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International Journal of Online Pedagogy and Course Design

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The mission of the *International Journal of Online Pedagogy and Course Design* (IJOPCD) is to provide a platform for the latest research, analysis, and development of online education, effective online teaching methods, and course design. IJOPCD covers the pedagogical design aspects of science education and computing education, as well as courses supported by educational technologies. Targeting academic researchers and educators who work in the field, this journal focuses on the importance of developments in online course design and teaching methods to improve teachers' teaching and students' learning. Researchers are encouraged to submit cross-disciplinary, high-quality syntheses that are interesting, beneficial, and apprehensible to all those interested in or teaching science and related disciplines.

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Topics to be discussed in this journal include (but are not limited to) the following:

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- Multimedia and interactive learning systems
- Online course design
- Online learners' behavior
- Pedagogy and teaching with technology
- Virtual reality environments
- Web-based teaching methods



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GUEST EDITORIAL PREFACE

Special Issue on Web 2.0 Innovation and Education

Maiga Chang, Athabasca University, Canada

Eric Zhi-Feng Liu, National Central University, Taiwan

Within the last few years, the Internet has been one of the most important information sources in our daily life. Networked environments and innovations such as BBS, discussion forums, web pages, Wikipedia pages, and blogs also emerged gradually. When we hear the term “Web 2.0” or even “Web 3.0”, it is a user-centered Internet phenomenon. Unlike one-way information delivery in the book/newspaper/radio/TV period, today users can share knowledge and debate issues actively instead of just being a listener or an information receiver.

In this special issue of the *International Journal of Online Pedagogy and Course Design (IJOPCD)*, we encourage submissions focused on the topic of Web 2.0 Innovation and Education. Web 2.0 is a young but fascinating research domain that attracts many interdisciplinary and international scholars. Many successful educational studies exist that integrate and use Web 2.0 as an instructional instrument; however, Web 2.0 has not been introduced systematically to the educational system. The goal of this special issue is to discuss the practices and research trends of Web 2.0 as a supporting tool in various educational aspects. Moreover, this special issue can provide the opportunity for practitioners and scholars from different domains to exchange valuable insights. This special issue collects the latest

research in Web 2.0 for Education; there are six papers in this issue.

First of all, Lin and her colleagues design group activity to facilitate knowledge building, with Web 2.0 application, monographic collaborative learning for knowledge building is convenient and easily implemented. They use Wisdom Master learning management system to log all data of the CSCL for knowledge construction interaction process and apply discourse analysis to convert the content of dialogue into a verbatim transcript for analysis. The results indicated that most dialogues belonged to the wonder (RW) category, i.e. respond to the information and responses with question, sharing and comment. Lin et al. then use the hermeneutics and the knowledge construction in Bakhtin’s dialogism and in Hermans’s dialogical self to reveal the relationship between identity and agreement in a socialized knowledge building environment.

Struck and his colleague at the second article do an interesting research, they call the podcasts created by learners for specific subject learner-created content (LCC). They use podcasts to develop student’s meta-skills, to support mobile learning and content learning, and to facilitate student involvement. They try to find out how students experienced the creating of content as learning material in the form of podcasts. The results show that the

learners do see podcasting as a study tool and four main categories representing the ways of using podcasts as learner-created content in studying.

Chang and her colleagues at the third article focuses on blogs, they try to see if the blogs influence adolescent bloggers' creativity from adolescent peers' viewpoint. They recruit twelve- to eighteen-year-old adolescent bloggers who continue managing their blogs to join their research and use online questionnaire and semi-structure interviews to get participants' ratings on their perceptions of creativity about themselves and peers. According to adolescent bloggers, the creativity definition is novel, useful, and valuable. The results also show that creativity can be enhanced from doing learning activities and practicing.

Lin and Ward at the fourth article show how Web2Quests can be used to promote multicultural education for pre-service teachers and teacher educators in Taiwan and the Unit States. The result show that about 93% of 72 pre-service teachers and teacher educators who responded to the survey both in Taiwan and the United States enjoyed the Web2Quest strategy and viewed it to be effective in promoting higher-level thinking and social constructivist activities. In addition to the questionnaire survey, a 45-minute focus group discussion was conducted via Skype. The focus group members stated that using Web2Quests in their classroom supported students' different learning styles and multiple intelligences; moreover, they also explicitly commented that Web2Quest activities gave students opportunities to bring their personal

perspectives on issues being discussed and to learn how to negotiate with team members to solve a problem in the real world.

Shen and Wu at the fifth article investigate the effects of computer supported collaborative learning with Web 2.0 on students' participation, learning process, and learning outcomes. They recruit 30 participants to attend a 14-week collaborative writing course. In this course, students need to use Google Docs to finish their assignments collaboratively. The results show that CSCL with Web 2.0 technology do have positive effects on perceptions of collaboration (i.e. interdependence), collaborative learning process, and learning outcomes.

The last article, Chen and his colleagues use a social network platform called Ning which allows users at different platforms such as Facebook and Youtube interacting with each others. Chen et al. design a series of courses on the Ning to discover the life stories of "Hakka Mothers." They recruit 200 students whose mothers are "Hakka Mothers" from three elementary schools and one junior high school. The students can share their first-hand stories about their Hakka mothers on the Ning, moreover, the students can deploy their contents from YouTube, Twitter and Facebook easily and effectively due to Ning also provides two-way sharing mechanisms from itself to other social networks. The results show that social network platforms are good for storytelling and story-collecting in teaching cultural relevant subjects.

*Maiga Chang
Eric Zhi-Feng Liu
Guest Editors
IJOPCD*

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Dialogues and Perception of Intersubjectivity in a Small Group

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ABSTRACT

The core value of Web 2.0 lies in its potential for building technologies that are open, decentralized, and shared. This paper designs group activity to facilitate knowledge building and move on learning management system to web 2.0 paradigms with computer supported collaborative learning in a small group. The “give-take” metaphor for knowledge construction in a small group discourse only interprets the solo voice phenomenon in asynchronous forums. Tumultuous, parallel, and connected voices in synchronous conferencing need alternative metaphors to understand the self and the other in a personified way. This paper represents discourse evidence of emerging meaning making, expertise commentary, self-identity, and collective confirmation as a process in small group collective knowledge-building.

Keywords: Collaborative Learning, Dialogues, Discourse Analysis, Knowledge Building, Online Course

INTRODUCTION

In 2001, the Taiwan Ministry of Education (TMOE) inaugurated a new k-9 curriculum. At the core of this curriculum are ten key competencies that we wish all children to possess. Inquiry and research, one of the ten key competencies, is quite foreign to most school teachers in Taiwan. In 2010, the TMOE inaugurated another k10-12 curriculum for vocational education. Project study is the core of the school based curriculum and through this course we hope

students be able to transmit knowledge from school to work. Even project practice taught at undergraduate level, collaborative learning and learner centered teaching strategy are the important issue in a project small group at all educational level.

Designing learning activities for online courses on “Research Methodology” usually involves tools to enable group discussions. Such learning activities emphasize openness, dialogue, and consensus building through the exchange of ideas. Within the talking-listening space afforded by a learning activity, the perception of intersubjectivity that helps individuals

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to understand self and others' intention and to develop shared knowledge should be investigated. In this study, we focus on intentionality as the ontology of source of knowledge among members in such a community of knowledge-building (Bereiter, Scardamalia, Cassells, & Hewitt, 1997; Biggs, 1992; Gan & Zhu, 2007; Koschmann, 1996; Nonaka & Konno, 1998; Scardamalia & Bereiter, 1996b; Stahl, Koschmann, & Suthers, 2006; Weinberger, Reiserer, Ertl, Fischer, & Mandl, 2005).

Increasingly, studies on computer-supported collaborative learning (CSCL) are moving away from meaning-making through the use of reading and writing strategies toward perception of intersubjectivity as a dynamic process of polyphony. Polyphony is a complex phenomenon that goes beyond talking-listening and giving-taking. Educators arrange pre-planned activities to improve the efficiency of knowledge telling, such as video presentations, issue follow-up, problem formulation, project planning, referring to literature, critiquing scientific writing, knowledge sharing, and giving/modifying commentary. These activities enhance learners' productive writing by promoting self-understanding, deeper learning, self-reflection, and feedback evaluation. Compared to the traditional approach, these activities are more effective for helping learners achieve higher academic performance, accomplish in-depth problem analysis, gain self-confidence, and acquire better reading comprehension (Scardamalia, Bereiter, & Steinbach, 1984; Scardamalia, Bereiter, McLean, Swallow, & Woodruff, 1989; Scardamalia, Bereiter, Brett, Burtis, Calhoun, & Smith, 1992; Scardamalia, Bereiter, & Lamon, 1994; Scardamalia & Bereiter, 1991, 1996a, 1996b).

Unfortunately, studies on CSCL have not been successful to disclose knowledge convergence in group process. The evaluation methods used to analyze CSCL in the past decade have met with new roadblocks. First, although effect studies with pre- and post-tests determine variances and learners' changed cognition, they do not reveal the group's shared cognition (Stahl,

Koschmann, & Suthers, 2006; Dillenbourg, Baker, Blaye, & O'Malley, 1996). Second, reciprocal teaching studies employing discourse analysis to classify self-explanation and self-other explanation attempt to investigate the degree of improved learning outcome; however, no manifest relationship between talkers' performance and listeners' elaborate explanation has been observed. The only relation we can establish is that talkers' performance is related to talkers' elaborated explanation. Such studies do not wholly or partially explain how group members connect with each other's ideas and thinking. In this study, we aim to track group process and arrange dialogue to enhance subjectivity and intersubjectivity within a small group.

Hermans's dialogical self theory (Hermans, Kempen, & Loon, 1992) and Bakhtin's polyphony theory (1981) have made important contributions to interpret the perception of intersubjectivity. To extend the literature on CSCL, dialogical self and polyphony, the authors of this study explored how a small group collaboratively negotiated the project based scientific writing for knowledge building. In using a case-study approach, we hoped to reveal the discourse process underlying authentic project work in an online course setting. The following questions guided the study: (1) How does the group member negotiate individual difference and select research topic with life experience and common consciousness within group? (2) How does the dialogical self socially construct knowledge and set self position to solve their own problems after teacher's review and feedback?

LITERATURE REVIEW

CSCL involves an online activity-based system. CSCL for knowledge-building entails learning with communities, tools, subjects, objects, activities, and outcomes in an online course setting. Among these six elements in a learning activity system, the epistemic subjects are in tandem with the epistemic objects, even

seeing and thinking according to the embedded experience. Subjects or individuals use tools and perform tasks to improve objects for a more productive outcome. To study the subject or self in a small group, we review the fundamental epistemology of inter-subjectivity and intra-subjectivity, and the use of polyphony to determine the perception of inter-subjectivity, intra-subjectivity, and objectivity. According to their perception, individuals connect with the world and self-others.

EPISTEMOLOGY FOR KNOWLEDGE-BUILDING THROUGH AN ONLINE DISCOURSE PROCESS

Studies on knowledge-building involving an online discourse process adopt different data analysis techniques under different epistemic perspectives. (1) Neo-Piagetism interprets knowledge as internalization and cognitive conflict. It uses form and structure to analyze data based on the epistemology of knowledge-in-mind, such as SOLO. (2) Social-cultural historicalism interprets knowledge as the outcome generated from activity systems. Social-cultural historicalism adopts contextuality to analyze data based on the epistemology of knowledge-in-the-world. (3) Social activism interprets knowledge as an object transformed by tools used in a society and through social practices. Social activism uses questions, asked by people in action, to analyze data based on the epistemology of knowledge-in-action. (4) Deweyism interprets knowledge as a reflection and transaction process for suggestions, task perception, hypothesis, inference, and testing. Deweyism adopts perception awareness to analyze data based on the epistemology of knowledge-in-reflection. In this study, (5) Bakhtinism interprets knowledge as the perception of intersubjectivity. Bakhtinism adopts polyphony and intentionality to analyze data based on the epistemology of knowledge-in-exchange. (6) Hermans (2001) interprets

knowledge as the perception of self. Hermans (2001) adopts the dialogical self as a multiplicity of position to interpret personal construct based on the epistemology of knowledge-in-I and Me.

The core concept of polyphony, as evidenced in interpreting the inner cognition process of knowledge-building within a small online group, emphasizes intentionality awareness and intentionality transformation as epistemic conditions to understand others, understand the world, and understand the self. Prior knowledge that individuals bring into a group meeting is considered as prior intentionality. Group members, building a discursive world with discourse, carry out intentionality and relive the experience. Sharing of a manifest intentionality and arriving at an agreement are indications of knowledge-building. Such inner cognition and discourse processes were studied and explained by cognitive conflict, social-cultural historical activity, social practices, inquiry, and dialogue in earlier works. In this study, we adopt an alternative approach to explain data by (1) moving form-transform-transaction toward transcendent, and by (2) moving learning as knowledge acquirement, learning as participation toward learning as exchange, learning as socially personal construct.

POLYPHONY FOR PERCEPTION OF INTERSUBJECTIVITY WITHIN AN ONLINE DISCOURSE PROCESS

Bakhtin (1981) polyphony of dialogue theory is a metaphor for perception of intersubjectivity. Piaget uses decentralized thinking as a metaphor for individual cognition development. Vygotsky (1978) uses individual knowledge beyond the self as metaphor of social cognitive development. Ligorio, Talamo, and Pontecorvo (2005) claim that intersubjectivity exists in the space of talking and listening between the self and others. That space is the zone of proximal development (ZPD). ZPD enhances self-understanding for the advancement of knowledge. In this study,

for knowledge-building and project learning tasks in an online research methodology, CSCL needs a more infused way of perception of intersubjectivity in a small group for collaborative reading and writing. That is not only giving and talking but also linking to self and others. Since the self is limited and self-intentionality awareness is incomplete, self understanding depends on “you know in me.” transcendence to improve the perception of intentional flow. Building upon what others have constructed, understanding others depends on “I know in you.” Once group facing deconstruction of what the self and others have constructed is complete, self-identity depends on transcendent “I know in own self.” That is Hermans’s (2001) dialogical self, a multiplicity of positions. On the other hand, dialogue could take a different turn. We need to deal with intentionality first. However, tumultuous, parallel, and connected voices create intersubjectivity in the talking-listening space. Bakhtin’s (1981) polyphony will be a more suitable choice for perception of intersubjectivity in this study.

While education is greeting the Internet application model of Web 2.0, not only has the application model of Web 2.0 itself changed, but also education needs to re-examine the source of knowledge, re-understand how an individual building knowledge and further expand the subjective self-construction in the Internet community to serve as evidence of Web 2.0 education.

METHODOLOGY

The process of CSCL for online small group’s knowledge construction is set on a state that group members engaged in meaning negotiation through prior knowledge equivalence, QOC (Question, Options, Criteria), and value exchanges. Research included research setting, sampling, methodology, procedure, data collection and coding schema.

RESEARCH SETTING

The administrative management program for master’s degree was designed for the on-the-job study of the administrative personnel at all levels in National Changhua University of Education. The educational background, age, learning time and other factors of the group members were distinct from those who participate in general educational programs. The distance learning course on “methodology” in this research, especially the learning content, was presented in form of hypertext multimedia and was organized through “Wisdom Master” online learning management system (LMS). The system functions of the collaborative learning activities provided by this course to the group members included: class discussion board, group discussion board, JoinNet video conference, and other tools. Should the discussion of the group members at JoinNet conference (Figure 1) involve postings on asynchronous discussion board, researchers might gain a further understanding of the dialogue situation among group members through accessing those postings.

Totally there were 30 participants in this research. Among them, there were 28 living and working in Chuanghua, 2 working in Taichung, 17 female, 13 male, 13 teachers, 7 teachers doubling as administrative personnel and 10 public affairs administrators. In terms of age, the youngest was 31, and the oldest 55. The average age of the participants was 38.74 (SD=6.18), showing a heterogeneity.

In addition to individual online counseling, and answering questions and providing information on asynchronous discussion board, course teachers also took turns chairing JoinNet video conference once a week, engaged in the discussion on hypertext multimedia teaching materials, led the study of literature, planned special topics, designed group reports, provided feedback, and guided the group in their revision work.

Figure 1. Collaborative learning through JoinNet computer conferencing



Table 1. Group background information

Member Code	Sex	Service unit	Alias	Respective numbers
FUS01	female	University	S	1
FUY02	female	University	Y	2
FEW03	female	elementary school	W	3
MPC04	male	local public affairs administrative unit	C	4
FUN05	female	University	N	5

GROUP SAMPLING

Group sampling was determinate on individual’s participation, such as the attendance rate, the willingness to adhere to labor division and the schedule of course activities, in the hope that the sampling group had high representativeness in terms of the evaluation of knowledge convergence. There were 5 subjects in this research (Table 1). Member code is composed

of 5 digits, of which the first represents sex, second service unit, third alias, the last two their respective numbers.

RESEARCH METHODOLOGY AND PROCEDURE

Husserl Phenomenology and Hermeneutics (Tashakkori & Teddlie, 2003; Guba & Lincoln, 1989, 2005) was adopted in this research aiming

at the understanding of text meaning to interpret “the meaning of the situation” (Fang, 2004).

The hermeneutic methodology can be roughly divided into 4 types (Wen, 2004): (1) hermeneutic literature analysis, (2) Husserl phenomenological hermeneutic observation, (3) Gadamar philosophical hermeneutic interview, (4) Habermas critical hermeneutic dialectic methodology. Of the above four methods, Husserl phenomenological hermeneutic observation was adopted in this research.

The advantage of the intentionality raised by Husserl is that it enables us to know a human is not self-closed, instead self is an entity that is able to communicate with the world. Whereas its disadvantage is that it fails to shake off the limitation of the conflict between objects and self because what it is conscious of is a world constructed by the subject instead of a real world. The relations between people and the world are not based on consciousness but are an existential model of people’s living in the world. Therefore when a consensus is formed because of self-openness and the self-awareness of subjective consciousness, the subjective structure can be gripped and grasped (Guan Yong-Chung, 2000). In other words, this research which was based on Husserl’s intentionality focused on people’s elimination of communication barriers and the construction of knowledge through their online discussion, the formation of a cooperative learning group, mutual communication and the achievement of a consensus.

The methodology courses were jointly prepared by 6 expert teachers using hypertext multimedia materials for a 13-week distance learning, online group video conference and video conference on group monographic task. CSCL for knowledge construction activities consisted of time-sequential asynchronous discussion and JoinNet video conference. For the arrangement of the research courses, in addition to the weekly reading of online course content, one-hour weekly online discussion was arranged for the interaction between teachers and students using JoinNet video conference. The arrangement for the peer interaction included synchronous and asynchronous group

discussion and synchronous and asynchronous class discussion. Interaction between teacher and groups included in-group and inter-group exchanges.

