


## PAPER

# The Online Learning Platform Using Animation Media for Storytelling to Enhance Students' New Normal Learning Outcome

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## ABSTRACT

The online learning platform using animation media for storytelling is a tool designated to be used for public relations, providing students and the general public with helpful and correct educational guidance about curricula and instruction management in the Broadcast Program, College of Industrial Technology, King Mongkut's University of Technology North Bangkok, Thailand. Thereby, the said platform relies mainly on animation media to give information in the form of storytelling, in which users can interact with the said animation media in real time. The study is based mainly on pre-experimental research, in which the 50 participants, comprising the students of King Mongkut's University of Technology North Bangkok and the general public, were asked to study with this online learning platform using animation media and then answer the questionnaire in the quality evaluation form with a five-level rating scale. The study results insist that the online learning platform using animation media for storytelling is efficient enough to be used as a tool for public relations and for educational guidance to enhance students' new normal learning outcome in Thailand. This is because the said platform can provide useful and correct information about the curricula and the instruction management in the broadcast program. In addition, the digital learning environment on this platform is believed to stimulate enthusiasm and interest in learning while promoting access to information through animation media with no limitations of time and place.

## KEYWORDS

online learning platform, animation media, storytelling, educational guidance, new normal learning outcome

## 1 INTRODUCTION

Touch-screen devices have been getting more and more popular as a new way to interact with digital technologies, as there is no need for other external input devices such as mice or keyboards. The use of natural ways to interact with such

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touch-screen devices enables users to express themselves in a natural way, which is believed to help promote both communication and collaboration [1] [2]. The touch-screen devices, therefore, have been employed to facilitate the interactive teaching and learning instead of the traditional classroom learning. Thanks to their unique characteristics, the said interactive devices are widely applied in combination with many other techniques in order to respond to different learning styles and some activities in daily life. Interactive media is a kind of media that can be applied in teach management so as to help students understand the lessons better because the learners can interact with the interactive media directly through computer technologies and communication technologies. Learners are also able to learn and control their tasks on their own; at the same time, the media of this kind can create real-time interactions and results [3].

Nowadays, the advancement of communication technology plays a vital role in our daily lives and it has brought some rapid changes in various areas, especially in the field of education. These changes have effects on the current instruction cultures in such a manner that the instruction must be consistent with modern learners [4]. The development of education towards the 21st century under the framework of Thailand 4.0 has been conducted on the basis of knowledge-based strategies that focus mainly on the development of human capital [5], as well as the use and the extension of bodies of knowledge in a flexible manner. The emphasis is also placed on the ability to access knowledge sources through the Internet along with the use of appropriate technologies, with an aim to enable students to create their bodies of knowledge and manage their own learning. In the meantime, learners are encouraged to have more engagement in the instruction and interact more with others. All of the aforementioned are considered the nature of learning that corresponds to the concepts of Education 4.0 [6].

One of the main goals of the improvement of quality in social services, especially those related to education, by applying the concepts of knowledge management in higher education institutions is to become an institution of learning with academic excellence [7]. In the past few years, the popularity of online learning in higher education has been growing so rapidly that many higher education institutions have started offering online courses to fulfill the students' needs in terms of ease and flexibility to access data sources [8]. In order to make use of these resources, the learners at the higher education level who expect success must be quite good at digital strategies and able to integrate their learning experiences. The more independence in working and learning, the more cautions students must have in order to control learning on their own [9]. Therefore, administrators working in higher education institutions should promote and support the instruction management that provides both personnel and students with opportunities to show their potential and abilities in collaboration, exchange knowledge with one another, and create new bodies of knowledge. Furthermore, all groups of people should be encouraged to have access to a variety of learning media with no limitations of time and place.

Recently, online education has been promoted all over the world [10], and the demand for learning through online platforms is obviously increasing as well. In addition, a number of researchers have paid more attention to this issue [8, 11, 12, 13]. That is, these researchers often applied online platforms in education systems in order to adapt the teaching processes and apply them in activities along with related contexts so that learners can have more opportunities to access the sources of knowledge, work together, and create new bodies of knowledge with no limitations of time and place. According to the reasons above, online learning is considered an approach that can be applied in instruction management in order to

fulfill learners' needs in terms of easy access and high flexibility and, meanwhile, to raise the quality of education that can be accessed by anyone. For instance, it is evident that the pre-service teacher students are more enthusiastic to perceive different stories from the digital online learning using storytelling techniques [11], and more than 50% of Thai students in higher education [14] have more fun while learning advanced English by means of online platforms.

