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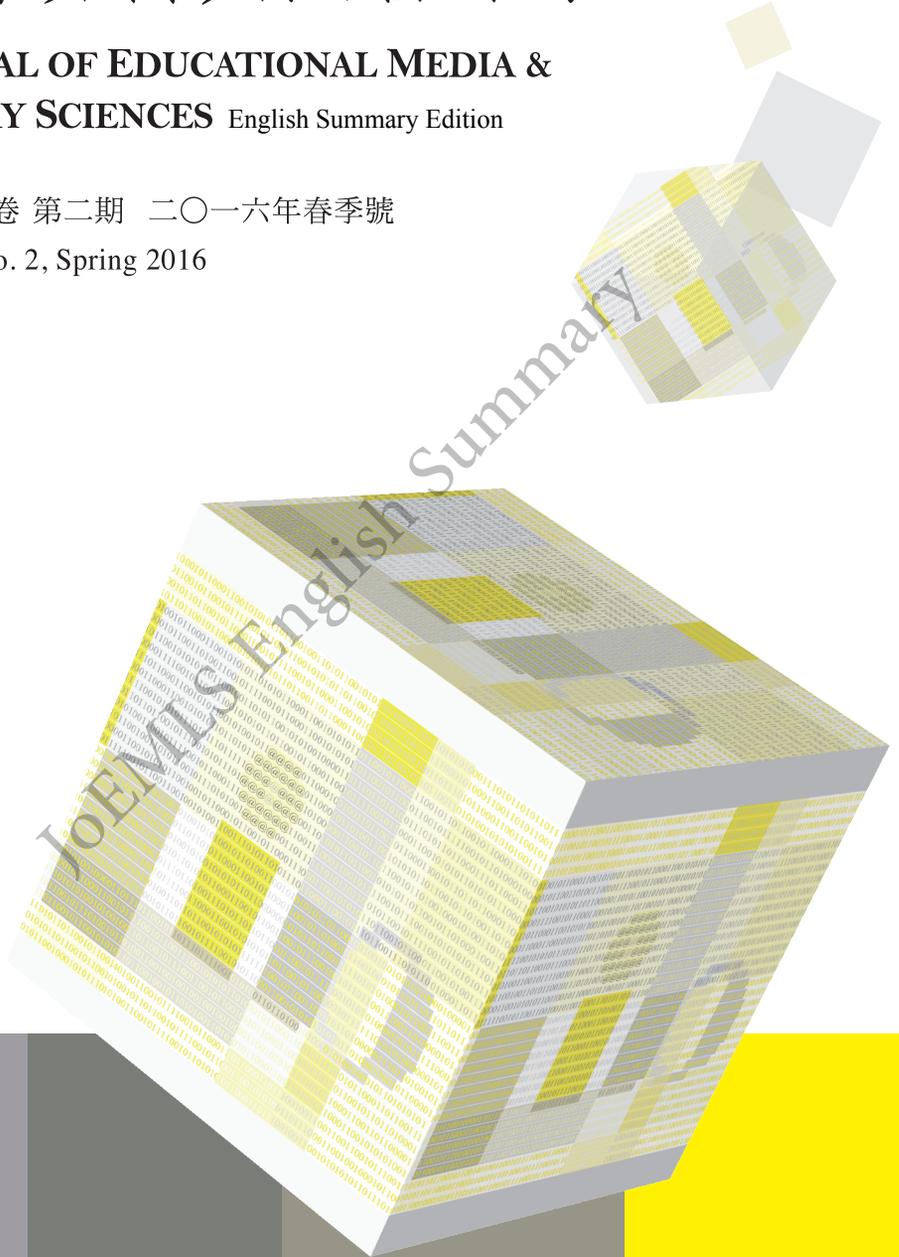
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教育資料與圖書館學，始於1970年3月創刊之教育資料科學月刊，其間於1980年9月更名為教育資料科學，改以季刊發行。自1982年9月起易今名，而仍為季刊，每年冬(1月)、春(4月)、夏(7月)與秋季(10月)各出刊一期，合為一卷。現由淡江大學出版中心出版，淡江大學資訊與圖書館學系和覺生紀念圖書館合作策劃編輯。本刊為國際學術期刊，2008年獲國科會學術期刊評比為第一級，2015年獲科技部人文社會科學研究中心評定為教育學門專業類A級期刊。並廣為海內外知名資料庫所收錄(如下英文所列)。

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The *JoEMLS* is an Open Access (OA) Dual, double-blind reviewed and international scholarly journal dedicated to making accessible the results of research across a wide range of Information & Library-related disciplines. The *JoEMLS* invites manuscripts for a professional information & library audience that report empirical, historical, and philosophical research with implications for librarianship or that explore theoretical and practical aspects of the field. Peer-reviewed articles are devoted to studies regarding the field of library science, information science and IT, the book trade and publishing. Subjects on instructional technology and information communication, pertaining to librarianship are also appreciated. The *JoEMLS* encourages interdisciplinary authorship because, although library science is a distinct discipline, it is in the mainstream of information science leading to the future of **InfoLibrary**.

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- (2) publisher's PDF version is the most recommend if self-archiving for postprint is applicable; and
- (3) published source must be acknowledged with citation.

Contents

EDITORIAL

- A Reflection on the Ethics and Disputes
of Submitting Journal Manuscripts**
Jeong-Yeou Chiu 135

RESEARCH ARTICLE

- A Curriculum Development and
Implementation of Information
Literacy in Nursing Practice**
Hui-Chuan Weng, Hsueh-Hua Chen, &
Pao-Nuan Hsieh 139

- A Study on Integrating Problem-based
Learning into the Innovative Teaching
in Information Literacy and Ethics**
Naicheng Chang, & Hsuan-Yu Hsu 171

- Civic Action-oriented Information
Literacy Curriculum: An Example of
Sixth-grade "US-Taiwan Eco-campus
Partnership Program"**
Lin Ching Chen, Kui-Chi Shen, &
Hsiu-Chen Lai 211

- Students' Involvement and Community
Support for Service Engagement in
Online Tutoring**
Lih-Juan ChanLin 245



EDITORIAL

A Reflection on the Ethics and Disputes of Submitting Journal Manuscripts

With the raising awareness of academic ethics in recent years, journal reviewers have been paying more attention to relevant issues regarding ethics of submitting manuscripts, including paper plagiarism, co-authorship, bogus data, self-plagiarism, and Salami publication (segmented publication), etc. Journal reviewers would inform chief editors about the misconducts, taking seriously their duty of monitoring and reporting. A group of medical journal editors in the UK established the Committee on Publication Ethics (COPE) in 1997, and have been putting their every effort to promote academic ethics and dispute resolutions. Their suggestions for handling cases of publication misconduct have become an important paradigm for various academic fields all over the world. Many cases of violating academic ethics have been reported. For example, the Retraction Watch website launched in 2010 have disclosed and reported many cases of publication misconduct. However, it is appalling that many cases of publication misconduct committed by scholars in Taiwan and China have been disclosed by international organizations, but rarely been reported by domestic media or investigated by relevant institutions.

In addition to following the principles suggested by COPE, well-known publishers of international scholarly journals also have sets of clear guidelines for preventing the prevalence of inappropriate manuscripts. Elsevier Publisher is such an ideal example.

Elsevier asserts that the completeness of academic documents is of great importance to researchers and libraries, and it is always a priority to maintain the trustworthiness and authority of academic electronic files. According to the Elsevier policies, there are four ways for handling journal manuscripts that violate academic ethics, including withdrawal, retraction, removal and replacement. This differentiation helps clarify the fact that previous academic articles have been regarded as academic documents/archives, since these documents/archives need to be appropriately preserved and organized, for leaving a complete historical record. It is reasonable to believe that Elsevier, other academic database publishers, and libraries, all share the same understanding and expectation.

Cases of academic articles being totally removed have been relatively rare, but all have been handled through a rigorous procedure, with consideration of preservation and credit checking. National Library Netherlands, in the same

country where Elsevier is located, have been undertaking the responsibility and duty of a library to preserve those removed journal articles.

The Elsevier policies and regulations are worth our attention and consideration, for handling cases of publication misconduct in Taiwan, which is what we rather not to see.

For this Issue 2, Volume 53 of *Journal of Educational Media and Library Sciences (JoEMLS)*, ten manuscripts were reviewed and four were accepted, with a rejection rate of 60%. Another six manuscripts are still at the review process. Research papers published in this issue include “A Study on Integrating Problem-based Learning into the Innovative Teaching in Information Literacy and Ethics”, by Naicheng Chang and Hsuan-Yu Hsu; “A Curriculum Development and Implementation of Information Literacy in Nursing Practice”, by Hui-Chuan Weng, Hsueh-Hua Chen and Pao-Nuan Hsieh; “Civic Action-oriented Information Literacy Curriculum”, by Lin Ching Chen, Kui-Chi Shen, and Hsiu-Chen Lai. The grand finale of this issue is the English manuscript by Professor Lih-Juan ChanLin, titled “Students’ Involvement and Community Support for Service Engagement in Online Tutoring”.