- (a) within the group: The group members participated in the compilation group research plan and group discussions were conducted using group discussions system in LMS. The group discussions system has functions for posting, emailing, forum, and JoinNet video conferencing. Individual’s writings should be posted 3 days before the group discussion was conducted. After the discussion, the opinions were summed up by the recorder of the group members and compiled into a conclusion to be posted online for other groups’ reference. In the end, revision was made to the works based on the reviews by other groups to complete each group’s works. The works of each group were divided into 5 elements: the determination of the research topic, the composition of research literature (Each group collected 10 study reports and compiled them into literature exploration format.), the composition of the research design, the composition of research abstract and motives, the composition of research results, conclusion, discussion and suggestions.
- (b) among the groups: The works of each group were reviewed by the another one. At each stage when a group finished its research report, say the determination of research topic, the summing-up of research literature, research motives, research design, research abstract, data analysis, the composition of research conclusion all needed to be published online for the members of the proceeding group to review (for example, the members of the first group should review the content published by the second group, and the members of the last group should review the content published by the first group) and come up with their afterthoughts before handing in, using the assignment handing-in function

Table 2. coding system

System	Code	Code alias	grade	Definition
the role of prior knowledge	seeker	RS	1	Seek for information and request answers
	wonder	RW	2	Respond to the information and responses with questioning, sharing or comment
	contributor	RC	3	Respond to the information and responses with questioning, provision, sharing, discussion, comment, reflection and scaffolding construction
	Monitor	RM	4	Respond to the information and responses with questioning, provision, sharing, discussion, comment, reflection, scaffolding and regulation
QOC	contributor	QT	1	Bring up new topics or situations during discussion
	coherence	QH	2	Logical consensus, non-superficial trust
	quick agreement	QQ	3	Rapidly establish QOC, i.e. without clarification and negotiation, i.e. quickly set up QOC for others' contribution
	convergence	QV	4	Integrate QOC, i.e. clarify, expand, supplement and accept of others' contribution and establish QOC
	conflict	QF	5	Conflicting QOC, i.e. argue over, object to, revise and replace QOC, even bring up new topics

of the platform, both their teachers and the members of the group whose works were reviewed.

The content of JoinNet video conference was compiled into a verbatim transcript, including the part of the video conference when the teachers were providing their guidance to the groups on the revision to monographic development.

DATA COLLECTION AND CODING SCHEMA

Wisdom master LMS logs all data of the CSCL for knowledge construction interaction process, including individual learning recorder, the recorded text and audiovisual data of the both synchronous video conference and asynchronous discussion board.

According to the methodology of discourse analysis, the content of dialogue was converted into a verbatim transcript for analysis. For each dialogue, if it contains a complete meaning, the same text is given two coding systems; if the content of the dialogue is unrelated to the theme, no code will be assigned to it. The coding system (Table 2) includes:

Prior knowledge classification presented by Zhu (1996) was adopted to understand how each individual brought himself to the site. The text of verbatim transcript was marked with codes – seeker (RS), wonder (RW), contributor (RC), and monitor (RM). 4-grade classification variables were assigned to the obtained results – 1 represents seeker, 2 stands for wonder, 3 for contributor and 4 for monitor. After that the results were compiled into worksheet for statistical analysis. Kappa coefficient (0.442, $Se=0.101$, $P<0.001$) was adopted for the coding

reliability between two researchers. The test results suggested a reliability of above average.

QOC raised by Beers, Boshuizen, Kirschner, and Gijsselaers (2007) was used to understand how individuals negotiate meanings. The text of the verbatim transcript was marked with conTribution (QT), coHerence (QH), Quick agreement (QQ), conVergence (QV) and conFlict (QF). Each turn taking were assigned according to 5-grade classification variables, with 1 for QT, 2 for QH, 3 for QQ, 4 for QV, and 5 for QF, and then keyin into worksheet for statistical analysis. There existed inconsistency between the two coding researchers' QOC coding of discourse rounds, indicating the subjectivity of the coding researchers. However, the coding researchers' evaluations of group members showed consistency in the distribution of QV and QF scores, suggesting a consistency in their opinions about the integration and conflict of individual's language. Additionally, as for the RW coded data, surplus of vision, exotopy (you in me) and transcendence (self-command) mentioned in Bakhtin's Dialogism (1981) were applied to further interpret the dialogue. Meanwhile, the conflict (QF) in the QOC was further analyzed to understand how a consensus can be reached through value exchange.

QOC was used as the coding system for consensus negotiation. The coding included contribution, verification, clarification, acceptance (refusal), and agreement (disagreement). In this research, they were revised to 5 codes: contribution, coherence, quick agreement, convergence, conflict as the judging standards for meaning negotiation results. The reason behind the revision was the attribute of this research - "the composition and the dialogue of a Research Plan". The integration of knowledge is the ultimate goal. Besides, QOC is a kind of coherence and quick agreement of subjective structure; accordingly it cannot be verified and clarified like nature science. Instead of agreement or disagreement, the composition of a research plan stresses the ultimate convergence. Consequently, convergence and conflict were used to replace acceptance (refusal) and agreement (disagreement).

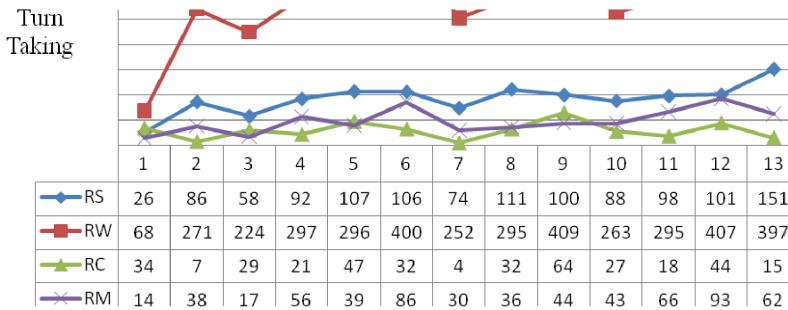
In this research, the data to be coded included group synchronous video conference, collective video conference, asynchronous discussion board, etc. Below is the explanation on the data code:

- (1) The online discussion at group synchronous video conference: For example, the code for prior knowledge is "1002g2-21-RC", of which 1002 stands for October 2nd, g2 for group 2, 21 for the number of times a speech was made (time sequence), RC for that the speech falls within the category of "respond to the information and responses with questioning, sharing, discussion, comment, reflection and scaffolding construction" and thus the member was classified as a contributor. Another example - a QOC code of 1122g2-106-QH, W9", of which 1122 stands for November 22nd, g2 for group 2, 106 for the number of times making a speech (time sequence), QH for that the speech was in line with the logic consensus and was therefore classified as consolidation, and W9 for that the record was made in the 9th week.
- (2) The online discussion at collective video conference: If the code is "1030mei-16:08", 1030 stands for October 30, mei for collective video conference, and 16:08 for 16 minutes and 8 seconds after the conference began.
- (3) Group asynchronous discussion board: If the code is "108th /181 postings in total", 108th represents posting no. 108, 181 means there are totally 181 postings.

DATA ANALYSIS ELUCIDATING THE ROLE OF PRIOR KNOWLEDGE IN 13 DIALOGUES AND THEIR LENGTH

Totally, 6,070 turns are taken within 13 dialogues (Figure 2). In this self and other created dialogical spaces, most turns involving talking in response to each other in terms of informa-

Figure 2. Role of prior knowledge in 13 dialogues



tion and responses involving questioning, sharing or comments (64%). Topics of the 13 dialogues are as follows: adopt a method to identify research trend; select a research topic; correlate the research objective to the research topic; collaborate with others in performing a reference search; collaborate with others in undertaking a reference review; set rules for citing references; integrate the literature review into group writing; modify the literature review; conduct knowledge convergence; collect and analyze research tools and data; form research hypothesis; revise research proposal; and perform the research design and complete the research proposal.

As for length of the individual dialogues, group leader MPC04 took more turns than the other members did (37%). Also, RW was the most recurring pattern of MPC04's turn taking socially. Comparing MPC04 with FEW03 revealed that the latter took the second highest amount of turns. Despite having the same patterns as other group members, i.e. seeking information and requesting answers, responding to information and responding to questions, sharing or comments, with a lower prior knowledge, FEW03 applied RS and RW to integrate with and connect to other's thoughts in 13 dialogues (Table 3).

IDENTIFYING THE ROLE OF QOC IN 13 DIALOGUES AND THEIR LENGTH

In the 13 dialogues, QT accounted for the most QOC, in terms of raising new topics or situations for discussion. The length of the highest peak was 134 turns in the research design and proposal complete dialogues. This finding suggests that group members confirm each other with questions, options and criteria during the final dialogue. However, in the discussion involving integration of literature review into group writing, QOC analysis was unsuccessful. Group members preferred conducting QOC (Figure 3) through face-to-face collaboration.

As for length of individual dialogues, group leader MPC04 took more QOC turns than the other members did (N=419). QT was the most recurring pattern of MPC04's QOC turn taking socially, in terms of raising new topics or situations during discussion. Comparing MPC04 with FUN05 revealed that the latter took the second highest amount of QT turns, yet had the highest QF. This finding suggests that FUN05 confronted a conflicting QOC (Table 4).

In sum, according to prior knowledge and QOC analysis, MPC04 took the most turns owing to his or her role as a leader. With a

Table 3. Length of individual dialogues

Prior knowledge		Individual dialogues					Total	percentage
		FUS01	FUY02	FEW03	MPC04	FUN05		
RS		158	144	229	513	154	1,198	20%
RW		680	534	777	1,231	652	3,874	64%*
RC		49	36	70	154	65	374	6%
RM		82	50	50	319	123	624	10%
Total		969	764	1,126	2,217	994	6,070	100%
Percentage		16%	13%	19%	37%*	16%	100%	

Figure 3. QOC in 13 dialogues

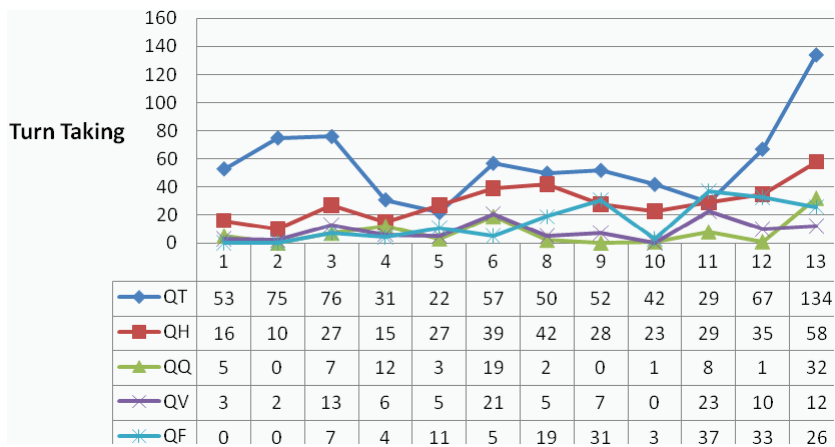


Table 4. QOC length of individual dialogues

QOC		Individual dialogues						Total
		FUS01	FUY02	FEW03	MPC04	FUN05	ZZ*	
	QT	111	91	103	214	155	14	688
	QH	76	58	61	97	48	9	349
	QQ	24	16	8	30	12	0	90
	QV	17	14	7	54	11	4	107
	QF	28	24	27	24	66	7	176
總和		256	203	206	419	292	34	1410

*guest from other group

lower prior knowledge, FEW03 asked questions and sought information from others, as well as constructed and integrated thoughts. Additionally, with a higher prior knowledge, FUN05 intended to introduce new rules and revise the logical consensus of the group, specifically in terms of hypothesis formation and research methodology judgment. The following qualitative analysis examines individual differences in terms of life experiences and a group consciousness, as well as presents a personal construct through dialogical self and self position mindset to resolve problems following a teacher's review and feedback.

NEGOTIATING INDIVIDUAL DIFFERENCES AND SELECTING A RESEARCH TOPIC INVOLVING LIFE EXPERIENCES

MPC04 led the group dialogue online with a thematic focal point. In a decentralized knowledge building environment, MPC04's group addressed counterpoints and individual differences in collaborative learning systems, in which the dialogue process began with a self-opening online discussion. The perception of intentionality relies on group interdependence and individual accountability. A situation in which listeners are empathetic and have reached a consensus implies the imaginative projection of a subjective state into an object, allowing for the apparent infusion of the object with it. The perception of intersubjectivity, i.e. the commonalities and differences in their thinking, guides group action in constructing knowledge collaboratively.

Sharing Individual Life Experiences through a Narrative Dialogue

The group initially decided upon the general direction of the research topic. Group members began discussing online through exchanges and explorations based on their personal life experiences (e.g., FUS01, FUN05) and from a

theoretical viewpoint) (e.g., MPC04). Despite varying interests, group members connected with each other based on a "common ground" of "organizational culture" theory. The following evidence shows above phenomena.

MPC04: I believe that the general direction should be determined first. [Researcher's remark: the topic of the research proposal.] Should it be an individual or a group (1002g2-16-RC). Alternatively, should we choose a topic from politics, economics, culture or sports? [Researcher's remark: field]

FUS01: While choosing organizational culture as the topic, I wonder what topics you would choose. (1002g2-25-RW) However, my direction is not that of a leader either. For instance, what relations or Confucian philosophical thoughts have influenced organizational culture (1002g2-27-RC)?

FEW03: I am not good at economics (1002g2-24-RW).

MPC04: Although all individuals can recommend the same subject, each one must explain their reason for doing so (1002g2-59-RM). As for why I chose motivation, I believe that many individuals are studying motivation. But I prefer to examine the direction of Maslow and expectancy theory, as well as other pertinent theories. I intend to integrate them into a graph and make a correlation between them in order to find a common ground (1002g2-60-RM). Despite the extensive discussion of Maslow, no one is integrating his theory into Maslow with other motivation theories. (NOTE: 'integrating his theory' ...INTO WHAT?) Have you noticed (this behavior OR this trend)? (1002g2-61-RC) I have read related literature. Teacher Chi also mentioned that Maslow developed his theory, with expectancy theory and others subsequently following. However, none of those researchers found a common ground through by using a graph similar to the one that Herzberg did [Researcher's remark: A theoretical framework

for staff motivation must be constructed]. What do you think?] (1002g2-62-RM)

FUN05: I initially chose job satisfaction as the topic. My secondary job as an accounting staff employee in school involved job satisfaction. I later discovered that the accounting job in school had become very popular after computerized accounting [Researcher's remark: outdated topic] (1002g2-81-RC)

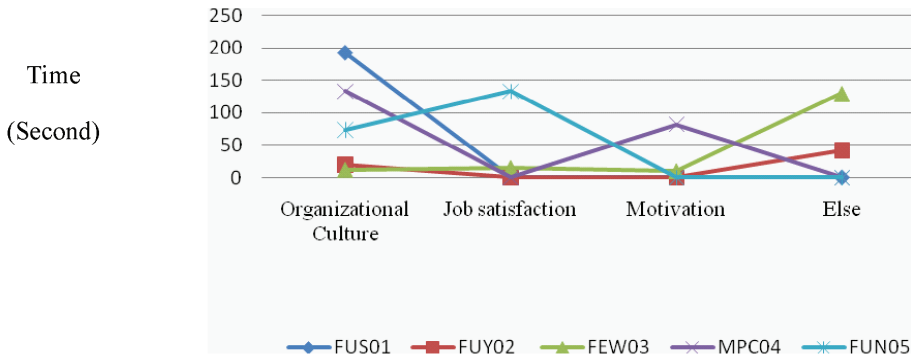
MPC04: What is the feasibility of setting organizational culture as our direction? Why did we choose 5 sub-topics (1002g2-112-RC)? A larger overlap implies a higher consensus. Coming up with 5 sub-topics would lead to a total of 25 sub-topics [Researcher's remark: sub-topic]. No overlap implies any common ground (1002g2-134-RM). Are our sub-topics the same? Each individual must persuade other members choosing the same topics by explaining why the topic is selected. A reasonable explanation implies a worthy research topic. Moreover, too extreme of an argument raises reservations among other members about the topic (1002g2-141-RM).

This investigation considered Bakhtin's Dialogism (1981) more effective in explaining the above dialogue contents. FUN05 failed to grip self-consciousness regarding the fact that job satisfaction research on school accounting staff employees had already become obsolete, indicating that FUN05 had already abandoned OR given up this topic. FUN05 uttered self and thought with a historical time and space. MPC04 failed to grip a shared vision of the motivation theory. This failure may be owing to that theoretical thinking was too abstract, explaining why other people failed to respond. For comparison, organizational culture raised by FUS01 received more participation and feedback. Structural relations of inter-subjectivity among the peers differ from the dialogue relations between "give" and "take", as well as the self-explanatory relations between "listening" and "talking". In contrast, group members shared prior knowledge, mutual

complements, mutual inquiries and mutual responses to choose organizational culture as their "common ground". "Inter-subjectivity" can more (aptly OR accurately) explain this phenomenon. Compared with "give-take" relation, FUS01 can more accurately explain the implications of the dialogue contents of FUY02, FEW03, MPC04 and FUN05, in addition to FU01. Figure 4 shows the time (in second) spent in a dialogue aimed at determining the group research topic.

- (a) While attempting to explain the failure to confirm either a job satisfaction topic or motivation topic, our results indicated that Bakhtin (1981) considered the difference between subjectivity and meaning, in which subjectivity is primacy), while meaning is only secondary. Meaning is a technological auxiliary used to realize subjectivity (Liu, 2005). Nevertheless, both subject and meaning must rely on dialogue, and meaning can only be produced in a positive, responsive mutual-understanding. Although absent in the heart or the mouth of the speaker, meaning is an effect generated by the substance exchanges of the counterpoints' vocal systems between a talker and listener.
- (b) This investigation also attempts to explain the common ground when selecting an organizational culture topic by identifying monologue as a subject-object dichotomy. Notably, dialogue consciousness turns into meaning construction when subject-object dichotomy is transiting to subjectivity. This dialogue differs from dialectical thinking. Dialogue is characterized by openness, incompleteness, coexistence, constructiveness, confidence and creativity; meanwhile, dialectical thinking is characterized by closure, either-or choice and binary opposition. While in coexistence of time and space in the JoinNet meeting, organizational culture is an effective means in which FUS01, FUY02, FEW03, MPC04 and FUN05 use their own self-conscious topics to engage in exchange and online dialogue.

Figure 4. Distribution of time and topics in research direction dialogue



Restated, MPC04's group decided the research direction with polyphony in terms of organizational culture, as shown in Figure 4. Bakhtin's (1981) dialogue theory can more aptly explain the turn taking regarding the formation of the common ground for the above organizational culture. Forms of monologue such as "job satisfaction" and "motivation" failed generate empathy and common knowledge.

Using Common Consciousness and Intention as Scaffolding for Constructing Knowledge Among Individuals and Groups

Group members discussed in a traditional classroom and selected "Elucidating How Leadership Style Influences Organizational Culture" as their research topic. This topic extended online discussion regarding organizational culture as their research direction in the first week (1002g2).

