การศึกษาผลการใช้สื่อเสียงบรรยายภาพเพื่อการเรียนการสอนทางไกล สำหรับนักศึกษาที่มีความบกพร่องทางการมองเห็น ของมหาวิทยาลัยสุโขทัยธรรมาธิราช

A Study on the Effects of Audio Description Utilization for Distance Education Students with Visual Impairment at Sukhothai Thammathirat Open University

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บทคัดย่อ

การวิจัยครั้งนี้มีวัตถุประสงค์เพื่อเปรียบเทียบผลสัมฤทธิ์ทางการเรียนก่อนเรียนและหลังเรียน โดยใช้สื่อเสียงบรรยายภาพที่พัฒนาเป็นรายการโทรทัศน์เพื่อการศึกษาเพื่อการสอนเสริมทางไกล ประกอบชุดวิชาไทยศึกษาสำหรับนักศึกษาที่บกพร่องทางการเห็น และศึกษาความพึงพอใจต่อสื่อเสียงบรรยายภาพกลุ่มตัวอย่าง คือ ผู้บกพร่องทางการมองเห็นที่มีสถานภาพเป็นนักศึกษาระดับปริญญาตรี มหาวิทยาลัยสุโขทัยธรรมาธิราช จำนวน 10 คน โดยการเลือกแบบเจาะจง เครื่องมือการวิจัย คือ แบบทดสอบวัดผลสัมฤทธิ์ทางการเรียนก่อนเรียนและหลังเรียน แบบประเมินและสัมภาษณ์ความพึงพอใจของผู้เรียนต่อสื่อเสียงบรรยายภาพ สถิติที่ใช้ในการวิเคราะห์ข้อมูล ได้แก่ ค่าเฉลี่ยส่วนเบี่ยงเบนมาตรฐาน สถิตินอนพาราเมตริก

ผลการวิจัยพบว่า การเรียนโดยใช้สื่อเสียงบรรยายภาพที่พัฒนาเป็นรายการโทรทัศน์เพื่อการศึกษาเพื่อการสอนเสริมทางไกล ประกอบชุดวิชาไทยศึกษาสำหรับนักศึกษาที่บกพร่องทางการเห็น คะแนนหลังเรียนของผู้เรียนมีความรู้เพิ่มขึ้นอย่างมีนัยสำคัญทางสถิติ ที่ระดับ .05 และผลการประเมินความพึงพอใจต่อสื่อเสียงบรรยายภาพ มีค่าเฉลี่ยรวมที่ระดับพึงพอใจมากที่สุด

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คำสำคัญ สื่อเสียงบรรยายภาพ ผู้บกพร่องทางการมองเห็น

Abstract

The objectives of this research were to compare learning achievement before and after studying by using audio description developed into educational television programs in Thai Study subject for distance education of students with visual impairment, and to study students' satisfaction towards the audio description. The sample consisted of 10 undergraduate students with visual impairment at Sukhothai Thammathirat Open University selected by purposive sampling. Research tools were pre-test and post-test of learning achievement and assessment and interview form of students' satisfaction towards the audio description. The statistics used for data analysis were standard deviation and nonparametric statistics.

The results of the research showed that students who learned with audio description developed into educational television programs in Thai Study subject for distance education of students with visual impairment had post-test scores higher than pre-test scores with statistical significance at the level of .05 and satisfaction assessment towards the audio description was at the highest level.

Keywords: Audio Description, Visual Impairment

Background and Significance of the Study

Nowadays, education has expanded to cover all groups of people, providing equal opportunities in education, including those who have physical disabilities. Different learning methods are used to respond to the learning of each group of people to create uninterrupted learning and achieve maximum learning efficiency. Learning and teaching processes have adopted media and technology to support learning. It is important to share and integrate the learning design of the instructors and learners as a medium to transfer knowledge and information to all groups of students. People with visual impairment are considered one type of disability classified as physical disability. They lose vision causing

obstacles in learning and daily life. Learning of people with visual impairment requires the use of integrated media to increase perception and understanding.

