.0 era make to the sectors of education in become to more aware of future changes, the emphasis on innovation and technology to assist in learning management. Jedaman. P., Buraphan. K., and others (2018) a mentioned to development and empowerment of human resources was another issued of learning management affective in the development of students to become a complete human being, have intelligence, the skills and developed of learning system that is responsive to the changes in the 21<sup>st</sup> century. Learning management to focuses on having learning skills and having a mindful of learning all the time. (Shoemaker, Christopher, H. Jack Martin, and Joseph Barry, 2016) A new learning model was designed and changing teacher roles that points out the importance that teachers need to adapt and change, include development of the student-centered for learning management capabilities. How to modify ideas to create educational innovation under a concept into the 21<sup>st</sup> century learning there are the concepts of developing students to have qualifications ready for life and cope with the changes that will occur

in the future. Providing education for persons with disabilities is one of important policies for development of the human resources in country to help the personnel with disabilities improve their quality of life, self, social development. (Office of Non-Formal Education Administration, 2013) to discusses the expansion of educational opportunities and services of personnel with disabilities to be thorough and quality that the contributes to the promotion of education for the disabled, both in the form of providing education for disabilities, provision of co-learning. Hearing impaired it's a word that a meaning indicating a ability of hearing, which covers the word deaf and hard of the hearing the personnel as personnel with hearing loss between 26 – 89 decibels there will be major problem communicating with hearing people in general society. (Office of the Higher Education Commission, 2018) From the study of the basic problems of learning management of hearing impaired to impacts education and learning in areas of intellectual development and academic achievement, development and language, emotional and social development, and communication to accounted for 69% of all learners, especially in communication of most problematic.

Learning and use of sign language communication is needed to provide normal and hearing impaired learners with knowledge and understanding between them. Which the knowledge -based society, such as the present day of learning management in the field of media and educational technology is considered an important tool, because the medias and technology can help to increase the efficiency and quality of learning, include able to enhance the teaching ability of teachers as well. This research into specific purpose to analyzed the problems state and expectations with use sign language learning management base intelligent of hearing impaired to effectiveness.

### Theoretical Background

Hearing impaired personnel communication, manual instruction is the best teaching method for people with hearing impairment of effective communication. The learning management a using sign language consisting of facial expressions and gestures to convey meaning, express emotions instead of words, and as a language for

communicating meaning between deaf and deaf personnel, including between normal, and deaf personnel. Jitprapha, S (2014) said that sign language is one of the linguistic features, with five major components of the sign language such as hand shape, position, location movement, facial expression, which to Thai Sign Language: TSL, it is a communication language whose main characteristics are hand gestures, facial expressions, head movements, also the communication language is understood only by sight, cannot use voice communication with clear gestures, a hence, it has to very important the meaning for deaf communication. Problems communicating with others is one of the main problems for people with hearing impairments. In this study investigating the problem state with use sign language learning management of hearing impaired to use of educational materials, and educational technology media. In order to the organize learning for the hearing impaired personnel using sign language, it is imperative if instructor conducts teaching in spoken language, sign language interpreter is required at all times. In addition, note-taking assistant must be provided for learners to review, appropriate educational materials, technology are essential factors to help promote the teaching. (Waree Thirachit, 2015) Expectations with use sign language learning management base intelligent into educational materials are valuable and useful for both learners and teachers (Nugent. G., Barker. B., and Others, 2015) as follows; a) will enable effective learning, it helps learners to understand more complex lesson content in a short time, can help them to conceptualize the subject accurately and quickly, b) it stimulates and creates interest in the learners, resulting in fun and not boredom, c) make to the students have the same understanding, and have shared experiences in the subjects studied, d) helping learners to be more involved in teaching and learning activities, creating good interpersonal relationships between learners and teachers, e) foster good character in education, helping learners to be creative from the use of those materials, f) helping the problem solving of personal differences. However, teaching materials are valuable only if they are used by the teacher properly and properly. Duchanee Jawanna, 2017) Office of the Higher Education Commission (2018) Therefore, the nature and qualifications of