After studying the contexts of online learning platforms, the researchers found out the approach that can be employed to solve the issues about the dissemination of information and educational guidance in College of Industrial Technology, Bangkok, Thailand. Thereby, the said approach can be accessed anywhere and anytime, and it can create understanding in the same direction by virtue of online learning platform technologies using animation media for storytelling. In other words, the said platform can be used practically as a tool for public relations and educational guidance in this study.

## 2 LITERATURE REVIEW

The analysis in this study was conducted on the basis of the relevant conceptual frameworks, the theories, and the research in order to develop the online learning platform using animation media for storytelling and use it as a tool for public relations and educational guidance in higher education.

### 2.1 Online learning platform in Thai university

The constant growth of technologies and the integration of new technological achievements for use in everyday life are quite remarkable in this century [15]. People have turned to relying more on technologies and computers since these enable them to carry out their tasks more easily. These drastic changes also have great effects on education and study methods, and this has completely changed the perspectives of traditional teaching and learning [16]. A variety of studies and experiences gained during the pandemic of COVID-19 have encouraged us to learn more about online teaching. For example, certain researchers in Thailand have been trying to examine the factors affecting online instruction management, the perspectives of teachers and students towards online learning [17], and the effectiveness of online learning tools [18]. However, these are merely some cases related to the application of ICT in education using an online learning platform in the instruction management in Thailand's higher education institutions.

The ultimate goal of educational development in Thailand, as stated in the National Scheme of Education B.E. 2560–2579 (2017–2036), is to fabricate a high-quality and efficient education system and use it as the main mechanism to enhance human potential and capabilities; in the meantime, the said system must be able to support education, learning, and the world's dynamic challenges [19]. The emphasis is placed on the seeking of knowledge, improvement of skills, and creation of positive attitudes towards lifelong learning. As a result, the technologies related to online learning platforms have become a significant part of education in the digital era because it is quite easy and convenient to access these online platforms anywhere and anytime. Also, this style of learning encourages learners to learn independently on their own. Moreover, it is believed that the platforms mentioned above can help reduce users' imagination and meanwhile promote more interactions, allowing

them to learn the contents and gain experiences through various stories in a continuous manner [20].

According to the information above, it is evident that the online learning platforms can be applied in many different contexts, especially those related to instruction management and the creation of experiences during the outbreak of COVID-19 in Thailand, so as to substitute for classroom learning. Consequently, the online learning platforms have become learning tools that promote interactions and effectively foster independent learning behavior among learners.

## 2.2 The significance of the use of animation media for storytelling in educational guidance to enhance the New Normal learning in Thailand

In the era of “New Normal”, a variety of technologies have been applied in public relations and educational guidance so as to enhance the so-called New Normal learning style. Also, it is expected that the public relations and guidance in this way, via different forms of social media and digital media, can upgrade the positive image of organizations and meanwhile provide crystal-clear communication [21]. The utilization of new technologies also makes it more possible to interact with one another in a real-time manner.

The Department of Electronics Engineering Technology is one of the programs of College of Industrial Technology, King Mongkut’s University of Technology North Bangkok, and there are many courses offered in this program. Also, Broadcast is a course in this program, and it focuses on both theories and practices concerning radio and television broadcasting. The students enrolled in this course are expected to apply the knowledge and experiences from this to serve the demand of the industrial sector. Thus, public relations is considered highly essential because it can introduce the helpful information about broadcasting to students and the general public, both inside and outside the university. Not only that, public relations is regarded as an option that can improve the good image of organizations and facilitate effective communication that can give understanding in the same direction.

Digital media in the form of animation has become a popular multimedia today. This is because the use of images can reduce the user’s imagination and meanwhile increase users’ interaction, which enables users to follow the contents in a continuous manner. Besides, users are also able to instantly interact with the instruction media [20] through the online learning. Due to the rapid change of technologies, digital animation media has gained such a lot of attention that it has been applied in various fields, such as education, entertainment, business, medicine, etc. Moreover, there are also many softwares that can support and make such digital media even more interesting and realistic [22].