Educational audio description can be classified as audio media that the people with visual impairment perceive via auditory. Educational audio description for people with visual impairment is the media that help students who are blind or have visual impairment access information. It can be used for educational television programs to present various things and enables people with visual impairment to receive information the same as normal students. It includes description about the visual information in the scene that does not have a dialogue or contains only music or text. This is to enable people with visual impairment perceive, understand, and communicate more than before and enhance learning efficiency. (Seksan & Unchulee, 2019)

Sukhothai Thammathirat Open University is one of the universities in Thailand that offers students with disabilities to study the same way as normal students. There is a Disability Support Center to assist students. Sukhothai Thammathirat Open University is an open university that has no classroom teaching. Students and instructors are far away from each other. However, they can have learning and teaching activities together by using multimedia including, print media as the main media, as well as, radio broadcasting, radio, television, DVD, audio CD-ROM, and internet media. Students and instructors will meet at the educational service center as necessary. (Sumalee et al., 2002)

Students with visual impairment can study in courses that the university offers the same as normal students. The university provides learning support media for students, including visual aids for students with low vision, audio examination tape for the exam, and DAISY audio book. At the present, there has not been any audio description for educational television programs. There was an opinion study regarding audio description developed for educational television programs for students with low vision. The interview was conducted with 5 students with visual impairment at Sukhothai Thammathirat Open University, divided into 2 groups: 1) students with complete blindness and 2) students with partial blindness. The students responded in the same direction. Instructional media that needed the most was audio, followed by educational television as supplementary media for distance education. The program should be described by instructors / persons who have knowledge in the course content. If there are animations and other illustrations

in the program, there should be audio description about the image to create more understanding and imagination.

From the above interview, the audio description developed into educational television programs in Thai Study subject for distance education of students with visual impairment is needed for learning and creating understanding for this group of people. The researcher therefore studied the results of using audio description media. The researcher developed 4 modules in Thai Study subject of audio description for distance education of students' visual impairment, including Module 1: General knowledge about Thai dance and Thai music, Module 2: Thai technology, Module 3: Traditions and rituals, and Module 4: Thai visual arts.

Literature Review

Audio description was created in 1981. Joel Snyder created audio description for movies and media to enable the blind and people with visual impairment to understand the media of normal people. Audio description provides "What the eye sees", including elements and actions such as clothes, sets and scenes. Audio description is not only used in media but also in the museum. Bernd (2007) conducted a study on the communication characteristics of media with audio description. It was found that when creating and receiving messages from specialized media, there are 6 levels of communication:

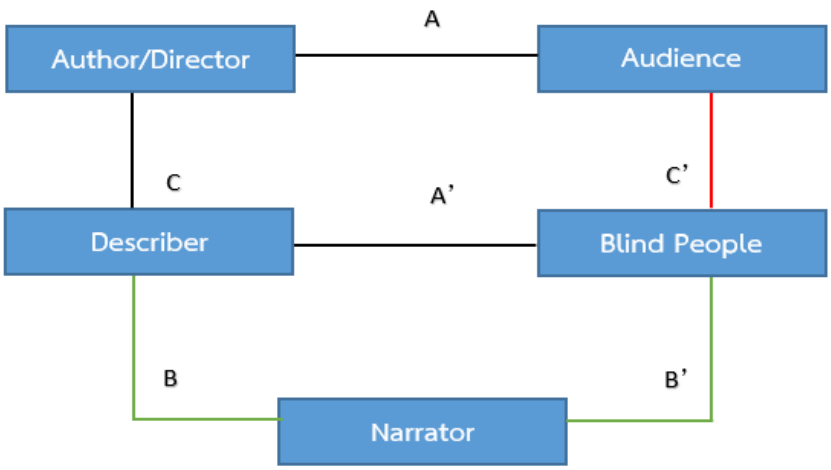

Figure 1 Communication characteristics of media with audio description

Level A Communication is normal communication, from an author to an audience or message receiver. It is the storytelling and continuity that appears in normal media.

Level A' Communication is similar to Level A communication. However, an audience is people with low vision. Therefore, a message sender is not an author like Level A. The message sender in Level A'is a describer.

Level B Communication is a communication between a description author and a narrator. The developing of audio description in this process is via a controlled script defined as the time code and key words that are needed to communicate.

Level B' Communication is "giving narration" in normal media. A voice narrator must use the narration script written by the describer. It should be careful not to make the narration that overlaps with the sound of the characters in the media.

Level C Communication is the communication between an author and a describer. This process is media analysis by considering what the media communicates in order transfer the essential part to write the narration script.

Level C' Communication is the level with least communication. It is between a normal audience and a blind audience.

Before having an audio description, to enable people with visual impairment to understand the media of normal audience, the normal audience must tell the story (the red line from A to C'). It may occur when both perceive the media at the same time. However, this way can cause annoyance for the normal people that they have to keep telling on what is going on all the time. Therefore, there are other levels of communication by making an audio description (green line from C to B to B').

