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Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills

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Abstract

"Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills" is an expected result from the implementation of Research and Development under the following concept: *"It begins with teacher learning development. Teachers then incorporate the learning outcomes into student development."* Firstly, as a result of implementing the R1&D1 to R4&D4 process, six sets of *Teacher Learning Manuals* and one *Teacher Workshop Manual for Implementing the Learning Outcomes in Student Development* were created. Secondly, in the R5&D5 phase, the manuals were evaluated with 157 teachers and 2,613 students using a one-group pre-test/post-test experimental model in schools affiliated with the Office of the Basic Education Commission. The experimental results revealed that the teachers' scores on the post-experimental test had met the standard of 90/90, and that the mean scores had been statistically significantly higher than the pre-experimental test. Furthermore, the findings in implementing the teacher's learning outcomes in student development illustrated that their post-experimental mean score in the *Information Literacy Skills* assessment had been statistically significantly higher than the pre-experimental score. Taken together, these findings confirmed that the developed online program had been proven to be effective according to the established research hypothesis. Moreover, the study results also demonstrated that the developed online program could be distributed to schools under the Office of the Basic Education Commission.

Keywords: Information Literacy Skills, Online Program, Self-Learning Module, Research and Development

1. Introduction

In the era of globalization, advances in communication, telecommunications and information technology have narrowed the world of today. People can communicate faster, and information can be disseminated, distributed, and transferred more conveniently. This progress affects people's cultures, their ways of life, beliefs, and even their thoughts. It also puts people at risk via the threats that come with technology. This kind of change is not easy to control and is even more challenging because it affects social management. Examples of various disasters that can occur are as follows: trans-national crime risk, the risk of terrorism and cyberattacks, negative impacts upon the quality of society; risks to the security and the quality of life of people, who cannot adjust to the changes; or the lack of knowledge and skills to keep up with the changing era. The most worrying thing is working with such rapid advancements even though many Thais still cannot adapt to the changes, the new rules, and the higher standards (Secretariat of the Cabinet, Thai Government, 2018).

Hassani (2015), Macauley (2001), Naik and Padmini (2014), Ranaweera (2008), Riedling (2006), and Scottish Information Literacy Project (n.d.) all believe that Information Literacy Skills are crucial because they are the skill sets that are essential to search for, retrieve, analyze, and to use information. This is a set of skills that allows individuals to solve problems and think critically, such as formulating questions, finding answers, researching information, expressing viewpoints, evaluating resources, and making decisions. In the 21st century, it is a skill set that will help students achieve a broader range of their goals through a student-centered learning approach and will enable students to achieve a more comprehensive range of purposes in the 21st century through student-centered learning strategies. Undeniably, Information Literacy Skills assist in more effective decision-making that can benefit society. They are essential skills for engaging in civic and social participation, creating new knowledge, and promoting successful lifelong learning.

Therefore, providing students with modern education, including enhancing skills in using the appropriate technology, is necessary for survival in the digital age. Unquestionably, students in the present era are people, who have grown up in and live in the digital age and who are keen to use the internet and communication technology. Therefore, it would be a great benefit if they could use these technological advances properly and wisely. Therefore, equipping them with the skills to learn digital technology is crucial in pursuing good digital citizenship (Wongyai, 2017). In particular, during the disruption of information technology, empowering students by sharing Information Literacy Skills is urgently needed because Thailand has not yet established a reasonable standard for digital technology learning and teaching in educational institutes (Lenarat, 2017).

The Core Curriculum of Basic Education (2008) identifies students' technology competencies as follows: *"Students should have the ability to select and use various technologies with technological process skills for personal and social development in communication learning and solving problem with creativity and integrity."* Therefore, developing students' technology competencies is essential to learning in the 21st century because it causes students to become aware of the dramatic disruption of information in the current world situation. Altogether, Information Literacy Skills consist of the following: 1) gaining access to information resources that will open up the students' ideas and experiences, 2) developing the skills to use information technology that must be regularly acquired and self-developed, 3) analyzing and evaluating the information that arises, 4) organizing the processing of information with creative methods and formats, 5) applying data to be used in effective and constructive decision-making processes, and 6) summarizing references and effectively communicating information. The learners of the 21st are required to adopt these vital digital skills so that they can comprehend information ethics leading to worldwide information access and to lifelong learning (Ministry of Education, 2008).

