**Academic Paper**

## Information Technology for School Guidance

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**Abstract**

Using technology for guidance takes various forms of guidance activities and tools in support of guidance work. There are both technology images in the form of media used in guidance and the tools to help manage guidance. These are to make the guidance work effective in education to reach as many learners as possible. The prominent examples of applications are Computer Assisted Instruction (CAI), electronic books (e-Books), video conference (Video Conference) and online learning (e-Learning). This paper reports the technology-based guidance work with three considerations: (1) efficiency in achieving the goal, (2) productivity in precision and time-effectiveness, and (3) economy in saving both time and human resources. The researchers expected that the obtained results would generate practical implications for guidance counselors in support of students, teachers, and educational administrators.

*Keywords: Guidance work, technology-based guidance, guidance counselors, guidance effectiveness*

## 1. Introduction

Today's world has changed dramatically in technology and Thailand has quickly responded to such changes. Along with bringing the country into the era of innovation and high income by the policy of Thailand 4.0, the country has emphasized creativity and innovation for the management of Thai education. The majority of the country's students belong to Generation Z in which they are closely related and grew up with new technologies via smart phones as personal tools. In this regard, guidance teachers need to keep up with technologies in the cyber world. The guidance process requires various technologies in line with changing social conditions and contexts (Netasit, 2020). In order for the guidance to be effective, convenient and fast, it is therefore necessary to use appropriate and modern technology in the guidance operations. According to the study of Komontien et al. (2016), guidance teachers still lack knowledge and skills in using media and technology to perform

on guidance tasks effectively. Guidance teachers need the application of tools, materials, and methods particularly for services in individual learner surveys, information provision, psychological counseling sessions, follow-up and evaluation, and other guidance activities.

In this paper, the authors present a guide to the use of new technology for school guidance teachers with emphasis on efficiency, productivity and economy. The objective is to assist guidance teachers or related guidance personnel in applying modern technology appropriately to school guidance work. The main topics include forms of guidance technology, application of technology for guidance, and the benefits of technology-based guidance work.

## 2. The Importance of Using Technology for Guidance

Guidance in educational institutions requires change in the guidance system in all aspects. According to Netasit (2020), the use of technology in the guidance process is necessary for the following reasons:

(1) The rapid growth in academics around the world and the emergence of new technologies and innovations have a direct effect on education and guidance practices. It is very important to use appropriate technology to assist the guidance work.

(2) Rapid changes in society are affected by development in science and technology. The social process is constantly changing and dynamic in nature. Such changes have a direct impact on the way of life, adaptation and development of learners.

(3) Characteristics of information society or news society allow information to be transmitted quickly all over the world. A large amount of information is at the fingertips of those who want to use it. The need for education or guidance as a source of information tends to be diminished. School guidance needs a new role as an information provider which is difficult to accomplish without technology.

(4) Changes in learning methods prompt the use of technology in guidance at one's fingertips in response to learners' individual differences in ample learning opportunities at individual learning pace.

(5) Advances in new technologies bring about the new format of guidance activities, media and guidance evaluation to suit the rapid technological changes. Guidance activities must respond to new learning styles that help learners to learn a great deal quickly in a limited time. Therefore, guidance technology has to initiate innovations in handling guidance tasks effectively.

(6) Learners tend to learn more on their own and the use of technology can help access lifelong education more conveniently.

In addition, Bill Gates (cited in Kaewdang, 2000) discussed the use of technology in learning management as follows:

(1) Learning is not limited to the classroom. In the modern world, people can learn from various sources of knowledge. In particular, the information superhighway is about to play a vital role in the management of human education.

(2) Learners have individual differences. Each child is different. Therefore, it is necessary to manage teaching and learning in accordance with the differences between people. Each child has different knowledge, understanding, experience and worldview.

(3) Learning that meets individual needs requires education that teaches a large number of children via computer technology. This has been the dream of educators for a long time to be realized by teachers providing care, support and guidance.

(4) Learning uses multimedia in every classroom via a computer network where children can choose to study various subjects according to their needs and interests.

(5) The role of the information superhighway in teaching will lead teachers from many different places as models. Teachers can create their own website to publish for a large number of learners or in the form of mass learning as individually preferred.

(6) The role of the teacher has changed, particularly as a student's trainer to help give advice, and a friend of learners. It is a creative solution for learners and a bridge that connects the learner with the world.

(7) The relationship between students, teachers and parents will be based on the computerized information superhighway system. It supports the relationship between students, teachers and parents, especially the use of e-mails or social media.

Bill Gates has opened up the whole new world of education with the introduction of modern computer systems and a globally connected information superhighway to catalyze the revolution in education.