## 2.3 What is digital storytelling?

Digital storytelling is a technique that uses digital media to convey contents through short stories. Usually, digital storytelling is generated by the integration of different media, such as still images, sound, video clips, and storytelling contents [23], [24]. It is also said that digital storytelling is a multimedia technology that offers opportunities for many people to work together. The learning environment in digital storytelling can arouse the interest of learners, enhance their imagination, and give helpful experiences [25]. In the study of Yuliani et al. [11], digital storytelling

can improve students' problem-solving skills, and it is regarded as an important and effective tool to develop language and digital skills of students. Moreover, it is thought that digital storytelling can save teachers' time and effort. Above all, some studies insist that the teachers who use digital storytelling can encourage students to have more participation in discussions, leading to more collaboration and making the contents more understandable [26].

Once considering instruction management, digital storytelling is regarded as a constructivist method that can integrate digital technologies with instruction activities in a constructive manner. Furthermore, digital storytelling also enhances students' engagement and supports teachers to develop constructivist learning environments, which is said to result in better collaboration among students and encourage them to have higher-order thinking and deep learning [11]. The aforementioned studies have confirmed that the technique of digital storytelling can promote learning by means of stories and arouse learners to have more imagination. Therefore, digital storytelling is considered an effective and efficient learning medium because the creators of such media can present the contents in video format, audio format, or other types of multimedia.

## 2.4 Research gap

The inspiration to conduct this study is the COVID-19 pandemic. To illustrate, over the past 3–4 years, people around the world have had to adapt themselves to many unexpected and unprecedented circumstances. Likewise, learning methods have been shifted to rely more on digital learning platforms. Such situations have caused major changes in learning methods, learning outcomes, and perspectives of teachers and students. There have been a number of theories and researches that discuss learning on digital and online platforms [27]. Several plan have also been established to keep pace with the online systems, e.g., learning goals [11], use of learning media, approaches, methods, and evaluation of time allocation in order to achieve the specified goals. For this reason, at this time, the learning through the online environments should be given great concern and importance. The most important part of this transition is the change of teaching methods from traditional classroom learning to the realm of online education [14].

According to the thorough review of the overall concepts, theories, and relevant literature, it is found that there are still some research gaps in this study. Hence, it is necessary to further study the guidelines that are needed for the development of the online learning platform using animation media for storytelling so that this platform can be employed effectively as a tool to do public relations and provide accurate educational guidance about the Broadcast Program in the College of Industrial Technology, Bangkok, Thailand. The previous studies [20] reveal that the education systems that employ animation media have not only high potential to support the so-called New Normal learning but also high efficiency in supporting useful information in higher education.

This study is intended to create capabilities in public relations and the provision of educational guidance; in other words, it is related to the propagation of useful information via the online learning platform using animation media for storytelling. In addition, the study is also concerning the exploration of the research participants' perspectives towards the development of this platform. Thereby, the research participants herein were asked to complete the evaluation form, and they were well protected by the policies of confidentiality and anonymity. This is all to find out to

what extent the online learning platform using animation media for storytelling can satisfy the needs of users in terms of public relations and educational guidance.

### 3 METHODOLOGY

This study is intended to explore the perspectives towards the development of the online learning platform using animation media for storytelling. Primarily, this study was conducted based on the pre-experimental research method with a one-shot case study, using an evaluation form that contains a five-level rating scale on the quality of the platform. The study objectives are as follows:

RO1: To synthesize the theoretical framework of the online learning platform using animation media for storytelling

RO2: To develop the online learning platform using animation media for storytelling

RO3: To examine the perspectives about the development of the online learning platform using animation media for storytelling

In order to investigate study objective 1, the researchers used the theories, documents, and researches related to the development of this platform so as to define the conceptual framework of this study. Regarding study objective 2, the details about the platform development were used to present the approaches to design and develop this platform, including the structure and components within the platform. For study objective 3, the quality evaluation form was employed in order to explore the perspectives towards the development of the online learning platform and to find out whether it can fulfill the users' demands in terms of useful information or not.

#### 3.1 Participants

There are 50 research participants (30 females and 20 males), comprising 20 students of King Mongkut's University of Technology North Bangkok and 30 people from the general public. All of these participants were derived by means of cluster sampling. All 50 participants have the same characteristics, and they all would such as to learn with the online learning platform using animation media for storytelling, which was designated to provide information and educational guidance in the College of Industrial Technology, Bangkok, Thailand. Whereby, all the requirements concerning information, consent to do the questionnaire, confidentiality, and data use were carefully addressed, both verbally and in writing, by all 50 participants.

