

A Study on the
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Web-Based
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Pei Chi Lu

Adjunct Assistant Professor

University of Taipei

Email: peichilu@gmail.com

Abstract

The quickly development of information science and technology changed the type of teaching. Today, the mode of learning and contents of general arts curriculum needed to respond the requirement of learning in the digital generation and has to be revised. This study aims to investigate the influence of blended curriculum web-based community on self regulation in arts general education for undergraduates as well as their learning responses on TA teaching and the design of general arts curriculum. Eighty-five students of an art appreciation curriculum participated in the study. Based on different models of web-based communities, this study categorized the students into “TA empirical group” and control group. Results of this study are as follows: (1) the “TA empirical group” model facilitates self-regulated learning performance; (2) the blended web-based community is helpful to undergraduates’ learning in arts general curriculums; (3) TA teaching is beneficial in enhancing the teaching efficiency of a blended curriculum; (4) the design of general arts curriculum should include modern art theories and practices. Finally, based on the results of the study, suggestions are proposed regarding the designs of university general curriculum and arts, TA teaching, etc.

Keywords: Blended Curriculum, Web-based Learning Community, General Arts Curriculum, Self-regulation, Teaching Assistant

Introduction

In recent years, general arts education has continuously undergone innovation and reform in response to the learning needs of the digital era; the application of e-learning and web-based technology to teaching can be regarded as the core of current curriculum development. The large number of students enrolled in general curricula results in large class teaching, which is a limitation of the teaching environment, and the adoption of traditional one-way lectures, thus contributing to insufficient interaction of teachers and students. Hence, both domestic and international universities with general curricula utilize a teaching assistant (hereinafter referred to as TA) system to assist teachers to conduct group teaching and discussion activities. Graduate TAs, due to their professional abilities and rich learning experiences, can be learning role models for the students. Sweeney, O'Donoghue and Whitehead(2004)pointed out that web-based learning, as an aid method, has been regarded as a solution to the demands of large-class teaching in higher education, and discussed the differences between face-to-face and web-based curriculum teaching. Harvard's General Education Report also recommended the inclusion of issues for discussion, the curriculum design of hands-on activities, and the implementation of a TA system to improve interactions between teachers and students, as well as to assist and enhance learning interest and efficacy of students(President & Fellows Harvard University, 2008). Chang (2009) concluded that a blended curriculum design has a significant positive influence on the learning attitude and efficacy of students. As a result, the blended curriculum model that integrates face-to-face and web-based teaching has become the trend of the curriculum design of general education. The TA's influence on the students' learning and the difference in the teaching role of the TA in the scenario of a blended curriculum deserve further discussion.

During the web-assisted learning process, students need to be cultivated with more autonomy, and taught to make the best use of learning

resources in order to achieve the set learning objectives. Thus, it is critical for teachers to adopt teaching strategies to assist and improve students' self-regulation. As shown in relevant studies on self-regulation, various teaching strategies, such as feedback provision, teaching demonstrations and the assistance of peer teachers can effectively improve the performance of self-regulation, including learning motivation, self-efficacy and the metacognition of students (Schunk, 2004; Pintrich, 2004; Zimmerman, 2000; Zimmerman & Tsikalas, 2005); however, more empirical studies are required to understand the influence of web-based learning community assistance on students' performance of self-regulation in the arts field.

Additionally, Hsu and Huang (2005) suggested that the general arts curriculum should help to improve higher level abilities of art appreciation, critical thinking and creativity. Chao and Lu (2009) believe that fine arts, in the content of general arts curricula, lack modern arts and visual culture. Liao (2009) proposed the actual application of the aesthetics of university life to general arts curricula of universities to integrate action learning and solution strategies to solving problems. Consequently, general arts curriculum planning should extend to the contents of modern culture and arts; at the same time, through teaching experimental results, the responses of students can be confirmed.

Hence, this study investigates university students as the research subjects to develop general curricula with the subject contents of modern arts, combining face-to-face curriculum and web-based learning community into a blended curriculum design, with the use of an online TA in a teaching experiment. The purpose of this study is to explore the influence of the application of web-based learning community with a blended curriculum on the self-regulation of university students in a general arts curriculum and, at the same time, to examine how TAs in the scenario of a blended curriculum use concrete strategies to effectively assist students to learn, as well as the learning responses of students to modern arts curriculum. The research questions to be addressed are as follows:

1. What is the influence of a web-based learning community with a blended curriculum on the self-regulation of a general arts curriculum?
2. In a general arts curriculum, how do university students respond to the learning assistance of a web-based learning community with a blended curriculum and online teaching by TAs?
3. How do university students respond to the learning of curriculum contents and the activities design?