Audio Description is one form of art. Snyder.J (2011) stated that it was one form of poetry. The principle of creating audio description media is choosing words with clear meaning to foster imagination. The narrator has the duty to convince receivers to create image in their mind. Joel Snyder divided the components of the audio description into 4 parts.

1. Observation. The narrator needs to be a "viewer" who is aware of the language. The narrator must observe all viewable elements and the part that creates the story. (As for movie, the narrator must watch the movie and analyze what happens in that

movie). The narration is transferred from the selection of words which gives clear and comprehensive meaning and creates imagination.

2. Edit. After the narrator watched the movie to make an audio description, it is needed to "choose" what they have seen and analyze the essence that needs to be communicated based on "the importance of that message to the perceptions of events". There are many times that only few seconds of media needs a lot of words to create images.

3. Language. The describer must convert objects and images into words. Therefore, choosing words that are clear, visual, or comparing them with something to create understanding is important.

4. Voice skills. The narrator needs to develop voice skills regarding the use of sound to convey meanings, the use of words, punctuation, to create correct understanding. This is also to create images that can develop into a story. This also includes conveying emotions via narration voice to enable the audio to completely represent images.

Audio description is therefore an important tool which helps create understanding and perception of the people with visual impairment in learning. The educational television programs with audio description for people with visual impairment will lead to learning and development of thinking skills to help them to achieve success in future learning.

The study of research related to the recognition of audio description for people with Visual Impairment found that Agnieszka et al (2017) conducted a study on the impact of audio description on the viewing experience of people with Visual Impairment. The research studied the impact of audio description on the dimensions of appearance area-based presence, ecological accuracy, involvement, and disadvantages) to visually impaired audiences. The presentation media was natural dramas in the form of 'standard' and 'creative' dramas. The objective of audio description combines elements of visual function and descriptions of actions and scenes that are important to the plot. Research results showed that audio description created emotions in all participants. The new version sounded more natural, especially for the participants who lost their eyesight completely. The study showed that creative scripts gave viewers a greater viewing experience. Siri & Nina (2013) conducted a research study on explaining educational content with audio

description, case study: Teacher Experiences in Uganda. A qualitative study and survey of teaching methods were conducted with 12 visually impaired teachers in Uganda using educational videos with audio description for teachers and students.

The research was conducted by interviewing teachers and observing while teaching the educational content with audio description in pairs and in small groups in the classroom. The results showed that audio description content was highly appreciated by teachers for creating participation and emotional engagement. In the situation of students with visual impairment, teachers benefitted from participating in discussions that took place after viewing. This research questioned audio description in terms of educational objectives and cultural relevance. The overall aim of the study was to engage in teaching by using audio description videos which will facilitate the learning process to be inclusive and reflected between blind teachers, students, and teachers in East Africa context. Gavin & Mariana (2016) studied how digital technology could design and implement audio description to film, television, and interactive media and enabled audiences with visual impairment to deliver audio presentations. The research started with modern sound design techniques using new audio technology that could be used to enhance the effectiveness of advertisements. It produced sound similar to the artist and reduced the gap between normal people and visually impaired people. It also helped improve communication between the visual arts and audiences with visual impairment. It drove the development of digital technologies and methods that can be used to improve the audiovisual experience for people with visual impairment. The study examined the way audio description can be uploaded via digital technology to provide both an informative and entertaining experience while supporting the use of the same soundtrack for audiences with visual impairment. There are two ways to improve audio description. The first method examined the latest advancement in surround sound and interactive media systems to create a more accurate soundtrack system that included accurate definitions of character and object positions in the air, camera shooting type, movement, camera angles, and frame depth. This method will reduce the need for explanations. The second method was to combine the first-person narrative as an alternative to the audio description to create an advertisement that suits the visual style and is enjoyable for all audiences. Both methods need an integration of the audio description with the creative

process to shift from evaluating the accessibility to be a part of creative storytelling. Both methods are highly compatible with film presentations. This research aims to present the methods for people with visual impairment to add audio tracks in various environments, such as museums, living rooms, personal mobile phones, as well as, applying in films, televisions, games, therapy training and other audiovisual activities that boost the digital economy in the United Kingdom (UK). The researcher engaged with key stakeholders from the film, television, interactive media industry and services to determine their practice, as well as how to integrate it with current workflows.