Jeong-Yeou Chiu
JoEMLS Chief Editor



A Curriculum Development and Implementation of Information Literacy in Nursing Practice^ψ

Hui-Chuan Weng^{ab*} Hsueh-Hua Chen^c Pao-Nuan Hsieh^d

Abstract

The purpose of this study is to develop an information literacy curriculum in nursing practices that incorporates evidence-based nursing and to evaluate its learning effects. During the planning phase, the curriculum was designed on the basis of the Information Literacy Competency Standards for Nursing issued by Association of College and Research Libraries (ACRL) and used semi-structured interviews to explore the information needs of clinical nurses. In terms of learning outcomes assessment, a quasi-experimental and pretest–posttest design was adopted. The results showed that the information needs of nurses were to resolve clinical problems in patient care and to write progress reports. Second, ACRL Information Literacy Competency Standards for Nursing was used to design the five modules for the proposed evidence-based information literacy course. The information literacy competencies of the Experimental Group in posttest evaluation were significantly improved compared with the Control Group ($p < .05$). Finally, both the Experimental and Control Groups differed significantly in information literacy competencies, knowledge levels of evidence-based nursing practices, and confidence levels in answering questions. Three suggestions were proposed for future research.

Keywords: Information literacy, Information literacy competency standards for nursing, Curriculum development, Evidence-based practice

SUMMARY

Introduction

The critical need for nurses to have the necessary information seeking skills to be able to draw upon the professional literature to improve patient

^ψ Part of this article had been presented at the Conference on Library and Information Society, May 7, 2015.

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outcomes has received great attention in the nursing professionals. For bridging the gap between clinical practices and research evidence, and applying relevant knowledge in health care, nursing professionals should be equipped with information literacy for identifying care needs, searching research evidence, conducting critical appraisals and applying in practices. Information literacy is an important tool for nurses to apply evidence-based practices (EBP) in nursing practices, as well as critical skills for them to engage in life-long learning (Jacobsen & Andenæs, 2011; Shorten, Wallace, & Crookes, 2001). The aim of this study is to design an information literacy curriculum in nursing practices that incorporates evidence-based nursing (EBN) and to evaluate its learning effects. The research goals include (1) identifying the information needs of the nursing professionals, as well as the obstacles and challenges they have during the information seeking process, as a reference for designing an information literacy curriculum in nursing practices, (2) using the Information Literacy Competency Standards for Nursing issued by Association of College & Research Libraries (ACRL) as the curriculum framework, and incorporating concepts of evidence-based nursing into the curriculum content, and (3) evaluating the learning effects of nursing students who take this information literacy course.

Methods

This study was conducted between February and June of the year 2015 on students who enrolled in a two-year Bachelor of Science program in nursing in-service education at a university of science and technology in Taiwan. These students all took an information literacy course with the Information Literacy Competency Standards for Nursing issued by ACRL as the curriculum framework and a set of curriculum content based on literature on information literacy courses in nursing practices, as well as the results of semi-structured in-depth interviews conducted on clinical nurses.

For the evaluation of learning outcomes, a quasi-experimental design was adopted and an evidence-based curriculum was developed. The three participating classes were divided into Experimental Group and Control Group, and were conducted with pretest and posttest of information literacy competencies in nursing practices. Three parts were included in these tests. The Part A is to identify the levels of the students' information literacy competencies and their confidence levels in answering questions. The Part B is to identify the students' knowledge levels in evidence-based nursing practices and their confidence levels in answering questions. The Part C is to record background information of these enrolled students.

Results

Based on literature review and in-depth interview analysis conducted on clinical nurses, three topics were generated in this information literacy course, including evidence-based practice in nursing, task identification, and effectively accesses and uses of quality information. Based on the Information Literacy Competency Standards issued by ACRL, a curriculum framework was developed with five modules including (1) course orientation and evidence-based nursing practices, (2) task identification, (3) information seeking strategies, (4) presentation strategies, and (5) accesses and uses information ethically and legally.

For the evaluation of learning outcomes, the paired *t* test was conducted and it revealed that there were significant differences ($p < .001$) between the pretests and posttests of information literacy competencies, knowledge levels of evidence-based nursing practices, and confidence levels of answering questions in Experimental Group and Control Group, indicating that the intervention of the information literacy course effectively enhanced students' relevant competencies. ANOVA was used to analyze the difference of total points of information literacy competencies in Experiment Group and Control Group, and the difference was significant, with $F(1,106) = 4.901$ and $p = .029^*$, indicating that after the students in Experimental Group received the evidence-based information literacy course, they had superior information literacy competencies, compared with the students in Control Group.

Conclusions

Three conclusions were drawn based on the study results.

1. The major information needs of clinical nurses in Taiwan are for resolving clinical problems in patient care and for writing achievement/progress reports required by the clinical ladder program. The nurses rely on electronic journals as their information sources, but they need to advance their knowledge of medical and nursing databases, as well as their abilities of identifying research topics, selecting appropriate keywords and reading literature written in English.

2. Information Literacy Competency Standards for Nursing issued by ACRL was used to develop the five modules in the information literacy course in nursing practices. The semi-experiment design revealed that the students in Experimental Group who took the evidence-based nursing information literacy course had a better performance on their learning outcomes of nursing information literacy competencies than the students in Control Group, with a statistically significant difference ($p < .05$). However, the students in Experimental Group reported that part of the learning activities were with a higher level of difficulties, needed to be adjusted further.

3. The analysis of pretests and posttests of nursing students' information literacy competencies revealed that not matter it is the original resource-based learning or newly developed evidence-based one, as long as a set of soundly-planned nursing information literacy course is channeled, it can effectively enhance nursing students' information literacy competencies and their confidence level of answering questions, thus having a positive effect on their overall information literacy competencies.

Based on the study results, three suggestions were provided for the reference of researchers in information literacy field.

1. In consideration of the shift-work nature of nurses, it is suggested that digital information literacy learning materials in nursing practices should be developed, for a more flexible curriculum for self-learning or continuing education offered by hospitals and Taiwan Nurses Association.

2. When nursing departments and graduate schools are planning nursing information literacy courses, it is suggested that classes on basics of research, statistical analysis and English reading comprehension should be incorporated, for enhancing students' abilities to engage in critical appraisal of evidence and further apply in practices.

3. Experts in library and information studies field should work closely with relevant professionals, including nursing teachers, nursing departments of hospitals, and Taiwan Nurses Association, to develop information literacy courses that are more able to meet the needs of nursing students and nurses.

ROMANIZED & TRANSLATED REFERENCE FOR ORIGINAL TEXT

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A Study on Integrating Problem-based Learning into the Innovative Teaching in Information Literacy and Ethics

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Abstract

The purpose of this study was to integrating problem-based learning into the innovative teaching, flipped classroom and blended e-learning environments, in the general education digital materials "Information Literacy and Ethics" to explore the learning motivation and learning outcomes. The study applied ARCS motivation model as the quantitative indicators of an online questionnaire, and in-depth interviews as the base of qualitative analysis. The results indicated that ARCS model was valid in the two teaching methods. The two teaching methods had their own advantages in learning outcomes; therefore, the study concluded that the two methods were appropriate and feasible innovative teaching method in Problem-based learning. Based on the research results, the study proposed four key elements in promoting Problem-based learning teaching in the information literacy innovative teaching: 1. leadership; 2. self-regulated learning; 3. applying ARCS model into teaching and learning; 4. a proper learning environment. The study initiated a new innovative teaching model in Problem-based learning, that is, to integrate the two teaching methods, and called it "blended flipped online instruction". The study believed that this blended teaching method should be a workable method that could produce good learning outcomes.

Keywords: Problem-based learning, Innovative teaching, ARCS motivation model, Flipped classroom, Blended learning, Information literacy

Introduction

Flipped learning is often referred to as an "inverted classroom", where students watch recorded video lectures at home and do their homework exercises in school. Studies have shown that there is a lack of sufficient discussion of digital learning platforms. Problem based learning (PBL) is strengthened by the Constructivist approach. It is an instructional strategy that is organized around the study and resolution of problems. Originally, PBL was used particularly for traditional medical education. However, the importance and the effect on students' learning performance using PBL and learning via problem solving

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in technology-mediated PBL or using PBL in online environments have been the subject of many higher education studies worldwide in recent years. PBL encourages collaboration and reinforces real world skills and it is believed that PBL enhances learning motivation and helps to achieve satisfactory learning performance. Students are confronted with a real or simulated problem that is a catalyst for the learning process. Students are transformed into active role players with responsibilities to develop skills in problem solving, so learning becomes reflective and involves a deep understanding of the materials.