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Review of literature

Web-based learning community with a blended curriculum

Blended learning was defined as the synthesis of traditional classroom learning and digital learning, and a blended curriculum design combines the advantages of traditional face-to-face and online learning (Osguthorpe & Graham, 2003). There are diversified methods of blended curriculum design, and this study uses the face-to-face curriculum to incorporate curriculum websites and web-based cooperative learning to assist teaching; the theoretical foundation of web-based community is derived from constructivism and relevant theories. Piaget's theory of cognitive development (1970) argues that individuals will use their own prior knowledge and experience to regulate and form new knowledge or behavioral models through interactions with the environment. Vygotsky proposed the concept of zone of proximal development (ZPD), and that suggested the successful achievement of tasks requires peer cooperation between learners and adults or those who are more competent (Vygotsky, 1978, 86). The ZPD concept can be concretely applied to web-based cooperative learning, such as strategies of peer interaction and scaffolding teaching. Under the instruction and guidance of teachers or student experts, group cooperative learning is conducted with the assistance of web-based tools to improve the cognitive development and learning performance of students. Bandura (1986) proposed social cognitive learning and held the

same perceptions towards the correlation of “individual”, “behavior” and “environmental factor” that dominates human activities.

In short, the cooperative learning of a web-based community integrates convenient communication tools provided by the Internet as well as a group learning model. The influences on learning stems from imitation and observational learning, knowledge co-construction via sharing and discussion, and demonstration teaching and reflective feedback of teachers. In the learning scenario of a web-based community, students can improve their learning motivation and self-efficacy by observing cognitive demonstration and behavior of teachers or peer models.

Theories related to the TA teaching

In the general curriculum field of this study, the TA is an important guide for face-to-face curriculum activities and blog web-based online teaching. The teaching assistance of a TA is conducted via peer tutoring. Topping (1996, 2005) pointed out the benefits of a learning community that is of similar age and learning background to that of the TA. The TA has more learning experience and professional knowledge than students’ peers of the similar age and at similar learning stage. Via the interaction between students and TA, students are assisted to achieve higher development and learning performance levels.

In the experimental group of a web-based learning community with a blended curriculum in this study, the TA participated in and guided the operation of a web-based community whose role is like that of an “online tutor”, a key factor in the learning performance of students. Shepherd(2003)proposed three roles of online TA: subject expert, coach and assessor; their respective main responsibilities are described below:

1. Subject expert: An online TA must be familiar with the subject contents of digital learning curriculum in order to present or design digital teaching material or handouts for curriculum needs or the self-study by students and demonstration teaching. Additionally, the online TA is also the knowledge provider who provides relevant information and links to

curriculum and FAQ, as well as contributes to discussions in the community's online forum to facilitate community communication.

2. Coach: The online TA shall be in charge of initiating questions to guide students into more in-depth thinking, listening to the learning needs of students and providing concrete and constructive feedback opinions, encouraging students in continuous learning and self-management, and assisting students in setting up challenging but achievable learning objectives to enhance their learning motivation. Furthermore, the online TA needs to track and control the learning state of students from time to time.
3. Assessor: The online TA needs to continually inspect and monitor the learning state of students and make sure that the learning tasks are achieved.

Salmon (2003) suggested the term “mediator”, that focuses more on the various fields interacting with an online TA, such as forum and synchronous or non-synchronous curriculum teaching. Salmon (2003) classified the online teaching model according to five phases: (1)access and motivation: students joining the community are welcome, and teaching in a digital learning environment is conducted; (2)online socialization: the establishment of web-based social communities is encouraged and assisted; the sense of belonging and mutual respect among members is cultivated; (3)information exchange: the direction of discussions of the online learning community is guided to focus more on learning tasks and relevant dimensions and issues, and learning information is provided; (4)knowledge construction: knowledge construction is a higher level of interaction that is generated via clarification and arguments made by learning community members towards issues and perception, in which the task of the online TA is to assist with the communication of members in order to build common knowledge; (5)development: the online TA assists learning community members to cultivate critical thinking abilities, and via feedback to group members, the TA challenges them in order to encourage them to engage in more profound thinking.

In sum, according to the definition of an online tutor suggested by Shepherd (2003) and Salmon (2003), this study defines the teaching role of a TA in a web-based learning community with a blended curriculum as the online TA who applies his/her own professional arts knowledge background to play the role of expert of subject contents, to provide curriculum instruction and learning resources, and to assist students in troubleshooting. The TA is both coach and assessor who gives professional feedback in regard to the performance of students, monitors the learning state of students from time to time and provides assistance when necessary. Moreover, the TA provides timely feedback or summarizes important points for further discussion and exploration.

Exploration of self-regulation theories

Pintrich and DeGroot(1990) pointed out the importance of the self-regulation of cognition and behavior as the important factors of learning, including cognitive strategies (rehearsal, elaboration and organization), metacognition strategies, and effort management and control. Chen(1995)summarized theories of various scholars and proposed self-regulation as the process of active construction; during the process, learners will base their observation of work characteristics, motivation and emotions to set their learning objectives for further monitoring, controlling and regulating of self-perception, actions, or even scenarios. As a result, self-regulation, based on learning motivation, involves establishing learning objectives, planning the learning contents, setting up standards and adopting learning strategies for monitoring learning progress, in order to achieve learning tasks. The above learning process is referred to as self-regulation(Lin, 2005).

Zimmerman(2000)used social cognition to interpret self-regulation and pointed out that self-regulation includes the metacognition, motivation and the level of active participation of learners in the learning process; metacognition is the process in which a learner plans, organizes, self-instructs, self-monitors and self-evaluates his/her learning; motivation is

the perception of a learner towards his or her ability to achieve learning tasks; and behavior is how a learner chooses the optimal learning environment during learning activities. Thus, self-regulation in this study is regarded as how a learner uses various strategies and methods to adjust and monitor learning activities during the learning process in order to assist himself/herself to complete learning tasks. This study also modifies the “self-regulation scale” to measure learning motivation changes as well as the cognition and resources strategies of learners in arts curricula.