Therefore, the concept of "Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills" attracted the attention of the research team. This research adopted Research and Development methodology according to the perspective of Sanrattana (2018), which points out that the educational innovations developed by this research methodology are related to the principle of *developing "people" to create "work"* via phenomena or empirical data. In other words, there is evidence for necessity. For example, there may be new expectations that challenge institutions or a change in the work paradigm where the personnel still lack the necessary knowledge and skills. At present, there are many new concepts and theories of educational innovation, and educators are expected to have the "knowledge" and be enthusiastic to conduct "actions," which generates the "power" that drives more effective work according to the concept of "Knowledge and Action are Power."

The concept of "*Developing "people" to develop "work"* leads to: *"It begins with teacher learning development. Teachers then incorporate the learning outcomes into student development."* Professional development in teaching considers the student's benefit as the ultimate goal (Gusky, 2000; Hoy & Miskel, 2001). Moreover, it correlates with Kampen, 2019, who stated that *"Student achievement should be the ultimate goal of any teacher professional development activities."* These are the reasons why the research team believes that "Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills" can achieve the goal of developing information literacy skills for students. Teachers need to be knowledgeable in information literacy skills and need to be able to empower their students in 21st-century education.

"Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills" is the product of R&D conducted at an experimental school (Lamplaimat School in the Lamplaimat District of Buriram Province), which is supervised by the Office of the Basic Education Commission. Therefore, the developed online program can contribute to the post-research target population or to those secondary schools, which are affiliated with the Office of the Basic Education Commission across the country. Furthermore, the research and development principles assert that if the results of the trials prove that developed innovations are practical according to specified criteria, then they can be distributed for the benefit of the target population. In addition, the online program, which was developed by the advanced digital technology, will definitely be significantly more beneficial to the target population than the traditional printed materials would be.

2. Literature Review

Literature review is an important starting step for research and development of online programs because it provides knowledge from the points of view of academics or academic agencies on developing *Teacher Learning Manuals* in six aspects as follows: 1) The definitions of information literacy skills from the perspectives of Association of College and Research Libraries (2000), Press (n.d.), The Library and Information Association (2018), Brantley (2015), Otterbein University (2021) and Virkus (2009); 2) The importance of information literacy skills from the perspectives of Hassani (2015), Macauley (2001), Naik and Padmini (2014), Ranaweera (2008), Riedling (2006), and Scottish Information Literacy Project (n.d.); 3) The characteristics of a person, who has information literacy skills from the perspectives of Karim, Shah, Khalid, Ahmad, and Din (2015), Bainton (2001), Willamette University (n.d.), and Thoughtful Learning (n.d.); 4) The development guidelines for information literacy skills from the perspectives of Bart (2009), Ferlazzo (2019) Bruff (2011), EBSCOpost (2017), Hong Kong Polytechnic University (n.d.), Proudman (n.d.), Reading Rockets (n.d.), and Xiao (2017); 5) The developmental steps of information literacy skills from the perspectives of LibGuide Team (2017), Loesche (2015), Cataldi-Roberts (2015), Scribed Company (2007), and Zook (2018); and 6) the assessment of information literacy skills from the perspectives of Caldwell (n.d.), Julien, Gross and Latham (2018), and Oakleaf (2006). Furthermore, the data from the literature review was also used in the instructions and summary for a set of *Teacher Workshop Manuals for Implementing the Learning Outcomes in Student's Information Literacy Skills Development*.

3. Research Objective

This research aimed at conducting research and development to produce "Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills" that would be effective according to the designated criteria. The developed online program consisted of two projects: the project on teacher's learning development and the implementation of teacher's learning outcomes to student's development. Each project had its own specific manual for self-learning modules.