This study validates the ARCS (Attention, Reference, Confidence, Satisfaction) model for motivation in a flipped classroom and in an online learning environment; analyzes student performance for the two innovative teaching methods; proposes the key factors for a good PBL in an innovative teaching environment and proposes a new PBL model that is most effective.

The PBL Model

The Information Literacy (IL) course for this study consisted of 3 PBL coursework: Decision-making of Information Ethics, the Evaluation and Verification of Network Information and Internet Addiction. Within the PBL environment, the problem is a catalyst that initiates the learning process: 1. students are introduced to an ill-structured problem that is related to their lives to increase interest and motivation; 2. students analyze the problem to determine what they know about the problem and conduct independent investigation of the information needed to address the problem; 3. students analyze the problem and identify action steps through collaboration; 4. students generate possible solutions to the problem; 5. students consider the consequences of each solution and select the most viable solution through metacognition.

The PBL process is supported by continuous reflection on the content and the process. This is improved on an ongoing basis by inputs from multiple sources and perspectives of assessment. The instructor acts as a facilitator and introduces the problem that is related to students' lives, in order to increase interest and motivation. The instructor groups students and provides resources to promote teamwork. The instructor observes the PBL process and supports the group leaders to strengthen their leadership and stimulate effective collaborative learning. The instructor also promotes self-regulated learning, in order to stimulate critical reasoning and elaboration on the topics. The instructor assesses the progress and designs the multiple evaluation scheme.

Research design

A total of 95 students (49 flipped and 46 online) were evaluated in the general education Information Literacy and Ethics digital materials for higher

education module that is a product of the Ministry of Education in Taiwan. An ARCS-based online questionnaire used the first author's previous research to measure students' perception of their motivation. In-depth interviews with group leaders and group members were used to gather qualitative evidence, in order to evaluate the PBL learning process. The questionnaire consisted of 20 items, which were derived from the four constructs of the ARCS model. Each construct is operationalized with five items, based on the subcomponents of ARCS model. The questionnaire items are measured using a 5-point Likert-type scale, ranging from 1 (strongly disagree) to 5 (strongly agree). A total of eight items (two in each construct) were removed because they exhibited cross-loading for different factors. Based on the first author's previous research, the following hypotheses are proposed:

- H1: Attention has a positive direct effect on relevance.
- H2: Attention has a positive direct effect on confidence.
- H3: Attention has a positive direct effect on satisfaction.
- H4: Relevance has a positive direct effect on confidence.
- H5: Relevance has a positive direct effect on satisfaction.
- H6: Confidence has a positive direct effect on satisfaction.

Results and discussion

Validating the ARCS model

Regression analysis was performed to test the hypothesized relationships. The factor loading for items meets the recommended threshold values of 0.60 (0.60~0.83). A reliability coefficient was computed for each factor, in order to estimate the reliability for each scale. All factors with a reliability coefficient of more than 0.8 (0.83~0.91) were considered to be acceptable in this study.

The R^2 value indicated that the coefficients in the ARCS model were generally statistically significant. The model explained a substantial proportion (flipped 61% and online 55%) of the variance in relevance. The respective variances for confidence and satisfaction were: flipped 64%, online 69% and flipped 76%, online 80%. The paths in the ARCS model, that is, Attention → Relevance → Confident → Satisfaction, were all statistically significant (p -values between 0.001 and 0.01).

Furthermore, the independent-samples t-test also indicates that there is no difference ($p > .05$) for the two groups on each factor.

Learning outcomes

1. Class participation and average scores

The results showed that the online group exhibits better engagement in the class and better performance than the flipped group: the number of times entering digital classroom times (flipped 426; online 815), the number of hours of

reading (flipped 74:22:19; online 180:37:40), the number of pages read (flipped 974; online 1811) and average scores on the online exam (flipped 83.1; online 90.1). However, the flipped group exhibited higher average scores for the term than the online group (flipped 81.7; online 78.5) as the online group had a lower PBL coursework average score due to points deducted for late coursework submission (flipped 81.7; online 78.9). Overall, the online group performed better than the flipped group in terms of self-regulated learning and collaborative learning that is required for PBL.

2. The PBL learning process

The study showed that both groups gained equal benefit, yet found that online group had challenges which were easier to overcome than those of the flipped group. The two groups all gave negative feedback in the questionnaire on the theme of the ill-coordination of collaborative learning, using terms such as **free-rider or irresponsible group leader**. Overall, the study demonstrates that both models are viable for PBL IL courses.

Discussion and Conclusions

The IL courses in this study provide a student-centered and inquiry-learning environment, which promotes a more general and pervasive extrinsic orientation by allowing opportunities for self-directions and acknowledging feelings about learning. This contrasts with the traditional, instructor-centered learning environment. Students who exhibit goal-oriented extrinsic motivation have a good chance of success if they have a strong belief in their capabilities and make an effort which then increases the intrinsic motivation that is derived from motivational instruction. Based on the results, four critical elements that increase the effectiveness of PBL are proposed: 1. leadership; 2. self-regulated learning; 3. the application of ARCS to teaching and learning; 4. a proper learning environment.

This study proposes that PBL should take account of institutional requirements, course objectives, learning context and the characteristics of learners. The study proposes a new innovative teaching method by integrating both methods in a framework that is termed, “blended flipped online instruction”. This provides a workable model that produces the best learning outcomes. A instructor starts with flipped PBL, in order to establish leadership in the group leaders and to encourage self-regulated learning by group members. The instructor also supports the PBL process by providing a proper learning environment that stimulates student engagement. The instructor monitors group communication and provides timely feedback whenever it is required. Students then continue to use PBL coursework with collaborative learning in an online community at an individual learning pace, which increases the effectiveness of

learning. This innovative blended teaching mode retains the benefits of flipped PBL and online PBL and addresses the difficulties that each method presents.

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JoEMLS English Summary

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Civic Action-oriented Information Literacy Curriculum: An Example of Sixth-grade “US-Taiwan Eco-campus Partnership Program”

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Abstract

The purpose of this study was to investigate the feasibility of a civic action-oriented information literacy plan within an elementary school, including the stages of analysis, design, development and evaluation. The plan topic was the US-Taiwan Eco-Campus Partnership Program. Students first identified environmental problems of the school; they then developed and implemented a civic action plan based on their collected information, exchanged dialogue to communicate with their American partners, and finally evaluated the overall effectiveness of the plan. The researchers collaborated with three teachers who teach information literacy, science and English respectively. The civic action lasted for ten months with two cycles. This study was conducted in an elementary school in the area of Chiayi. The data was gathered through participant observations, tests, surveys, interviews, and document analyses. The results showed that it is feasible to promote civic action-oriented information literacy curriculum in sixth grade. Students' problem solving skills, rational participation in public actions, and intercultural understanding improved via the following strategies. These strategies included progressive information literacy curriculum, collaboration among teachers, the support of school administration, and integration of information technology.

Keywords: Civic action, Information literacy, International understanding, Eco-campus

SUMMARY

Introduction

In addition to diverse inquiry skills, social responsibility is also a concern of information literacy. How to make wise decisions and be informed citizens in today's chaotic society is a goal which information literacy instruction wishes to pursue (American Association of School Librarians [AASL], 2007; Bruce, 2008; Lloyd, 2010). However, information literacy curriculum rarely addresses the topic of civic actions in real instruction settings.

In recent years, the fields of social studies, science and English in Taiwan

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suggest teachers depart from their scripted textbooks. Instead, teachers should get students to analyze problems in a real world, to gather information and to take actions based on an inquiry process (Green & Medina-Jerez, 2012; Lee, 2012; National Council for the Social Studies, 2013; Ministry of Education, 2014). However, it is still questionable whether such an interdisciplinary instructional design can help students assume the responsibilities of democratic citizenship.

Thus, the main purpose of this study was to examine the feasibility for implementing a civic action-oriented information literacy plan across disciplines within an elementary school. The focuses of this investigation included the analysis, design & development, and evaluation of the entire plan.

Methods

A collaborative action approach was used as the framework for this study. The researchers worked with teachers Jessica, Mary, and Sandra, who taught information literacy, science and English respectively. We collaboratively designed and implemented a civic action project across disciplines, based on the Big6 model. The project titled “US-Taiwan Eco-Campus Partnership Program”, lasted for ten months.

The study was conducted in Chiachia Elementary School in Taiwan. It has adopted the information literacy curriculum since 2005. The information literacy curriculum was integrated into various subject matters via the framework of inquiry-based learning, such as Super 3 and Big6 models. A series of inquiry projects has been implemented in information literacy instruction in each semester starting at the second semester of first grade.