Group thinking in research direction dialogue significantly differs from that in research topic dialogue. Narratives thinking in research direction dialogue involved developing dialogue self with others as sharing a lived experience. However, propositional thinking in research topic dialogue involved inner dialogue self with multiple authors or personal position as logic and rule based reasoning.

Initially, each group member had to come up with 5 sub-topics, from which, the research

topic was selected through discussion. Obviously, an asynchronous discussion board for the group failed to complete this task. Group member MPC04 asserted that both talking and written text is an elaboration and a democratic behavior. Thought originates from OR is the origin of the intention to reach a consensus, online discussion and posting represent participation in an assignment and collaborative mechanism. FUS01 and FEW03 questioned the effectiveness of implementing a task, asserting that "the determination of topic" and "the determination of direction" should be different. Determination of a topic should be a consensus reached by a literature reading, whereas the determination of direction should be a common research interests shared among group members. In complementing MPC04's opinion, FUN05 explained labor division and collaboration to FUS01 and FEW03. In sum, the group members were then in the stage of task definition. Bakhtin's Dialogism (1981) stresses that monologue plays a dominant rule in subjectivity. When an ideology undergoes a transformation, heteroglossia diminishes the central place of monologue, whereas dialogue facilitates the exchange among different languages. The above group leader attempted to assign a task to group members based on self-consciousness. However, other group members perceived the task based on their subjective consciousness. Despite causing the centripetal force of monologue to disperse, dialogue facilitates

the mutual awareness of the value and conflict of self-command; the coexistence of differences renders the transformation of consciousness. Herman's dialogical self is considered as the ideological transformation beyond individualism and rationalism.

DIALOGICAL SELF SOCIALLY CONSTRUCT KNOWLEDGE AND SET THE SELF POSITION TO SOLVE THEIR OWN PROBLEMS FOLLOWING TEACHER REVIEW AND FEEDBACK.

Identify the Connection Between Whole and Part Tasks in an Agreement

In the dialogue relationship on developing a research survey, turn taking was) in the order of FUY02, FUS01 and FUN05, respectively. FUY02 initiated the dialogue with the blind spot about what to do (RS). FUS01 was FUY02's dialogical self. FUS01 provided FUY02 with information and explained the meaning of subjective construction to facilitate FUY02's self perception and reach completion. FUS01 is related to FUY02's self-reliance and self-complementing behavior. Restated, In addition to talking to FUS01, FUN05 created FUS01's dialogical self. FUN05 is also related to FUS01's self-reliance and self complementing behavior. The following evidence shows above phenomena.

FUY02: I queried others as to what characteristics that their school president possesses? (1211g2-93-RS)

FUS01: No, I wrote this survey was because two theses that I read directly pointed out their personalities. Do you know what personalities they identified? He asked some questions guide the discussion. (1211g2-95-RW).

FUY02: hmm... Did you design the 23 questions based on the personality characteristics of those 5 individuals? (1211g2-11-RW)

FUN05: I only explained the survey. For instance, I referred to the XX scale compiled by someone; my approach to compiling the data for this scale resembles this one (1211g2-203-RM).

Herman et al. (1992) cited Bakhtin's (1981) identity as a relationship with two connected logic dialogical behaviors. Their results also indicated that identity and agreement differ from each other. An agreement refers to a relationship in which the first order and sequential remarks follow each other sequentially and originate from two spatially separated individuals in communication with each other.

The following dialogue explains all speakers have demonstrated sequential remarks, as shown the evidence of agreement relationship.

FUS01: Upon completion of the questionnaire, a pre-test is conducted for testing the validity score. Survey questions with a lower validity score are eliminated and, then, the final questionnaire is sent out. My observation of many questionnaires revealed found that questions with a lower validity score had been eliminated, subsequently lowering the number of questions. Next, reliability analysis is conducted on the questions with a higher validity score. Although aware those researchers in previous studies have done it this way, we were unable to do so owing to our inability to conduct validity analysis. (1211g2-227-RW)

FUN05: Hi, FUS01. My observations suggest that a so-called expert survey is performed after a preliminary screening of the questionnaire [Researcher's remark: Expert validity]. I was told that expert opinions will determine whether the questions are appropriate OR suitable, require revision or must be eliminated (1211g2-228-RM). Pre and post surveys are mentioned only in an experimental method. (1211g2-250-RM)

FUS01: FUY02 suggested that pre and post surveys are an experimental study in their physical strength test and are not related to our questionnaire. Our research method cannot be referred to as experiments,... (1211g2-285RW).

MPC04: Data are collected through a questionnaire survey. Compiling the questionnaire initially involves exploring relevant literature and coming with a conclusion, as well as referring to related scale questions to compile a preliminary questionnaire. Following review of the questionnaire by our adviser, scholars and experts with positions related to education evaluation and principle and faculty should be invited to provide their opinions on the propriety of the questions and the completeness of the sentences, conduct a review and evaluate the questionnaire, as well as make suggestions on the revision to form an expert content validity. Thereafter, our adviser was consulted on which questions to add and eliminate, as well as which sentences to revise in order to compile a preliminary questionnaire. (1211g2-288-RC).

Data analysis conducted by the group simulated those mentioned in related literature and books. The dialogue is as follows.

FUN05: I wrote my work in this way and I am unsure whether it is effective. Although other theses contain an explanation of SPSS, I am unaware of how to conduct explaining why I left it out (1211g2-202-RC).

When a group member identifies with one's self identity and is conscious of the inter- formed by self and others, he or she must further accept oneself and others; in addition, the self has attained transcendence (Maslow, 1971). Transcendence is an important process of a subject's completion of intra-subject self-construction when the group is in a state of inter-subjectivity. Also, transcendence can be outlined as expert evaluation, self-identification, and collective identification.

Set the Self Position to Resolve their Own Problems after Teacher Review and Feedback

(a). Expert evaluation

Confirmation and clarification of clarifying an expert evaluation significantly contributes to the group's public revision of their constructed knowledge. According to FEW03, Although our teacher did not disagree with our questions, she thought if we settled for the original questions, the purpose would be wrongly written (1122g2-106-QH, W9). Under difficult learning circumstances, e.g., modification of research questions, research purpose, and literature review, conflict in their dialogue escalated during the 9th week. Additionally, additional rule selections and competing rules appeared when they expressed their opinions. While discussing how to modify research purpose, group member FEW03 proposed modifying the title from the "Relationship" research to the research on Gender, Personality, Leadership Style and Organizational Atmosphere" to maintain "Sex" and "Personality Difference" listed in the original research purpose. The number of variables has increased from 2 to 4. According to FUS01, However, the modification has too many variables (1122g2-204-QF, W9). When FUS01 suggested changing the research subject to "Research on Leadership Style and Behavior", FEW03 said: If so, it would sound similar to "What leadership style does the school principal possess to produce a specific leadership behavior?" This topic sounds odd to me (1122g2-221-QF, W9). These conflicts contain cognitively mythical concepts. FEW03 proposed a return to the original topic that contained 2 variables. FUS01 also agreed to maintain the original topic with 2 variables. According to MPC04, The teacher wanted us to first discuss the leadership style of a school principal and, then, deal with the organizational atmosphere, and, finally, talk about how leadership style and organizational atmosphere influence organizational behavior (1122g2-

476-QH, W9). Finally, FUS01 refused the suggestion made by FEW03 about a gender and personality-related topic. FEW03 also refused the proposal made by FUS01 on a leadership behavior-related topic. Restated, the original research topic agreed to thorough collective construction, which carries an extremely high consultative value. When unequal values were produced with the subsequent exchange, expert evaluation and the clarification of expert evaluation became an important basis for the group to maintain their original consultative value.

(b). Self-identity and collective confirmation

When the monographic study was based on the individual construction of labor division, and the negotiation of meaning and a revision were conducted collectively on the JoinNet video conference, self-identity and collection-confirmation became essential for promoting consciousness adjustment of others and self adjustment. The following evidence shows above phenomena.

As to whether to include the school principal as a respondent, FUS01, the original questionnaire designer explained as follows: The school principal was the research topic in my original design (1204g2-91-QF, W11). In this case, I considered respondents below 35 years old. However, if teachers are the research topic, this age bracket does not need to be specified because many teachers are in their 20s (1204g2-94-QF, W11). Actually, OR In fact, I don't think the respondents should include the school principal. Instead, school principal should be excluded (12094G2-101-QF, 11).

When FUS01 made a self-adjustment based on self-identity, an equivalence relation was produced, which followed by the generation of consensus and coherence.

When stating that research framework should be based the research objective, FEW03 stated the following: The suggestions of FUN05 and FUY02 contained personality characteristics. Should they be kept? If yes, an additional research purpose should be included. If not, the drawing of a [research framework] and the research purpose presented by FUS01 are the most appropriate (1204g2-180-QF, W11). However, if the original research objective is to be maintained, my design would lack an element (1204g2-197-QF, W11).

The dialogue continued, with FUS01, FUN05 and FUY02 all conferring that their research framework designs already included personality characteristics. Later, the research framework design was collectively confirmed.

RESULTS AND DISCUSSION RESULTS

In this study the contents of 13 online discussions were coded based on prior knowledge classification and question selection rule. Analytical results indicated that most dialogues belonged to the RW category: respond to the information and responses with question, sharing and comment. To explore the RW contents, the hermeneutics and the knowledge construction in Bakhtin's (1981) dialogism and in Hermans's (2001) dialogical self can help reveal the relationship between identity and agreement in a socialized knowledge building environment. That knowledge in the pursuit of the intentional culmination through the exchange and dialogue self, the self and group can be further reassembled; in addition, the constructed knowledge can be revised through expert evaluation, self-identity and collective confirmation. Once reaching an agreement, the talker and the listener are connected by a relationship of identity, also referred to personal position. This is an agreement or

disagreement that relies on the relationship between the question and answer. Moreover, polyphony with multiple authors and identities enhance the perception of intersubjectivity.

DISCUSSION

Intervention for knowledge building

Most of the research contents were presented with multimedia teaching materials. Learners received a multimedia broadcast and teachers' guidance to engage in the knowledge transfer. Meanwhile, the teaching designers devised activity rules for the CSCL to construct knowledge in order to guide learners in their development of monographic knowledge building task. However effectively achieve the teaching goal still requires eliciting the opinions of teaching staff, the substitute in teaching by the learners with a higher prior knowledge, a group's cooperative learning and the awareness of an individual's conscious intentions. Although this study focused on the decentralized group's collaboration process and used the dialogical self to disclose the implications of subjective construction and inter-subjective collective construction, the group's selection of a monographic methodology and the quality of the dialogue were affected by the difference in prior knowledge and the question selection rules. Teachers' in-time interventions in different stages were necessary, especially in the stage of connecting research topic, research hypothesis and methodology and the stage when the groups were engaged in knowledge convergence.

Revelation of Online Dialogue Nature through Dialogism

Theoretically, as for the dialogical self or polyphony of multiple identities and multiple positions, the nature of an online dialogue is complex. In this study, 13 dialogues in a small group must produce a learning outcome in a scientific writing style. Although dialogical self is concerned more with a personal con-

struct and internal-external position to develop knowledge about self, this study more heavily emphasizes the intentionality within group dialogues, literature review, and collaborative writing. Restated, it is the outcome presented in a dialogue way within a CSCL activity system. The task and consciousness of developing the research proposal were examined through the dialogism revelation of online dialogue. When the subjectivity and the inter-subjectivity fail to be conscious of the subjective knowledge with his or her prior knowledge, the constructed knowledge treats its knowledge of an objective world as its cognitive subjectivity and inference. When the dialogism commands transcendence, the objective matters of intra-subjectivity becomes evidence of an individual's conscious intentions and transforms into the objective existence of the inter-subject. It goes beyond the metaphor of "give and take".

Implementation of CSCL Activity and Course Design for Higher and K-12 Educational Practice

CSCL activity focuses on developing team efficacy. Related research did not confirm whether individual efficacy affects team efficacy. Educational practice must still be examined as how to group and design learning tasks for a higher interdependence in a small group. In this study, the case study in a small group identified the importance of collaborative socially construct and the discourse process of the intersubjectivity, as well as the importance of teacher evaluation, self identity, and collective confirmation to achieve knowledge convergence.

CONCLUSION

Methodology is an academic training course that cultivates the ability of researchers to understand the world through questions and construct knowledge. Given advances in Web 2.0 application, the tools for monographic collaborative learning for knowledge building are becoming increasingly convenient and easily implemented. Education has subsequently shift-

ed from emphasizing knowledge transferable to constructing knowledge. While those digital opportunities allow digital learning research to adopt theories from other fields to interpret the web 2.0 educational phenomena, additional efforts are warranted to understand how active learning participants change in their learning styles owing to technological assistance, especially in terms of a socialized virtual space and synchronous and asynchronous flexible time. However, we believe that reflexive sensitivity of intervention for knowledge construction and perception of intersubjectivity for understanding the nature of online dialogue is necessary for teacher professional development.

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Podcasts as Learner-Created Content in Higher Education

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ABSTRACT

Using podcasts in higher education has caught more and more attention among educators and researchers, but there is still a strong need for research and academic publications to focus on certain issues, such as the role of the learners. Instead of lecturers (teachers, scientists, and experts), learners (students, trainees or pupils) produce a podcast with a specific content called learner-created content (LCC). This study aims to find out how students experienced the creating of content as learning material in the form of podcasts. The results are two-fold. First, using podcasts included four categories: (1) the development of meta-skills, (2) mobile learning, (3) support for content learning, and (4) facilitating student involvement. Second, the students saw podcasting as a study tool. The study proved authentic, internally and systemically valid and opened up logical generalizability. Some recommendations are given for a better educational use of podcasts in higher education.

Keywords: Higher Education, Mobile Learning, Podcast, User-Created Content, Web 2.0

INTRODUCTION AND PREVIOUS RESEARCH ON THE USE OF PODCASTS IN HIGHER EDUCATION

Podcasts and podcasting as terms have appeared more and more frequently in publications and discussions on higher education in the era of

Web 2.0. In fact, these topics have received more and more attention as an interesting area in pedagogical development (Copley, 2007; Evans, 2008; Hew, 2009; Cebezi & Tekdal, 2006; Cooper, 2008; Fernandez, Simo, & Sallan, 2009; Lonn & Teasley, 2009). Researchers, teachers, tutors and staff developers in diverse scientific fields are experimenting with and discussing podcasting and its potential. The aim often is

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to identify novel higher-education contexts in which podcasting could be used beneficially.

The concept ‘podcasting’ combines ‘broadcasting’ and ‘iPod’, a well-known brand of portable media player produced by Apple. However, instead of a need for any form of portable media player, podcast is basically a digital media file that plays audio or audio together with something to view and is made available from a website (Salmon, Mobbs, Edirisingha, & Dennett, 2008).

Preliminary empirical evidence points to some benefits of podcasts in higher education. Students consider podcasts as elective revision tools (Copley, 2007; Evans, 2008), and podcasts allow them to listen repeatedly to specific materials that they missed or did not understand (Hew, 2009). Students feel that podcasting is a powerful tool to complement the traditional resources in a course (Fernandez, Simo, & Sallan, 2009) and that podcasts have greater value for learning than traditional written comments (Cooper, 2008). In addition, as reported by Lee, McLoughlin, and Chan (2008), podcasts stimulate conceptualizations of disciplinary content and collaborative knowledge creation.

Although a number of studies on podcasts have shown promising improvement in learning results and experiences, research on podcasting is still in its infancy. As Lee, Miller, and Newhamn (2009) remark, empirical research on educational podcasting is needed to give a better picture of podcasts as a means for learning. They emphasize the importance of learner-created content. Spragey and Pixley (2008) point in the same direction when arguing that listening to recordings created by others is not much different from listening to lectures. The real power of podcast, according to them, is when it is placed in the hands of the students. However, previous research (Lee, McLoughlin, & Chan, 2008; Copley, 2007; Evans, 2008; Hew, 2009; Cebezi & Tekdal, 2006; Cooper, 2008; Fernandez, Simo, & Sallan, 2009; Lonn & Teasley, 2009) has mainly focused on how students use podcasts. Only a small number of academic publications are concerned with the issue podcasts as learner-created content. Fol-

lowing the idea of Spragey and Pixley (2008), this study adds an important aspect on previous studies by analyzing podcasts as learner-created content.

Different types of podcasts have been identified: audio podcasts (only the audio channel), video podcasts (video and audio channel) and enhanced podcasts (audio and additional applications such as templates, whiteboards, discussion forums, PowerPoint presentations, etc.). These types have been implemented in different ways in their introduction to higher education (Salmon, Mobbs, Edirisingha, & Dennett, 2008). Identifying the use of podcasts in higher education makes it necessary to take a closer look at the producers of podcasts and at their aims. We identified three main production groups: 1) teachers, trainers, instructors, etc. (podcasts as teacher-created content), 2) students, trainees, pupils, etc. (podcasts as learner-created content; LCC), and 3) authors, experts, scientists, etc. (podcasts as a source) (Figure 1).

According to research literature, using podcasts as teacher-created content seems to be the most common way at the moment. Teachers produce podcasts to support learners in different ways, for example, by creating a “podcast lecture” in order to clarify difficult topics (Aliotta, Bates, Brunton, & Stevens, 2009) or to explain complex concepts or processes step by step (Fothergill, 2008). Teachers can also give audio feedback to students through podcasts (France & Ribchester, 2008). Another common approach is giving guidance to learners on using software such as SPSS via enhanced podcasts (Mount & Chambers, 2008).

Podcasts as learner-created content bring the learner into the role of producer. It means that the learner’s task is to produce a podcast with some specific content. This approach requires technical equipment (PDAs, mobile phones, camera phones, digital cameras, personal media players). This may necessitate that a higher education institute provide students with equipment, which may explain why this approach is still rare. However, there are some examples of fieldwork projects in which students collect

Figure 1. The use of podcasts in higher education



information, such as videos, pictures and audio from the field, and bring it to the classroom or upload to an online platform (Downward, Livingstone, Lynch, & Mount, 2008). Jenkins and Lonsdale (2008) report a project in which students' creativity is encouraged through their telling of digital stories in mp3 files enhanced with photographs.

Podcasting as a source refers to podcast-based online sources, which could be audio and video clips on online journal or newspaper pages.

AIM OF THE STUDY

Our aim was to find out how the students had experienced the creation of content as learning material in the form of podcasts. We were interested in which ways podcasts could be used in higher education and what beliefs and attitudes the students had regarding educational podcasts.

DESIGN OF THE STUDY

This article reports the pilot study module that was conducted at the University of Helsinki in 2008 as a part of the 25-credit media education studies. The pilot study themes included, for instance, the concept of media education, critical media education, media and new literacies as well as the educational aspects of social web. The students were first oriented with using podcasts and ways of producing them. Then they were divided into groups according to their own study interests and topics. The pedagogical

aim was to emphasize the meaning of learner-created content through practical learning tasks. The active and collaborative agency of the students was emphasized. The students—in pairs, groups or individually—made an outline and podcasted their ideas, experiences and findings into the podcast server of the university. The educational meaning was to involve the students deeply in the teaching, studying and learning process by supporting and encouraging them to produce and publish their ideas and comments. This was also felt to make the research design firmer and, at the same time, more open to the students themselves.