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Relevant literature

In the studies on the application of blended curriculum with a web-based learning community, the special focus has been placed on the influence of the TA on the improvement of self-regulation effectiveness. Van den Boom, Paas and Van Merriënboer(2007), for example, studied 84 students engaged in distance learning to examine the differences between the teaching model of the TA who gave in-depth feedback and reflective instruction and the peer feedback model. They discovered that students in the experimental group of the TA model outperformed those of the peer feedback model in self-regulation, learning attitude and learning results. Cheng and Ku(2009)applied a reciprocal peer tutoring model to information curriculum; the results indicated that the cooperative learning with peer tutoring helps to improve the learning motivation of students. Thurston, Duran, Cunningham, Blanch and Topping(2009)also found that the integration of the peer tutoring interaction form and the web-based platform can effectively facilitate the learning in regard to international language exchanges. De Wever, Van Keer, Schellens and Valcke(2009)investigated 135 freshmen as the subjects in teaching assistance to a non-synchronous web-based learning community and compared the influence of two models: role play and peer teachers, on the knowledge construction of students. The results showed that the peer teacher model makes a positive contribution to the knowledge construction of students. Furthermore, recent studies on blended curriculum also point out that the inclusion of problem solving in the

design of learning tasks, an online forum of a learning community and the building of student learning portfolios help in the sharing of information and exchange of opinions, as well as improve learning motivation and effectiveness of students' learning (Kember, McNaught, Chong & Cheng, 2010; Yeh, Huang & Yeh, 2011; Yen & Lee, 2011).

As mentioned above, the web-based learning community in a blended curriculum in this study is a cooperative web-based learning community model constructed on the theoretical foundation of constructivism. In the "TA experimental group" of the web-based learning community in a blended curriculum, the focus is on the teaching assistance function of the TA, so each group TA is set as an online TA and online mediator who is the subject expert, coach and assessor of arts curriculum, as well as the host and opinion negotiator of online activities. The TA plays the role of key guide and instructor of online teaching for a web-based learning community with a blended curriculum to actively direct the functioning of the web-based learning community, as well as to design and implement online activities. Through the implementation of the blended face-to-face teaching and web-based learning community, we examine the learning response of the self-regulation of university students to TA teaching in the scenario of a general arts curriculum.

Method

Research design

Participants

This study investigates 85 students who took a general curriculum of Arts Appreciation in a university. The curriculum adopts a blended design including face-to-face and web-based learning group teaching to organize Blog webs to assist students to learn a general arts curriculum. According to the model of the web-based learning group with a blended curriculum, students were assigned randomly to online social webs of the general

curriculum, consisting of 44 in the TA experimental group and 41 in the control group.

Research setting

This study adopts a factorial design of semi-experiment research method with research setting shown in Fig. 1.

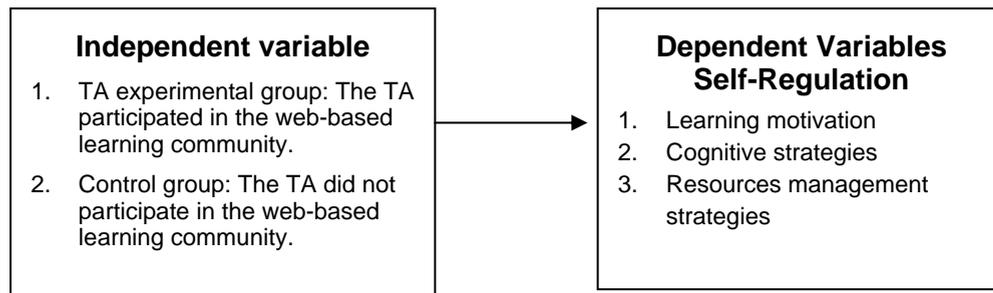


Fig. 1 Experimental design

The independent variable of this study is the web-based learning community with a blended curriculum with the division of the TA experimental group and non-TA control group. In the TA experimental group of the web-based learning community with a blended curriculum, a graduate student with an arts professional background and teaching experience took the position of Group TA and referred to the five-stage model for teaching and learning online proposed by Salmon(2003): “access and motivation”, “online socialization”, “information exchange”, “knowledge construction” and “development” to design and implement various online activities and to incorporate with curriculum development and concrete measures, such as the provision of operational examples and explanation, sharing learning resources and website links, encouragement and feedbacks to student performance, participation in learning community discussion, offering of reflective in-depth feedbacks and initiation of discussions to propose issues to inspire critical thinking of students. Thus, the TA in the experimental group of the web-based learning community played the role of online TA, subject

expert of the arts field, and the guide for online teaching and learning. Additionally, the TA could assist students in problems they may face regarding their studies and the use of the information platform. In the control group, the TA did not participate in the web-based learning community and only provided assistance to problem solving. Students mainly learned from mutual exchanges. This study uses feedback sheets of students and interviews after classes to analyze and understand learning responses of university students to a general arts curriculum of modern arts.