4. Research Hypothesis

According to the R&D methodology and the information obtained from the literature review, the research aims, which were developed to examine "Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills," focused upon two designated criteria: 1) The teachers' scores on the post-experimental test would meet the 90/90 standard, and the mean scores would be statistically significantly higher than the pre-experimental test, and 2) the student's post-experimental mean scores in the *Information Literacy Skills* assessment would be statistically significantly higher than their pre-experimental scores.

5. Research Methodology

5.1. Concepts and procedures

"Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills" was developed under the following concept: *"It begins with teacher learning development. Teachers then incorporate the learning outcomes into student development."* This study adopted a Research and Development methodology that was in

alignment with the perspective of Sanrattana (2018), who pointed out that the educational innovations developed by this research methodology are related to the principle of *developing "people" to develop "work"* with phenomena or empirical data. In other words, there is evidence for necessity. For example, there are new expectations that challenge institutions or cause changes to the work paradigm, and in these institutions, the personnel still lack knowledge and skills. At present, there are many new concepts and theories of educational innovation, and educators are expected to have the "knowledge" and to be enthusiastic when taking "action," which generates the "power" that drives working more effectively in accordance with the concept of "Knowledge and Action are Power."

Moreover, the literature review is the most important step for starting research and development because it provides information on online program development, which focuses on projects as a significant component. Each project has its specific manual for self-learning modules. Therefore, the procedure of the study began with a literature review according to R1&D1, R2&D2, R3&D3, R4&D4 and R5&D5 patterns as described below:

R1&D1: **A Review of the Literature**   A literature search was conducted related to information literacy skills on the following topics: definitions, importance, the characteristics of a person with information, the developmental guidelines, the developmental steps, and assessments. The information obtained from this step is used in creating a set of six manuals for the teacher's learning development project. The set consisted of: (1) a manual for learning about the definitions of information literacy skills; (2) a manual for learning about the importance of learning information literacy skills; and (3) a manual for learning about the characteristics of a person, who has information literacy skills learning; (4) a manual for learning about the developmental guidelines for information literacy skills; (5) a manual for learning about the development steps of information literacy skills; and (6) a manual for learning about the assessment of information literacy skills; and (7) a set of the *Teacher Workshop Manual for Implementing the Learning Outcomes in Student's Information Literacy Skills Development*.

R2&D2: **Uncovering the Flaws: The First Step**   To make the initial improvements to the manual, the manual was scrutinized to find any flaws, which included examining for conciseness, usefulness, appropriate language, and appealing content presentation. The focus group discussions were conducted with 15 teachers in a non-experimental school known as Romburipittayakhom Rachamangklapisek.

R3&D3: **Uncovering the Flaws: The Second Step**   The manual was checked for flaws for a second time, including examining for conciseness, usefulness, appropriate language, and appealing content presentation. The focus group discussions were conducted at two non-experimental site schools: Bualuangwittayakhom School (with 15 teachers) and Thantongpittayakhom School (with 15 teachers).

R4&D4: **A Review of the Additional Literature**   Any additional literature on the topic of information literacy skills assessment was searched for to obtain information for the following two research tools: 1) the test for teacher's learning based on the content of six manuals and 2) the student's information literacy skills assessment.

R5&D5: **Examining the Manuals in the Pre-experimental Research Step with a one group Pre-test/Post-test design**   The experimental area was Lamplaimat School located in the Lamplaimat District of Buriram Province. It is a secondary school under the Office of the Basic Education Commission that teaches Grades 7-12. This study adopted purposive sampling to select the experimental group. The target consisted of 157 teachers, 1,270 lower secondary school students, and 1,343 upper secondary school students (2,613 in total). The field experiment took place during the Second Semester of the Academic Year of 2021. The experimental course was divided into following two phases:

Phase 1: **Teacher learning development using online self-learning modules** The activities and the schedule in this phase consisted of the following steps:
1. The research team met with the target teacher group to explain the research details and conduct the teacher's pre-test. This step took two days.