DATA, METHODS, AND VALIDITY

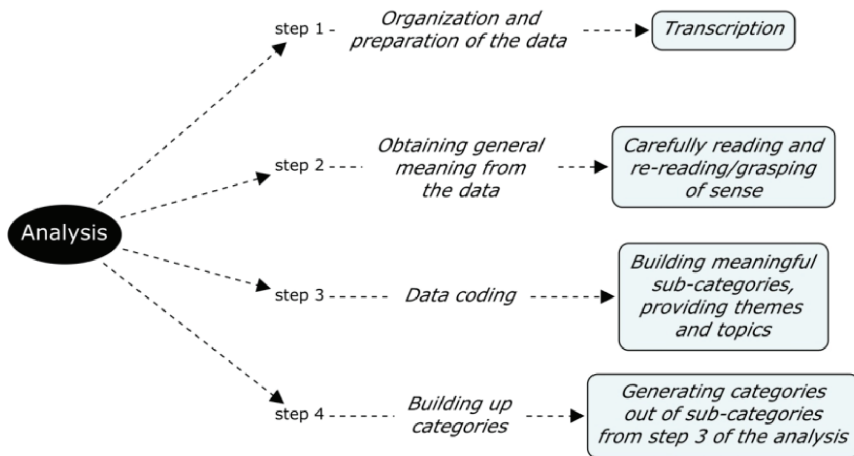
Our approach was qualitative, and the method used a semi-structured face-to-face interview. Five female students aged 21–45 were interviewed. The interviews, lasting 20–30 minutes, were recorded. The interviewees were native speakers of Finnish, but they were interviewed in English. In this article, the interviewees are quoted verbatim, with only slight grammatical but not terminological corrections.

The interviews were transcribed and read through several times. After that, a qualitative content analysis was carried out. This process is shown in Figure 2.

Thirty chunks/subcategories were interpreted, leading to four main categories:

1. Using podcasts as LCC inside the instructional process for meta-skill-development.

Figure 2. The analysis process



2. Using podcasts as LCC inside the instructional process to support content learning.
3. Using podcasts as LCC inside the instructional process to support mobile learning.
4. Using podcasts as LCC inside the instructional process to facilitate student involvement.

Validity, in general, concerns the accuracy and precision of the findings reported in a study. In order to guarantee a high degree of validity in our pilot study, a lot of measures were taken. We kept in mind that rating validity always has to be carried out with regard to the goals and research tasks put forward in the article. From the perspective of *disciplined subjectivity*, we understood that all research design stages had to be subjected to continuous questioning and reassessment, which in our case led to a lot of fruitful discussion exchanged between the authors. The whole research setting was limited on purpose to cover only certain aspects of the large phenomenon of podcasting, resulting in a tighter and more controllable and implementable design. We also realized that two dimensions had to be taken into account in a balanced way: educational aspects and technical potential. These measures were linked to *internal validity*, to the fact that we

actually studied what we expressed we were studying. This also called for paying attention to introducing podcasting to the students, which we did at the beginning of the study module during a special introductory session. This way we also endorsed *face validity*, i.e., the degree of justification or substantiation of the study to the outsiders, which in our case were the students of media education. Validity was also increased by the fact that the pilot study could be incorporated into an existing study module that had already been carried out earlier. This way, the research design profited from prior experience when dealing with research-specific themes and students of media education. We also made the analysis process (Figure 2) as open as possible, in order to let the readers follow our logic and see how we drew conclusions from the interviewees' utterances.

In the five interviews, all contextual circumstances were made as identical as possible in order to minimize intervening factors whenever possible, as social situations and external conditions may greatly affect *reliability*. All interviews were recorded in order for the authors to listen to them several times. This probably enhanced this study's *internal reliability*, as several authors could discuss and work on the analysis process as well as

agree on the statements and conclusions drawn from the interviews. Using the interviewees' second language (English), instead of their first (Finnish), embraced a certain risk, but all five students proved fluent speakers of English and expressed no language-related concerns. The transcriptions were made as accurately as possible. It is usual in a qualitatively-oriented study to aim at polyphony, that is, to let the interviewees' own voices to come through. This is what has been done in this article as well in order to enhance validity of the results. An obvious threat to *internal validity* would also be to emphasize certain opinions only. The polyphony we aimed at when highlighting the students' ideas, both positive and negative, is therefore deliberately used to decrease threats to *internal validity*. On the other hand, *external reliability* was probably influenced positively by the fact that the pilot study module teachers and students knew each other in advance, making it easier to approach a new technology in terms of mutual professional interest.

We report a pilot study, which justifies the relatively small number of interviewees (N=5). On the other hand, through semi-structured interviews, we could get a lot of ideas, impressions, concerns and wishes from the students. Many of these ideas were in harmony with research literature in the sense that, for instance, students must be introduced to understanding the potential of learner-produced podcasts and to various ways of using them in their own study processes and learning. The concept of *authenticity* is often linked to validity in qualitative studies. Authenticity means that the research design is incorporated into an authentic operational environment, which, then, adds to the *natural validity* of the setting. This was clearly the case in our pilot study. Threats to *external validity*, often interpreted as the degree of applicability of constructs and postulates made by the researcher across different groups, may lead to obstructing or reducing the study's *comparability* and *translatability*, but as ours was a pilot study, we paid more attention to making our study *internally valid*, instead of trying to reach out to higher *generalizability*, i.e.,

repeatability or *replicability*. The results presented below can be regarded as valid *within* the presented context, not necessarily *beyond* that context, as piloting new applications of social media is still by definition contextual research. Against the backdrop of *logical generalizability*, though, the responsibility for judgment about *logical generalisation* resides with the readers rather than with the authors. This way, the readers may draw different conclusions of a study based on their own life experiences. In our pilot study, *logical generalizability* might open up beneficial reconsiderations of the research design. Finally, we would also argue that our pilot study was *systemically valid*, as it helped, in our interpretation, to introduce learner-produced podcasting into our teaching in educationally desirable ways.

RESULTS

There were two main results. On the one hand, four main categories representing the ways of using podcasts as learner-created content in studying were identified. On the other hand, recognizing the centrality of the beliefs as key constructs to be studied (Fenstermacher, 1979; Pintrich, 1990; Pajares, 1992) the beliefs, likes and dislikes of the students were drawn from the data to reveal the students' pedagogical thinking towards podcasts as learner-created content as a study tool. The students spoke about the potential of podcasting, but it also became clear that this "study tool" was very new and unfamiliar to them.

I think it was, first it was really weird. I haven't done like anything like that before, and I hadn't even thought about doing schoolwork, by just recording your voice. (Student 1)

As the quotation above indicates, podcasting was for all the participants a previously inexperienced way to study and to learn. This caused some resistance and negative comments. It seems that it is essential to properly introduce students to the purpose of using podcasts as

learner-created content and their role in the instructional process.

Using Podcasts as LCC to Develop Meta-Skills

When taking a precise look at the described activities of the students during the production of their podcasts, it seemed obvious that the students developed and improved certain meta-level skills, or skills which can be used in contexts other than podcast production. The students had to think about how to present their thoughts and record a podcast for other students. Students learned the technical production of a podcast and how to contribute data to the studying community.

I think it was like trying something out and we had one lecture where we saw how to do it and how [to use] Audacity [software] and how to do the podcast and how to bring it to the BSCW [a web-based platform] and so on. (Student 3)

The students developed beliefs and assumptions about how a podcast should sound in order to be interesting for the audience. For example, the language of the podcast should be clear; it should sound natural and not be too long, as it is important to focus only on one argument or opinion. Through implementing these instructions, the students demonstrated their creativity and knowledge and developed their presentation skills, self-presentation skills and their articulation and communication skills. They thought about the necessary preparations for a podcast in detail. Some used pen and paper, others a Word document. They tried different production processes, and most of the interviewees found that it was important to focus on just one specific topic or opinion for each podcast. They shared the opinion that a podcast for learning should not be too long. The recommendations were 3–5 minutes. They reflected on the quality of their podcasts. Producing an audio podcast is all about speaking and recording one's own voice. For some it felt awkward to listen to their own voice, and some

really did not like it, while others considered it to be a good opportunity to learn about how they sound to others when they are speaking and to develop self-awareness.

I did so that I first wrote what I wanted to say to my computer, and then I kind of read it first, but then it sounded bad, because I realized as I was saying those things I wrote out loud that it wasn't as clear spoken as what I meant. It was more clear when I was writing it than what I was saying out loud. So I had to change it a little bit. So in a way it was helpful to do the podcast because it is so easy for me to write things and then there is no sense in then, in them in my writings. So in making the podcast and thinking about how I am going to explain this to others I made it a bit more clear. (Student 1)

This example shows the students' ways of creating the podcasts and how they reflected on their first attempts. They paid attention to their own learning process, as the following quotation shows:

I think the podcast is a helpful way to arrange your thoughts. So you have to think about how to explain things as simply as you can and as clearly as you can. And you can learn how to pronounce things, and things like this ... so I think it can help you present yourself, maybe. (Student 1)

Using Podcasts as LCC for Mobile Learning

In this category, mobile learning was emphasized and podcasts made with mobile technologies. All the students agreed that it was an advantage and convenient to be able to listen to the podcasts multiple times, anywhere and anytime (Hew, 2009) with a mobile device.

The students also mentioned that in addition to the audio podcast, it would be of additional help if more applications, such as video, could be used. It would make it more colorful and easier for the listener to grasp the content and pay

attention. Most of the students produced their podcasts at home with their desktop computer. However, they thought that with the right mobile devices it would be nice to listen and produce podcasts in different places.

Using Podcasts as LCC to Support Content Learning

This category represents the context of podcasts as LCC as a study tool to learn course-related content. As most of the tools that are used inside the instructional process, podcasts as learner-created content also support students in their learning process for a specific content. Students know best how a tool can help them in their study on a certain topic. The topics that the students had chosen as the content of the podcasts included critical media education, school shootings, the representation of sexes in the media and small children's media education. All the students agreed that it would be more fun to produce the podcast together in a group instead of sitting alone in front of a computer, and further, that they would expect more success in their learning, if they could discuss and create content on a topic together and exchange information in a production team. The students found it boring, if a text was just read aloud in the podcast. All the interviewees felt that the podcast would be more effective, if students could produce their podcasts in an exciting and colorful way. They also saw games, pair work and working in teams as a good opportunity to reach that aim.

It would be more natural [to work with others], because speaking alone is not natural. So it would help that. And then maybe if you speak with some other person you would maybe get ideas from that person and exchange ideas and actually think of new things. But when you are alone and have already thought about everything you are gonna say, then you really don't come up with anything new when you are actually doing the podcast. When you are recording it. (Student 5)

The students responded mostly positively when it came to the question of whether podcasts as learner-created content could be a regular part of learning environments in higher education. They were open-minded but critical. They had developed their own views on podcasts with both new ideas and restrictions. Their ideas included using them instead of writing essays, in phonetic studies and also for language training, as mentioned above. Some considered the fact that it would be possible to share an opinion or present an argument without being interrupted by others as an advantage; other students were of the opinion that this would be a disadvantage and preferred classroom presentations via PowerPoint. Most of the students agreed that podcasting was not just new, but also easy and fun. Some students did not find producing podcasts as learner-created content much different from writing an essay if done individually.

Using Podcasts as LCC to Facilitate Student Involvement

Involvement means here that the students see podcasts as learner-created content that enriches their own learning process and, in addition, develops volition and motivation. As mentioned earlier, podcasts as learner-created content were something unfamiliar to the students. They naturally questioned whether podcasts would be effective and compared them to other study tools, such as classroom presentations, essays, comment papers or learning diaries (Fernandez, Simo, & Sallan, 2009).

This category extends students' pedagogical thinking by assuming that most of the students do not just have beliefs and opinions of their own learning process and what is effective for them in it. They also wanted to form an autonomous and personal opinion of this new study tool. In this project, the students only saw the effectiveness of using podcasts as learner-created content in certain points. After analyzing the research data, it became clear to us that one important part of involvement in the instructional process was to explain to the

students the purpose of a new tool such as podcasts as learner-created content and to support them in forming their own opinion and beliefs towards this new study tool. The students had developed their own ideas of how podcasts as learner-created content could be used. Some recommended that it should be important to produce podcasts at the very beginning of the course, and that they should then be used again as part of the instructional process. This could mean, for example, listening to them and discussing them in class or online on a discussion forum. It seemed to be more motivating for the students to produce something important enough to be used in order to achieve another learning goal, than producing something that would not be needed later. An example of a second-level goal, as presented by one student, would be, for example, to use podcasts to provoke discussion about some topic that they had identified as important and to learn in this way from the knowledge and opinions of the other course participants.

During this course the podcast was just something extra or just a method. I think if you would like to have some discussion about the podcast, they should be more focused on. You should start doing them in the beginning and do them all the time. Then you would have the discussions and everything. (Student 1)

Some students commented that they did not see the point of producing a podcast. In the interviews they made this very clear. But they also gave recommendations as to how this study tool should be used and introduced in order to support their own motivation towards it.

As mentioned above, the tool itself had a lot of potential for the students and could be fun to use in a production team or as part of creative group work. It was a new and a challenging learning method and experience.

CONCLUSION AND DISCUSSION

In our project, the educational use of podcasts was studied as an application of Web 2.0. We did not know the best way to use podcasts for educational purposes when our project started. The research literature we studied mostly described cases in which a teacher created podcasts. In our case, it was the students' job to create them. Therefore, it was important to find out what they thought when creating the content and how they experienced the creation process itself.

Our study was a pilot project with eight students experimenting with podcasts. From those eight students only five agreed to be interviewed and in this way to participate in the research. It is against our research ethics to force students to be a target of research activities. Although the number of interviewees was small, we regard our results valuable when the research of podcasts is still in its infancy in the field of education. As students of media education, the interviewees could be considered as a special group of students. However, they came from different faculties and from a variety of disciplines. Some of them would become teachers while some others did not have plans to work in educational institutions. In that sense they could be considered as a representative group of students of the university.

Our results indicate that the students reflected on various pedagogical aspects when planning and creating the podcasts. For further research, an emerging field of investigation, the student's pedagogical thinking (Mylläri, 2007; Byman & Kansanen, 2008), may provide an insightful perspective. We also assume that the student's pedagogical thinking becomes a more interesting phenomenon when learner-created content is gaining more ground.

A podcast differs from other oral presentations, such as presentations in seminars or discussions on lectures. A podcast is a short, compact

presentation, which, in our case, is permanent and stored on the Internet. In that way, it is also very public and can be accessed by anyone who understands the language. These characteristics were also noted by the students. Some expressed a dislike for recording one's own voice and allowing others to listen to it. This is obviously one aspect of social media, that is: volition. Learners are not always willing to create content to be used by fellow students. This may be an interesting scope for future research now that the concept of volitional media literacy has been introduced (Kynäslahti et al., 2008).

According to the students, podcasts should be focused and short, 2–10 minutes. To some extent, this naturally depends on the content. In our case, the content dealt with definitions of concepts or brief descriptions of some media educational phenomena. Short podcasts can be recorded with mobile phones, without any extra equipment. Indeed, we believe that the mobile aspect should be emphasized in the future.

One question for further research concerns the pedagogical value of images and graphics if added to a podcast, forming it to a video podcast. In our case, video podcasts would probably not have added anything educationally substantial to the tasks. But there are undoubtedly numerous topics in which video podcasts would be useful, when recorded, for example, in situ.

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Investigating Adolescent Bloggers from the Perspective of Creative Subculture

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ABSTRACT

This study focuses on the phenomenon of adolescent bloggers' creativity from adolescent peers' viewpoints. The participants are five twelve- to eighteen-year-old adolescent bloggers who continue managing their blogs. Online questionnaire and semi-structure interviews have been conducted to get participants' ratings on their perceptions of creativity about themselves and peers. The results suggest that (1) the definition of creativity among adolescent bloggers is novel, useful, and valuable; (2) creativity can be enhanced from doing learning activities and practicing; and, (3) blog serves as a place where adolescents can present their works and also communicate with peers.

Keywords: Adolescent Subculture, Blog, Creativity, Education, Learning

1. INTRODUCTION

Currently numerous studies have focused on the use of Web 2.0 technologies such as blogs in educational settings (Weller, 2007; Kerawalla, Minocha, Kirkup, & Conole, 2009; Chong, 2010). Most of existing Web 2.0 in education researches claim blog as facilitation role in learning environment to enhance students' learning, or to provide opportunity for learners to discuss or interact with others (Liu & Chang, 2010; Pachler, Daly, Mor, & Mellar, 2010; Petrakou, 2010; Wang, 2009; Richardson, 2006; Wells,

2006; Flatley, 2005; Willians & Jacobs, 2004; Seal & Przasnyski, 2001). In recent years, with the popularity of computer and internet, adolescents are spending much more time online (Lupac & Sladek, 2008), especially some of them use blog as a tool writing diaries and presenting their thoughts.

The advent of the internet has changed the traditional conditions of personal identity. As the physical interaction detached from face-to-face communicate environment in the online environment, it becomes possible for individuals to interact with others online in the disembodied text approach. Moreover, anonymity makes it possible for individuals to withhold personal

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information, such as name, gender and residence. The combination of disembodiment and anonymity on the one hand creates a new kind of personal identity production emergence, on the other hand creates a safety place for individuals to express themselves (Bargh, McKenna, & Fitzsimons, 2002; Zhao, Grasmuck, & Martin, 2008). Recently, studies related to adolescent identity development shifted from face-to-face situation to the online environments (Derks, Bos, & Grumbkow, 2007; Huffaker & Calvert, 2005; Herring, Schedit, Bonus, & Wright, 2004; Groevant, 1998). For example, Danet and colleagues focus on online usage of emoticons. Results indicate emoticons play an important role in online communication environment to make up the lack of disembodied effect (Danet, 1998; Danet, Ruedenberg, & Rosenbaum-Tamari, 1998). However, few studies focus on spontaneous bloggers, especially adolescent bloggers, how they present thoughts and creativity on their blogs.

The central purpose of this study is to investigate adolescent bloggers from the perspective of creativity subculture. More specifically, based on the key concerns of Web 2.0, this study was undertaken in order to understand how adolescent bloggers define and aware creativity, and how they evaluate the creativity they and their peers have. This study may lead a better understanding of adolescent subculture from the perspective of creativity, from both aspects of self awareness and peers' viewpoint.

For these objectives to be achieved, the article is structured as follows. The first section deals with a review of literature, addressing both theoretical and empirical aspects of the role of blogging, adolescent subculture, and creativity; after which research methodology is carried out, with details of a statement of the specific research questions, the participants in the research, and the procedures used. Results are then presented following each of these descriptive sections. Finally, discussion and conclusion are drawn, and suggestions are also made for further research.