Design of a general arts curriculum

This study develops the contents of “Art appreciation: Taiwan’s modern arts and visual culture” general curriculum as the formal teaching experimental curriculum under four topics: “Introduction to modern arts appreciation”, “Appreciation of Taiwan’s modern arts”, “Taiwan’s modern visual culture” and “Group project presentation”. In terms of teaching activities design, in addition to the incorporation of “classroom discussion” activities, two field trips to a museum of modern arts and three seminar series on “face to face with artists” were arranged. The purposes of this general art curriculum are to enhance the arts and visual cultural literacy of students, higher level of thinking training, and the inclusion of the web-based learning community teaching strategy.

The curriculum integrates the blended classroom curriculum and blog web-based learning community. In addition to online teaching, the TA assisted in guiding group discussion and creative activities as well as providing learning assistance in the classroom curriculum. The design of “classroom discussion” was based on the lecture contents of the week for groups to discuss or interact with each other; before the end of each class, groups had the chance to discuss together or make presentations, thereby enabling students to transform lecture concepts into practical discussion and brainstorm more creative thoughts. Group presentation was designed with the same principle, by encouraging students to work with groups, observe the current phenomena of Taiwan’s visual culture, select issues for

discussion, plan their creative projects, solve problems encountered and collaborate to complete their projects. Students had the chance to reflect on what they had learned and put it into practice in their creation.

Instruments

Self-regulation scale

The self-regulation scale used in this study refers to motivated strategies for learning questionnaire (MSLQ) compiled by Pintrich and Degroot(1990) for the modification of learning measurement in arts field. The scale consists of “learning motivation”, “cognitive strategies” and “resources management strategies” including 11, 11 and 8 questions respectively, for a total of 30 questions. The scale adopts a five-point measurement ranging from 1 to 5 points for “completely not matched” to “completely matched” respectively. The higher scores indicate better performance in each aspect and the Cronbach’s $\alpha = .94$ shows ideal internal consistency.

Feedback form and interview outlines of a general arts curriculum

This study investigates the responses of university students to a blended curriculum with a web-based learning community, and feedback forms were distributed after classes with the adoption of purposive sampling from students in the TA experimental group and control group. Face to face interviews and MSN online chatting were used for semi-structured interviews, in order to understand the influence of web-based learning community with a blended curriculum and online teaching by a TA on the learning response of students to a general arts curriculum.

Procedure

This experimental curriculum lasted for 14 weeks, two classes per week lasting 100 minutes. The first three weeks of the experiment were used for the experimental preparation to introduce arts appreciation, the platform of the experimental curriculum, and group blogs. In the 4th week, the experimental curriculum formally began. Data collected by this study include: pre-test and post-test of “Self-regulation scale” and feedback forms filled by

students; 13 volunteers were taken for interviews after classes, including 9 from the TA experimental group and 4 from the control group to understand the responses of students to the web-based learning community with a blended curriculum. In the end, both quantified and qualified data are analyzed to provide conclusion as the reference for the design and implementation of general arts curriculum in universities.

Results

Analysis of the influence on self-regulation performance of a general arts curriculum

According to the “Self-regulation scale”, this study analyzed the pre-test and post-test of students conducted before and after the curriculum implementation with 85 effective samples to address the influence of different web-based learning communities with a blended curriculum on the self-regulation performance of students before and after the implementation of the experimental curriculum. An ANOVA on self-regulation scales revealed the significant main effect of web-based learning community of blended curriculum (Wilks' $\Lambda = .610, p < .05, \eta^2 = .390$).

Table 1 Means and standard deviations of measures on self-regulation scales

Scale	Section	Item	TA experimental group (n=44)		control group (n=41)	
			M	SD	M	SD
Learning motivation	Self-efficacy	3	1.363	1.058	.804	1.435
	Actively learning	5	2.977	2.510	1.097	2.177
	Learning beliefs of arts	3	2.045	1.669	1.122	1.568
Cognitive strategy	Critical thinking	5	3.477	2.757	.951	2.097
	Meta-cognitive strategy	6	3.136	2.637	1.365	2.861
Resource management strategy	Resource management	3	1.772	1.492	.487	1.885
	Peer learning	3	1.704	1.636	.317	2.054
	Help seeking	2	1.409	1.335	.073	.984

Note. N=85

Table 1 presents the means and standard deviations of measures on self-regulation scales. On the learning motivation aspect, the students in TA experimental group show better on self-efficacy ($M=1.363$), actively learning ($M=2.977$), and learning beliefs of arts ($M=2.045$) than the control group. On the cognitive strategy aspect, the students in TA experimental group present better on critical thinking ($M=3.477$) and meta-cognitive strategy ($M=3.136$) than the control group. On the resource management strategy aspect, the students in TA experimental group show better on resource management ($M=1.772$), peer learning ($M=1.704$), and help seeking ($M=1.409$) than the control group.