the teaching materials, production and use of the media to suit the teaching and learning conditions, in order to achieve the learning activities of the objectives. Poldongnok, J (2013) to suggested the principles of choosing appropriate teaching materials (e.g., the media must be relevant to the lesson content and the aims to teach, the content is accurate, modern, interesting and the medium that will have the greatest impact on teaching and learning, learn to understand the subject material well in sequence, quality and production techniques is clear and true, etc.) Morrison, G. R., Ross, S. M., & Kemp, J. E (2004) discusses the types of educational media and technology for personnel with disabilities divided into the categories: print media, electronic media, material media, mixed media. However, they are all the mediums that promote visual perception a large part. The visual perception of hearing impaired is important as a result of effective development of the learning process for the hearing impaired. The process of learning to develop personnel to increase knowledge, understanding, skills, and to change attitudes, ideas, behaviors in the desired direction. In order to affect the execution of the workload of responsibility successfully and efficiently. Online training is a training that uses online materials for training. It is the transmission of the training material to the trainees. (Chaiya Agarawang, 2015) Which focuses on giving the trainees access and learning on their own, having the freedom to learn at any time. According to different potential and needs. In this study investigating the expectations with use sign language learning management base intelligent into sign language course, sign language learning management, sign language process and materials technology, evaluation assessment. Learning management base intelligent to effectiveness including atmosphere and learning environment, promoting learning resources and learning networks, the learning management processes and technology an innovation media, team learning to participate in the exchange of knowledge.

### Research Methodology

The methods of the results were to mixed method research both to a participatory action learning, it is a qualitative study employed a review of documentary, interview and a survey by questionnaire to analyzed the problems state and

expectations with use sign language learning management base intelligent of hearing impaired to effectiveness.

### Key Informants and Samples.

The key informants into an interview were director and teachers in Audiovisual school, technology media and sign language specialists of 15 persons, they all were by purposive sampling. The samples to survey were the director and teachers, technology media and sign language specialists, the parents and hearing impaired of 120 persons, They all were multistage random sampling.

### Research Instruments.

The instruments of research were to, a) interview questionnaire of problems state with use sign language learning management base intelligent of hearing impaired as a structure into interview including a use of educational materials, and educational technology media, b) the questionnaire of expectations with use sign language learning management base intelligent of hearing impaired to effectiveness of semi-structure to 5-level scales is divided into 5 aspects of sign language course, sign language learning management, sign language process and materials technology, evaluation assessment, learning environment, and c) the questionnaire of learning management base intelligent to effectiveness of 4 aspects of atmosphere and learning environment, promoting learning resources and learning networks, learning management processes and technology innovation media, team learning to participate in the exchange of knowledge with the consistency of the instrument from the experts assessment, and the confidence form try- out to coefficient method of 0.87, 0.89, respectively.

### Collection Methods.

Respondents were asked to respond to the qualitative data employed a review of documentary study and to interview by interview questionnaire with key informants of director and teachers, technology media and sign language specialists of 15 persons for analyzed the problems state with use sign language learning management base intelligent of hearing impaired. And a quantitative data to survey by the questionnaire with the samples director and teachers, technology media and sign language

specialists, the parents and hearing impaired of 120 persons for analyzed the expectations with use sign language learning management base intelligent of hearing impaired to effectiveness, and learning management base intelligent to effectiveness to the data.

#### *Inquiry Methods.*

An inquiry methods to data analysis as the problems state with use sign language learning management base intelligent of hearing impaired, this is a qualitative data was analyzed by using three main stages, i.e., data reduction, data organization, data interpretation to conclusion. And the expectations with use sign language learning management base intelligent of hearing impaired to effectiveness, learning management base intelligent to effectiveness, this is a qualitative data was analyzed by descriptive statistical analysis including frequency, percentage, mean, standard deviation, and stepwise multiple regression.