2.   To further develop the teachers using online manuals and self-learning modules, the teachers could download the manuals from the website that the research team had created. The learning had to be completed without intervention from the research team or anyone else. This step took one month.
3.   Together, the target teacher group worked on checking for flaws to improve the manuals and took a post-test. This step took two days.
4.   The research team analyzed the post-test results and compared them using the standard criteria of 90/90. A comparative analysis of the average scores of the pre-test and the post-test were made using the t-test dependent. This step took two days.

Phase 2: **The Implementation of the Teacher's learning outcomes to develop the Students**   The activities and schedule in this phase included the following steps:
1.   The research team met the target teacher group to explain the research details and to evaluate the information literacy skills of the students in the target group using the pre-test. This step took two days.
2.   The target teacher group implemented the learning outcomes to develop the students' information literacy skills without any intervention from the research team or anyone else. This step took two months.
3.   Together, the target teacher group worked to check for any flaws in order to improve the manuals and evaluated the students' information literacy skills using a post-test. This step took two days.
4.   The research team conducted a comparative analysis of the average scores of the pre-test and the post-test using a t-test dependent. This step took two days.

5.2. Research Tools

   1. The Teacher's Learning Outcomes Test consisted of multiple-choice questions with four answers. It was used to evaluate the teachers' knowledge as a pre-test and a post-test. The research team invented this test using the content from the teacher's learning manuals, which consisted of definitions; the important aspects; the characteristics of a person with information; the developmental guidelines; the developmental steps; and assessments. The test was an online form (Google Form). In addition, it was based on Benjamin S. Bloom's cognitive domain, which classifies thinking skills from low to high as follows: remembering, understanding, applying, analyzing, evaluating, and creating (Sanrattana, 2018). In addition, it was examined for validity as described below:
   1.1 Five curriculum, teaching, and measurement experts examined the validity using Rovinelli and Hambleton's (1977) Indices of Item-Objective Congruence (IOC). The results demonstrated that every question had an IOC value of higher than 0.50 (Chaichanawirote & Vantum, 2017).
   1.2 The pilot test was conducted with 30 teachers from a non-experimental site school: Burirampittayakhom School. The result analysis revealed the following: 1) the index of difficulty of questions had been between 0.20 - 0.80, and the power of discrimination had been between 0.20-1.00, which conformed to the specified criterion; 2) the reliability of the test was examined using Kuder – Richardson's method, and it had shown a KR - 20 coefficient of 0.889, which was greater than the specified criterion (equal to or greater than 0.70); and 3) regarding the test difficulty, the mean scores of all samples were employed as a criterion. If the average score was between 30 and 50 percent of the total score, it was considered fairly difficult. If the average score was lower than 30, the test was considered to be more complex. If the average score was higher than 50, the test was considered easier. Data analysis revealed that the average score from all samples had been 23.87, which was equal to 66.30 percent of the total score.

   2. The Student's Information Literacy Skills Assessment Form   It was an online form, Google form, with 5-level rating scales: the most, very, medium, less, and the least. The researcher created the form using the studies related to the characteristics of a person, who has information literacy skills based on the perspectives of: Karim et al (2015), Bainton (2001), Willamette University (n.d.), and Thoughtful Learning (n.d.), and from studies related to the information literacy skills assessment based on the perspectives of: Caldwell (n.d.), Julien et al (2018), and Oakleaf (2006). It was examined for validity as described below:
   2.1 Five experts in curriculum, teaching, and measurements examined the validity using Rovinelli and Hambleton's (1977) Indices of Item-Objective Congruence (IOC). The results demonstrated that every question had shown an IOC value higher than 0.50 (Chaichanawirote & Vantum, 2017).