The existing teaching and learning systems still keep the classrooms intact. Technology gives students the opportunity to study individually, or collaboratively as desired with the teacher. In this regard, teachers, counselors or guidance personnel in the field of education need to adjust and keep up with the changes that are now taking place.

## 3. Forms of Guidance Technology

Technology used for guidance work carries several formats as follows:

(1) Technology in the form of *media* is used in guidance is known as Information Communication Technology (ICT) for learning activities. The nature of use depends on the technique and method, as seen in guidance activities using ICT media as learning tools. In this case, ICT conveys content to students to study and recreate a body of knowledge through ICT media products. The guidance teacher takes the role of a producer, and the guidance teacher and the learners jointly producing the desired ICT products. ICT media are generally available on the Internet; this type of ICT media is in the form of video media, electronic books (e-books) or computer-assisted instruction (CAI). Computer-assisted instruction has different techniques and formats, such as a game (Game), a search (Discovery), a tutorial (Tutorial), and a test and practice (Drill and practice) (Office of Technology for Instruction, 2012).

(2) Technology in the form of *tools* to assist in the guidance work utilizes ICT in guidance work to collect documents, store contact records with parents, surveys, and follow-ups. The tools are classified by three characteristics: (1) help record and store information related to guidance work, such as data on students' history, grades, health records, aptitudes and interests; (2) expand access to a vast amount of information available on the Internet to enable guidance teachers to empower themselves with knowledge, search, and research; (3) serve as a ready-to-use tool for guidance teachers to apply modern technology to plan and facilitate their work; they can use mobile phones to share guidance-related materials, presentations and contacts with colleagues and students.

(3) Technology in the form of an *information system* helps users manage structures in educational institutions, such as local networks, and a management information system (MIS) created for use in specific departments or organizations. The use of management information systems (MIS) is intended to solve management problems, show statistical data in support of school administrators, and in turn reduce paper. There are examples of information systems for educational guidance, as reported by Komontien et al. (2016) of an information system for educational guidance of a secondary school in Maha Sarakham Province under the school network of Mahasarakham University. The researchers reported a developed information system for educational guidance according to the System Development Life Cycle: SDLC in 5 steps of design analysis and information systems development. The web browser program was Microsoft internet Explorer 6.0 and above. The highlight of the network-based information system is that it saves time in installing the system for users—students, guidance teachers, and administrators. The results of the study indicated the users' satisfaction with the information system for education guidance.

As seen in guidance technology mentioned above, guidance teachers are to select technology that is appropriate for learners for effective guidance operations. The purpose of use is vitally important to obtain the desired value, advantages in the school's conditions, environment, traditions, and ethics propriety of copyright.

## 4. Application of Technology for Guidance

Technology development for guidance applications is to make the guidance work effective and distribute education to reach as many learners as possible. Technology applications for guidance cover the following:

(1) Computer Assisted Instruction (CAI) is applied to teaching and learning management in organizing guidance activities. The program uses a variety of presentation styles in texts, graphics, animations and sound to attract learners' interest in learning.

(2) Multimedia media or mixed media using computer technology show a combination of texts, numbers, still images, animations and sound together. "Multimedia" is a technology that has been developed rapidly to display images in a way that combines many types of media. It focuses on interacting with users. The way of learning in today's society has changed and developed rapidly. Therefore, the integration of technology media from the base of computer use for learning has resulted in applications of information and communication technology for guidance that currently plays a vital role in education.

(3) Electronic books or e-Books are digital publications in text, images, or a combination of both. It can be read on a digital device (e-reader) or on a computer that requires specific software to provide interactions with students. Electronic books can easily insert images, sounds, animations, quizzes, and can print out the desired document. Downloading or reading from the internet sites can be done or updated at any time. These features make it easy for students to read and understand electronic books like paper books on a computer, smart phone or tablet.

(4) Video Conference or teleconference via screen allows people to meet in a group of persons located in different places. Meetings can be conducted via a computer monitor or electronic device, such as a smart phone with a camera and a specific application. Add-on applications are also available on Line, Facetime and Zoom for 2-way communication.

In the context of education through video conferencing, students and teachers can communicate with each other via screens in multimedia format. Students in remote classrooms can communicate with teachers and classmates via visual interactions in real time.

(5) Online learning or e-Learning allows students to learn through the Internet computer network. Students can choose to learn according to their abilities and interests. The lesson content may consist of texts, images, audio, video and other multimedia; students can use a web browser program to access and display the results. Online learning supports teacher-student/ student-student interactions anytime and anywhere as preferred by learners.