The main research site was a sixth-grade classroom which had a total of 30 students (15 boys and 15 girls). Mary, the science teacher, applied for the Eco-Campus Partnership program from Taiwan government hoping to improve students’ environmental awareness. Jessica, a teacher librarian was responsible for teaching the civic action-oriented project in information literacy instruction. Therefore, teacher Jessica invited Mary and Sandra to collaborate on this project. The information literacy instruction was taught once a week over two semesters.

The research process included two stages:

1. Preparation Stage: Since the learning materials mostly came from National Wildlife Federation, Teacher Jessica invited several external experts to translate and to revise the materials, so that the materials corresponded to situations in Taiwan, and could be understood by sixth graders.

2. Collaborative Action Stage: Since it needed more time for setting up partnership between U.S. and Taiwan, and teachers as well as students needed more opportunities for reflection, the researchers and teachers designed the civic

action instruction with two-cycles.

The instrument Eco-Campus Test was used for pretest and posttest in this study. Data collected included interviews, participant observations, tests, and document analyses. All qualitative data were organized, coded, reviewed and analyzed multiple times. The quantitative test data were analyzed using a paired sample t test, which examined the differences between participants' pretest and posttest scores.

Results

Civic Action Cycle I

1. Analysis, design and development of civic action I

Sixth-grade students in Chiachia Elementary School experienced 9 inquiry projects using the Super3 and Big6 models since first grade. They were all familiar with the inquiry process and skills. However, all of the projects involved cognitive aspects only and seldom related to a real action. Therefore, it was rare for students to implement a civic action in an authentic situation. On the other hand, students started to learn to use computers and the internet since third grade. However, teachers did not give them many assignments which needed to use computers because parents worried about their children might become addicted to the internet.

Based on the analysis above, Jessica communicated with parents about the Eco-Campus website in PTA meeting, and got their support for monitoring students' use of the internet. Students worked in groups of ten and discussed their assignments on the website. After each group established consensus, Jessica asked each group to investigate energy use within the school and to identify inefficiency using an energy checklist.

In the science classes, Teacher Mary taught advantages and disadvantages of each types of energy and clarified Group 4's question: "Do the solar panel manufacturing processes bring risks to our environment?" by saying that every type of energy might cause some environmental pollution (Record 20141126). After reading related materials from library and the internet, four civic action plans, Plan A through D, were proposed by the four groups (Group 1 through 4).

2. Evaluation of civic action I

According to the Eco-Campus Test results, the paired sample t-test was significant ($t= 3.085, p=.004<.05$). It meant that sixth graders acquired the overall information literacy and civic action skills after learning the civic action-oriented information literacy instruction.

Among four civic action plans, Plan B was the most effective one. Group

leader Wendy respected ideas of other members and encouraged them to discuss their problems on the Eco-Campus website to form consensus (Dis. B 20141031~1110). In the beginning, they inspected each classroom apathetically and left warnings to the one that forgot turning off light. Then they found that middle elementary students improved their habits a lot, so Group 2 felt a sense of accomplishment, **“I feel great because it can help everyone save energy together.”** (Sheet S10).

Plan C did a great job too. Through many times of trial and error, group C members finally cooperatively adapted the song “Paddle Fragrance” to “Energy Saving” and recorded it on a computer using Audacity software. After broadcasting the song to whole school, S5 wrote his feelings, **“In the beginning, I think it is a piece of cake. Then I found it is not easy at all. We need to consider so many things to get a job done. For example, do the lyrics rhyme? How can we reduce the noise when recording the song?”** (Sheet S5)

In sum, through the civic action, students’ environmental awareness was increased. They cared more about the environments around them. In the end of the semester, the Chiachia Elementary School was honored for a Silver award which meant students improve school environment collaboratively. As for the intercultural understanding aspect, since the partnership between U.S. and Taiwan was built until the end of the semester, many students did not have the feeling of intercultural partnership in this cycle.

Civic Action Cycle II

1. Analysis, design & development of civic action II

Group C noticed that Energy Saving song was broadcasted twice a week. However, most students had not learned the lyrics and they could not understand the meaning of saving energy. Therefore, Group C members continued their action in this cycle which taught 30 classes the song in the morning.

Teacher Sandra finally contacted Teacher Mark in Houston via email, and set up two video conferences for introduction, sharing each other’s actions, and posing questions about each other’s culture. In English classes, Sandra taught students how to write action reports and self-introductions in English.

2. Evaluation of civic action II

Ten members in Group C worked in groups of two and taught 30 classes singing the Energy Saving song with PowerPoint for two weeks. Then they formally reviewed the song with all teachers and students in the school assembly hall. In the interview, Jessica said, **“From the students’ perspective, their time and energy are limited, and they have so many other assignments needed to be done. So I am pretty satisfied with their performance.”** (Jessica inter20150205). In addition, in the lecture for action report to their partners,

Group C listed two important things they learned during the action process, “**1. We have learned how to use different ways to raise people’s awareness on turning off the lights. 2. When we worked together to save the earth, it was better than got 100 points on a test.**” (Lecture GC). The results supported Checkley’s (2008) claim that comprehensive cross-disciplinary civic-action curriculum can increase students’ sense of mission, and prepare them to be participating citizens.

Conclusion

It is feasible to promote civic action-oriented information literacy curriculum in sixth grade. Students’ problem solving skills, rational participation in public actions, and intercultural understanding improved. However, the success depended upon four key elements. They were progressive information literacy curriculum, collaboration among teachers, the support of school administration, and integration of information technology.

ROMANIZED & TRANSLATED REFERENCE FOR ORIGINAL TEXT

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Students' Involvement and Community Support for Service Engagement in Online Tutoring

Lih-Juan ChanLin

Abstract

The use of modern technology has extended beyond the reach of traditional teaching and learning space. In the "Online Tutoring for After-School Learning", college students are involved in online-tutoring to promote children's after-school learning and information literacy in remote areas. The supportive community played a vital role in providing needed counseling to enrich students' service learning experiences. A survey among 184 online tutors (at a university in northern Taiwan) with a set of predetermined questionnaire items was analyzed and compared among tutors with different experience of involvement. Experienced tutors perceived higher level of community engagement in various aspects than newly-recruited, including "understanding of children", "service action", "self-discipline and responsibility", "interaction", and "positive value to serve". The qualitative assessment indicated the need of counseling from supportive community to nurture college students' positive attitude toward service work.

Keywords: Service learning, Community engagement, Online tutor, Afterschool teaching, Higher education, Online counseling

Introduction

Community engagement is a widely accepted means of enriching students' educational experience. Much literature has addressed that experiences from community engagement help deepen the relevancy of knowledge acquisition and contribute to a better understanding of social responsibility, thereby advancing the applicability and societal benefits of higher education (Fontaine & Todd, 2011; Remedios, Clements, & Webb, 2015; Winston, 2015). Yet little is known about the lasting effects of such engagement among college students in their participation of community services (Bowman, Brandenberger, Lapsley, Hill, & Quaranto, 2010; Sax, Astin, & Avalos, 1999). Academic service-learning offers opportunity for students to be engaged in authentic activities. This opportunity also addresses the needs of communities in order to enrich the educational

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experience and encourage lifelong civic engagement (Bates, 2010; Mitchell et al., 2015). Although the service experience only last 1-2 years in students' college year, this engagement might provide a valuable opportunity to reflect upon their interactions with the community and share their experiences with others.

In Taiwan, since 2006, online tutoring programs emphasizing college students' experience involved in tutoring remote children, aimed to bridge the digital divide and learning gap for children in remote areas (supported by both the government and society), have drawn increasing public attention on issues related to community engagement in higher education (ChanLin, Lin, & Lu, 2015). Online learning offers opportunities and possibilities to reach remote individuals of diverse socio-economic status. Much research has addressed the importance of engagement that students experience in learning to understand the problems in the community they serve and to cope with the problems they face with in serving (Giles & Elyer, 1994; Hughes, Boyd, & Dykstra, 2010; Johnson & Bratt, 2009; Middleton, Dupuis, & Tang, 2013; Ministry of Education, 2016; Verleur et al., 2011). However, in order to provide guideline for future implementation, more research effort is needed in assessing how students' are engaged and how they are cultivated in the service tasks by their supportive community.

Although online tutoring provides college students with new experiences in participation of service learning, there are difficulties in tutoring practice, especially for assessing children's learning situations from remote sites and coping with children's learning problems. Unlike the face-to-face interaction in a traditional classroom, bridging the understanding between the tutors and the children is important in the online tutoring practice. In the online tutoring process, the assessment from students' reactions toward their engagement in the service task, and the support obtained from their supportive team are both important.