2. LITERATURE REVIEW

2.1. Blogging and Learning

Web 2.0 communication practices change the attitudes toward issues such as authorship, copyright, knowledge production, and expertise (Dohn, 2009). It is not only a technological revolution, but also a social revolution where knowledge can both be discovered and constructed by everyone (Downes, 2005; Freedman, 2006). Four key concerns of Web 2.0 are: user participation, engagement, sharing, and interaction (O'Reilly, 2005; Dohn, 2009). Users are empowered to edit the web page, which enable them to play the role as both a reader and an editor. With the authority to be an editor, users participating in generating content which they are interested in to express themselves, some of them could possible frame the virtual community of interest (Fisher, 2001); with sharing thoughts and comments online, opinions can be expanded and spread out immediately; with online interaction, sense of belonging can be build up.

Knowledge can be well-organized and maintained through the use of Web 2.0 practices, e.g. blog. With these well-organized blog articles, learners can learn what they interest and engage in the environment. Generally, blog can be easily defined as an online personal diary, blog users can write their own thoughts or feelings in text, photographic style, and voice on their own Internet space (Liu & Chang, 2010; Chang & Liu, 2008; Nardi, Schiano, Gumbrecht, & Swartz, 2004; Hourihan, 2002). Moreover, the importance of blog, a kind of web-based application, is to provide an opportunity for users, especially adolescents to observe how peer's creativity (Turvey, 2006).

Some researchers were interested in blog genres. Blood (2002) is not only an early blog adaptor but also the first one who publishes blog related book "The weblog handbook: practical advice on creating and maintaining your blog". She has divided blog genre into three categories: filter, personal diary, and notebook. Differ-

ent from Blood's viewpoint, Krishnamurthy (2002) classifies blogs into two dimensions, i.e. personal/topic and individual/community. Herring, Scheidt, Bonus, and Wright (2004) first using systematic approach to study blog articles. They randomly selected 203 blogs, using content analysis empirically coding blog features with different blog genres. Based on blog genres, researchers can understand blog usage in a systematic approach, and also easy to cluster them. However, due to the plentiful and variety contents, it is hard to categorize one blog article into one single dimension from the reader's point of view. However, finding out blog genres enables researchers portraying the whole picture of blog use (Herring, Scheidt, Bonus, & Wright, 2004). Due to the familiarity with the blog, blog genres defined by adolescent themselves can precisely be revealed; however, blog genres defined by researchers according to previous studies can make the connection to other researches with the same coding standard. Therefore, in this study, blog genres are both defined by adolescent bloggers themselves and researchers.

The combination of blogging and learning portrays an idea that learning is not restricted to classroom. Two learning metaphors, acquisition metaphor (AM) and participation metaphor (PM), have proposed by Sfard (1988). In the acquisition metaphor, the goal of learning is to achieve individual enrichment. On the other hand, in the participation metaphor, the goal of learning is to building a learning community. Dohn (2009) further describes the discrepancies between Web 2.0 and educational practices. In educational practices, learning activity is usually organized by experts to cultivate learners' ability in order to fit in their working life in the future. In Web 2.0 practices, learning activity is viewed as a process of communication, participation, and construction among participants. From the perspective of participation metaphor, learning is a process of participation, communication, and sharing. Similar to PM, in blog, bloggers learn what they interest through continuous writing and posting their blog articles. Learning is not a passive process anymore, but an active, purposeful, and meaningful process.

2.2. Culture and Adolescence Subculture

Culture, according to the definition on Cambridge dictionary, is the way of life which generated from a particular group of people at a particular time. It not only appears in the way of art or knowledge, but also influences individual's thoughts and behaviors. Subculture, is part of culture, also indicates a way of life. However, subculture especially asserts customs and ideas of a particular group of people within a society, which are different from the rest of that society (Rice, 1990).

Adolescence may be labeled as the period of life when questions of personal identity. From the viewpoint of Erickson, this is the period of developmental crisis happens (Erickson, 1963, 1994). Crisis of adolescence in this period mainly come from the inconsistency between two spectrums: self identity and role confusion (Blinka & Smahel, 2009; Gackenbach & Stackelberg, 2007; Calvert, 2002). Erickson (1963) asserted that it is difficult especially for adolescence to forming self identity. With the characteristics of anonymous and asynchronous, internet provides a space for adolescence to self-exploration, self-expression, and redefinition of identity (Turkle, 1995). Generally, adolescents perceive their role online as an extension of their offline identity (Subrahmanyam, Garcia, Harsono, Li, & Lipana, 2009).

In recent year, the advent of internet has changed the traditional conditions of identity production. As the detached from face-to-face environments with the rapid increase of internet, studies situation related to adolescent identity development shifted from face-to-face situation to the online environments (Herring, Kouper, Schedit, & Wright, 2004; Huffaker & Calvert, 2005). Huffaker and Calvert (2005) focus on online adolescent subculture and online identity among blog adolescent users. Results indicate that male and female adolescent bloggers present themselves similarly in the online space, for example, they often reveal real names, ages, gender, and locations; however, male bloggers use more emoticons than female to express

their emotions, and more resolute language use. These researches focus on adolescent blogging behavior, however, there has been little empirical research on the issue of adolescent subculture, especially from the viewpoint of creativity.

2.3 Creativity, Adolescence Subculture, and Blogs

The concept of creativity has been blurred to define for a long time (Csikszentmihalyi, 1996; Simonton, 1999). Some researchers develop linear and non-linear model from the focus of psychological process (Wallas, 1926; Torrance, 1974; Koberg & Bagnall, 1981; Necka, 2003); other researchers belongs to different disciplines have their different research interests. Recent researches turn to use compound perspectives to investigate creativity, and regard creativity as a dynamic process (Sternberg, 1999; Csikszentmihalyi, 1996). These definitions are most defined by adults or by professionals, however, when we trying to study specific adolescent subculture, is it possible to define creativity from the perspective of adolescence members? Hence, adolescents peer review are used in this study to evaluate adolescent bloggers' creativity from the perspective of creative subculture, and to investigate how adolescent bloggers aware of creativity and how they rate their and peers' creativity.

Creativity is a part of our daily lives (Runco & Richards, 1997) but difficult to define (Simonton, 1989), especially given a diverse definition used in varied fields. Cognitive psychologists prefer to define creativity in terms of a mental process (Smith, Ward, & Finke, 1995); psychologists in experimental field claimed creativity as a product (Martindale, 1990; Simonton, 1989). Personality psychologists prefer to treat creativity as a trait (Barron, 1969; Eysenck, 1993); later creativity researchers regarding creativity as an outcome, such as a novel idea (Amabile, 1983, 1988; Woodman, Sawyer, & Griffin, 1993). Generally speaking, researchers agree that creativity is a concept needs creative producers to have multi-discipline knowledge and also a problem

solving process (Torrance, 1974; Gardner, 1988; Csikszentmihalyi, 1996; Amabile, 1996).

Amabile (1996) researches key elements of creativity from the integrative perspectives from social psychology approach and social context approach. She emphasizes two characteristics of creative task: ill-structured and open-ended, and she also asserts the proper creative task should be heuristic and non-algorithmic. Heuristic means creative task can be solve in multidimensional approaches, which provide possibilities for individual to accomplish creative task; on the contrary, algorithmic task means creative task can be solve in a simple and step-by step approach, which restrict the possibilities of creativity due to its fix problem solving steps. Csikszentmihalyi (1996) argues that creativity not merely comes from individual's brain, but also the result of interaction between individual thoughts and social culture. He further indicates that creativity is an interactive product among individual person, domain, and field. Individual person asserts the personal traits, background, thinking style, and so on; domain is a sufficient element of creativity. To generate creative idea need to base on fundamental knowledge. Only when creative idea approved by domain gatekeepers, it has the chance to keep in the domain; field indicates the influential person in the domain who have the power to decide the legitimacy in the domain. The concept of big 'C' and small 'c' are also coined by Csikszentmihalyi (1996). The former one indicates that the creativity can make a big change of human culture and society; the latter one indicates that the creativity can be seen in our daily life. To conclude, both Amabile (1996) and Csikszentmihalyi (1996) emphasize the importance of social culture, which means, creativity can only be shown if it can be approved by others in the social culture environment.

However, with the emergence of the computer and the internet, little research has been done on topic creativity that adolescent bloggers present on the Internet, which plays a crucial role in this expanding age of technology. The definition of such creativity up to now still blurred to define. One reason might be that cre-

ativity itself is a complex process from coming out an idea to generate product and work; the other reason might be that creativity requires creative producers to integrate skills and knowledge in different disciplines. Researches about creative processes suggest that personal characteristics inherently have a strong influence on creativity (Amabile, Conti, Lazenby, & Herron, 1996; Oldham & Cumming, 1996; Siau, 1995). Given these previous researches on values and creativity, we believe it is now time for a fresh look at the issue centered on both creativity self-awareness and the peer viewpoint of creativity. The present study is our attempt to focus on finding out the definition of creativity from the adolescence viewpoint, and how adolescent bloggers evaluate creativity themselves and how they evaluate peers.

3. METHODOLOGY

Psychologists have shown an interest in creativity (Prabhu, Sutton, & Sauser, 2008), however, few researches focus on peer-evaluating viewpoint. The core concern of Web 2.0 is grass root spirits. Starting from this point, we are interesting in self-awareness of adolescent bloggers, and, how they evaluate peer's creativity. Moreover, in this study, it is hoped that the creative evaluating standard can be generated from adolescent bloggers.

3.1. Research Questions

In order to gather grass root definition of creativity from adolescent bloggers, semi-structure interview and peer assessment method were used. Questions of semi-structure interview can be divided into four parts: demographic information, creativity awareness, blog usage behavior, and peer review. This study intends to address the following three research questions:

1. How adolescent bloggers define and aware creativity?
2. How adolescent bloggers consider the relations between blog articles and creativity?
3. How adolescent bloggers evaluate the creativity they and their peers have?

3.2. Data Collection and Participants

In order to gather adolescents' viewpoints of creativity, peer assessment method was used. Three main approaches were used: adolescent self-define, researcher-define, and peer assessment. None of the participants were blind as nature of the experiment. They were told to participating that we were interested in determining whether how adolescent bloggers aware their own creativity and how they evaluate theirs and peer's creativity, they were not told, however, what standard of creativity evaluation and types of results were expected. Research procedure is introduced as follows.

- (1) Choose participants with criteria

Purposeful sampling and snow ball method are used in this study to collect data from 'educational blog award platform (<http://edublog.tp.edu.tw/edublog/default.aspx>)'. Among 870 adolescent bloggers, two groups were divided: 395 are junior high school students and 475 are senior high school students. Criteria of choosing samples are: (a) age of chosen adolescent bloggers should between twelve to eighteen; (b) chosen adolescent bloggers need to have their own blog and continuously maintain more than six month; and, (c) chosen adolescent bloggers need to have at least fifty posted blog articles. Researchers first picked up 10 creative adolescent blogs from each group.

- (2) Contact with the five participants

In the beginning, researchers contacted with the 20 chosen adolescent bloggers by leaving messages on their blogs, sending messages via instant message, and sending emails to them. Research purpose and requirements were also announced. 5 adolescent bloggers replied that they are willing to join the research.

- (3) Given an article

After got the responses from the bloggers, each chosen blogger was asked to provide one of their most satisfied blog articles in order to conduct the following survey.

(4) Questionnaire and peer review

The five bloggers were asked to fill out an online questionnaire which elicited information concerning both their blog usage and creativity awareness. The questionnaire consists of three parts: (a) demographic background, including gender, the school s/he is attending right now, blog genre, blog usage experience, and motivation of using blog; (b) creativity awareness, including creativity definition, creativity awareness, and self creativity evaluation; and, (c) peer review, each blogger was asked to evaluate other four peers' creativity according to their blog articles. Each blogger needed to evaluate the creativity that s/he and the peers might have. Researchers did not discuss the definition of creativity with the participants in advance in order to dig out their thoughts about what is creativity.

(5) Semi-structure interview

After the responses of the questionnaire were received, the researchers conducted semi-structure interview with the participants in order to know the reasons these adolescent bloggers evaluated their and peers' creativity.

4. DATA ANALYSIS

4.1. Demographic Information and Motivation of Using Blogs

Five adolescent bloggers are involved in this study, three of them are female and two are male. All bloggers indicate that they learn to use blog via self-learning. Furthermore, they have managed their blogs more than two and half years (S1 ~ S4), only S5 manages her blog for only six months. These bloggers post at least five articles on their blogs each month

in average. S1 and S3 indicate that they have more than three blogs for curiosity of trying to use different blog platforms. Moreover, except updating their blogs every week, they also read other bloggers' articles.

Reasons for bloggers start using blog are: (1) functionality. S1 says "because I like the functions this blog platform provides"; S2 says "I feel this blog is easy to use", and S3 says "it is simple to use"; (2) interactivity. S4 says "because lots of my friends are using this blog platform" and "my friend ask me to join_S4"; (3) parents. S5 indicates "My mother asks me to use a blog in order to participate the contest"; (4) peer's invitation. Two bloggers choose wretch as blog platform (S2 and S4) mention that they use blogs because they received peer's invitation. Many blog service providers has the function of connecting to friends, this function enables the bloggers to form a community based on their social relationships.

The bloggers are asked to self-rate their blog genre, as Table 1 shows. Participant S1, S2, and S4 think their blogs belong to text-based genre; S3 thinks her blog is comic-based genre; and, S5 think her blog belongs to photo-based genre, and she further categorizes her blog as genre of creativity. Adolescent bloggers are asked to provide one their most satisfied article. These articles match their self-rated blog genres, which mean if a blogger rates his/her blog as text-based genre, then s/he may provide text-based article as the one to present himself/herself. S3, however, is different from others. Almost all of her articles are comics; however, the one she chose is text-based article. One hypothesis for this case is that the creativity recognition is still influenced by others' expectation and/or social value.

Adolescent bloggers are also asked for reasons attracted they continue using blogs. Answers are concluded into four categories: personal aspirations, recognition effects, social relationships, and cyber relationships, as Table 2 shows. Regarding personal aspirations, four of adolescent bloggers say that the blog can help them expressing their feelings freely: S2 says "it is convenient to use blog, I can write

Table 1. Demographic information

ID	S1	S2	S3	S4	S5
Gender	Female	Male	Female	Male	Female
School Type	Junior high school	Vocational school	Junior high school	Junior high school	Vocational school
Blog genre (Self-defined)	Text	Photo/text	Comic	Text	Photo/creativity
Blog genre (Researcher-defined)	Personal	Personal	Personal	Personal	Personal
Blog article category	45	18	17	10	18
Average article number	20.88	14.45	5.57	7.08	6.90

whatever I want”; S5 says “blog is free to me to write articles”; S4 says “because parents and teachers will not read my blog, so I can express my thoughts on it freely.”

Regarding the recognition effects, Some of them also indicate that using blog can get more attentions: S3 says “the more frequently I post article or update my blog, the more readers I have” and “sometimes I post photos I took on my blog, I got feedbacks which encourage me so much.”; S2 thinks “writing blog on the one hand has more freedom, on the other hand, I can try different ways to present my creativity” and “if you are really a creative person, then you will have a lot of people appreciate your works”. Regarding the social relationships and the cyber relationships, S5 indicates “blog is a channel to me to make friends in the cyber space” and “I read every single comment that people left on my blog and try to respond them all.”

4.2. Adolescents' Definition and Awareness of Creativity

4.2.1. Definition of Creativity

Definition of creativity can easily divided into two types, one is big ‘C’, means the creativity which can change human cultivation or culture, e.g. the Theory of Relativity proposed by Einstein; the other one is small ‘c’, means the creativity which normally be seen in our

daily life, e.g. creative commercial products (Csikszentmihalyi, 1996).

Creativity awareness among these five adolescent bloggers are close to the definition of small ‘c’, they think the creativity can be learned through learning: S1 says “creativity can be cultivated, and also nurtured through the process of learning”; S3 says “in the beginning of creating, it is difficult for me to generate creative work, however, I started from imitation. After a period of time, I gradually find my own way to generate creative ideas and works.” Furthermore, continuously writing blog articles helps them express their ideas to the blog readers: S4 indicates “it is difficult to have creative works in the beginning, however, when time passed, I have more ideas and become skillful to write something special”; S2 says “I think only very few people is talented to have creativity, however, in my opinion, creativity can be improved via learning.” Only S5 defines that the creativity is the capability through inherent nature, she says “in my opinion, this kind of creative capability, is part of talented and is hard to imitate.” In general, adolescent bloggers define that the creativity can be improved via learning.

4.2.2. Awareness of Creativity

Adolescent bloggers consider creativity is the opposite of plagiarism as S1 says “creativity is a better form rather than plagiarism” and others mentioned that it is important to have personal

Table 2. Reasons of using blog

Categories	S1	S2	S3	S4	S5
Personal aspirations					
Information exchange	*				
Share emotion	*	*		*	
Spending time	*				
Gather new information	*		*		*
Share			*		*
Express self		*	*	*	*
Recognition effects					
Play different roles		*			
Get more attention		*	*	*	
Social relationships					
Increase topic with friends		*	*		*
Connect with friends				*	
Cyber relationships					
Make more friends	*				*
Interact with cyber friends					*

style: S2 says “creativity is kind of personal style, anything different from others can be seen as a sort of creativity”; S4 says “creativity is a kind of distinctive styles and ideas.” Moreover, they take creativity as a kind of life style, should and must to practice in daily life: S4 says “I think creativity is a kind of living style, besides generating distinctive ideas, it is more important to practice this idea into daily life. For example, I notice every little thing around me in daily life, then I find creativity appear in many ways. Sometimes I find creativity in commercial advertisements, in book titles, in music, in restaurant menus. If we pay attention carefully, creativity can be found in daily life.” and S5 indicates that “creativity is 1% inspiration and 99% learning.”

In the questionnaire, the researchers divide creativity awareness into six sub-scales: self-awareness, peer-awareness, friend-awareness, teacher-awareness, and others (Table 3). Here, “peer” means classmates, “friend” asserts non-classmate peer, “others” indicate not but blog readers or cyber friends. Participants need to

rate the sub-scale relevant questions with five-point Likert scale which ranges from 1: strongly disagree to 5: strongly agree.