## 5. Examples of Using Multimedia in Guidance

The multimedia type of Chigozie & Akamobi (2015) are: (i) Audio Technology in announcing through a school line and sound to publicize various news, and (ii) Video Technology for students' orientation. The school or guidance event can record events on the day of orientation and compile the essence and atmosphere stored in the guidance room for students to listen. (iii) Image Technology is the development and application of images, format management, image galleries, image search, creation and decoration, such as the use of illustrations on a variety of public relations media in guidance work for learners to understand the public relations media easily. (iv) Text Technology refers to messages or characters, such as sending messages via mobile phones, LINE, and Facebook to communicate with students. (v) Animation & 3D Technology can display animations in both 2D and 3D formats, Virtual Reality, decoration, and processing, as seen in animated media for use in guidance activities. (vi) Storage Technology can be in compressed formats of recording information, as shown in the systematic archive storage of guidance media.

## 6. Examples of Guidance Activities through Electronic Media or e-Learning

Laohajaratsaeng (2001) classified three characteristics of electronic media or e-Learning: (1) Supplementary Media in creating webpages for guidance services work. (2) Use Alternative Use for students to choose in addition to a normal class mode. (3) Teaching Tool to guide students to study, practice, and test their knowledge online without attending a class. The paper examinations can be optional as seen appropriate by the teacher/ program manager.

## 7. Guidance Services in Schools Using Appropriate Modern Technology

(1) Individual learners respond to survey services via an online questionnaire, follow-ups and evaluation as feedback. In general, guidance teachers will use the method of distributing documents to students, but in the 4.0 era, they create online questionnaires and quizzes to collect data and interpret results quickly. They can move or store large amounts of documents, copy or jot down various information categories or even save the budget of printing paper. The use of Google Forms is for questionnaires and quizzes, which allows guidance teachers to gather and share information quickly and economically.

(2) Making infographics is convenient in the media, on public signs, or even user manuals in various formats. Statistical information, electric train map, plans, and weather forecast diagrams are for guidance work. The use of infographics is currently widespread

in use on the Internet and most learners tend to choose the most accessible information. Bringing it into the form of an infographic is a good way to present information services to learners. Infographic items are presentable and appealing to learners to understand and can be shared through social media applications, such as Facebook, Instagram, and Line.

(3) Social media applications in psychological counseling services currently facilitate communications on both telephone networks and the Internet via networks worldwide. With social media applications, most students spend rather long hours on activities using technology through mobile devices for communication, entertainment and knowledge seeking. Therefore, it is a good opportunity for teachers and counselors to make use of these tools in communicating, providing information, and giving advice to learners and related parties effectively.

(4) Creating an application in the guidance activities in schools to handle all guidance tasks consistently. Guidance counselors can help learners to discover for themselves what they are interested in and what they are good at in choosing a career and further study in the future. As known, the use of smart phones and tablets with installed applications makes it easier for users to access various media in contact with their customers and online education programs as preferred. Enrollment procedure, preparation of teaching and learning materials, knowledge exchange and management, and guidance services are accessible on the electronic devices for benefits of all parties concerned.

## 8. Benefits of Using Technology for Guidance

In the overview of guidance operations, the use of technology, when used correctly and appropriately, will yield good results. Three considerations--Efficiency, Productivity, and Economy--can help save both time and human resources. Chaloesap et al. (2012) reported the benefits of using technology for guidance as follows:

(1) Benefits to learners: (i) Learners have the opportunity to choose to access guidance services through channels that are suitable for their abilities, aptitudes, and interests. (ii) Learners have access to guidance services anytime and anyplace. (iii) Learners practice thinking and solving problems on their own. (iv) Learners are encouraged to have skills in finding learning resources. (v) Learners can learn wider and deeper content. (vi) Students make the most of their free time in accessing knowledge.

(2) The benefits to the guidance teachers: (i) Allowing them to plan more variety of guidance activities. (ii) Supporting guidance activities for learners to understand more concrete lessons. (iii) Increasing the efficiency of the guidance teachers' work with the use of technology. (iv) Aiming at learners to self-assess and the guidance teachers to process the assessment of the learners. (v) Making the learning atmosphere pleasant for learners. (vi) Bridging the learning gap among students.

(3) Benefits to educational institutes and guidance work: (i) Collecting data on guidance work in educational institutes. (ii) Reducing costs and increasing productivity and efficiency in office automation systems. (iii) Communicating with fewer contact steps in the educational institution. (iv) Reducing the use of paper. (iv) Providing online guidance services that can perform various activities efficiently as in an online questionnaire and report submission systems.

## 9. Limitations on the Use of Technology for Guidance

Namburi (2003) and Katasila (2020) identified limitations in the use of technology for guidance work as follows:

(1) Schools in remote areas have limited computers for students' frequent use.

(2) The levels of learners' technology tend to vary in collaborative learning.