#### 3.2 Data collection instruments

The exploration of perspectives towards the development of the online learning platform using animation media for storytelling was carried out by using the quality evaluation form with a five-level rating scale for each element contained in the platform. This is to find out the level of efficiency and the usefulness of the platform in terms of public relations and educational guidance. The questions in this evaluation form are made in reference to the objectives of this study. In other words, the questionnaire in this study consists of 20 questions asking about the elements



of the platform, e.g., contents, presentation, suitability of design, storytelling techniques, etc. Besides, the evaluation form was proved for index of item objective congruence (IOC) by experts in order to make sure that the questions in the form are consistent with the platform in this study. Before starting the voluntary assessment on this form, all participants had been informed that they could feel free to make decisions to participate in the study. Most importantly, they were guaranteed that their identity would not be disclosed.

### 3.3 Method

The development of the online learning platform using animation media for storytelling is based mainly on the concepts of system approach [28] and design of multimedia and animation [29]. Thereby, the methodology of this development is as follows:

Stage 1: Synthesis of relevant documents and research. The researchers studied the documents and the research that are relevant to the development of the online learning platform using animation media for storytelling so as to synthesize the theoretical framework of this research (see Figure 1). The contents of the said documents and research are all about online learning platforms, animation media, digital storytelling, and educational guidance.

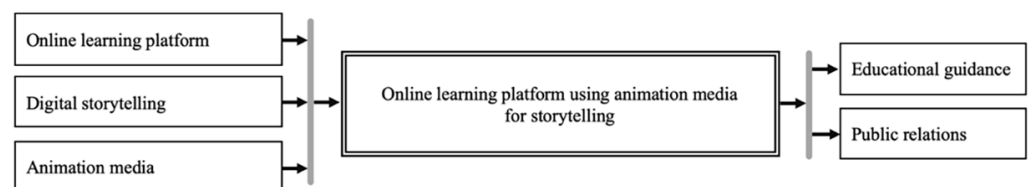


Fig. 1. Theoretical framework

Stage 2: Development of the online learning platform using animation media for storytelling. In this stage, the researchers used the theories of design and development of multimedia and animation, as well as the principles of system approach, to develop the online learning platform so that the said platform would contain all appropriate elements and can be put to practical use for public relations and educational guidance.

Stage 3: Exploration of perspectives towards the development of the online learning platform using animation media for storytelling. In this process, the researchers requested the research participants to complete the evaluation form on the quality of this platform.

## 4 FINDINGS

The online learning platform using animation media for storytelling is a tool fabricated to be used for public relations so as to give students and general people useful and valid educational guidance about curricula and instruction management in the Broadcast Program, College of Industrial Technology, King Mongkut's University of Technology North Bangkok, Thailand. The design and the development of this platform are on the basis of multimedia and animation design, which consists of five elements, i.e., balance, unity, color, flow, and interaction. Also, the five steps of the system

approach, i.e., analyze, design, develop, apply, and evaluate, were also employed in order to acquire all necessary elements so that the platform developed in this study can be utilized in public relations and educational guidance for people in and outside the university. It is also expected that the platform will be beneficial in terms of learning while giving helpful information about higher education. The online learning platform using animation media for storytelling is illustrated in Figure 2.