### **Findings and Discussions**

The study revealed that the problem state and expectations with use sign language learning management base intelligent of hearing impaired to effectiveness were followed:

1. Problems state with use sign language learning management base intelligent of hearing impaired including, 1) a use of educational materials to as the book has a lot of content and has few pictures, causing the learner to lose interest, hearing impaired in learning management a using the book with complex content in conjunction with normal learners. Whose language is abstract and incomprehensible, causing hearing impaired, can not to read the book, and do not understand deeply or reading cannot comprehend all the comprehension because the language is too difficult. When unable to read, it causes students to be less interested in continuing their research and there should be lessons for learning to use sign language especially, 2) educational technology media to as the use of video materials with sign language interpreters and text subtitles, the use of computer-assisted lessons for learning, the use of the Internet for learning, the presence of

other printed materials. In addition to the textbooks for learning, promoting and supporting the use of video media, the quality of the technology media does not meet the learning management objectives, the lack of educational technology skills. Problems and obstacles in the use of videos of learners such as having no VCD player, unable to understand the sign language described by the interpreter. (Office of Non-Formal Education Administration, 2013) Moores, Donald F (2014) a reasons why video use is not prevalent in the group of hearing impaired. And the inability of schools to prepare equipment for students to use the internet and computer-assisted lessons thoroughly, including the production of educational technology of hearing impaired for learning management is limited. Quigley, S. and Paul, P. (2015) a developing and stimulating the use of educational technology media for effective and efficient learning management requires preparation and implementation of processes, methods, including the development of media production in accordance with the learning management. Wirach Klaharn (2016) to enable effective learning, it helps learners to understand more complex lesson content in a short time, help them to conceptualize the subject accurately, it is to stimulates and creates interest in the learners, resulting in fun and not boredom, make to the students have the same understanding, and have shared experiences in the subjects studied, helping learners to be more involved in teaching and learning activities, creating good interpersonal relationships between learners and teachers. Learning activities as well as comprehensive measurement and evaluation to generate knowledge. Understanding and using technology to support learning management for maximum efficiency.

2. Expectations with use sign language learning management base intelligent of hearing impaired to effectiveness to the levels this shown as table 1, the earning management base intelligent to effectiveness this shown as table 2, and predictive equation of learning management base intelligent to effectiveness this shown as table 3.

**Table 1.** Mean, standard deviation, and levels of expectations, both overall and each side.

<b>Expectations</b>	<b>Mean</b>	<b>Std.</b>	<b>Levels</b>
Sign language course ( $X_1$ )	4.28	0.52	High
Sign language learning management ( $X_2$ )	4.35	0.53	High

Sign language process and materials technology (X <sub>3</sub> )	4.28	0.60	High
Materials technology (X <sub>4</sub> )	4.24	0.55	High
Evaluation assessment (X <sub>5</sub> )	4.22	0.49	High
<b>Totals</b>	<b>4.28</b>	<b>0.47</b>	<b>High</b>

**Table 2.** Mean, standard deviation, and levels of learning management base intelligent to effectiveness, both overall, and each side.

<i>Learning management base intelligent to effectiveness</i>	<i>Mean</i>	<i>Std.</i>	<i>Levels</i>
Atmosphere and learning environment	4.26	0.57	High
Promoting learning resources and learning networks	4.22	0.57	High
Learning management processes and technology innovation media	4.04	0.66	High
Team learning to participate in the exchange of knowledge	4.15	0.57	High
<b>Totals</b>	<b>4.17</b>	<b>0.55</b>	<b>High</b>

**Table 3.** Effects to stepwise multiple regression for finding predictable variables that can predict was learning management base intelligent to effectiveness.

<i>Model</i>	<i>Predictable variables</i>	<i>R</i>	<i>R<sup>2</sup></i>	<i>F</i>	<i>Sign</i>
1	X <sub>4</sub>	0.81	0.65	660.92	.00
2	X <sub>4</sub> , X <sub>5</sub>	0.85	0.72	452.58	.00
3	X <sub>4</sub> , X <sub>5</sub> , X <sub>3</sub>	0.86	0.75	344.15	.00
4	X <sub>4</sub> , X <sub>5</sub> , X <sub>3</sub> , X <sub>1</sub>	0.87	0.76	263.70	.00

\*\* Significant at level of .01.

**Table 4.** Regression coefficient of expectations and learning management base intelligent to effectiveness.

<i>Predictable variables</i>	<i>B</i>	<i>Std. Error</i>	<i>β</i>	<i>t</i>	<i>Sign</i>
X <sub>4</sub>	0.31	.05	0.31	5.29*	.00
X <sub>5</sub>	0.34	.05	0.34	2.90*	.00
X <sub>3</sub>	0.21	.05	0.21	3.40*	.00
X <sub>1</sub>	0.12	.05	0.12	2.23*	.00
a = -0.006, R = .867, R <sup>2</sup> = .751					

\*\* Significant at level of .01.