2.2 In order to analyze the alpha coefficient of reliability using Cronbach's method, an evaluation trial was conducted with 30 students at a non-experimental site school: Burirampittayakhom School. According to the results of the data analysis, the alpha coefficient of confidence for the entire questionnaire was 0.85. The examination of each feature revealed the following: 1) 'Having an awareness of the qualities of good information' had been 0.85, 2) 'The skills for accessing information' had been 0.87, 3) 'The skills for assessing the value of the information' had been 0.85, and 4) 'The skills of using the information' had been 0.84. The alpha coefficient of confidence had been higher than the specified criterion, which was equal to or higher than 0.70 (UCLA: Statistical Consulting Group, 2016).

5.3. Data Analysis

1. The 90/90 Standard was used to analyze the data and to compare the teachers' learning outcomes in the post-experiment. The first 90 represented the percentage of the mean scores obtained from the Knowledge test by the entire group of teachers. The last 90 represented the percentage of teachers, who had passed the test according to all objective criteria. (Yamkasikorn, 2008)

2. The t-test dependent statistic was used to analyze the data to compare the results of the teacher's learning outcomes and the student's information literacy skills assessment in the pre-experimental test and the post-experimental test.

6. Research Results

The results from the R1&D1 step produced "Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills," which consisted of two projects, in which each project had its specific manuals as described below:

1. The Teacher's Learning Development Project had a set of six manuals, which were created from the perspectives of academics and agencies, and which had been obtained from the literature review process. The followings are the detail of the six manuals.

1.1 The manual for learning the definitions of information literacy skills presented perspectives from Association of College and Research Libraries (ACRL) (2000), Press (n.d.), The Library and Information Association (2018), Brantley (2015), Otterbein University (2021) and Virkus (2009).

1.2 The manual for discovering the importance of information literacy skills learning presented perspectives from Coonan and Secker (2013), Macauley (2001), Naik and Padmini (2014), Ranaweera (2008), Riedling (2006), and Scottish Information Literacy Project (n.d.).

1.3 The manual for exploring the characteristics of a person with information literacy skills learning presented perspectives from Karim et al (2015), Bainton (2001), Willamette University (n.d.), and Thoughtful Learning (n.d.).

1.4 The manual for creating the developmental guidelines for information literacy skills presented perspectives from Bart (2009), Ferlazzo (2019), Bruff (2011), EBSCOpost (2017), Hong Kong Polytechnic University (n.d.), Proudman (n.d.), Reading Rockets (n.d.), and Xiao (2017).

1.5 The manual for investigating the developmental steps of information literacy skills presented perspectives from LibGuide Team (2017), Loesche (2015), Cataldi-Roberts (2015), Scribed Company (2007), and Zook (2018).

1.6 The manual for discovering the assessment of information literacy skills presented perspectives from Caldwell (n.d.), Julien et al (2018), and Oakleaf (2006).

2. Implementing the Learning Outcomes in the Student's Information Literacy Skills Development Project A workshop manual with instructions was implemented and can be summarized as follows: 1) the typical characteristics of information literacy skills for students, 2) the developmental guidelines for information literacy skills, and 3) the steps of information literacy skills development. The manual also included the teacher assessment form to assist in implementing the developmental guidelines and the developmental steps, feedback on the manual's strengths and weaknesses, and reflections about the work.

Remarks:

1. Please refer to every manual written in Thai at: https://online.pubhtml5.com/avtq/noot/

2. Please refer to the teacher practice level assessment form written in Thai at: https://bit.ly/2QPTqRc
3. Please refer to the teacher's learning outcome test written in Thai at: https://bit.ly/37cFoRM
4. Please refer to the development assessment form on information literacy skills of students written in Thai at: https://bit.ly/3KMDC7E