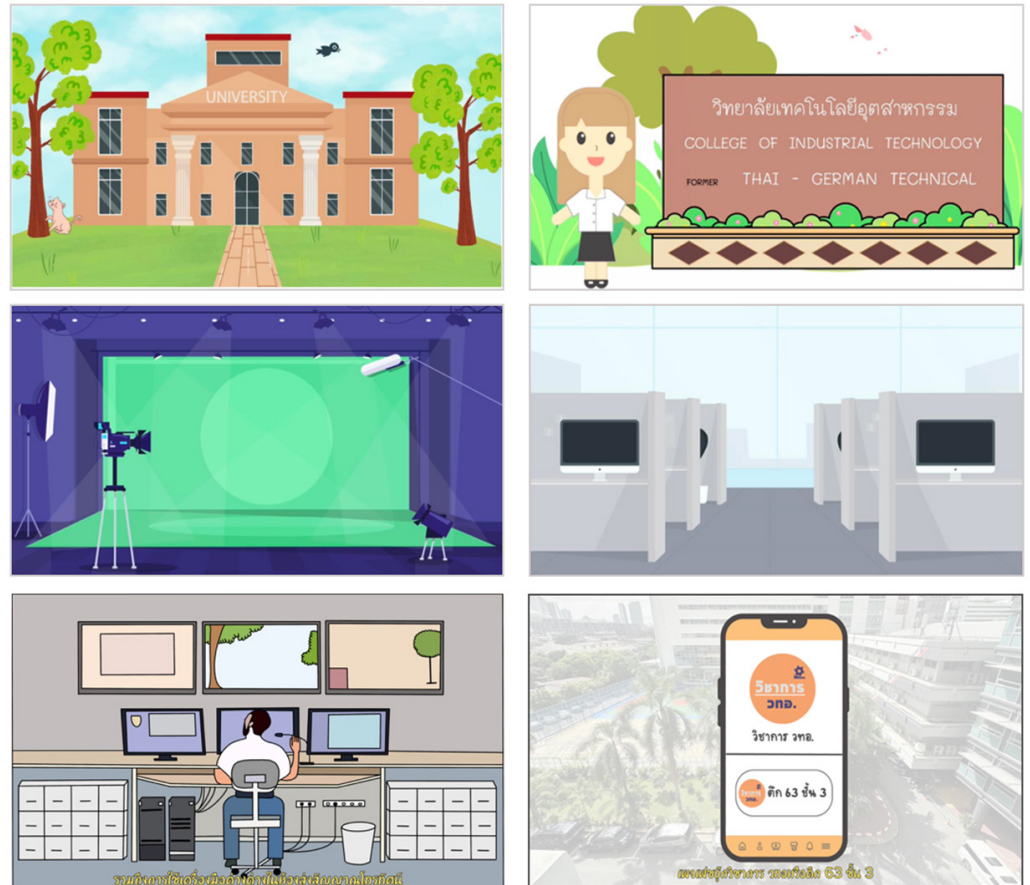


Fig. 2. The online learning platform using animation media for storytelling

The main objective of this study is to examine the perspectives of the study participants about the development of the online learning platform using animation media for storytelling. All of these participants gave their consent to complete the evaluation form, and they were well protected under the policies of confidentiality and anonymity. This is to find out to what extent the online learning platform using animation media for storytelling can satisfy the needs of users in terms of public relations and educational guidance.

According to the process of data collection, all 50 participants were willing to answer the questions in the evaluation form. Each question has a five-level rating scale, and the criteria for assessment and interpretation [30] are as below.

- Average score 4.50–5.00 refers to very high quality.
- Average score 3.50–4.49 refers to high quality.
- Average score 2.50–3.49 refers to average quality.
- Average score 1.50–2.49 refers to low quality.
- Average score 0.00–1.49 refers to very low quality.



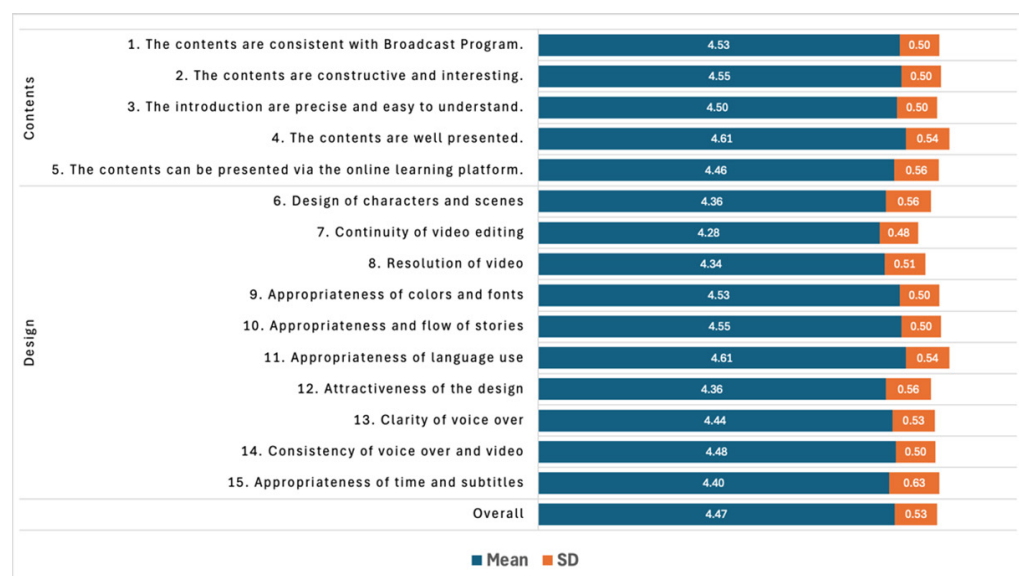


Fig. 3. Results by examine the perspectives of the learning platform using animation media for storytelling