Framework of community engagement in online tutoring

Prior research on college student engagement in online tutoring service has identified the learning process experienced by students (ChanLin et al., 2015). Online synchronous learning allow participants to see one another, download learning resources to use as teaching and learning tools and provide the elements of personal interaction, which a live-time, face-to-face classroom can offer (Woodcock, Sisco, & Eady, 2015). Tutoring children with digital resources through synchronous interaction, college students have experienced various aspects of development in community engagement as addressed in literature, including understanding the community (Bonk, Simons, Scepanisky, Blank, & Berman, 2009; ChanLin et al., 2015; Ngai, 2009), taking actions for coping with problems (Bonk et al, 2009; Stenhouse & Jarrett, 2012), interacting with the

community (Fiume, 2009; Ngai, 2009; Taylor & Pancer, 2007), self-discipline and responsibility (Austin & Rust, 2015; Brown, 2015; Molee, Henry, Sessa, & McKinney-Prupis, 2010; Tyler & Kvam, 2015), and positive value to serve (Billings & Terkla, 2011; Fiume, 2009; Marichal, 2010). Community engagement in these aspects is highlighted in service learning (Figure 1). As shown in Figure 1, interaction with the community helps students to be more aware of the characteristics of children and their learning obstacles. It also helps students to take appropriate actions to cope with children's specific problems. Engaging students' learning from online tutoring is a cyclic process. Through learning and doing, students practice self-discipline and gain responsibility. Students are also provided with opportunity to build positive value and beliefs toward serving.

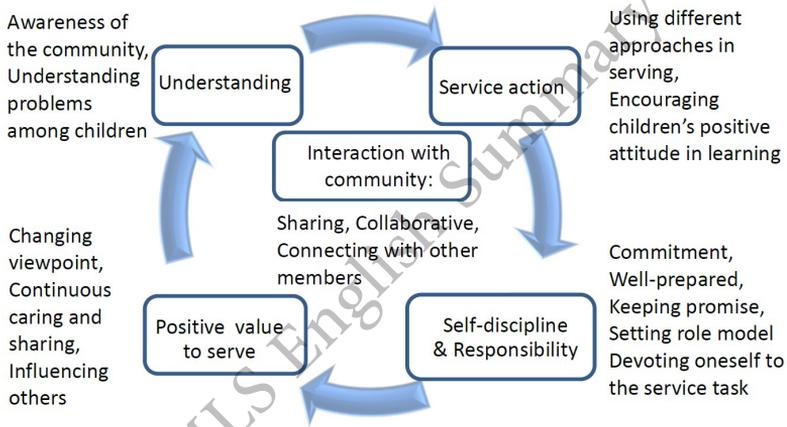


Figure 1 Framework of engaging students' learning from online tutoring

Research indicates that learning through servicing has great impact on development of students' civic responsibility (Chang, Chen, Wang, Chen, & Liao, 2014; Gelmon, 2001; Mitchell et al., 2015), interpersonal skills (Giles & Eyler, 1994; Tucker, McCarthy, Hoxmeier, & Lenk, 1998), and practical skills (Hébert & Hauf, 2015). In this service culture, service-learning brings about a variety of positive student outcomes ranging from intellectual growth and personal development to civic commitment. Supported by the community, students become more value-conscious in that they are committed to promoting understanding in the service community and to take actions in solving community problems (Ngai, 2009). As noted, service experiences directly benefit both the community and students involved (Manolis & Burns, 2011). Service teams with well self-discipline members are critical to develop a sense of community, marked by mutually agreed-upon behaviors norms in serving. Effective discipline is important for a positive culture on which services and learning are valued (Wayson & Lasley, 1984). By creating a knowledge sharing culture, students were

encouraged to integrate knowledge and the out-of-class experience in order to deepen the learning and guide their service goals, and gradually develop positive value for serving and more personal concern for the society (ChanLin et al., 2015; Einfeld & Collins, 2008; Lizzul et al., 2015).

Involving the community

In service practice, helping college students to develop relationship with their community partners is critical to offer a successful service learning experience (Johnston, Bennett, Mason, & Thomson, 2016). The community might offer support for community-based experiences or opportunity for internalization of interdisciplinary knowledge among students (Steiner, 2015). Sufficient opportunity for interaction with community partner can foster understanding and collaboration between college students and the community they serve (Lizzul et al., 2015). Through working and interaction with their community partners, college students are more aware of the barriers of distance and space experienced by children in their learning, such as issues related to insufficient learning resources, facilities, and teaching resources needed for development of academic literacy (Beard & Dale, 2010; Bell, 2010; Wang, 2015), challenges in school readiness and achievement, and limited digital access to information and learning resources (Celano & Neuman, 2010; Khan, Hasan, & Clement, 2012).

Online-tutoring opportunity offers innovative approach in bridging understanding among college students and remote children with face-to-face virtual interaction. The interaction among the service community members also encourages mutual sharing and exchange of knowledge to enhance individuals' critical thinking skills in problem-solving (ChanLin et al., 2015; Waldner, McGorry, & Widener, 2012). As for the benefit to remote children, more access to digital technology from online tutoring opportunity also improves e-tutee skills in information technology and balances the educational resources gap between urban and rural areas (ChanLin et al., 2015; Huang & Liu, 2015; Jacobs et al., 2015; Sultan, 2015). Tutoring children from disadvantaged cultures not only encourages college students to value their serving for the community differently, but also offers opportunities for mutual understanding between college students and remote children, as well as between the communities in the university and in remote areas (ChanLin, Lin, & Lu, 2015).

Effort for bridging divide

The access and use of information and communication technology (ICT) permit teaching and learning to extend beyond the reach of traditional teaching and learning spaces (Mahdi & Al-Dera, 2013; Sangrà & González-Sanmamed, 2011; White, Folley, Williams, & Allen, 2015). In light of the continuing effort

in achieving equal access of ICT among disadvantage community, sufficient resources, organization of manpower, and community mentorship are critical concern to the success of bridging divide in rural community (Erdiaw-Kwasie & Alam, 2016). The research and practice for equal access should also focus on fostering mutual dialogue and creating knowledge from serving the community (Schlicht, 2013).

The implementation and challenges of e-tutoring has been suggested in many studies in addressing culture differences, context in shaping children's motivation in learning, strategies in involving students in learning (Gudmundsdottir, 2010; Johnson & Bratt, 2009; Krauss, 2013; Lewis, Scot, & Calfee, 2013). Cross-disciplinary research and application to support effective communications among the service community are emphasized (le Roux & Loock, 2015; Srivastava & Shainesh, 2015). Online-tutoring offers remote children of diverse socio-economic status with digital opportunity for accessing needed learning support and resources. However, to ensure the quality for serving tutoring tasks, the assessment among college students in their competency development, self-discipline and engagement in serving the community is needed. The instructional practices in e-tutoring ranging from highly structured, individualized support to occasional responses to specific learning problems should also be well monitored by the team to guarantee the achievement of intended service objectives (ChanLin et al., 2015; Chien, Liao, & Walters, 2015).

Engagement in serving

In higher education, service learning helps to cultivate students' civic behavior, and research suggests that participation in service learning fosters college students' development of responsibility and intentions to continue their civic behavior (Kliwer, 2010). A study by Weglarz (2000) suggests that participants obtained greater awareness of community needs, appreciation of cultural diversity, awareness of socio-cultural problems and empathy or sensitivity for others. Ngee (2011) suggests that youths need community service opportunities for their development of civic attitudes and competence skills. Service learning not only contributes to developing university students' awareness of responsibility in the community, but also encouraging necessary actions to engage in change of existing inequities, injustices and difference (Larsen, 2014). From this process, students might experience a more positive sense of self during their community service-learning expeditions, which might increase a sense of mastery, confidence and belief for serving in their future.

Critical social theorists propose that quality education centers on cultivating students' ability to think critically — questioning or deconstructing — them and reconstruct knowledge actively (Leonardo, 2004, p. 12). Research also

suggests that students' service experiences, when perceived as being of high quality, may both engender a sense of civic responsibility and cultivate students' attitudes toward social responsibility and an ongoing desire to contribute through participation in volunteering (Nanda & Scott, 2011). When civic engagement is cultivated in students, their participation in civic activities such as volunteering may persist through adulthood.

Assessment of service engagement

In assessing students' service learning experiences, Lin, Lin, and Lu (2014) suggest 6 facets of constructs to assess students' engagement. These facets include "social concern and responsibility", "service actions", "self-discipline", "social interaction", and "understanding prior to serving", and "understanding during service". These criteria are adopted from the work of several scholars who have emphasized the necessity in deepening the level of involvement and commitment in service work, including: critical reflection in service action (Molee et al., 2010), interaction and commitment to volunteering (Fiume, 2009; Taylor & Pancer, 2007), personal development and civic commitment (Bonk et al., 2009; Ngai, 2009), and awareness of the community and knowledge development (Simons et al., 2010). In addition, Billings and Terkla (2011) suggest multilayer reflections on civic engagement, collaboration, and service learning pedagogy tailored to reflect particular institutional missions. Knapp, Fisher, and Leversque-Bristol (2010) focus on the aspect of students' confidence in making contributions to serve the community by using various scales in assessing civic engagement, efficacy, and empowerment. Marichal (2010) approaches the evaluation of service learning using four axes of a student's civic development of civic ontology, including efficacy, deservedness, value judgment, and identity. These arguments present service-learning researchers and practitioners with a mechanism for evaluating the outcomes of student service-learning in diverse communities.