The results of R2&D2, R3&D3, R4&D4 and R5&D5 produced the *Teacher Learning Manuals* and one *Teacher Workshop Manual for Implementing the Learning Outcomes, as well as the Teacher's learning test and the Student's assessment form,* which led to the experimental research in the field based on the pre-experimental research with a one group pre-test/post-test design. The experimental investigation was conducted at Lamplaimat School in the Lamplaimat District of Buriram Province, which is supervised by the Office of the Basic Education Commission. The experimental group consisted of 157 teachers, 1,270 lower secondary school students, and 1,343 upper secondary school students (2,613 in total).   The research findings were based on the hypothesis that "Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills," which was comprised of two projects, each with its own manual, could be deemed as 'beneficial' based on the following criteria:

1)   The post-test results in the teacher's learning outcome test were in line with the standard of $90/90$. The first 90 represented a percentage of the mean post-test scores, which was 33.51 points out of 36. It demonstrated that the post-test scores had been higher than the specified criterion (90). The last 90 was the percentage of the teachers, who could complete all objectives. It revealed that 92.79% of 157 teachers had been able to pass all objectives on the exam. The number was higher than the specified criterion (90).

2)   The results showed that the mean score of the pre-experimental test of 157 teachers had been 23.61, and the standard deviation had been 7.07, while the post-experimental test mean score had been 33.51 and the standard deviation had been 1.21. Therefore, when analyzing the data by t-test dependent, the mean score of the post-experimental test was statistically significantly higher than the mean score of the pre-experimental test at 0.05, which is shown in Table 2.

Table 2: The results from the t-test depended upon comparing the teachers' learning outcomes before and after the experiment

Testing	Sample sizes	Means	Standard Deviations	t
Before	157	23.61	7.07	20.187*
After	157	33.51	1.21	

*p < 0.05

3)   Before the experiment, the assessment results from the information literacy skills with $2,613$ students revealed that the mean had been 4.07 with a standard deviation of 0.79, while the results from the assessment after the experiment had shown a mean of 4.78 with a standard deviation of 0.42. Therefore, when analyzing the data by using a t-test dependent, the mean score of the post-experimental assessment had been statistically significantly higher than the mean score for the pre-experimental assessment at 0.05, which is shown in Table 3.

Table 3: The results of the t-test dependent when comparing the results of students' information literacy skills assessment before and after the experiment

Evaluations	Sample sizes	Means	Standard Deviations	t
Before	2,613	4.07	0.79	71.378*
After	2,613	4.78	0.42	

* p < 0.05

7. Discussion

The student's 21st-century skills have been highlighted in recent studies. Buckle (n.d.) defined these skills as: *"the knowledge, life skills, career skills, habits, and traits (that are) critical to student success in today's world, particularly as students move on to college, the workforce, and adult life."* 21st-century skills consist of the following: *Critical thinking, Communication skills, Creativity, Problem-solving, Perseverance, Collaboration,*

Information literacy, Technology skills & Digital literacy, Media literacy, Global awareness, Self-direction, Social skills, Literacy skills, Civic literacy, Social responsibility, Innovation skills, and Thinking skills. Information literacy skills are among those, as are digital literacy skills in Promrub and Sanrattana (2022) study "Online Program to Empower Teacher Learning to Develop Students' Digital Literacy Skills." The dramatic disruption of technology resulted in 21st-century skills, and over time, will become more complicated. Duggal (2022) classified the Top-9 newest technology trends for 2022 as follows: 1) Artificial Intelligence and Machine Learning, 2) Robotic Process Automation (RPA), 3) Edge Computing, 4) Quantum Computing, 5) Virtual Reality & Augmented Reality, 6) Blockchain, 7) the Internet of Things (IoT), 8) 5G, and 9) Cyber Security.