Table 2 Analysis of Variance for self-regulation scales

Source		SS	df	MS	F	Sig.
	Self-efficacy	5.815	1	5.815	3.788	.055
Learning motivation	Actively learning	76.215	1	76.215	13.639**	.000
	Learning beliefs of arts	19.690	1	19.690	7.494**	.008
Cognitive strategy	Critical thinking	130.626	1	130.626	21.538**	.000
	Meta-cognitive strategy	63.598	1	63.598	8.258**	.005
Resource management strategy	Resource management	32.135	1	32.135	11.272**	.001
	Peer learning	38.694	1	38.694	11.736**	.001
	Help seeking	37.352	1	37.352	26.245**	.000

* $p < .05$ ** $p < .01$

Subsequently, Students' development on aspects of self-regulation scales was analyzed at the level of the three scales (see Table 2). An ANOVA on the learning motivation aspect revealed no significant for self-efficacy ($F(1,81)=3.788$, $p = .055$), and significant difference for actively learning ($F(1,81)=13.639$, $p < .05$) as well as learning beliefs of arts ($F(1,81)=7.494$, $p < .05$). On the cognitive strategy aspect, an ANOVA revealed significant difference for critical thinking ($F(1,81)= 21.538$, $p < .05$) and meta-cognitive strategy ($F(1,81)=8.258$, $p < .05$). On the

resource management strategy aspect, an ANOVA yielded significant difference for resource management ($F(1,81)=11.272, p < .05$), peer learning ($F(1,81)=11.736, p < .05$), and help seeking ($F(1,81)=26.245, p < .05$).

Therefore, the experimental results showed a significant and positive effect of the TA as the online TA in the “TA experimental group” of a web-based learning community with a blended curriculum, with various teaching strategies for the self-regulation of students. With the encouragement and guidance of the TA, students improved their motivation to participate in group discussion and sharing, and actively expressed their thoughts and creative insights. The reflective feedbacks given by the TA can assist students in demonstrating higher cognitive strategies, such as the introduction to critical thinking perspectives and reflection of metacognition. Additionally, TA’s online teaching strategies include demonstration and instruction of learning tasks, provision of relevant learning resources, the reminder of the teaching schedule, and allowing students to solve their own learning problems in order to effectively improve students’ ability to manage learning resources.

Learning response to general arts curriculum

This study summarizes the data derived from feedback sheets and interviews after class¹ and collects 80 effective samples of feedback sheets, including 43 from the TA experimental group and 37 from the control group. We interviewed 13 students after class, including nine from the TA experimental group and four from the control group, in order to understand the opinions of students regarding the learning assistance of web-based learning community with a blended curriculum; the design of the general arts curriculum is described below:

¹ This study assigns numbers to feedback sheet and after-class interview data of students. Feedback sheets of the general curriculum is partly numbered according to data serial; for example, S01 shows 01 as the feedback of 01 student and that of after-class interview includes interview date and number of students interviewed; for example, SI201001125 #01 shows student 01 received the interview on January 25, 2010.

Learning assistance of a web-based learning community with a blended curriculum

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In regard to the “blog learning community”, students often mentioned the exchange function of the blog because students taking the general curriculum come from different departments, and lack exchange channels after class. Group blog provides a convenient interactive environment for students to discuss and exchange opinions from time to time and share their learning resources.

Group blog gave us closer links between us and curriculum contents. We can quickly browse the opinions and sharing of peer students or post our thoughts on blog to share with others. (S43)

I think it is quite convenient to hand in assignments via blog. I can turn in assignments quickly and browse the assignments of other peer students. Sometimes I may forget points mentioned in classes but after viewing others’ assignments, I will be reminded...at the same time; I do not need to hand in paper copies and the teacher can directly browse and correct assignments online. (SI20100128)

In terms of the benefits of a web-based learning community for the learning of a general arts curriculum, students mentioned the help in improving critical thinking abilities, and they were able to refer to others’ experiences to quickly accumulate knowledge, and were inspired with more thoughts:

The participation of a blog learning community allows members to share our writing and to understand diversified thoughts. The critical thinking ability of ourselves for other artworks is improved. We are able to use the “feedback article” function to discuss and share with group members, and we are able to know more about artists and artworks as well as how others analyze work contents. (SI 20100130 #02)

I think that sharing on blog is a good idea that allows many people to view the results, and continuous modification becomes possible. Seeing the world from the shoulder of a giant is a good feeling. (SI20100121)

Additionally, students mentioned that the feedbacks from the TA and other group members drove them to actively post articles. It not only forms a good interactive learning cycle but also helps to produce confidence and benefits future thinking and learning models:

Each of us has different thinking models and in others' responses, we are able to know what we ignored. This helps me greatly for thinking about the department I am studying in and my future plans. Because I major in design, feedback opinions influence my thoughts and expand my horizon. After all, design cannot be limited in a small box. (SI201001125 # 02)

Differences and influences of the role of the TA in face-to-face and online teaching

In this study, the TA played a very important role in teaching guidance in both the face-to-face curriculum and "TA experimental group" of a web-based learning community, and students thought that the frequent exchanges and interactions with the TA in the classroom and the TA's participation in group blog discussions also guided students to actively learn. As mentioned by a student:

TA helps students to understand the curriculum better, and assists students to complete each assignment and task, and the TA participates in discussions and inspires us. In terms of the blog, the TA on blog provides reference information or, via the participation in blog, the TA inspires peer students to post articles or to give feedbacks. The TA also reminds us to turn in assignments. (S33)