To examine students' engagement in online tutoring service, mapping characteristics in diverse settings in remote sites and identifying students' perceived growth and their engagement in serving the community are helpful in future implementation (ChanLin et al., 2015; le Roux & Loock, 2015). Evolving technology provides innovative approach of service learning opportunity in cultivation of students' ownership in the community (Jopling, 2012). College students engaged in "Online Tutoring for After-School Learning" learned to adjust their tutoring to meet the community (children in remote areas) needs, and also deal with issues related to real-life problem-solving, social interactions, and responsibility (ChanLin et al., 2015). Experiences for solving real-life problems encourage students to obtain a sense of achievement and value through serving, when expected objectives were achieved (Stenhouse & Jarrett, 2012).

Implementing the online tutoring service program requires long-range planning by experienced members in the service team. It also offers students the opportunity to work with others. In this current study, students' service learning experiences were assessed in line with their engagement in the online tutoring setting. It was speculated that students with more experience of involvement in service learning perceived higher level of community engagement (compared with newly recruited) due to more experience in reflective and feedback process obtained from prior services. The guidance from the supportive community might also provide valuable counseling and guidance to help students learn from the tutoring service process. Research questions in this study were: (1) How did students perceive their engagement in serving the online tutoring community? (2) Did experience of involvement influence students' engagement of service? (3) How did the community provide students with needed counseling to enrich students' experience in service engagement?

Research Method

Context for the service learning setting

The study employed both qualitative and quantitative approaches to explore students' engagement responses and counseling obtained from the supportive community (experienced mentors and teachers from remote sites). Online tutoring service learning reactions and experiences were gathered at a university (in northern Taiwan), which has been providing leadership (among 27 universities) in the "Online Tutoring for After-School Learning" for the past few years. E-tutor environments using JoinNet, networks, webcams, headphones, keyboards, mice, and writing tablets were set up for the university and 13 remote learning sites. The "Online Tutoring for After-School Learning" met online every Tuesday and Thursday night from 6:30 pm to 8:30 pm.

To help students be aware of the community and their responsibility, training following recruitment provided tutors with pre-service learning opportunity at the beginning of the semester. College students were instructed with teaching strategies needed for interaction through a webcam, and the background information they should know about the remote children. Along with the tutoring process, in-service training was provided monthly. All the tutors met on a weekly basis (Every Tuesday and Thursday night) at specific computer laboratories. They interacted with their supportive team twice every week physically or virtually. Tutors were required to write service reflections on online diary system after each period of service. Tutors' reflections were responded by the supportive community (experienced mentors and teachers from remote areas) on a weekly basis. In addition to the supportive community, students also sharing experiences

among themselves when meeting for service.

Tutors' profile

One hundred and eighty four college students were recruited as online tutors in the university, and recruited tutors were paired with remote children based on their competent subject areas (including: Chinese, mathematics, and English) (Table 1). Among these tutors, 140 were female (76.09%) and 44 (23.91) were male. Students' profiles in their experience are summarized in Tables 2. From these profiles, 106 tutors were categorized as newly-recruited (new tutors) (57.6%), and 78 tutors were experienced tutors (having tutoring experience with more than one child) (42.4%). Four tutors had experience with more than 6 children.

Table 1 Subject taught by tutors

Subject taught	Chinese language	English language	Mathematics	Natural science	Total
N	28	59	91	6	184
%	15.22	32.07	49.46	3.26	100.0

Table 2 Tutors with different experience of involvement

Involvement	Newly-recruited	Experienced	Total
Number	106	78	184
%	57.6	42.4	100

Data collection

Both quantitative and qualitative methods for research were employed. The questionnaire collected basic information about each tutors status and grading for children's learning status (1-10 point scale to represent various aspects of their learning). College students' engagement responses constructed by prior research (Lin et al., 2014) were adapted and revised for the study. A total of 47 items categorized in various facets were used to elicit tutors' responses, including: (1) understanding of the children, (2) service action, (3) self-discipline and responsibility, (4) interaction with the community, and (5) positive value to serve (examples listed in Table 1). A 1-5 point Likert scale (from "strongly disagree" to "strongly agree") was employed to evaluate student' responses. Expert review was used for face validity of the questionnaire items used in the study. Also these items were evaluated and revised by 27 experts in online tutoring (coordinators of the online-tutoring partner in different universities) for validity concern (Lin et al., 2014). Reactions among tutors with different experience of involvement were compared.

Table 3 Construct for questionnaire items

Construct	Theoretical issues addressed and references	Example of questionnaire items
Understanding	awareness of the community; understanding in service community (Bonk et al., 2009; Ngai, 2009)	I was aware of the tutee's learning status from her/his past record. I understood the tutee's mental and physical condition through observation.
Service action	actions in solving community problems; task achievement (Bonk et al., 2009; Stenhouse & Jarrett, 2012)	I used various approach to motivate the tutee's learning. I adjusted teaching pace based on the tutee's level.
Self-discipline and responsibility	self-reflections and -monitoring in service actions (Austin & Rust, 2015; Brown, 2015; Molee et al., 2010; Tyler & Kvam, 2015)	I devoted myself to the tutoring task. I expected to be a role model to my tutee. I kept promises to my tutee. I disciplined myself to meet tutee's expectation.
Interaction	interaction with others for achieving intended service goals (Fiume, 2009; Ngai, 2009; Taylor & Pancer, 2007)	I built up good relationship with the tutee. I built up mutual assistance relationship with other tutors.
Positive value to serve	civic engagement; values and beliefs for continuous serving (Billings & Terkla, 2011; Fiume, 2009; Marichal, 2010)	I felt that I should do something for society. I will influence others to devote themselves to help under-served groups.

Complementary results about how students have been cultivated via the process of service and reflection process were obtained from service diary. Other documentary information was also used to triangulate research data, such as project reports, job calendars from website, photos, and video clips for activities. Selected data (consented by the subjects) were used for supporting interpretation from quantitative analysis. The interpretive frameworks used in this study followed the concept suggested by Creswell (2013) to elicit core characteristics of phenomena explored, and deeply ingrained views about the types of issues that need to be studied.

Results

Assessment of tutors' community engagement

Tutors' community engagement was assessed. From their service experiences, college students developed their awareness, concern, and responsibility toward the community they served. Disposition for social interaction and self-discipline to serve the community were also assessed. Various aspects were evaluated by the tutors, including: (1) understanding of the children, (2) service action, (3) self-discipline and responsibility (4) interaction

with the community, and (5) positive value to serve. Data from these responses are summarized in Tables 4-8. Among these 47 items, “I felt responsible for my tutee” (Mean = 4.52, SD = .600) in “positive value of service” was rated the highest among all. The results reflect that most students strongly felt the responsibility and their concern to their tutees from the service experience.

Table 4 Students’ responses toward “understanding of children”

Questions	Mean	SD
I understood the tutee’s academic standing profile at school.	3.77	.882
I was aware of the tutee’s learning status from her/his past record.	3.60	.830
I knew the tutee’s past tutee experiences.	3.59	.999
I tried to know the tutee’s family status through interaction.	3.72	.943
I tried to know the tutee’s school life through interaction	4.06	.755
I understood the tutee’s mental and physical condition through observation.	4.20	.668
I grasped the tutee’s learning interests via various approaches.	3.98	.772

Cronbach’s $\alpha = .79$

Table 5 Students’ responses toward “service action”

Questions	Mean	SD
I adjusted my teaching content to fit a specific time period.	4.08	.643
I tried to provide the tutee with interactive content.	3.88	.803
I varied my teaching approaches to motivate the tutee’s learning.	3.81	.784
I designed learning content based on the tutee’s level.	4.18	.767
I shared my own learning experiences with the tutee.	3.99	.803
I often tried to reduce the tutee’s learning frustration.	4.12	.707
I encouraged the tutee to behave positively.	4.36	.629
I taught the tutee strategies for learning.	4.03	.792
I taught the tutee to develop a positive learning attitude.	4.15	.690
I corrected the tutee’s inappropriate behavior immediately.	4.01	.789

Cronbach’s $\alpha = .84$

Table 6 Students’ responses toward “self-discipline and responsibility”