The key result from this research was to link new technological mechanisms to improve the audio description with an overall goal of integrating new media services for people with visual impairment. Anna & Marta (2016) conducted the research on creating a library of audio descriptions in multiple languages and many formats: Project VIW. This research presented the media library of audio descriptions in multiple languages and many formats. Project A. presented a documentary in English and then translated the documentary into Spanish and the Catalan language. Then, 10 documentaries with English audio description, 10 documentaries with Spanish audio description, and 10 documentaries with Catalan audio description will be presented to experts. All documentaries came with audio description, considering two aspects: cinematic entertainment and linguistics. The media library is an innovative tool for research in audiovisual language translation that allows for comparative analysis of translations in the same language and translation in different languages. Examples with analysis are also included in the study.

From the research data in different countries mentioned above, the use of audio description in education, the research found that the use of audio description videos to teach learners with visual impairment improved participation and emotional engagement to the situation. Therefore, the use of audio description to develop programs for teaching will benefit students. Today's technology is effective in helping in the production and dissemination process as well. Research by Gavin & Mariana (2016) showed how digital audio technology can design and implement audio description to film, television, and media. Broadcasting of media with audio description in this era can also be via social media as a channel to reach people with visual impairment.

Objective

The objective of this research were:

1) to compare learning achievement before and after learning using audio description for distance education of students with visual impairment at Sukhothai Thammathirat Open University and

2) to study the satisfaction towards audio description for distance education of students with visual impairment at Sukhothai Thammathirat Open University. The study results will be the basis information for further development audio description other subjects at Sukhothai Thammathirat Open University.

Research Hypothesis

Learning achievement of visually impaired learners who study with optional distance learning programs for visually impaired students. Assemble the Thai Studies course of Sukhothai Thammathiraj Open University after school was significantly higher than before at .05 level.

Research Method

In conducting the study of using results of audio description for distance education of students with visual impairment at Sukhothai Thammathirat Open University, the researcher followed these steps:

1. Population and samples

The population was 50 undergraduate students with visual impairment at Sukhothai Thammathirat Open University. The sample was 10 undergraduate students with visual impairment at Sukhothai Thammathirat Open University selected by purposive sampling.

2. Research tools

2.1 Pre-test and post-test of learning achievement

2.2 Assessment and interview form of students' satisfaction towards the audio description

3. Research methodology

3.1 Contact the sample to explain about the study with audio description developed into educational television programs for supplementary distance education by channels such as telephone, online social media, and face to face.

3.2 Conduct the research by having the sample do the learning achievement test before studying. After that the sample group studied 4 modules of audio description developed into educational television programs in Thai Study subject for supplementary distance education at Sukhothai Thammathirat Open University, including Module 1: General knowledge about Thai dance and Thai music, Module 2: Thai technology, Module 3: Traditions and rituals, and Module 4: Thai visual arts. Learning was via online social media such as LINE application, YouTube, Google Drive. Learning materials were also sent by postal mail, etc. Self-learning period was set for no more than 4 weeks.

3.3 After studying the audio description developed into educational television programs in Thai Study subject for supplementary distance education, students did post-test of learning achievement and did an interview form of students' satisfaction towards educational television programs in Thai Study subject for supplementary distance education.

3.4 Analyze the average scores of pre-test and post-test by using the Wilcoxon Signed Rank Test.

3.5 Analyze the results from the assessment and interview form on the audio description for distance education at Sukhothai Thammathirat Open University. The semi-structured interview form was used. Interview questions were prepared by analyzing objectives to get empirical data. Statistics used were percentage and standard deviations.

4. Statistics used for data analysis

4.1 Basic statistics: mean, standard deviation

4.2 Wilcoxon Signed Rank Test

results

The researcher conducted the study with the sample to compare learning achievement scores before and after studying and to study the satisfaction towards the use of audio description developed into educational television programs in Thai Study subject for supplementary distance education. The details are as follows.

1. Learning achievement of students before and after studying by Wilcoxon Signed Rank Test.

Table 1 Comparison of scores before and after studying by Wilcoxon Signed Rank Test

Paired Samples Statistics	N	Z	Asymp. Sig. (one-tailed)
Posttest 30.20 pretest score 21.90	10[b]	-2.807[b*]	.005

* p <.05

The results obtained from the analysis using Wilcoxon Signed Rank Test found that the post- test scores of students with visual impairment increased with statistical significance at the level of .05 with Sig. value equal to .005. less than .01.