In classroom teaching, the TA focused more on the role as coach and facilitator. Students mentioned that the TA does not over interrupt or dominate discussions but observes and provides in-time assistance and encouragement. When group discussions encountered bottlenecks or failed to reach a consensus, the TA provided new thinking directions or mediation by summarizing overall opinions:

I think that the TA often gives some guidelines. During discussion, he often waits until we finish and then gives us the guidance. For example, during a group project, at the beginning, we did not have any thoughts and he gave us a clear direction. It was not very complete, but it enabled us to have a better development. (SI201001125 #01)

Students normally recognized the professional abilities of TA. In addition to the assistance to professional knowledge and problem solving in class, the TA provided his professional thoughts and technical instruction during a group project not only to help non arts majors to solve problems but also to inspire them and to guide work presentation:

The TA assists us and provides practical suggestions. For example, during a group project, although we came up with the topic by ourselves, he provides us with more concrete thinking since he majors in arts and knows better how to practically use materials and thoughts in creation. (SI201001116 #03)

From the interview contents and feedback opinions of students in the "TA experimental group," we are able to understand the influence of the TA's online teaching strategies on the students' learning of a general arts curriculum in web-based learning community in this model. During the interviews, students mentioned the inspiration of the TA for posting articles as well as the encouragement for students to more actively express themselves and participate in the discussions. At the same time, students mentioned the professional assignment guidance and in-depth feedback

opinions of the TA, and perceived the TA as the expert in the teaching role of a blog web-based learning community. In the face-to-face curriculum, the TA is more like a learning partner involved in the discussion activities of the group:

I think that the TA, during classroom activities, is like a facilitator; during discussions, he adds his opinion and helps us to focus on our opinions... On the blog, he acts more like an expert and gives professional opinions. The TA is quite helpful for demonstrating assignments on blog and that inspires me to write more like he does. For example, he gives an in-depth analysis of artwork...the TA's interpretation of artwork does not influence my views but helps to guide us to come up with outlines and key points. (SI20100116 #04)

For example, during interviews with students and discussion of issues on modern arts, the TA's feedbacks changed students' perceptions towards arts and aesthetics. Students became more open to accept the diversity of modern arts and visual culture as well as their unique ways of expression. They were able to reflect on the deeper meanings behind modern arts:

The TA's feedbacks on the exhibition impressed me very much. In our feedbacks, we discussed modern arts. After visiting the exhibition, we felt nothing and had no idea about the work of the artist. The artworks are not always beautiful, and some even are bloody or critical of current issues. Modern arts strongly challenge visual limits; they disagree with others just because they want to disagree...When the TA gives feedbacks to arts and aesthetics, I feel like I am not against modern arts, and I am able to raise other perspectives. (SI 20100116 #01)

At the same time, students pointed out the difference between feedbacks given by the TA and peer students. They recognized the professional and more in-depth feedbacks of the TA. The TA is more like an

expert who can guide others to more in-depth thinking, and students expect that they can also be recognized by the TA in the feedbacks. They regarded the feedback as driving their improvement. Opinions of students came from personal experiences and they gave positive feedbacks:

First of all, the TA gives feedback to each article. After his response, more peer students give theirs. This inspires others to express themselves more... I view responses of others to my article, but I think the most important influence comes from the feedbacks given by the TA. (SI 20100125 #01)

The TA's feedbacks guide us to begin more in-depth thinking and feedbacks given by peer students are more positive...of course; the TA is more professional and the contents of his feedbacks can be fully understood. Sometimes professionalism is serious, but the TA's feedbacks are not serious. (SI 20100125 #02)

From the responses of students, we can understand the difference of role definition and work focus in two teaching fields of the blended curriculum: face-to-face curriculum and online teaching. For students, the TA in the group blog web-based learning community was more like an expert; in the classroom curriculum, the TA integrated into a group discussion as a learning partner. In the classroom curriculum, the TA monitored students' learning as an observer and gave learning assistance or reminded students to pay attention to the curriculum schedule and points of attention. Via face to face contact, the TA integrated the learning activities of students and provided real-time feedbacks and instruction. Thus, the TA in classroom curriculum teaching focused on the role of facilitator and assistant. The online teaching role of the TA has the expected teaching effect due to the experimental design of the role of expert. The TA, through concrete teaching strategies such as the publication of assignment sample, discussion guide and reflective feedbacks provided more in-depth guidance of teaching contents. Differences occur due to the different type of interaction of online

teaching compared to that of the classroom curriculum; for teaching online, the TA needed to use the text form of feedbacks and articles posted, and online activities designed to convey thoughts via the platform. Thus, the teaching contents are more organized and better demonstrate his professional competence.

In general, the TA's online teaching focused more on the guidance of in-depth discussion, the roles of "discussion guide" and "opinion mediator." Results of this study confirms the theory that the online teaching role of the TA cannot completely replace the teaching function and emotional exchanges in a face-to-face curriculum(Sweeney, O'Donoghue & Whitehead, 2004). De Smet, Van Keer, De Wever and Valcke (2010) pointed out that during the TA's training curriculum, the combination of online teaching model and teaching strategy design can effectively improve the self-evaluation of the TA. Students, thus, can be guided to achieve higher levels of teaching objectives and self-efficacy, such as knowledge construction. As a result, in the blended curriculum of face-to-face and online teaching contents, the TA's teaching design and implementation should flexibly combine the advantages of both, and the TA's teaching training should focus on information technology assist teaching abilities.