First question is about creativity self-awareness, all of the five adolescent bloggers rate themselves as a creative person. Regarding peers-awareness, only two of them argue that “I am a creative person in peers’ eyes”, e.g. S2 says “some of my peer are my blog readers, they often read my blogs and encourage me” and S5 says “when I post something new on my blog, they leave comment to me; sometimes they tell me I am a creative person.” However, three of them have not answered this question; their opinions reveal that they never discuss their creativity with their peers. Regarding friends-awareness, two of them strongly agree that “I am a creative person in my friends’ eyes” (S2 and S5). Regarding teachers-awareness, lots of them unanswered this question. S1 says “my teachers even don’t know I have a blog; I never discuss creativity with them, they think academic performance is more important”, and S2 says “Teachers don’t have their own blogs,

Table 3. Creativity awareness of adolescent bloggers

	Self	Peer	Friends	Teachers	Parents	Others
S1	4	N / A	3	N / A	N / A	3
S2	4	4	5	N / A	N / A	5
S3	4	N / A	4	N / A	4	4
S4	4	N / A	4	4	N / A	4
S5	4	5	5	5	5	5

so I never discuss my blog with them.” Regarding parents-awareness, S5 says “my parents always encourage me to be creative; they always give me advices regarding my creativity and are proud of me.” Regarding others-awareness, the “others” here represents people who are not classmates and friends of the blogger, but read the blogger’s articles. S2 and S5 strongly argue that in others’ eyes they are creative, e.g. S5 says “some readers leave messages on my blog and ask me when I will post my new drawings” and S2 says “some readers often visit of blog and give me comments, they are interested in photos I took, and also think I am a creative person; some of my readers ask me how to take those photos and ask me to teach them.”

There is some similarity by comparing between the creativity definition of adolescence and researchers (Table 4). Most of these adolescent bloggers define creativity as novel, useful, correct, and valuable, this viewpoint similar to Amabile’s definition of creativity (Amabile, 1996).

4.2.3. The Role of Creativity

One blogger said creativity play an important role as best friend in her life (S1), other one said creativity is in need of everyone (As a student major in design, I think creativity is in need of everyone. Who owns creativity can be some excellent person in the future_s2; I love to create, thus, I think creativity is necessary for me. I request myself not to imitate but searching some inspiration base on others’ works_S3). Blogger S4 said creativity help him to encounter problems in daily life, and

blogger S5 feels creativity plays an important role in her life, even in the future.

In sum, adolescent bloggers are in agreement of their own creativity, especially blogger S5. Blogs of S2 and S5 belongs to picture and image, and both of them were senior high school students. Suggestion of future research can focus on the relationship between age and creative style, or the influence of creative style on creative awareness. In the part of creative role, adolescent bloggers regard creativity related to their daily life. Moreover, they think creativity is an indispensable element in life.

4.3. Relationship Between Creativity, Blog, and Life

The role of blog in adolescent bloggers can be seen as a) Emotional expression (blog is a place for me to express my emotion. I usually wrote something which even cannot to share with my friends or parents_S1; blogs as channel for me to make connection to classmates and friends_S4), b) Establish the relationship (blogs can make it easier for me to make more friends on the web_S5; my blog can be seen as my second home. I get used to browsing my blog everyday when arriving home_S2; blog is not only a place for me to find out solutions when I have difficulties in school, life, or others, but a platform for me continues learning and growin_S3).

Talk about the relationship between blog and creativity, bloggers S1 considered that the relationship between blog and creativity equals to the relationship between writer and its creation. Others regarded creativity makes

Table 4. Researches 'and adolescent bloggers' viewpoint of creativity

Researcher / Year	Creativity perspective toward researchers	Creativity perspective toward adolescent bloggers
Torrance (1966)	*Aroused creative thinking process *Creativity is a process of problem-solving	*Creativity almost consisted of everything, and it can help me to solve problems_S4
Csikszentmihalyi (1996)	*Creativity results from the combination of field, disciple, and personal. *Creativity can only be recommended by gatekeeper of the discipline.	*Creative work which can represent myself is the one I wrote for the competition_S5
Amabile (1996)	*Creativity can be shown on the product. * Creativity must be recognized as novel, useful, correct, and valuable.	*Creativity is a kind of personality; the ability of generating novel ideas or work is the creativity_S2 *Creativity is a way of life, which can display in daily life, and enable us a better life_S4
Sternberg (1999)	*Creativity resulted from the interaction between wisdom, knowledge, thinking style, personality, and environment. *A perspective viewing creativity as mystery	*Creativity consisted of 1% inspiration and 99% learning_S5 *Creativity can be enhanced through learning and practicing_S3

it possible for blog effectiveness become more obviously. It is creativity that enables bloggers to enrich their blogs (It is necessary for a blogger to possess the characteristic of creativity_S4; blog and creativity are complementary_S5). Blogger S3 said that creativity can be shown through blog management and blog usage.

Blog management is a kind creativity, because everyone has their own style. Someone who is interesting in photography, their blogs might belong to the style of photography; people who love biking, their blogs might lot of articles related to biking. Everyone manage their blogs with their own unique creativity and personal style. This is my viewpoint.

4.4. Evaluation of Creativity

Each of adolescent bloggers was ask to provide one blog article to represent them. After collecting five blog articles provided by each blogger, they were ask to self-rating and peer assessment about creativity range from 1: strongly disagree to 10: strongly agree. Each of them did not know each other. Figures in diagonal line indicate the score of self-rating

(Table 5). Among these articles, article 1, lyric article writing about happiness, got the highest score in the process of peer assessment; article 5, a comic form ending with text explanation got the second high score. Article 5, an exposition article discussed about internet addiction, got lower score than other articles. Reasons might be that this article is much former than others. Moreover, blogger S5 indicated that the purpose of writing the article she chose was for participate a competition. Why S5 chose this article to present as most satisfied article? She replied that because of the consideration of social value. Most of blog articles are emotional and personal related, in other words, more informal. Thus, when we ask S5 to choose an article from the blog, she picks up the one with formal purpose.

Horizontal axle indicated how each adolescent blogger score others. On the one hand, the self-rating score of creativity of blogger S1 was the lowest among the five participants (the self-rating score was 4). Moreover, an average score of peer-rating was the lowest among the five ($M = 5.50$); On the other hand, the self-rating score of creativity of blogger S4 was the highest among the five participants

Table 5. Creative works Internet comment

	Article 1 (Text)	Article 2 (Poetry)	Article 3 (Text)	Article 4 (Poetry)	Article 5 (Comic)	Mean
s1	5	4	4	6	8	5.5
s2	8	6	6	6	5	6.25
s3	10	2.	7	5	7	6
s4	7	6	7	6	8	7
s5	5	10	3.	10	10	7.6
Mean	7.5	5.5	5	6.75	7	n / a

(the self-rating score was 10), the average score of peer-rating was the highest among the five ($M = 7.60$).

Generally, the relationship between self-rating and peer-rating can be explained as follows: adolescent bloggers who has more sense of their creativity (high score in self-rating), the more creativity awareness of other peers' creativity they have (high score in peer-rating); or adolescent bloggers who has more creativity awareness of their peers (high score in peer-rating), more creativity awareness they have on their own (high score in self-rating).

In addition, results of individual evaluation were shown in the following. Article 5 got the highest evaluation result from blogger S1 and S4. Both S1 and S2 regard creativity as the ability to improve living quality or make life better. Meanwhile, article 5 titled "the funny life between my grandmother and I" the author was trying to depict her interesting life in the form of comic, which correspond to the creativity definition of S1 and S4. Thus, article 5 got the highest score from evaluator S1 and S4.

Article 1, titled "Happiness", got the highest score from blogger S2 and S3. Blogger S1 described her point of view of happiness in the lyrics form. Blogger S2 and S3 regard creativity as a way to present personal style. Recognition for creativity in such awareness, blogger S1 portrayed the picture of happiness in her own way through text. That might the reason why S2 and S3 bloggers rate article 1 as the highest one. S5 rating article 2 and 4 as full marks. Both article 2 and article 4 were written in a poem

style. What inference can be made from this fact? From the S5's blog, blogger S5 prefers using photographic or comics to present her creativity, and the definition of creativity in her mind was combine both inspiration and learning. To conclude, rating result was influencing by the reason and definition toward creativity.

Test of homogeneity of Chi-square test was used in order to test the homogeneity of rating standard among different raters. The result was significant ($\chi^2 = 46.37, p < .05$) that these five adolescent bloggers were not homogeneity in rating. Looking back on the definition of creativity can find the difference of creativity definition between these five adolescent bloggers. For example, blogger S4 defines creativity as the ability of problem solving; S5 defines creativity as the combination between wisdom, knowledge, thinking style, personality, motivation, and environment. To conclude, differences shown in creativity definition significantly influence the way they rating others' creativity.

5. DISCUSSION AND CONCLUSION

The purpose of this study is to investigate adolescent bloggers' creativity, and also trying to investigate their awareness of blog usage, self creativity, and peers' creativity. This study has taken a step in the direction of defining creativity from the viewpoint of both adolescent bloggers and subculture. To summarize the salient features of the analysis, several findings are

of interest. Results are shown that adolescent bloggers define creativity as novel, useful, and valuable, which is close to the creativity definition of Amabile. Moreover, adolescent bloggers regard creativity can be improved by learning. Blog provides a space for them to present their own thoughts and works, and enables them to watch and communicate with others. It is helpful for them to enhance their creativity. Except providing a space for those adolescent bloggers, blog also make it possible for them to make friends in the cyber space. The five adolescent bloggers are all agree that they are creative. In the portion of peer evaluation, generally, pictorial blog genre is inclining to get higher score while the textual genre is tending to get lower score.

The relationship between self-evaluate and peer-evaluate is found in the section of peer evaluation. On the one hand, the higher score one might get in the part of self-rating, the higher score he might use to evaluate others' creativity; on the other hand, the lower score one might get in the section of self-rating, the lower score he might use to evaluate other in the section of peer-evaluation. In addition, definition of creativity and creativity awareness are also important factors to influence how a person to evaluate creativity. People are tending to appreciate creative works which closer to self creativity definition.

Even though the body of research has the undeniable merit of offering valuable insights into creative subculture from viewpoint of adolescent, it has some limitations. Perhaps future research could examine creativity awareness from different viewpoints, such as psychology, cognition, education, sociology. We are hopeful that future research will provide results which may reflect different aspects of the reality. While this study has its limitations, it is hoped that it can serve as a basis for further related study in adolescence creative subculture.

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The Integration of Web2Quest Technology into Multicultural Curriculum in Teacher Education: A Potential for Globalization

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ABSTRACT

The study examines the attitudes and past experiences of pre-service teachers and teacher educators in Taiwan and the U.S. regarding the use of Web2Quests to promote multicultural education. The demographics in many countries are increasingly changing, especially regarding the growth of students from diverse backgrounds. In all classrooms, teachers need to have high levels of multicultural competency to create welcoming and equitable learning environments. However, multicultural education in the curriculum of many teacher education programs is still limited. Technology is an extremely useful tool that can enhance learning experiences for both teachers and students. Technology can be implemented to foster multicultural education in interesting and engaging ways. The study shows that the majority (about 93%) of the pre-service teachers and teacher educators who responded to the survey both in Taiwan and the United States enjoyed the Web2Quest strategy and viewed it to be effective in promoting higher-level thinking and social constructivist activities. Participants suggested that professional development is needed to help teachers design effective WebQuests, especially using the new version of WebQuests which utilizes Web 2.0 technologies. This professional development may have a significant impact when preparing teachers and, ultimately, students to be productive global citizens.

Keywords: Critical Pedagogy, Diversity, Multicultural Competency, Multicultural Education, Web2Quest

INTRODUCTION

The increase in diversity of cultural, religious, and linguistic influences in many countries has had a significant impact on K-12 educa-

tion. Teachers in these increasingly diverse classrooms need to have high levels of multicultural competence to create welcoming and equitable learning environments. In Taiwan, for example, the educational system as it is currently constructed does not distribute resources equitably. With increasing diversity among

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students, immigrant children from families of low socioeconomic backgrounds often encounter financial and social class inequities; therefore, educational leaders must transform the educational system to offer equal opportunities for all. The primary goal of multicultural education is to eliminate education inequity and provide the best possible education for all students. However, in many countries, multicultural education in the curriculum of teacher education programs is still limited.

Regarding educational inequity, Gorski (2007) argued that the “achievement gap” was not as important as the “opportunity gap” (p. 16). The problem of educational inequity includes practice and consciousness. Recognizing educational inequity in one’s conscious thoughts is critical as Hooks (1994) discussed that implementing a multicultural education system would be impossible, “If one does not think and see multiculturally” (p. 187). This means that even with an excellent curriculum, we cannot teach against racism if we are racists. To gaining a multicultural perspective, teachers need to break free from traditional models of teaching and learning and ask “To whose benefit is the curriculum?” At the very least, teachers can make sure they are not replicating inequities in their own pedagogies and curricula.

Teacher education programs need to respond quickly to the increased need for designing appropriate and effective multicultural education curriculum. Fostering teacher candidates and in-service teachers in their development of a deeper understanding of multicultural education will enable them to recognize and, consequently, eliminate their own prejudices and biases. In turn, teachers can educate their students to be culturally responsive citizens. Many educator leaders have addressed issues related to the potential intersection of the Internet within a multicultural education framework. Muffoletto and Horton (2007) argued that educators need to seek to identify issues and visions, leading to new relationships centering on democratic practices, equity, and social construction of

knowledge and justice. Using the Internet can assist teachers in broadening their horizons and understanding of self and others within broader historical and social contexts.

The Internet serves as a resource-based learning tool and has brought new trends for teaching and learning. A WebQuest has been defined by Dodge (1995) as an inquiry-oriented activity in which some or all of the information that learners interact with comes from resources on the Internet. Research indicates that WebQuests can promote learners’ higher-level thinking, knowledge application, and interpersonal as well as collaborative skills (Dodge, 1995; Schmitt, Dayanim, & Matthias, 2008). March (2003) reconceptualized and elaborately defined the WebQuest as a scaffolding learning structure that uses links to essential resources on the Internet as an authentic task to motivate students’ investigation of a central, open-ended question. The goal of this investigation is to help students develop a more sophisticated understanding of their research topics.

WebQuest provides teachers with an instructional framework to create meaningful online learning activities. For example, social linkage and human networks are critical in Web 2.0 learning environments. According to a Pew Internet Survey (2008), more than 55% of all American teenagers between the ages of 12-17 use online social network sites such as Facebook. In Taiwan, a recent report from the Ministry of Education (2009) stated that 85% of students ages 13-24 use a Blog, Wiki, or Facebook to keep in touch with friends, publish online journals, or complete their assignments. According to Kurt (2009), while the Internet has changed significantly the WebQuest technique has changed little over the past 10 years. The upgraded WebQuest, which uses Web 2.0 technology, has been named Web2Quest in this paper. To fully take advantage of Web 2.0 technology, teachers can create Web2Quests by using Web 2.0 tools such as wikis, blogs, multimedia sharing, podcasting, and social networking.

This paper examines: (1) teachers’ perceptions of Web2Quest use in their classroom;

(2) multicultural education reform in teacher education curriculum through the lens of critical pedagogy, and (3) implications of incorporating Web2Quest into multicultural curriculum. Designing Web2Quests for multicultural education may prepare teachers and students to be productive global citizens.

LITERATURE REVIEW CURRICULUM AND CRITICAL PEDAGOGY IN MULTICULTURAL EDUCATION

According to Banks (2004), creating a teacher education policy for the 21st century must include preparing educators for effectively teaching students from diverse racial, ethnic, and social groups as a major focus. The following section focuses on developing curriculum and pedagogy that support multicultural education as well as some approaches to facilitate multicultural curriculum reform.

Key Goals and Characteristics of a Multicultural Curriculum

Banks and Banks (2007) delineated four key goals of multicultural education: (1) to help individuals gain greater self-understanding by viewing themselves from the perspectives of other cultures; (2) to provide all students with the skills, attitude and knowledge needed to function within their ethnic culture, within mainstream culture, and within and across other ethnic cultures; (3) to reduce the pain and discrimination that members of ethnic and racial groups experience because of their unique racial, physical, and cultural characteristics; and (4) to help students to master essential reading, writing, and math skills.

There are many considerations for integrating multicultural education throughout the teacher education program. Gorski (2001) proposed the following key characteristics of a multicultural curriculum: (1) Delivery: teachers must acknowledge and address varied learning styles while challenging dynamics of power and privilege in the classroom; (2) Content: content

must be complete and accurate, acknowledging the contributions and perspectives of all groups; (3) Teaching and learning materials: resources must be diverse and critically examined for bias with varied instructional materials.; (4) Perspective: content must be presented from a variety of perspectives and angles in order to be accurate and complete; (5). Critical inclusivity: students must be engaged in the teaching and learning process in order to facilitate experiences in which students learn from each other's experiences and perspectives; (6) Social and civic responsibility: if teachers hope to prepare students to be active participants in an equitable democracy, students must be educated about social justice issues, and teachers must model a sense of civic responsibility within the curriculum; and (7) Assessment: curriculum must be constantly assessed for completeness, accuracy, and bias.

Using Critical Pedagogy in Multicultural Education

To comprehend the developmental process in multicultural curriculum design, critical pedagogy in multicultural education should be examined. Wink (1997) noted that critical pedagogy probes deeply into our roles as teachers, students, citizens, and human beings. Particularly, critical pedagogy is concerned with reconfiguring the traditional student/teacher relationship; the student and teacher are both active agents. In critical pedagogy, the classroom is envisioned as a site where new knowledge, grounded in the experiences of students as well as the teacher, is produced through meaningful dialogue. To comply with the key characteristics of a multicultural curriculum, the authors suggest using constructivist, transformative, and Internet pedagogies within the framework of critical pedagogy:

- (1) Constructivist pedagogy: Constructivism draws many of its beliefs from Vygotsky's (1989) socio-cultural theory including the contention that learners not only benefit from the knowledge of more experienced

and skilled peers, but also from the differing perspectives they bring to the learning environment. Teachers use constructivist pedagogy design the overall structure of the lessons for scaffolding activities and provide resources that help students create high standard products.

- (2) Transformative pedagogy: Cummins and Sayer (1997) stated that teachers often use strategies such as cooperative learning, problem-based instruction, discussions, or role plays to promote engagement. Transformative learning, in turn, will occur when students feel responsible for contributing in class, feel empowered, and feel that their ideas are valued.
- (3) Internet pedagogy: According to Gorski (2001), the Internet's most important potential contributions, both educationally and multiculturally, lie in its power to connect to the most important resources of all: other people. The Internet can provide teachers and students with the opportunity to connect with people around the world from a multitude of cultures. For example, teachers and students who have read a particular book can then gather online to share questions and exchange resources about that book.

Approaches to Multicultural Curriculum Reform

Banks and Banks (2007) suggested there are four frequently used approaches to multicultural curriculum reform: (1) Contributions approach: reflects the least amount of involvement in multicultural education approaches; (2) Additive approach: content, concepts, themes, and perspectives are added to the curriculum without changing its basic structure; (3) Transformation approach: changes the structure of the curriculum and encourages students to view concepts, issues, themes, and problems from several ethnic perspectives; and (4) Social action approach: combines the transformation approach with activities to strive for social change. Students

are not only instructed to understand and question social issues, but also to act on these issues

In order for multicultural education to be realized from a holistic, critical perspective, the authors advocate the social action approach for the curriculum as defined by Banks and Banks (2007). With the goals and characteristics of multicultural education in mind, Web2Quests may be designed and implemented to foster multicultural education curriculum reform.