2. Results of satisfaction toward audio description for supplementary distance education at Sukhothai Thammathirat Open University

Table 2 Statistics of satisfaction towards audio description developed into educational television programs in Thai Study subject for supplementary distance education

Items	Mean	S.D.	Result interpretation
1. Supplementary distance education television programs in Thai Study subject for people with visual impairment helps you to understand the content.	4.50	0.52	Highest satisfaction
2. The use of language in supplementary distance education television programs	4.60	0.51	Highest satisfaction

Items	Mean	S.D.	Result interpretation
in Thai Study subject for people with visual impairment can transfer meaning clearly.			
3. Supplementary distance education television programs in Thai Study subject for people with visual impairment help you to visualize image.	4.90	0.31	Highest satisfaction
4. The narrator in supplementary distance educatio television programs in Thai Study subject for people with visual impairment pronounced the words clearly.	4.90	0.31	Highest satisfaction
5. The voice of the narrator in supplementary distance education television programs in Thai Study subject for people with visual impairment is beautiful.	4.80	0.42	Highest satisfaction
6. The voice of the narrator in supplementary distance education television programs in Thai Study subject for people with visual impairment is suitable.	4.90	0.31	Highest Satisfaction
7. The audio level of the narrator in supplementary distance education television programs in Thai Study subject for people with visual impairment is suitable and clear	4.90	0.31	Highest satisfaction
8. The audio level of the original soundtrack of the supplementary distance education television programs in Thai Study subject for people with visual impairment is suitable and clear.	4.70	0.48	Highest satisfaction
9. The mixed audio of the narrator voice and original soundtrack of the supplementary distance education television programs in Thai	4.40	0.51	Highest satisfaction

Items	Mean	S.D.	Result interpretation
Study subject for people with visual impairment is suitable.			
Average	4.73	0.41	Highest Satisfaction

Table 2 shows the basic statistics results of the satisfaction assessment towards the supplementary distance education television programs in Thai Study subject for people with low vision. It was found that Item 3: Supplementary distance education television programs in Thai Study subject for people with visual impairment help you to visualize image, Item 4: The narrator in supplementary distance education television programs in Thai Study subject for people with visual impairment pronounced the words clearly, Item 6: The voice of the narrator in supplementary distance education television programs in Thai Study subject for people with visual impairment is suitable, and Item 7: The audio level of the narrator in supplementary distance education television programs in Thai Study subject for people with visual impairment is suitable and clear had the same average scores at the highest level (M = 4.90), followed by Item 5: The voice of the narrator in supplementary distance education television programs in Thai Study subject for people with visual impairment is beautiful (M = 4.80). The overall average was at the highest level (M = 4.73), according to the specified criteria.

3. The results of the interview with the sample on the use of audio description developed into educational television programs in Thai Study subject for supplementary distance education.

The researcher interviewed the samples using telephone methods with openended questions for the sample to respond freely. The questions can be summarized as follows:

Topic 1: Can audio description developed into educational television programs in Thai Study subject for supplementary distance education support learning for students? How much it supports students?

The sample responded in the same direction with the answers as follows:

The supplementary distance education television programs in Thai Study subject for people with visual impairment can help create better understanding of the subject. The content was concise. Students with visual impairment can understand the whole content which can help them to do the test.

Topic 2: What are the disadvantages of audio description developed into educational television programs in Thai Study subject for supplementary distance education? Most answers suggested that the television programs duration is too long per episode. The program should be more concise. On the other hand, some students suggested increasing the duration of the program to add more details of the subject to be deeper and clearer. The students responded in the same direction to increase the number of exam items.

Topics 3: General suggestions

Students would like the university to create supplementary distance education television programs cover every subject.

Audio description should be applied to course materials because an audio book does not have audio description to describe the illustration.

Conclusion

The learning achievement test of 10 students with visual impairment found that the students had post-test scores higher than pre-test scores with statistical significance at the level of .05. The satisfaction of the students with visual impairment towards supplementary distance education television programs in Thai Study subject had an average of 4.73. This is consistent with the data of Foundation for the Blind in Thailand Under the Royal Patronage of H.M. the Queen that the learning of people with visual impairment would have obstacles in learning because the student cannot perceive and under-stand from the normal media like other students. Instructors must understand the nature of students with low visions. They learn by hearing and touching. The media that supports the learning of these students is divided into two groups: Tactual Aids and Auditory Aids. Supplementary distance education television programs in Thai Study subject is classified as auditory aids which means auditory perception. This type of media will help develop hearing for

students with visual impairment by telling the sound of the environment leading to fast and easy learning such as the use of audio equipment or DAISY book.

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