Design of a general arts curriculum

1. Design of general arts curriculum units

This study, according to unit statistics, ranks curriculum units that interest and impress students from the most to the least as "Taiwan's digital arts", "Gender issue and Taiwan's modern arts", "Taiwan's internet visual culture", to "Taiwan's modern pop visual culture." Among them, in the unit on "Taiwan's digital arts", students mentioned about the diverse forms of digital arts break the traditional narrow perception towards limited arts expression. Via the use of digital audio and video teaching resources, students said they are better able to understand and appreciate the features of interaction between digital arts and the audiences. At the same time, digital artworks create combined virtual and reality fantastic images and effects to allow

students to enjoy the fresh sensual excitement. They were cultivated with the knowledge of digital media application and amazed with the creativity combined with new technology and arts. For example:

I like the interactive technology and arts films screened by the teacher in class, especially, the touch audio installation. Through the temperature of the hand, the audio system is initiated to play music; with multiple component combination, different pieces of music can be played. I felt amazed! (S09)

“Taiwan’s internet visual culture” received good responses from students of Generation E; they said they are living in a world with convenient Internet resources, and that the Internet has pervaded their daily life and plays an important part. But the frequent contacts to the Internet do not give them the chance to think of the influence of Internet culture. Through examples and issues of Internet visual culture raised in class, such as those related to the pop Facebook social medial, blog and online forums, they were able to rethink and analyze the value of relevant issues and visual culture. For “Taiwan’s modern pop visual culture”, students responded that pop visual culture is omnipresent and that ignorance will lead to the blind following others. Through the introduction of relevant theories and issue discussion, they were able to understand the contents of pop culture as well as to cultivate more in-depth observation abilities and to develop critical thinking. As mentioned by one student,

Pop culture seems transient and changeable. But what my teacher said leads us to think more about the depth of pop culture, and to have a broad understanding of the so-called high fashion, taste and psychology of those involved. (S20)

Furthermore, students reported that the gender issue is often marginalized or ignored. Through the creative descriptions of artists and

gender image presentation in artworks, the students were able to understand the gender issue more profoundly; thus, they reflected upon their attitude to gender. As said by one student,

The gender dimension in critical thinking of modern artworks shatters us; especially, the strong use of gender symbols is very impressive and enables me to reflect on my attitude toward women, and I learned about respect.

(S21)

2. Activity design of a general arts curriculum

In the activities of this general arts curriculum, students were interested and impressed (sequentially, from the most to the least): visit to the museum of arts, expert seminar, group work and group discussion in class. In “visit to the museum of arts”, students said that before, they lacked visiting experience to the museum of arts and information on arts and culture. Factors, including the poor knowledge of Taiwan’s modern arts and the unavailability of tour guides, influence their willingness to visit the museum of arts. Students thought that personal contact with modern artwork via the visit to the museum of arts and the arrangement of professional tour guides helped them to learn the background knowledge and appreciate the creative contents of artists. For “expert seminar”, this curriculum arranged a “face to face with artists” seminar series by inviting modern artists who are still part of the art field to share their creative journeys with students. Students mentioned that personal creative experience and life stories of artists told in person left them with a deep impression and realization:

The expert seminar gives the most benefits to link the artwork of experts and their personal style. Especially, for the lectures of Teacher ○○○, although during her youth, she did a lot of criticizing and avant-garde photography work, she looks like a respectable teacher... (S14)

At the same time, students thought the sharing of creative experience by artists in person is direct and valuable. They were able to understand the creations and journeys of artists from an original perspective. As reported by one student,

In the past, I looked at artwork from my personal perspective, and even through the interpretation of an expert, I tried to summarize all my scattered thoughts. Through the introduction of artists in person to their artwork and creative thoughts in a chronological manner, I feel more interactive with artworks. (S37)

For “group work” and “class discussion”, students generally recognized the importance of cooperative learning in groups as well as the advantages and value of teamwork. As one student mentioned,

The general curriculum allows us to know peer students from different departments. Because different trainings give us different ways to think and to create, the general curriculum enables me to cultivate more diversified thinking and to interact with others better. (S08)

Conclusion and Suggestion

Conclusion

This study concludes with the influence of the application of web-based learning community with a blended curriculum on the self-regulation of university students in a general arts curriculum, as well as their learning responses to a web-based learning community with a blended curriculum, TA teaching and general modern arts curriculum. There are four conclusions proffered below:

The “TA empirical group” model facilitates self-regulated learning performance

As shown in the research results, the experimental group of a web-based learning community of blended curriculum with TA assistance has a significant influence on the self-regulation of university students in a general arts curriculum. Thus, in the “TA experimental group” of a web-based learning community with a blended curriculum, the TA’s online teaching strategies achieved the expected teaching results as they have a very significant and positive influence on motivation, cognition and resources management strategies of the self-regulation of students. If the TA gives proper encouragement and responds with emotional support in time to create the collective atmosphere, he can effectively improve the motivation for students to participate in the group, while reflective feedbacks help students to apply higher levels of cognition strategies such as critical thinking and metacognition. Additionally, the guide to online discussion activities, real-time learning support and the provision of learning resources all benefit the resources management abilities of students, and help students to self-regulate their learning development.