Referring to the results of the evaluation on the quality of the online learning platform using animation media for storytelling in Figure 3, which was conducted with the 50 research participants (30 females and 20 males), consisting of 20 students and 30 members of the general public, it is found that the overall quality of the online learning platform using animation media for storytelling is at a high level (mean = 4.47, SD = 0.53). Once considering the standard deviation (SD), it is evident that there is a small distribution and the data in the averages are quite similar, which results in only a small discrepancy in the results of this study. This insists that the users of this platform are satisfied with its quality and efficiency in terms of public relations and educational guidance.

In reference to the in-depth interview with the research participants, it is also found that the online learning platform using animation media in this study can effectively present useful information and contents related to the broadcast program by means of storytelling technique. The presentation of this style encourages users to feel more interested in the contents and meanwhile enable them to receive helpful and correct information, which can avoid misunderstanding and discrepancy of information. Furthermore, users are content that they are able to interact on this platform in real time via their smartphone, which also enables them to access the information anywhere and anytime as the platform is compatible with various operating systems. According to the aforementioned details, the results are consistent with the study of Aqeel Alzoubi [31], who said that the use of multimedia and virtual environments based on conflict strategies can reduce mathematical misconceptions of 85% of all the first-year students at Hashemite University, Jordan. In order to explore the students' performance related to the utilization of online learning, the said conflict strategies, which were designated to reduce misunderstandings and discrepancies related to mathematical information, were used before and after allowing the students at Hashemite University to use multimedia and virtual environments. As a consequence, it can be clearly seen that these students did improve their mathematical learning at the significance level of .05. The results are also consistent with the research of Phuthong [32], who studied the factors that have influenced the adoption of collaborative learning social-media platforms among university students in Thailand during the Covid-19 'New Normal' Era. This study

found out that the ability to collaborate with others and the perceived fun are probably the most important factors affecting the application of social media platforms in collaborative learning among university students in the Covid-19 'New Normal' Era. Furthermore, the findings also insist that the ability to work with others and the fun perceived while learning have a direct impact on the embracement of such platforms among university students. Overall, this clearly reflects that the students regard the social media platforms as useful tools for group work, class discussion, and sharing of information regardless of limitations of space and time. All of the aforementioned are the reasons why these students employed these tools to interact with their classmates and instructors.

## 5 DISCUSSION

The results derived from this study can be used not only to investigate the main objectives of this study but also to be served as a conceptual framework for other online learning platforms that can make use of digital environments to improve users' knowledge and provide helpful educational guidance. After conducting the literature reviews, it was found that the results of this study are in line with those of Srimala, Aueng, and Chatwattana [20], who mentioned that the application of digital storytelling technique as an approach to telling stories through animation media can really enhance the satisfaction of users. This is because the stories are presented in the form of 2D video clips, using animation to make them look more interesting and compelling, which is said to stimulate students' imagination. Moreover, this technique can be used to present the contents in an academic format corresponding to the curricula, making the said contents clear, precise, and easy to understand. The conclusions are also consistent with the research of Yuliani and Hartanto [11], who studied digital online learning by using digital storytelling for eight pre-service teacher students. It was found that all of the 8 pre-service teacher students, out of the total 78 students who had been practicing teaching, could successfully apply the technique of digital storytelling in the English online classroom. This is because the students seemed to have more enthusiasm to perceive the stories presented in the online learning environment combined with a variety of learning media. Not only that, it is believed that this technique also helps motivate the students to develop their English skills, e.g., vocabulary, reading, speaking, and writing. The outcomes are also in line with the research of Papadakis et al. [16], who employed an interactive 3D serious game to teach 22 students in Greece, who were divided into two groups, i.e., a control group and an experimental group, in the study on the subject of the Greek ancient theater. It can be clearly seen that learning through interactive 3D digital serious games is appealing to learners, and it can make the traditional educational processes more productive, more exciting, and more enjoyable. As a result, learners are able to acquire more knowledge through the said serious games. Also, the results herein are in compliance with the research of Papadakis and Kalogiannakis [2], who conducted the study on journal articles and conference papers in English published during the year 2010–2019, along with the meta-analysis and study synthesis of 22 studies published from 2011 to 2019. The researchers found that mobile devices are recognized as popular media choices among children, and these gadgets can also be used to enhance children's intelligence and learning efficiency thanks to the applications thereon that can serve as educational tools to promote enthusiasm, amusement, and engagement in learning.