Questions	Mean	SD
I prepared before class.	4.05	.759
I was always on time for service task.	4.28	.656
I disciplined myself to meet tutee’s expectation	4.31	.675
I forgave the tutee’s erratic or unreasonable behaviors.	4.21	.702
I expected to be a role model to my tutee.	4.15	.684
I expected myself to manage my emotions during tutoring.	4.33	.604
I kept promises to my tutee.	4.38	.666
I concerned my tutee’s learning outcomes.	4.20	.668
I devoted myself to the tutoring task.	4.46	.608

Cronbach’s $\alpha = .88$

Table 7 Students' reactions toward "interaction"

Questions	<i>M</i>	<i>SD</i>
I shared experiences with team members	4.32	.643
I established collaborative relationships with other tutors.	3.93	.773
I built up co-advising relationships with teachers from the learning site.	3.83	.789
I established a team relationship with project assistants.	3.95	.770
I developed good interpersonal skills.	3.97	.839
I cherished the relationships I developed during tutoring.	4.18	.746
I considered collaborative experiences in the team to be important.	4.07	.793

Cronbach's $\alpha = .88$ **Table 8 Students' reactions toward "positive value to serve"**

Questions	<i>M</i>	<i>SD</i>
I changed my viewpoints of those under-served children.	4.10	.863
I learned to place myself in the position "of minority groups."	4.38	.737
I am concerned about the lack of learning resources for children in remote areas.	4.35	.717
I learned to care more about remote children's learning needs.	4.48	.652
I cared about the learning and growing environment for children from disadvantaged groups.	4.48	.609
I considered that I should put myself into others' positions.	4.35	.760
I felt the responsibility for my tutee.	4.52	.600
I felt that I should do something for society.	4.49	.627
I will influence others to engage in the tutor services.	4.35	.753
I will be involved more in fostering the growth of children in remote areas.	4.32	.692
I had the chance to understand the education issues of remote children.	4.33	.726
I will continue to pay attention to remote children's education issues.	4.35	.670
I will influence others to devote themselves to help under-served groups.	4.36	.621
I will engage myself in more social works in the future.	4.25	.703

Cronbach's $\alpha = .94$

Comparison of different experience in involvement

A summary of mean response from each category are listed in Table 9. From the list, "positive value to serve" was responded the highest (Mean = 4.36, SD = .537) among all. Most students valued highly from the online tutoring service. Positive value might drive the way students appreciate the experience. In order to study engagement among tutors with different involvement, students' responses were compared between experienced tutors and newly-recruited tutors. The comparison indicates that more experienced were more engaged in all categories ($p < .001$). Higher engagement among experienced students invited us to observe how they were supported by the community in fostering engagement and positive value to serve.

Table 9 Mean responses for each category

Category	Mean	SD
Understanding of children	3.85	.560
Service action	4.07	.484
Self-discipline and responsibility	4.29	.507
Interaction	4.04	.584
Positive value to serve	4.36	.537

Table 10 Comparison of different involvement

Category	Involvement	N	Mean	SD	Levene's test	t-test
Understanding of children	Newly-recruited	106	3.70	.53	F=0.660 p=.418	t=-4.452 p=.000***
	Experienced	78	4.05	.54		
Service action	Newly-recruited	106	3.97	.48	F=0.021 p=.884	t=-3.301 p=.001**
	Experienced	78	4.20	.46		
Self-discipline and responsibility	Newly-recruited	106	4.21	.50	F=1.323 p=.252	t=-2.451 p=.015*
	Experienced	78	4.39	.51		
Interaction	Newly-recruited	106	3.86	.55	F=0.264 p=.608	t=-5.016 p=.000***
	Experienced	78	4.28	.55		
Positive value to serve	Newly-recruited	106	4.24	.52	F=0.149 p=.700	t=-3.730 p=.000***
	Experienced	78	4.53	.51		

* p<.05; ** p<.01; *** p<.001

Support for tutoring task

From above statistical analyses, tutors with more experience of involvement have higher level of engagement in tutoring task. Combination of qualitative data (gathered from various documentary information, such as project reports, job calendars, and video documents) give complementary results about how students have been cultivated via the process of service, reflection, and feedback from supportive community. For example, within the tutoring team work, the core values of the online tutoring team were addressed and re-emphasized in various training opportunities, stated as follows: “May my being become a blessing to mankind”, “We give the best to those in need the most”, “To accompany lives with my life; to educate lives with my life” (video document). From the project execution, various opportunities were provided to help tutors understanding the children and the community they were serving (project website) (Figure 2). “Learning sites collaborated with teaching sites (universities) helped college students become a learning companion to children in remote area” (project report). The collaborate effort between the university and the learning sites was also observed to enrich students and children with a fruitful teaching and learning experience.

To reflect on daily service work, tutors kept tutoring journals after each tutoring service. An online journal platform for reflective thinking was used among tutors. From this platform, tutors obtained needed support from

2. 大學伴教育訓練培訓模式

每學期初	期中每個月	不定期
基礎課程 <ul style="list-style-type: none"> 計畫理念、核心價值 計畫執行模式 	學科教學課程講習 <ul style="list-style-type: none"> 教材教法、教案製作 教學規劃 	<ul style="list-style-type: none"> 中小學退休老師、青少年輔導專家演講 城鄉交流多元學習單元
技術課程 <ul style="list-style-type: none"> 教學平臺 系統應用 十二年國教備課教學 共12小時 (8小時實體+4小時線上) 	輔導知能課程講習 <ul style="list-style-type: none"> 偏鄉教育生態 偏鄉學童學習態度 青少年心理輔導知能 	<ul style="list-style-type: none"> 資深大學伴教學分享 大學伴溫馨故事分享 社會參與及議題反思

Figure 2 Training model for tutors in project execution

Source: Ministry of Education (2016).

the community (project assistants and teachers from remote learning sites), especially for the understanding of learning obstacles experienced by remote children and sharing of mutual understanding among the tutoring community. Examples of support from the community are given in Table 11. To fulfill the need of “Understanding the children”, immediate feedback from the supportive community (experienced mentors and remote teachers) was observed from daily tutoring reflective practice to help tutors develop their understanding of the children they served. Through the online feedback, the tutors were able to understand learning status about the child, and the problems they needed to cope with specific learning situations.

From “Service action” (Table 11), feedback of the supportive community helped tutors develop problem-solving skills needed to adapt to children’s need. Tuning tutoring strategies for specific children’s need was experienced by most tutors as important service actions. Due to disparity of learning status among children in remote sites, online tutors need to adjust their approaches of tutoring accordingly. The supportive community often shared experiences and provided suggestions to students’ decisions in use of actions.

To meet the need of “Self-discipline and responsibility”, devotion of time and effort was expected by the team. Serving required commitment from students. From their service practice, students anticipated themselves to be well-prepared to the class. Much commitment from the tutors was observed from documentary data and reflective journals. Encouragements and verbal support were given by the supportive community for tutors’ devoted of time and effort (Table 11).

Table 11 Examples of community support to online tutors

	Response example from tutor	Feedback from supportive community
Understanding the children	Dian was not in a good mood. I tried to understand why, but she would not talk. I was wondering if there were something happened at school.	Encouraging her to talk would be a good starting point. Please give her more encouragement and support. She would feel better.
	Tracy seemed to pay little attention to the class. She seemed too tired. I tried to slow down the pace, but she showed little interest in listening.	She was busy with dancing practice. ...If this situation happened again, try to let her take a rest for about 5 minutes.
Service action	I found many short English stories. I thought Mary should be able to comprehend. Next semester I will use some story books as supplement materials.	You propose a good suggestion. If it is possible, maybe you would like to show Mary some short English stories. You may make necessary adjustment based on her learning status.
	Today I taught him new problem-solving strategies (in math)... He seemed very excited about his own progress, and actively explored new strategies in solving the problems.	“Encouraging active thinking is great. The more progress the kid makes, the more he is willing to study further. ...I am glad you bring this up to the children. You are great.
Self-discipline and responsibility	Although I had sore throat, I worked with him today. I felt accomplished when Jackson made great progress.	With your devotion, he is progressing well. You might want to give him some challenging tasks next time.
	I blamed myself for not well prepared for the class. More work was needed to make the lesson interesting to the kid.	Don't be discouraged. A change of your teaching strategy can be really worthwhile. Keep on going
Interaction	I made a great breakthrough today in interacting with the kid. Thank you for giving me supportive suggestions.	Great! You might want to provide different interests for sustain his attention span.
	Very appreciate your help. Today she shared with me her painting portfolio. I took the chance to interact more with her today.	Good job! Jan just finished her midterm exam. She might feel doing well, and like to share with you more about her life.
Positive value to serve	I will continue to serve for online tutoring. I felt accomplished from the kid's learning achievement. I cherished this great opportunity and experience.	Thank you for spending time with the kid. If you love to continue on accompanying the kid, I believe the kid would love to hear your encouragement.
	I felt happy that I could make a difference for the children who needed me.	Your devotion was valuable to children who needed you. On-going support from more people like you is needed.