\* Significant at level of .05.

Table 1. Levels of expectations with use sign language learning management base intelligent of hearing impaired to effectiveness of high levels (Mean= 4.28), when considered separately on each side as found to be at high level in all aspects. By the side with the highest mean of sign language learning management (Mean= 4.35), inferior of sign language course and sign language process (Mean= 4.28), and materials technology (Mean= 4.24), respectively.

Table 2. Levels of learning management base intelligent to effectiveness of high levels (Mean= 4.17), when considered separately on each side as found to be at high level in all aspects. By the side with the highest mean of atmosphere and learning environment (Mean= 4.26), inferior of promoting learning resources and learning networks (Mean= 4.22), and team learning to participate in the exchange of knowledge (Mean= 4.15), respectively.

Table 3. Predictive equation of learning management base intelligent to effectiveness found that the expectations of materials technology (X<sub>4</sub>) was the most predictable variable of learning management base intelligent to effectiveness, when increasing the forecasting variables of evaluation assessment (X<sub>5</sub>), sign language process, materials technology (X<sub>3</sub>), sign language course (X<sub>1</sub>), respectively, can mutually describe the variance of learning management base intelligent to effectiveness to equal of 75.1%. Table 4. Regression coefficient of expectations and learning management base intelligent to effectiveness, have to regression coefficients in raw scores are .31, .34, .21, and .12, respectively. The regression coefficients in standard scores are .31, .30, .23, .12, respectively.

Expectations of materials technology ( $X_4$ ), evaluation assessment ( $X_5$ ), sign language process and materials technology ( $X_3$ ), and sign language course ( $X_1$ ) were the variables that can predict of learning management base intelligent to effectiveness of hearing impaired, can contribute to explain variability of learning management base intelligent to effectiveness of 75.1. Have to regression coefficients in raw scores are .31, .34, .21, and .12, respectively. The regression coefficients in standard scores are .31, .30, .23, .12, respectively. Write the forecasting equation were to regression coefficients in raw scores ( $Y' = -0.01 + .31X_4 + .34X_5 + .21X_3 + .12X_1$ ). Regression coefficients in standard scores ( $Z' y = .31ZX_4 + .30ZX_5 + .23ZX_3 + .12ZX_1$ ). Therefore, learning management base intelligent to effectiveness including atmosphere and learning environment, promoting learning resources and learning networks, learning management processes and technology innovation media, team learning to participate in the exchange of knowledge into the same directors as the expectations with use sign language learning management base intelligent of high levels. From the predictive equation of learning management base intelligent to effectiveness such as for the sign language curriculum that is in line with the needs of the labor market, the objectives of the course are clear to promote learners to have knowledge and apply them to the job by specifying the details of the competency-based learning activities. And the potential and readiness of learners, by the teaching of sign language into learning management base intelligent to effectiveness as focus on teaching and learning that allows students to practice real practice, able to transfer knowledge, help to learn in content of learning. Also, learning management processes that correspond to individual differences, promoting development of the use of learner-centered educational technology media. Jedaman, P., Phoncharoen, C., Kenaphoom, and Others (2020) technology access to become part of life in 21<sup>st</sup> Century of Thailand 4.0, the new generation will be used as a learning tool, education management to be able to use technology of the management and instructional, also used as the tools to develop their own knowledge. Using media and technology innovation in teaching to promote learning appropriately from various