## 6 CONCLUSION AND FUTURE RESEARCH

The online learning platform using animation media for storytelling is a tool used for providing educational guidance and doing public relations on the courses, programs, and information about Broadcast Program by means of 2D animation media. The contents are presented in the form of short stories, which are composed of a variety of media, e.g., still images, sound, motion pictures, etc., by means of storytelling technique. It is believed that this kind of presentation allows users to follow the content fluently, reduce their imagination, and interact in real time through a variety of devices.

The main objectives of this study are to enhance the efficiency of public relations and provide helpful educational guidance by propagating the useful information via the online learning platform using animation media for storytelling. In addition, this study is intended to explore the perspectives of 50 research participants towards the development of this online learning platform; thereby, the said participants include 20 students of King Mongkut's University of Technology North Bangkok and 30 people from the general public. All 50 participants herein share the same characteristics, and they were all willing to learn with the online learning platform using animation media for storytelling in order to learn about the information and educational guidance in the College of Industrial Technology, Bangkok, Thailand.

The results of this study can answer all three study objectives completely and comprehensively; in addition, the online learning platform developed herein can help enhance the bodies of knowledge and provide educational guidance by means of storytelling through digital environments. Besides the instant interaction in real time via smartphones, the said online learning platform also features a variety of learning media that can encourage students' engagement and motivate them to learn. Furthermore, the results derived from this study are not only in accordance with the information obtained from the discussions and the in-depth interviews with the research participants after the experiment but also consistent with the previous literature and research [2, 16, 20, 31, 32]. Therefore, it can be concluded that the online learning platform using animation media for storytelling can be employed effectively as a guideline to further develop other bodies of knowledge and provide educational guidance through digital environments.

### 6.1 Investigation of research objectives

The study objective 1 is to synthesize the theoretical framework of the online learning platform using animation media for storytelling. In this study, the documents and the research relevant to online learning platforms, animation media, digital storytelling, and educational guidance were used to synthesize the theoretical framework of the targeted online learning platform; therefore, study objective 1 is successfully investigated. Next, the study objective 2 is related to the development of the online learning platform using animation media for storytelling. This objective is completely investigated by the detailed illustration of design and development approaches along with the structure and the elements within this platform. Finally, study objective 3, the examination of the perspectives about the development of the online learning platform using animation media for storytelling, was also investigated by the results of evaluation, showing that the developed online learning platform is efficient in terms of both public relations and educational guidance, and it is also beneficial to education, too.

It can be clearly seen from the study results that the online learning platform using animation media for storytelling can fulfill users' demands of learning in terms of educational guidance and public relations on curricula, courses, and academic information about Broadcast Program because the contents are conveyed in an academic format, which is crystal clear, correct, and easy to understand. In addition, the further discussions with the participants confirm that users are getting more interested in following the contents thanks to the storytelling technique that conveys the contents in the form of short stories in consistency with the curricula. Besides, the platform developed in this study can be accessed anywhere and anytime, which is considered a kind of active learning that can raise the quality of education services through the New Normal.

## 6.2 Limitations and future research

The findings in this study still have some limitations that are needed to be further addressed in the future. First of all, the contents in the platform of this study are designated specifically for use in educational guidance and public relations. Therefore, this study is regarded just as a pilot study, and it requires the more diverse contents as well as a larger population in order to confirm the study validity. Additionally, there is a limitation on the technique used in this study, which also results in a limited scope of presentation. Thus, future studies should focus on the more varied technology designs. In conclusion, this study still has an important role in promoting awareness and proactive public relations that can provide correct and valid information through self-learning by making the ultimate use of digital technology in the instruction management for higher education.

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