IMPLICATIONS OF MULTICULTURAL CURRICULUM REFORM THROUGH WEB2QUESTS

Web2Quest Technology offers students and teachers the opportunity to transform curricula and encourage students to develop higher-level thinking skills. Educators can best promote this development by modeling critical thinking skills through Web2Quest scaffolding learning activities. Encouraging students to recognize their values, feelings, privileges, and biases can facilitate the development of self-awareness.

Windschitl (2002) noted that the Internet is believed to have changed the ways in which people learn and acquire information. Through the Internet, learners now have access to a wide range of knowledge and ideas. Dodge (1997) wrote that any technology in education needs to have the power to guide learners to go beyond the information given. Web2Quest does that by connecting people from different cultures via wikis, blogs, Skype and videoconferences. Dodge (1995) also noted that the Web2Quest instructional design is based on constructivist principles and is sometimes referred to as inquiry-based learning. The constructivist approach emphasizes the role of students as primary agents of learning. Learners engaged in Web2Quests find, analyze, classify, synthesize, and evaluate information from sources on the Internet, and integrate new concepts into established knowledge structures. According to Wenger (2002), learning communities are groups of people who acquire new knowledge

through cooperation and collaboration. Wenger (1998) proposed that learning is most transformative when the process of learning involves active participation in a community within which one feels a sense of belonging. Webb and Mastergeorge (2003) further explained that it is critical for members to negotiate a role within the community and view themselves as contributors if they are to feel and sustain this sense of belonging. With the aid of the Web2Quest scaffolding activities, teachers can use a more constructivist approach to increase a community of learning in a larger context. A successful and sustaining learning community encourages ongoing interaction if members in the community develop a sense of belonging, respect and trust. In the following section, the theoretical underpinnings for the WebQuest model further elaborate on implications of multicultural curriculum reform through Web2Quests.

Theoretical Underpinnings for the WebQuest Model

The following underlying constructs of WebQuest as an effective instructional tool were examined and identified based on earlier research by Dodge (1995, 2001), and Zheng, Perez, Williamson, and Flygare (2008).

- (1) Constructivist problem solving: The construct of higher-level thinking plays a unique role in the design and development of WebQuests. VanFossen (2004) stated that constructivism operates on the concepts of examining things from multiple lenses, proposing solutions with varied approaches, and analyzing and synthesizing information.
- (2) Social interaction: Dodge (2001) identified the theoretical connection between WebQuests and cooperative learning theory. Dodge pointed out that both WebQuests and cooperative learning theory emphasize the construct of social skills to support learning activities relating to positive interdependence, individual accountability, and interpersonal skills.
- (3) Scaffolded learning: The construct of scaffolded learning entails the concepts of facilitating higher-level thinking and organizing new learning through making the connection between previous learning and current goals, and enabling goal attainment using a structured approach (Dodge, 1995, 2001; VanFossen, 2004). Dodge (2001) also pointed out that the role of scaffolding is for students to “transform what they read into some new form” (p.58). This facilitates what Mezirow (2000) called transformative learning.

The authors propose that these findings have significant practical implications for instructional designers and teachers who would like to use WebQuest to engage learners in social collaboration. Additionally, the authors suggest that the practice of social collaboration should go beyond WebQuests’ traditional conceptual framework to include skills from other educational professionals who may contribute different perspectives to help teachers design and develop WebQuests by implementing the new elements of Web2.0 technologies into WebQuests, which will be described in the following section.

Steps and Instructional Strategies for WebQuest Model

According to Dodge (1995), a WebQuest usually includes six steps. The “introduction” part sets the stage and provides some background information which draws the learner in and leads to the “task.” The task should be doable and interesting. The “information sources” provides useful related links to save the learner’s time on surfing the numerous websites. Information sources might include web documents, experts available via e-mail or real-time conferencing, searchable databases on the net, and books and other documents physically available in the learner’s setting. The “process” guides the learner step-by-step to complete the task by using needed resources. The process should be broken out into clearly described steps. The “evaluation” is usually constructed in the form

of rubrics focused on both the process and the product of learning in relation to a particular project. The “conclusion” part brings closure to the quest, reminds the learners about what they have learned, and perhaps encourages them to extend the experience into other domains.

Dodge (2001) proposed the possibilities of using Web 2.0 trends like blogs and wikis in the WebQuest model (WebQuest.org). More dynamic and user-focused WebQuests can be created easily by teachers with the help of Web 2.0 tools. Kurt (2009) further examined and discussed possible applications of new Web trends on WebQuests instructional strategies as identified below:

- (1) Use of blogs in Web2Quests: A blog or Web log is a web-based application that allows the authors to publish content that may be accessed via the Internet browser without needing much technical knowledge. Moreover, blogs increase collaboration and higher-level thinking through their feedback systems. Kurt (2009) suggested that blogs can be integrated into Web2Quests. For example, a blog can be used to create interactive and effective Web2Quests easier and faster than designing Web2Quests using the traditional method. Furthermore, learners can publish questions they come across at any point while completing Web2Quest tasks, and other group members or teachers can respond; this is similar to Blackboard discussion used on many college campuses in the US and Taiwan. In addition, students may keep blog journals during their Web2Quest activities. Luehmann (2008) shared a similar idea as he suggested that blogs can enhance reflection as well as analytical, critical, and creative thinking by encouraging student to engage with positions different from their own.
- (2) Use of Wikis in Web2Quests: A wiki is a Webpage with content that anybody can add to, edit, or delete. Wikis provide unique collaborative opportunities; groups can collaboratively work on the content of a site using a standard Web browser. Kurt (2009) advocated that students and teachers in groups can collaboratively create Web2Quests using wikis on the Internet to manage and organize information, share resources, make decisions, and discuss work during the Web2Quest activities. Also, teachers can monitor students’ activities because wikis have a revision history feature. This means whenever there is a change, wiki saves the before and after versions. Therefore, teachers can see the progress the students are making. In sum, wikis can be used as an alternative to a school or class website, to which a broader interested audience can contribute ideas and comments; or teaching staff within the same program may scaffold collaborative projects.
- (3) Help from RSS feeds: Really Simple Syndication (RSS) is used for sharing Web content in the sense that a site’s contents can easily be syndicated as an RSS feed to whoever wants it. Many blog and wiki tools have the RSS feed feature built in to syndicate content and therefore increase the effectiveness of Web2Quests. As Kurt (2009) suggested, RSS can be implemented in several ways: (a) educators can create automatically updating Web2Quests with the help of RSS, (b) teachers can monitor Web2Quest activities via RSS feeds, and (c) students can keep up with their peers’ actions. With the help of RSS, teachers and students can keep breast with the latest information on specific subjects, for example, multicultural education to save a lot of time surfing different websites.

With blogs and wikis, teachers can easily submit content through a Web browser without technical knowledge of HTML or the uploading of files to the internet. Thus, Web2Quests with blogs and wikis built inside will certainly simplify Internet publishing. The advantage of using blogs and wikis as a basis for Web2Quest is that the visual design of the Web site can be simplified by making use of the concept of templates, which are pre-developed Web site

page layouts. Teachers can use these templates to easily make attractive Web2Quests that would attract more interest from tech-oriented students. The previous sections have provided a foundation for incorporating Web2Quest into multicultural education which is discussed in the following section.

INCORPORATING WEB2QUEST INTO MULTICULTURAL CURRICULUM

To obtain a comprehensive understanding of Web2Quest as an effective instructional tool to foster multicultural curriculum, the authors provide the following discussion of relating constructs and instructional strategies of Web2Quest to critical pedagogy in multicultural education. Moreover, an example of Web2Quest designed by the authors to promote teachers' multicultural competency through fable activities has been illustrated.

Multicultural Curriculum through Critical Pedagogy and Web 2.0 Technologies

According to Marshall (2001), multicultural education and technology have emerged as key issues in teaching and teacher education. Teachers at all levels seek ways to integrate the two to reach more people and facilitate authentic and meaningful learning experiences across cultures. Marshall argued that through technology teachers can implement Bank's (2004) five critical dimensions of multicultural education: content integration, knowledge construction, prejudice reduction, equity pedagogy, and empowering school culture and social structure. First, the goal of content integration is to expand the curriculum by integrating contributions of diverse cultures into traditional disciplines of study. Web 2.0 technologies can contribute to achieving that goal by promoting communication between diverse groups. Second, Cummines and Sayers (1997) wrote that teacher educators are being called upon to use technology to promote and

reinforce knowledge. For example, Blackboard Discussion threads, blogs, podcasts, Facebook, wiki, Skype and videoconference allow students to have engaging dialogues with people from diverse cultures and learn to respect different perspectives while simultaneously examining their own ideas about cultural diversity. Third, prejudice reduction is about eliminating all forms of bigotry. Web 2.0 technologies can be used to establish learning exchanges between individuals of diverse cultural backgrounds and therefore reduce prejudice and stereotyping. Fourth, equity pedagogy is about equalizing opportunities to learn. Web 2.0 technologies provide educators and students wide access to cross-cultural professional and learning communities. Fifth, the ultimate purpose of multicultural education is to transform the taken-for-granted policies and practices of schools into a democratic and inclusive education system.

As described in previous sections, many educational leaders argue that critical pedagogy is the only way to carry out genuine multicultural education. Teachers and students need to go beyond the surface and look inside their biases to think critically and change their misconceptions. After this has begun, teachers and students can determine how they can take action in the classroom or community to create positive change. Implementing Web2Quest may be a dynamic method for teachers and students to engage in multicultural education from critical perspectives.

The authors propose the following features of Web2Quests that make them particularly well suited for promoting multicultural education. First, Web2Quests provide an authentic scenario to engage students in active learning while integrating several learning outcomes within a single assignment; students can be encouraged to respect diverse talents and ways of learning. Second, Web2Quests require that students use higher-level thinking skills to look at the world from different perspectives. Third, the Web2Quests template provides a ready framework for constructing assignments and developing meaningful learning activities to engage students in examining multicultural is-

sues. Finally, Web2Quest scaffolding activities can help teachers and students address the multiple and complex challenges in multicultural learning environments. The authors advocate that the overarching goal of the integration of Web2Quests into multicultural education is to equip students with the basic knowledge and skills necessary for using technology to promote social interaction and, ultimately, empowerment connecting students as well as teachers across cultural boundaries.

A Multicultural Competency Web2Quest to Foster Multicultural Curriculum

The authors used the critical pedagogy analysis proposed earlier in the paper to examine how Web2Quest can serve as an effective tool to achieve multicultural education. The authors designed the Multicultural Competency Web2Quest using fables. The purpose of the “Multicultural Competency through Fables” Web2Quest is to help both teachers and students recognize the similarities and differences of various cultures to build global understanding and a respect for diversity. The Web2Quest designed by the authors is discussed below.

(1) Introduction:

This Web2Quest was designed to help increase teachers’ multicultural competency, so that they will be well prepared to face many issues relevant to the increasingly diverse student populations in schools today. This Web2Quest explores how a culturally-diverse perspective can be incorporated into curriculum design, teaching strategies, and interactions with students and parents.

(2) Goals for “Multicultural Competency through Fables” Web2Quest:

Through the Web2Quest, learners: (1) engage in activities that lead them to understand their own cultural perspectives; (2) recognize the similarities and dif-

ferences resulting in various cultural perspectives; (3) appreciate the depth and scope of many of the compelling racial and cultural issues impacting public schools today in the world; (4) grow personally in their understanding of equity; (5) explore their own internalization of prejudice by reflecting on their own socialization to specific groups; and (6) demonstrate an understanding of the concept and diversity of cultures, and views of the world, recognizing the similarities and differences resulting in various cultural perspectives.

(3) Information sources:

Gorski (2001). *Multicultural education and the internet: Intersections and integrations*. There are many useful, multicultural related websites in the book.

McCarthy, T. (1994). *Multicultural Fables and Fairy Tales: Stories and Activities to Promote Literacy and Cultural Awareness*.

Fables and Trickster around the World: http://edsitement.neh.gov/view_lesson_plan.asp?id=237

(4) Process description:

This Web2Quest has been designed so that participants make contributions and submit assignments at their own pace. Learners find fables from the Information Sources linked above. These fables are from different countries so that learners understand cultural similarities as well as differences. First, learners choose their favorite fable to post on the blog. Second, learners analyze and respond to fables posted by five peers. To analyze each fable, learners respond to the following questions.

(a) What morals are illustrated in these fables?

- (b) What are the traits of the different animals (for example, the lion stands for kingliness, the mule for obstinate stupidity).
- (c) How do the character traits of the animals relate to the character traits and behaviors of real people?

Third, learners choose a fable they personally like and rewrite it to reflect their own culture. Learners could write about why they rewrote the fable the way they did in order to acknowledge cultural similarities and differences. Fourth, learners post their version of the revised fable on the blog for peers to read and write a response. Fifth, learners revise their own fable based on their peers' suggestions and their extensive knowledge of fables. Finally, learners evaluate, select, and use a range of media, as well as information and communication technologies such as blogs, wikis, GoldWave, and Movie-maker to create, edit, and present their work.

(5) Performance evaluation:

The learners' final grade for the project is based on the following components: (1) 40% on writing and posting one fable on a blog and responding to five peers' fables; (2) 30% on learners' rewriting one fable and their analyses posted on the blog; (3) 30% on using Web 2.0 technologies to present their work.

(6) Conclusion:

The learners have completed the Multicultural Competency Web2Quest. They are now more knowledgeable about the multicultural education issues related to social networking. As Tu, Blocher, and Robert (2008) stated that "I" is a synthesis produced by thinking from self. Through creating multiple "I"s, individuals re-create themselves constantly in a continuous process of self-overcoming and self-improving (p. 267). With the

Multicultural Competency through Fables" Web2Quest, you have been engaged in examining diverse viewpoints and multiple perspectives.

METHODOLOGY OF STUDY

Qualitative techniques were used to learn the attitudes and past experiences of pre-service teachers and teacher educators in Taiwan and the U.S. regarding the use of Web2Quests to promote multicultural education. The authors were specifically interested in learning the teachers' motivation behind using Web2Quests to promote multicultural education. Eighty questionnaires composed of four open-ended survey questions were emailed to prospective participants: 20 teacher educators in Taiwan and 20 in the US and 20 pre-service teachers in Taiwan and 20 in the U.S. Participants in Taiwan were recruited from two Normal Universities in the northern region via e-mails to education departments. Participants in the U.S. were recruited through a listing of teacher educators at a large university in the Pacific Northwest and the International Students Services Office at the same university. The response rate was 90% with 72 participants in the survey. Responses to the questionnaire revealed that 45 participants had previously used Web2Quests: 24 Taiwanese participants (13 pre-service teachers and 11 teacher educators) and 21 American participants (15 pre-service teachers and 6 teacher educators).

In addition to the questionnaire survey, a focus group discussion was conducted via Skype with four pre-service teachers to gain further data. The 45-minute discussion was recorded and later transcribed. Two teacher educators who are currently teaching in teacher education programs in Taiwan were willing to implement in their classrooms two Web2Quests. One Web2Quest was called "Search for China" and was created by Dodge (1995, 2003), and the other was called "Multicultural Competency through Fables" and was developed by the authors. Thirty-six pre-service teachers in these professors' classes were divided into six groups to complete the Web2Quest projects in four

weeks. After this four-week period, in-depth one-on-one interviews were conducted with these teacher educators to better understand their insights regarding the advantages and challenges of using Web2Quests. Each of the 45-minute one-on-one interviews was recorded and later transcribed. Interview questions included the following:

1. Will the Web 2.0 technologies like blogs, wikis, podcasts, or social networks (Ex: Facebook) promote cultural understanding? How? (Please give examples.)
2. Do you believe that there are advantages in using Web 2.0 technologies for teaching and learning? (Please give specific examples.)
3. What are the advantages and challenges of using Web2Quests to promote cultural understanding? (Please indicate specific difficulties.)
4. When asking your students to complete a project in a small group (3~4 people) by using a Web2Quest, what were the advantages and difficulties? (Please address the question from students' perspectives.)

Using the constant comparative method (Strauss, 1987), data collection and analysis were performed concurrently and continued throughout the research. The transcripts were initially read independently, followed by subsequent e-mails, phone calls or face-to-face discussions to share information and seek clarification regarding emerging themes in the data.

DATA COLLECTION AND ANALYSIS

The discussion below expands on the results of the survey data regarding the effectiveness of Web2Quests. Based on the data, 83% of the participants favored Web2Quests over 17% who found it challenging. From the results, two themes emerged.

Advantages of Using WebQuests

Over 90% of the participants who responded to the survey questions believed that when people from different cultures and languages interact, attitudes and beliefs are discovered in a personal context rather than learning about cultural similarities and differences through reading a book. Authentic personal connections across cultures make learning more fascinating and meaningful, as explained by 83% of the participants. In addition, 93% of the participants said that there is a wealth of information on any given subject on the Web. If students see that their teachers are excited about WebQuest activities, then the excitement will catch on.

The four pre-service teachers who participated in the focus group interview and the two teacher educators who were interviewed one-on-one voiced similar opinions that students nowadays are very comfortable and motivated by technology and interacting with others through the use of technology. The teacher educators suggested teachers provide links to sites that embrace up-to-date, motivating information, based on the interests of students. The focus group participants as well as the two teacher educators espoused a constructivist approach to teaching; their teaching methodology built on students' personal experiences and knowledge, and provided for collaboration, small group interactions, and hands-on learning. They also stated that using Web2Quests in their classroom supported students' different learning styles and multiple intelligences. The teacher educators explicitly commented that Web2Quest activities gave students opportunities to bring their personal perspectives on issues being discussed and to learn how to negotiate with team members to solve a problem in the real world. For example, one Taiwanese professor remarked: "The benefits are in brainstorming, problem solving, and working together to develop a project that all the group members can use and benefit from." The other professor remarked

that the students' reflective journals in the study indicated that scaffolding activities helped pre-service teachers to better understand their underlying assumptions about multicultural education. They also assessed the feasibility of Web2Quests for their learning and teaching.

Challenges of Using WebQuests

During the focus group discussion and the one-on-one interviews, five of the six participants (83%) mentioned addressing that planning and preparing lessons with Web2Quests were time consuming. Other concerns were access to technology in the classroom setting and differences in language and time zones for direct communication with teachers and students in other countries. All of the six participants commented on the need for students to respect different voices among team members and professional development for teachers to learn about technologies.

Four participants (66%) argued that if a teacher has a bias toward a different culture, then the students will also become negative toward that specific culture. One teacher mentioned that finding well-rounded information on a given subject could be difficult; a lot of information on the Web promotes a certain subject without discussing the disadvantages. To complete a well-rounded project, the students need to get opposing viewpoints about a given subject.