The blended web-based community is helpful to undergraduates’ learning in arts general curriculums

As shown in the research results, with the assistance of technology, a web-based learning community can counter the drawback of insufficient interaction in large-class general curriculum. Students reported the benefits of a web-based learning community and information platform for achieving better communication with students from different majors. Through interdisciplinary exchanges, students can broaden their horizons. Students also said that they receive learning benefits such as mutual support from learning partners and resources sharing with each other via cooperative learning in groups. During discussions and a group project, students expressed that the recognized achievements helped them to be more concentrated in the learning of general curriculum.

TA teaching is beneficial in enhancing the teaching efficiency of a blended curriculum

As indicated by the research results in this study, the TA in the two teaching fields of blended curriculum, “classroom curriculum” and “web-based learning community,” produces two different role types of teaching efficacy. In the classroom curriculum, through face to face exchanges, the TA gave students face-to-face and direct feedbacks, including emotional support and in-time guidance to the group, while in the web-based learning community, the TA, due to different interaction type, guided the web-based learning community to share and discuss. He also gave in-depth reflective feedbacks with the purpose to inspire higher levels of knowledge construction by inspiring students to develop critical thinking abilities. Thus, TA’s teaching in a classroom and web-based learning community produces substantial teaching efficacy. In the future, the advantages of the TA in the classroom and web-based learning community should be integrated in the design of TA teaching in blended curriculum in order to give students comprehensive learning assistance and guidance.

The design of general arts curriculum should include modern art theories and practices

In terms of the design of a general arts curriculum, this study focuses on the contents of Taiwan’s modern arts and visual culture; based on the exploration of contents and depth, we designed diversified activities in consideration of both theories and practice to reflect social and art cultural thinking and to make the best use of information technology to improve learning efficiency. The curriculum contents and planned teaching activities included: “visit to the museum of arts”, “expert seminar”, “class discussion”, “group project” as well as introduction and issue exploration to modern arts and visual culture. Students were helped to broaden their horizons regarding the existing scope of teaching contents of a general arts curriculum, and the curriculum received positive evaluation from the students. Substantial benefits were produced for the learning of students in general arts curriculum, and the conventional thoughts of students about the general curriculum were changed. The implementation results of the curriculum design in this study

can serve as the reference for the design of general arts curriculum in universities.

Reflections and suggestions

Problems of content design of general arts curriculum in this study, objectively, are limited to the teaching hours of the general curriculum. Activities should be arranged according to the schedule of one semester, and this also applies to the teaching scope. The diversified backgrounds of students also increase the complexity of the teaching design; because the teaching subjects of general arts curriculum are non-art major students, it is difficult to confirm and evaluate their art learning experience and competencies. Additionally, the unclear positioning of the general arts curriculum also brings more difficulties to the curriculum design. For a holistic education, the content scope of the general arts curriculum should be linked to the past learning of students in arts curriculum; but for higher education, this should be designed in depth. Therefore, the balance between professionalism of teaching contents and the level of students in the general curriculum is an issue that needs addressing in the design of general arts curriculum.

Furthermore, as shown in the research results, the TA is the key to guiding a web-based learning community. In both face-to-face curriculum and online teaching, the TA plays an important guiding role. In terms of teaching in a web-based learning community, the in-depth guidance strategies of the TA has been demonstrated to be an important factor that influences teaching efficacy, and this punctuates the importance of the application of information technology to the TA's educational training. As a result, in the TA's educational training contents, in addition to guided teaching in the traditional classroom curriculum, more emphasis should be put on the application of information technology competencies, such as the utilization of information platform, the application of the Internet and digital archives learning resources, as well as online teaching strategies to respond to the increasingly advanced technology development.

In conclusion, the focus of the application of a web-based learning community with a blended curriculum should be placed on the incorporation of R&D of teaching strategies and teaching field contents, as well as the utilization of technology tools to assist the learning process. This study uses group cooperative learning in a classroom and web-based learning community to enhance exchanges and sharing by students. In both face-to-face and online teaching, issues on modern arts and visual culture are designed to guide the discussion, and teaching strategies and activities such as group projects are implemented. By incorporating online sharing and coordinative platform, students are guided by teachers to develop a learning network for knowledge sharing and co-construction to further advance students' higher thinking level. Thus, the web-based learning community with a blended curriculum does help students to learn. The teaching design and strategic application should be the key to influence the learning performance of students and achieve good teaching efficacy.

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Appendix 1: Interview Outline

1. What are the main influences and benefits of group blog for your learning in the general arts curriculum during this semester?
2. What do you think of “interactive feedbacks of group blog? What are the benefits for learning in the general arts curriculum?
3. What are your thoughts and experiences of “group blog?” (For example, problems encountered and pros and cons of group blog); what are the methods you think should be added to group blog to assist your learning?
4. What influences and benefits do you receive from “Group TA” in the blog community for your learning in the general arts curriculum during this semester?
What guidance and assistance does the “Group TA” provide for you in the blog community? What are the concrete methods? What will you suggest to enhance the “Group TA”?
5. Is there anything else you want to share or comment on for the general arts curriculum during this semester?

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