teaching methods and appropriate content, as well as providing activities to encourage learners to ask questions and express their opinions on language learning materials. Hands help to learn more effectively and stimulate the understanding of learners making fun and not boredom of learning of hearing impaired to effectiveness. Childs, P. R. N., & Tsai, S. K (2016) an education for teaching and learning practices for inclusive classroom of transformation process. Educational reform initiative to succeed, a change on instructional practices inside the classroom this can be manifested in different way, establishing communities of practice that work together to develop their practices of teaching and learning through collaborative process of professional learning under identity the learning management, students'-centered teaching practice, creating collaborative learning to interaction of new knowledge. Morgan, J (2014) the digital divide has affected educators since the dawn of technology use in the classroom. Teachers and critics alike have seized on the fancy phrase "digital divide" and blamed it for insufficient technology use in the classroom as well as for student disinterest. Phrase is thrown around in school cafeterias, lunchrooms, classrooms, and during board meetings, frequently whispered as would be the name of the contagious plague, and passed over just as quickly. Digital divide is a seemingly intractable problem. Teachers to would a recognize the mastery of basic skills and deem that to precious class time should be spent on other endeavors instead of computer practice. This problem is difficult to avoid unless the school curriculum specifically allows for time spent on teaching and learning computer skills. Figueredo, Lauren, and Connie K. Varnhagen (2011) technology must be affordable. Especially, in light of the struggling budget line of school districts across the country, a technology have to reasonable price tag. Therefore, school districts will decide against expensive, new technologies and the extra cost. using media and technology in schools. First, students can learn from media and technology, and second, they can learn with a media and technology. (Pacino, Maria, and James Nofle, 2011) A learning "from" media and technology is often referred to in terms as instructional television, computer-based instruction, integrated learning systems. (Trudell,

Alesha, 2011) Learning with technology is referred to in terms such as cognitive tools and constructivist learning environments. The instructional processes exposing students to messages encoded in media and delivered by technology, assuming that students perceive and encode these messages, requiring a response to indicate that messages have been received, and providing feedback as to the adequacy of the response. Computer-based cognitive tools have been intentionally adapted or developed to function as intellectual partners to enable and facilitate critical thinking. In the cognitive tools approach, media and technology are given directly to learners to use for representing and expressing what they know. Learners themselves function as designers using media and technology as tools for analyzing the world, accessing and interpreting information, organizing their personal knowledge, and representing what they know to others. In this way, an important factor of the learning environment both to physical and psychological, that is, physical within the classroom and outside the classroom, provide appropriate and conducive to learning as for the psychology an environment for fostering good relationships, good feelings should be created so that learners are motivated and feel good a leading to effective learning.

### Summary

Problems state with use sign language learning management base intelligent of hearing impaired including a use of educational materials to as the book has a lot of content and has few pictures, hearing impaired in learning management a using the book with complex content in conjunction with normal learners. Whose language is abstract and incomprehensible, causing hearing impaired, can not to read the book, and do not understand deeply or reading cannot comprehend all the comprehension because the language is too difficult. When unable to read, it causes students to be less interested in continuing their research and there should be lessons for learning to use sign language especially. Educational technology media to as the use of video materials with sign language interpreters and text subtitles, the use of computer-assisted lessons for learning, the use of the Internet for learning, the presence of other printed materials. In addition to the textbooks for learning, promoting and supporting the use of

video media, the quality of the technology media does not meet the learning management objectives, the lack of the educational technology skills. Problems and obstacles in the use of videos of learners, unable to understand the sign language described into an interpreter. Expectations with use sign language learning management base intelligent of hearing impaired to effectiveness such as sign language course, sign language learning management, sign language process and materials technology, materials technology, evaluation assessment at a level of high levels. Learning management base intelligent to effectiveness of atmosphere and learning environment, promoting learning resources and learning networks, learning management processes and technology innovation media, and team learning to participate in the exchange of knowledge at a level of high levels. When to the predictive equation of learning management base intelligent to effectiveness to equal of 75.1%. And have to regression coefficients in raw scores are .31, .34, .21, and .12, respectively. The regression coefficients in standard scores are .31, .30, .23, .12, respectively of the variance to significant at level of .01. Atmosphere and learning environment of intelligent that to appropriate to be something as encourages students to feel that they want to study. And effective learning as well as to motivate learners' interest and motivation to create learning experiences.

### Recommendation

The need for innovative media, technology and atmosphere and learning environment to indication of the importance of learning management by creating educational materials to the hearing impaired, providing appropriate media, covering curriculum, supplementing teaching. Therefore, media should be created, produced to meet the needs and cover all content in the lesson, the use of international sign language interpreters, to support the use of educational technology materials in the learning management process, by setting the learning management model, including plans and strategies for using educational materials to develop learning of hearing impaired to effectiveness.

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