From their tutoring experiences, students shared relevant customs, skills, value, and spiritual practices. Their service practice also reflected the importance of “Interaction” and “Positive value to serve” (Table 11). To be engaged in the community, tutors established relationships with children and members in supportive community. Frequent advices and sharing of experiences from the supportive community helped students gain a sense of belongingness.

Interactions among the community also fostered mutual understanding among members to achieve intended tutoring goals. From the process of serving, tutors gradually developed positive value from serving in the community. Feelings of accomplishment and willingness for serving were revealed by the tutors. The supportive community valued highly on tutors' positive serving attitude and encouraged them for long-term engagement in the community.

As summarized from online journals and other documentary data, online tutors interacted with the community member frequently. Weekly meetings at the service site (computer lab) made student access needed face-to-face counseling from the experienced mentors easily. Frequent conversations among the community members and open sharing and discussion also encouraged mutual understanding, service action, self-discipline/responsibility, interaction, and positive value from daily service practice. Through online tutoring, students' positive value for serving has been cultivated via reflection and feedback from supportive community.

Discussion

This study explored college students' engagement in the tutoring community. Community support from the tutoring process was also observed. Online tutoring service learning experiences assessed from students' reactions reveal positive responses. From the overall reactions, students gave high rating to the aspects of "self-discipline and responsibility", "interaction with community" and "positive value to serve". Compared with newly-recruited tutors, experienced tutors responded more positively toward their devotion to the service in every aspect ($p < .05$). It is speculated that more service experience and exposure to guided reflective actions in community service might have potential impact on students' perceived engagement in the service task. As observed in prior research, successful advising and mentoring help students deepen the relevancy of knowledge acquisition and contribute to a better understanding of social responsibility among students (Fontaine & Todd 2011; Remedios et al., 2015; Sangrà & González-Sanmamed, 2011; Winston, 2015). In this study, most students felt the service experiences achieved their expectations. They expressed positive value in serving. And none of them dropped out. Observed from the study, frequent communication and open sharing and discussion among community members encouraged students' involvement and their engagement in the tutoring service. The nature of this engagement provided students with a valuable opportunity to reflect upon their interactions and shared experiences within the community. It also fostered students' feelings of belongingness to the community and the awareness toward the vital role they played. Through

mutual understanding, students would be able to think and act from the children's perspective. Several studies also demonstrate the lasting effects on attitude and value among college students in their experience with community engagement (e.g., Astin & Sax, 1998; Barber, Mueller, & Ogata, 2013; Bowman et al., 2010). Respectful and meaningful engagement in service practice entails building reciprocal relationships among the community members. A commitment to the community also encouraged students to achieve the goal for the service. From this study, tutors' service actions focused on their own self-adjustment and their devotion to solving problems with specific learning situations might help them to develop more positive serving attitude toward the servicing. Community support from experienced mentors and remote teachers also played a critical role to provide students with meaningful learning opportunities to cope with problems in real-life situations.

Complementary to the observed results, qualitative data reveals cultivation experiences from service reflections. Influenced by serving atmosphere surrounded them, online tutors expected themselves to effectively manage their time, prepare tasks and teaching activities in order to achieve the tutoring objectives. From their engagement in the community, they also gained a sense of responsibility toward the serviced group. As noted, service reflections for students' engagement are essential in service practice (Austin & Rust, 2015; Larsen, 2014; Lizzul et al., 2015; Molee et al., 2010). The tutoring experiences allowed students to direct and regulate their thoughts, feelings and actions through self-reflections. Although tutors were provided with textbooks and various supplementary learning resources for preparation of online tutoring, their teaching approaches needed to be tuned to children's individual differences and learning needs. To achieve their tutoring tasks, college students self-reviewed their instructional approaches by keeping online journals. Through reflections and distant interaction with the supportive community, college students obtained more understanding about the learning characteristics and problems with specific children, and made necessary adjustments to meet their learning needs. The online tutoring opportunity allowed college students to learn practical knowledge from experiencing. The feedback from supportive community also offered online tutors with opportunity to bridge understanding necessary for successful virtual tutoring practice.

From their online tutoring service, most of the tutors relied mainly on the online communication for building the tutor-tutee relationship. Mentorship from the supportive community helped tutors to gain awareness and thorough understanding about learning problems for specific children. Through counseling from supportive community, students developed the skills and knowledge

needed for serving the tasks and taking necessary actions to cope with problems. Previous research has emphasized the importance of mentorship needed to foster active engagement within the service community (Mottner, 2010; Vazir & Meher, 2010). In this study, supportive community from the community was helpful to provide mentorship and guidance aligned to increase students' understanding and actions needed for the serving task. Shared experiences from the community are considered critical to guide students to experience the use of evidence-based decisions in authentic settings (Lizzul et al., 2015; Waldner et al., 2012). The project created a merit for caring and creating additional learning opportunity to children from remote areas. Serving cultures different from theirs, online tutors learned to deal with real-life problems. Teaching counsel obtained from supportive members increase students' ownership of learning. The valuable experience gained from the community was not only "to help college students become a learning companion to children in remote area", but also make the supportive community become a teaching companion to college students.

When participating in service activities, students are motivated to acquire the habits of critical thinking and the ability to identify the most critical issues within real-life situations (Annis, Palmer & Goetz, 2010). High quality service experience may engender both a sense of civic responsibility and cultivate their attitudes toward social responsibility (Nanda & Scott, 2011). This study revealed similar results. Teachers from learning sites and experienced mentors were willing to share their understanding about specific children with online tutors. Students' obtained guidance from the supportive community contributed to valuable dimensions of facilitating active engagement in serving the community. Through their participation in online tutoring, college students also gradually developed personal concern towards society.

Conclusion

Having grown in popularity over the past decade, "Online Tutoring for After-School Learning" has developed into an effective service model linking academic learning with efforts to address issues of social concern in Taiwan. University commitment and community support are both needed to encourage online tutors to explore new ways of deepening learning. In this study, we have employed a tool to document students' reflective learning in their online tutoring activities. The rubrics used to assess students' attitude toward community engagement. Experienced tutors responded more positively toward their responsibility and from the engaged service work. Counseling from the supportive community contributes to valuable dimensions of nourishing students' engagement in serving and learning. The main limitation of this study is the results may only

be generalized to the type of online service learning used in the research. The study only assessed tutors' reactions toward the services. Impact for the tutees might be included in future assessment. Since there was no control or pre-test in the study, other research designed method might be integrated in further study. Also findings of this research would be strengthened by a larger sample size for assessment. In-depth analysis from the members within the tutoring community is also needed in future research.

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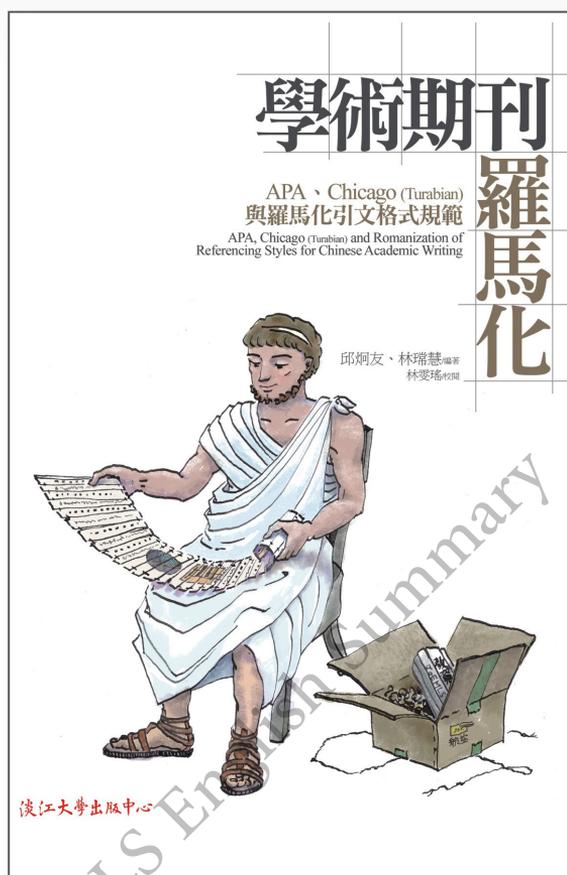
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範例2－參考文獻(References)
林雯瑤、邱炯友(2012)。教育資料與圖書館學四十年之書目計量分析。教育資料與圖書館學，49(3)，297-314。【Lin, Wen-Yau Cathy, & Chiu, Jeong-Yeou (2012) A bibliometric study of the *Journal of Educational Media & Library Sciences*, 1970-2010. *Journal of Educational Media & Library Sciences*, 49(3), 297-314. (in Chinese)】

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