(3) The use of technology decreases learners' social and interaction skills. Learners can chat with others online intimately but tend to distance themselves from real people in face-to-face interactions.

(4) Asking and answering questions sometimes doesn't happen spontaneously/ immediately and such delay in interactions can lead to incomprehensibility or miscommunication.

(5) The used technology in good guidance is rather difficult to achieve flexibility suitable for students with different aptitudes.

(6) Guidance teachers spend a lot of time preparing for work in terms of content via computer programs. They also need to train the students to use computer programs competently.

(7) Schools and educational institutions need to allocate sufficient budget for both hardware and software.

It can be seen that the use of technology in guidance work has both benefits and limitations. If a guidance teacher chooses to use technology for guidance, he/she may start with a blended or hybrid mode as a transition from the paper-based human contact to the orientation toward the virtual mode.


## 10. Ethics for Users of Information Technology

Guidance teachers as technology users in guidance operations need to observe ethics for users of information technology (The Office of the Secretary of the National Information Technology Commission, 2001).   Information technology ethics cover personal information, development, production and invention. Users' ethics include the following:

(1) *Users of information technology for work* refer to operators, employees and people who use information technology with the purpose of working or performing work-related tasks. Ethical considerations are: (i) Take into account the benefits of the organization, not harass other users, not cause any damage to the organization. (ii) Have responsibility on duties and keep confidential information of the organization without disclosing to others. (iii) Have knowledge and understanding of information technology and can perform duties accordingly. (iv) Beware of the importance of duties and maintain professionalism by focusing on self-improvement and advancement in the information technology environment. (v) Not misuse information technology knowledge, or not exploit those who lack equal knowledge and understanding.

(2) *Users of information technology for personal use* refer to those who use information technology for purposes other than performing duties. Such users may utilize information technology for personal purposes by the prescribed guidelines: (i) Beware of responsibility for oneself, others and society in using information technology properly. (ii) Evaluate technology, data, information and appropriate applications. (iii) Respect the rights

and copyrights of other people's creations. (iv) Not disseminate inappropriate content—violence, hatred, sex, drugs, gambling, illegal actions, and other people's personal information. (v) Not commit computer crimes or offenses by using a computer as a tool to destroy computers or computer systems. Computer crimes include (i) unauthorized alteration of data; (ii) writing or creating computer programs embedded in other programs for the purpose of destroying data or computer systems; (iii) the use of the balance consolidation technique by rounding amounts; (iv) the use of utility programs as tools to access the system; (v) writing or creating a program that imitates the normal screen of any website which deceives computer users, and stores the user's user ID and password in a secret file; (vi) circumstances as specified by the conditions in tracking the movement of the accounting system and payroll system and change the numbers; (vii) The leakage of information whether deliberately or not, electromagnetic radiation being emitted while working, or the installing process being intercepted when receiving information as required; (viii) eavesdropping communication signals; and (ix) computer-based crime related to planning, control and monitoring process modeling.

It should be noted that information technology has been designed, produced, invented and developed continuously to meet users' needs. In this regard, guidance teachers need to observe professionalism in guidance work as well as information technology ethics in guidance practices. It is certain that they need to take into consideration the interests of learners, educational institutions and society at large.

## 11. Reflections

As shown in the synthesis of guidance work with the use of information technology, the authors considered it as a practical tool to promote and organize a new environment for learning. Guidance teachers use media or various channels for learners to understand and interact with them. Learners are encouraged to learn by themselves in a more widely distributed education via Computer Assisted Instruction (CAI), electronic books (e-Books), video conference (Video Conference) and online learning (e-Learning). The overall guidance operations emphasize efficiency, productivity and economy.

Individual learner can now access survey services via online questionnaires, and tracking services with Google Forms. Infographics are easy to communicate with the target audience, and suitable for presentations on tasks with complex data. The use of social media programs in psychological counseling services is apparent among learners. Electronic devices--smart phones, computers, tablets are commonly used for communication, entertainment and knowledge seeking. Therefore, it is a good opportunity for guidance teachers to take into account the suggestions and ethical issues in using social media in guidance activities. Guidance teachers can educate learners with cyber etiquette and information technology ethics so that they can avoid complications that may arise from unintentional cyber privacy intrusion, harassment, plagiarism, frauds, or crimes. Guidance teachers should also keep in mind that the quality of guidance operations does not always rely on technology, but on the quality of the teachers regarding their professionalism and ethics.

## 12. Suggestions

Technology investments require sufficient budget and long-term commitment from educational institutions. Decision making should involve all parties concerned in the organization. The authorities in schools/ educational institutions need to protect electronic data and resources in a well-designed security system to ensure that the information technology tools can support intended operations effectively.

## 13. The Authors

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