One World International School, Singapore (2020) believes that "21st-century skills will continue to play a significant role in our lives, which is why we provide students with opportunities for hands-on learning to develop these unique and valuable skills." Therefore, it is more challenging for teachers in their roles. *What should they do to develop the practical 21st-century skills?* In the 21st-century classroom, needs are quite different from the 20th-century ones. In the 21st-century classroom, teachers are facilitators of student learning and creators of productive classroom environments. Students can develop the skills they might need in the present or in the future. (Nola, 2022)

From the above perspective, the research team believes that the "Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills," which was created using the R&D procedure, is an educational innovation that effectively enhances the teachers' roles in the development of information literacy skills for students. Information literacy skills are included in the desirable skills for the 21st century. The developed online program consists of numerous perspectives related to information literacy skills in the aspects of definitions; the important features; the characteristics of a person, who has information; developmental guidelines; developmental steps; and assessments. Therefore, the research team believes that teachers will naturally implement the skills with their students after obtaining the knowledge. This concept aligns with Gary Zukav's quote, "Knowledge is power, and for each level of knowledge, you are held responsible for how you use it." In addition, John F. Kennedy stated: "In a time of turbulence and change, it is more true than ever that knowledge is power."

8. Recommendations

"Online Program to Enhance Teacher Learning to Develop Students' Information Literacy Skills," which is an educational innovation proved by the experimental group, is effective and meets the specified standard of the hypothesis. Therefore, the agencies involved in teacher professional development (i.e., the Ministry of Education, the Office of the Basic Education Commission, the Educational Service Area Offices, and the schools) should be aware of its merits and utility. Moreover, designated strategies from the responsible units are required to enable the widespread and effective use of this online program so that it can be employed as a tool for developing teachers in other affiliated schools.

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Appendix

The Student's Information Literacy Skills Assessment Form

The qualification and characteristics that reflect information literacy skills	Your Opinion Level				
	5	4	3	2	1
Having an awareness of the qualities of good information					
1. I realize that good information must come from a reliable source.					
2. I realize that good information must be current, recent, and up-to-date.					
3. I realize that good information must be flexible, must meet the needs, and can be examined.					
4. I realize that good information must be accurate, free from mistakes, clear, and unambiguous.					
5. I realize that good information must consist of complete and reliable facts.					
6. I realize that good information must be concise, straightforward, and not discursive.					
7. I realize that good information must be secured from unauthorized access.					
8. I realize that good information must be verifiable.					
9. I realize that good information goes through assessments, analyses, and synthesis to achieve the most accurate and efficient result.					
The skills for accessing Information					
10. I can access various information step by step.					
11. I can identify the required types and the scope of information.					
12. I can identify the information sources that meet the purpose of my search.					
13. I can use IT to search for information.					
14. I can use searching strategies to search for different information in order to make it more accurate.					
15. I can tell the differences between information sources: websites, magazines, or books.					
16. I can use various information sources to search for diverse types of information.					
17. I can learn new skills to enhance my information literacy skills.					
18. I can use library searches together with computer technology searches to obtain the desired information.					
19. I can search for additional information for comparison and analysis.					
20. I know how to choose the information sources to meet the needs for the completion, accuracy, and unity of required information.					
The skills for assessing the value of the information					
21. I can critically assess information and its sources.					
22. I can check on the qualifications and reliability of the author.					
23. I can check on the publisher's qualification and reliability.					
24. I can learn the techniques to assess the website's qualification and reliability.					
25. I can reasonably identify whether the information from various sources (i.e., websites, magazines, and books) is suitable for my objectives.					

The qualification and characteristics that reflect information literacy skills	Your Opinion Level				
	5	4	3	2	1
26. I can compare the perspectives found in the information source to other relevant sources.					
27. I use my intelligence to assess, analyze, and to synthesize information.					
28. I am attentive and pursue research in a fair-minded manner in order to effectively assess the information.					
The skills of using the information					
29. I understand the economic, social, cultural, and legal issues associated with using the information.					
30. I use information morally and ethically.					
31. I integrate information ethically and legally.					
32. I use the information correctly and do not infringe upon the copyrights of others.					
33. I can present and communicate information to other people.					
34. I can use information effectively to achieve specific objectives.					
35. I consider the impact that bias has upon the interpretation of data.					
36. I am aware of the disadvantages of bias, deceptions, or data manipulation.					
37. I am aware of the disadvantages of presenting only one point of view, one opinion, and/or one attitude.					