Some students in this study preferred to work individually and had difficulties working with their team members. One teacher educator reported that a student struggled in asserting her voice within her group because of a dominant member who controlled the group discussions. Over time, the teacher indicated that her students learned how to take more active roles in negotiating the process of learning. Meanwhile, the teacher stepped back from the traditional role as a gatekeeper of knowledge to a facilitator to ensure that students became decision makers in a constructivist learning environment and negotiated new ways of redefining relationships within the learning community. An American pre-service teacher

stated: "Professional development for teachers to learn about technologies should be available. When integrating Web2Quests in classrooms, difficulties are finding the time and place for collaboration and having access to training and support, especially the first time one is asked to complete such a project." Over 83% of the participants in the study who had used Web2Quests referred to the need to be aware of the possibility of students' stereotyping individuals from different cultures. A Taiwanese teacher wrote: "People may misunderstand each other based on the stereotyped information ... I thought Brazilians were supposed to be quite arrogant... I found most of them really approachable and kind."

RESULTS AND DISCUSSION

The survey asked participants to respond to four open-ended questions. Survey question one asked: "Will the Web 2.0 technologies like blog, wiki, or social network sites promote cultural understanding? How?" The responses from participants suggested that Web 2.0 technologies can promote cultural understanding. However, Web 2.0 technologies do not necessarily increase cultural understanding. The effectiveness of Web2Quest depends on the teacher's skill, who one contacts through these media services, the purpose a person has in using them, and how a person responds to other people. For example, blogs can expand contacts, and so can wikis or social networking, but their effectiveness is dependent upon the context, the content, and the control of those who are using these services. The authors argue that opening up to anybody on social networking sites is a safety issue; we should use social networks carefully when expanding our contacts into the world.

Survey question two asked: "Do you believe that there are advantages in using Web 2.0 technologies for teaching and learning? (Please give specific examples.)" Participants' responses demonstrated the following advantages in using Web 2.0 technologies for teaching and learning. The first major advantage is practice in

writing and communicating clearly with others without the visual cues that people associate with face-to-face interaction. Second, through blogs or wikis that are shared, both teachers and students can connect to a global audience; each person can contribute some aspect of knowledge or expertise while collaborating with others. Third, social networking sites can provide students the opportunities to deal with problems that exist when communicating with people they don't know, and to experiment with identities and how they present themselves.

Survey question three asked: "What are the advantages and challenges of using Web2Quests to promote cultural understanding?" Participants' responses showed that students gain group and individual experiences by bringing something to contribute to the group. Students could also develop information literacy skills and learn how to do a rhetorical analysis of the audience. There is a lot to be learned when incorporating Web2Quests in classrooms. The authors agree with the educators in this study that time constraints should not prevent the use of Web2Quests because they connect both teachers and students to a global audience. Web2Quests also enhance both teachers' and students' reflections on behaviors and assumptions on multicultural education issues. In addition, Web2Quests help teachers and students feel valued for their ideas and expertise as a result from contributing to an online community.

The major challenges of using Web2Quests to promote cultural understanding are simply practical ones. Not all people have access to technology like the Internet. Also, there are security issues. For instance, if a class has a blog and it is not limited or secure, then others can comment with ads, inappropriate comments, etc. Therefore, security measures need to be in place to protect people's identities and to protect from negative aspects of the Internet. In terms of cultural understanding, the Internet often consists of individuals posting information, and much of the information may be inaccurate or particular to that one individual. Reading the blog of one person from Spain would not make a person an expert in the Spanish culture, but the

reader would gain a sense of one individual's views on the subject. In addition, learners need to be able to evaluate online content and sites for credibility, for bias, and for goals that may run contrary to cultural understanding. Participants' responses in this study revealed that time would be the biggest constraint when incorporating Web2Quests in classrooms. This challenge was mentioned by 27 teachers (60%). For example, in using a Web2Quest, the teachers needed to skim through a lot of the information. Students also needed to have a fair understanding of how to use hyperlinks, how to evaluate information, and how to present information ethically to their own audience.

Survey question four asked: "When asking your students to complete a project in a small group (3-4 people) by using a Web2Quest, what were the advantages and difficulties?" Respondents perceived Web2Quests as possibly highly beneficial. Some benefits included engaging with a variety of technological tools to gain a wide variety of ideas and group members. Lessons learned in incorporating Web2Quests can be used to equip interested teachers and faculty in all disciplines to adapt Web2Quest to address similar challenges that are faced in other institutions. However, teachers need the time to create the Web2Quest opportunities and the majority of the teachers in the study see time as the number one potential problem. Lack of computer availability or limited computer availability in schools could be another one. Having time to get together to work with colleagues and discuss effective strategies could be an issue as well.

CONCLUSION

The results of the study indicate that Web2Quest technology can be implemented in teacher education programs to foster multicultural education in an interesting and engaging manner. The majority of the pre-service and university teachers (93%) in the study believe that using technology to collaborate beyond the classroom, to discuss current multicultural issues,

and to share information can assist teachers and students in broadening their horizons and their understanding of self and others within larger social contexts. Web2Quests focused on multicultural education ensure that teachers obtain practical experience with using technology, while gaining insight about their own identities and about how they can incorporate multicultural perspectives in their classrooms. After completing the Web2Quest, learners will be challenged to reflect on their experiences and to take social action which is fundamental to critical pedagogy.

Teachers and students in the study enjoyed collaborative activities and shared multimedia files via interactive videoconferences or Skype. Findings from the study revealed that participants developed empowering multicultural relationships with one another while developing multicultural understanding, and abilities to use technology in meaningful ways. Preparing teachers for the multicultural classrooms of today and the diverse classrooms of tomorrow is a process that will not be accomplished by completing one project or taking one course. Being familiar with taking social action through Web2Quest scaffolding activities encourage teachers to carry out genuine multicultural education through a critical pedagogy perspective. Despite the benefits, there are still challenges in using Web2Quests such as time constraints, access to technology, differences in language and time zones, opposing voices among team members, and professional development for teachers. Future research will focus on how to overcome these challenges both in Taiwan and in the United States.

In sum, Web2Quests serve four major functions to promote multicultural education. First, Web2Quests can act as a tool for multicultural education scaffolding activities which include technology tools, peer interactions, and online communities. Second, Web2Quests can serve as a tool to increase higher-level thinking. Third, Web2Quests can help both teachers and students eliminate their prejudice and biases toward people from cultures other than their own. Fourth, Web2Quests can promote col-

laboration so that students work together to maximize their own and each others' learning. Through using Web2Quests as tools to connect classrooms to the world, teachers and students can move in a positive way toward becoming global learners and citizens.

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An Exploration of Students' Participation, Learning Process, and Learning Outcomes in Web 2.0 Computer Supported Collaborative Learning

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ABSTRACT

Many researchers indicate that collaborative learning is an effective strategy to improve students' learning. Collaborative learning is no longer confined to face-to-face classrooms with the advancement of technology. The concept of computer supported collaborative learning (CSCL) matches web 2.0 which emphasize learner centeredness, social interactions, and mutual sharing. The concept of CSCL matches E-Learning 2.0 which focus on learner centeredness, social interactions, and mutual sharing. This study investigates the effects of computer supported collaborative learning with web 2.0 technology on students' participation, learning process, and learning outcomes. During a 14-week collaborative writing course, thirty participants were asked to use Google Docs to finish their assignments collaboratively. Results showed that computer supported collaborative learning with web 2.0 technology have positive effects on students' participation, learning process, and learning outcomes. Implications and suggestions are also provided in this study.

Keywords: Collaborative Learning, Computer Supported Collaborative Learning, E-Learning 2.0, Learning Strategy, Web 2.0

INTRODUCTION

Collaborative learning is a strategy that can aid learners to achieve effective learning (Dewiyanti, Brand-Gruwel, Jochems, & Broers, 2007; Hilke, 1990). It is not a new instructional concept or method. From as early as 1920, many

researchers have proposed to use collaborative learning to enhance learning effectiveness (Diler, 2008; McConnell, 2005). Collaborative learning refers to a pre-designed learning situation where students are divided into multiple groups, with each group consisting of members with heterogeneous attributes, and then assigned tasks that they need to accomplish through mutual cooperation, assistance, dependence, and

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sharing of resources (Slavin, 1990). Through group cooperation, students can develop not only a closer relationship but also better communication skills and high-level reflective capabilities (Johnson & Johnson, 1994). With the advancement of computer technologies and increasing prevalence of the Internet, collaborative learning is no longer confined to face-to-face classrooms (Georgia & Symeon, 2010). According to McConnell (2005), the place of identity, control, ontological security, and guilt in e-learning groups were the four critical factors for effective learning among networked learning groups and communities. Now, it can be performed in a virtual environment built on a global network. This extension of collaborative learning, realized through integration of technologies, is called Computer Supported Collaborative Learning (CSCL).

In addition to learner-centeredness, CSCL stresses that learners play an active role in the cognitive process, while teachers are only supporters (Francesca, Stefania, & Donatella, 2007). Hence, learners should be equipped with prerequisite knowledge before engaging in learning, and their metacognition is important in the learning process (Hanna, 2005). In CSCL, teachers should switch their role from a deliverer of knowledge to a promoter of knowledge construction and monitoring. They do not give answers directly. Instead, they guide learners to interact with members in the group to jointly accomplish given tasks and finally assess the performance of each group or member (Georgia & Symeon, 2010). Through rapid development of the Internet, the interactive models on the Internet have evolved from one-way delivery of information to multi-way communications where user centeredness, sharing, and participation are emphasized (Diler, 2008).

Many existing studies on CSCL hold a positive view of its value, suggesting that CSCL can help learners to (a) construct knowledge, (b) develop creativity, (c) judge messages, (d) reorganize independent thinking, (e) enhance problem-solving skills, and (f) expand learning methods and domains through observation of peers' opinions and brainstorming with them

(Johnson, Johnson, & Holubec, 1993). However, some researchers have also pointed out that because group achievement equals individual achievement in CSCL, some learners may be unproductive in the collaborative learning process and simply take advantage of others' efforts like taking a free ride (Tomlinson & Henderson, 1995). In such occasions, the load of learning will fall on more competent members or those whose parents can lend a hand. If any member feels that their sharing of the load is unfair and has reduced motivation for learning, the performance of the entire group may be reduced. There are always shy members in any group. Their inability to cope with pressure may result in a fear for speaking up in class and inactivity in group interactions, which will indirectly make it hard for teachers to objectively assess students' individual performance (Johnson, Johnson, & Holubec, 1993).

According to Swigger and Brazile (1997), a web-based collaboration environment allows students to develop problem-solving abilities, support each other in learning, and share resources. It is thus good for students' research. To ensure effectiveness of collaborative learning, Chiu, Chen, Wei, and Hu (1999) identified five elements of an effective collaborative learning activity or system, including (a) cooperative group structure, which means the group size, quantity, heterogeneity across group members, group cohesion, and group composition (b) cooperative task structure, which means design of the task may take the division of labor (for team members separately completed) or collaboration (for team members to complete co-operation) two ways, (c) cooperative incentive structure, which can be adopted by individual members of the performance or results to group common themes award (d) cooperative environment structure, which means the environment of the arrangements, including group of the space to conduct group meetings, discussion, and study and work, and (e) individual accountability, which can make group understand each individual's the degree of contribution.

Since introduction of Web 2.0, many Internet services have been developed on the

basis of its core spirit (Clark, Logan, & Luckin, 2009). The well-known services include online albums, blogging systems, wikis, media sharing and favorite sharing platforms (Durkee, Brant, & Nevin, 2009). The emergence of Web 2.0 has been viewed as an important turning point of the Internet (McKenzie, 1998). It has directly impacted the interactive models of teachers and learners and even turned learners from the object into the subject in e-learning (Conole & Culver, 2010). With the development of Web 2.0, the concept of e-Learning 2.0 was also introduced.

E-Learning 2.0 is a learning model that stresses learner centeredness, social interactions, and mutual sharing (Conole & Culver, 2010). According to Williams and Chinn (2009), learners can benefit from some learning strategies in e-learning 2.0 setting, i.e. active learning strategy, collaborative learning strategy, and etc. This concept of e-Learning 2.0 matches the afore-mentioned functions of CSCL that learners rather than teachers should be centered in learning, and knowledge should be constructed through peer interaction, assessment, and cooperation (Lai & Lan, 2006). In this learning model, teachers' role has been switched from a lecturer who delivers knowledge to a promoter who assists students to construct knowledge (Trentin, 2009).

In the future, using collaborative learning, mutual sharing and student-centered learning concepts to develop Web 2.0 compliant e-learning methods and application instruments to enhance learning outcomes will be an important tendency (Clark, Logan, & Luckin, 2009). Wiki-style is an online text and editing system that allows everyone to compile and modify the content of a web page and exploit the collective power of their intelligence (Trentin, 2009). It subverts the traditional idea of cooperative learning, i.e., accomplishing a task through division of labor, and introduces the concept of collaborative writing. Google Docs is an application developed based on the concept of collaborative writing (Karpova, Correia, & Baran, 2009). It is easy to operate and learn. Users

with experience of using Microsoft Office are able to quickly transfer their learning and skills. The major advantage of Google Docs is that it allows simultaneous editing of a document by multiple persons. Therefore, it makes sharing and collaboration easy. Therefore, this paper attempts to implement collaborative learning on a collaborative writing platform, Google Docs. By taking advantages of the sharing and co-editing features of this platform, the researcher will guide students' collaborative learning process, track their learning and editing to analyze the contribution of each learner.

Johnson et al. (1993) mentioned that although network collaborative learning has certain advantages over traditional collaborative learning, some unresolved difficulties and limitations of network collaborative learning still affect the collaboration efficiency of some groups. Not all network-based learning projects or activities can obtain expected results (Riel, 1989; Riel & Levin, 1990). One of the main reasons for collaboration inefficiency is that lack of face-to-face interaction easily causes a sense of alienation from peers. Besides, skills required for collaborative learning are not inborn, and grouping students does not assure that all members in each group will spontaneously engage in collaborative learning (Johnson et al., 1994). Based on the four elements of collaborative learning (Johnson & Johnson, 1987), (a) positive interdependence, (b) interpersonal interaction, (c) individual accountability, and (d) group processing, a collaborative learning process checklist was developed to evaluate learners' performance in each dimension and understand their learning processes in our web-based collaborative learning program. The purpose of this paper was to investigate the effects of applying web 2.0 platform to web-based collaborative learning on students' participation, learning process, and further analyze the applicability of Google Docs to elementary school students' network collaborative learning.

Table 1. The schedule of the learning activities

Week	Learning Activities
1st-3rd	a. heterogeneous grouping. b. introduction of Google Docs interface operation and collaboration skills.
4th-5th	a. introduction of social resources. b. introduction of news and journalists. c. introduction of elements of journalism. d. basic principles for compiling news articles. e. selection of location for interview.
6th- 9th	a. allocation of tasks. b. use Google Docs to collect the related resources. c. discussion and arrangement of interviews. d. production of Appreciation. e. simulate interview. f. conduct real interviews
10th- 15th	a. use Google Docs to do discussion. b. use Google Docs to integrate the resources. c. use Google Docs to produce the report and do art works.
16th- 17th	a. use Google Docs to publish the results. b. evaluate other works. c. do group self-assessment and peer assessment. d. group reflection activities.

METHODOLOGY

Participants

The sample consisted of 30 students (15 males and 15 females) drawn a class of an elementary school. We divided the students into five groups, so there were six students in each group. This class was composed under the goal of normal distribution when the students entered the fifth grade. Since our collaborative learning program involved collaborative learning, media and software operations, interviewing, reading, writing, and composition, we divide the students according to the heterogeneous of their language and computer use competencies.

Collaborative Writing Platform

The collaborative writing platform used in this research was Google Docs education edition provided by Google Inc. The site was hosted on <http://docs.google.com/a/tmups.tp.edu.tw/>. The students were required to make use the various functions of Google Docs for nearly all

learning activities, including collection, discussion and sharing of data, production and presentation of collaboration results. The instructor would also use Google Docs to participate in and observe students' learning processes.

Procedure

The setting of this study was in a computer lab with one computer for each student. The time period of this study was seventeen weeks. The program was once per week. The students had opportunities to discuss face-to-face and do their assignments in the lab for 10 to 20 minutes every week. Due to insufficient of time, they need to do their assignments online at home using Google Docs after class.

The collaborative learning activities in this study were based on Chiu, Chen, Wei, and Hu's (1999) five elements. Table 1 shows the schedule of the learning activities.

In the first three weeks of the program The Little Journalist, the instructor provided an introduction of the concepts and functions of the collaborative writing platform Google Docs

to the students to familiarize them with the skills for collaborative writing. The instructor defined her role and the role of each student in the learning program along with the general goal of the program and goals for each group. After confirming that all students had sufficient understanding of the above information, the instructor divided the students into heterogeneous groups and verified the goals for each hierarchy.

The 14-week collaborative learning program then began. In the first six weeks, the program was focused on learning of the basic knowledge of journalism, covering utilization of social resources, introduction of news and journalists, six elements of journalism, basic principles for compiling news articles, selection of location for interview, allocation of tasks, discussion and organization of responses, simulation of interviewing, and recording of interview responses. The field interview was to interview a staff of a organization.

Among the above-mentioned items, selection of location for interview, making contact with the interviewee, allocation of tasks, organization of questions to ask, and collection of related data were performed on Google Docs. Students were required to make use of the functions of this platform to communicate, discuss, and integrate data they had collected. After completing field interviews, the students spent the following six weeks on organization, production, and editing of their results. In the 16th week, they were required to use Google Docs to publish their production as a web page and present it as an outcome of their collaboration. The instructor would use a self-developed evaluation scale to assess whether all the groups have achieved assigned goals. The evaluation result would also be considered in our analysis of whether the expected goals for each group have been achieved. Finally, through a group reflection activity, all the students examined their collaborative processes to derive some directions for future collaboration.

The Collaborative Learning Process Assessment Scale was conducted at the end of the 6th as the pretest and 12th week as the posttest

during good classroom atmosphere. According to McConnell (2002), a positive social climate is necessary in conducting collaborative assessment. Additionally, this form of assessment can help learners to reduce dependence on instructors as the major source of judgment about the quality of learning.

MEASUREMENTS

Collaborative Learning Process Assessment Scale

In order to understand each learners' participation in the collaborative learning program and perception of their and others' contributions, we translated the project-based learning process assessment scale developed by Miller (2001) into Chinese version to produce a 4-point scale consisting of five dimensions: (a) participation, which means one would active, enthusiastic, and responsible participate in learning and discussion, (b) sharing of responsibilities, which means one would finish all the assignments from the group, (c) interaction quality, which means one would express himself or herself clearly and understand others' thought, (d) task execution, which means one would do his or her job perfectly, and (e) group contribution, which means one would actively find the resources and provide assistance to the others .

This scale was applied to assess the learners' collaboration performance after field interviews and result presentations from the perspectives of teachers, learners (self-assessment), and peers (mutual assessment). For the inter-rater reliability, the Kendall's W of this scale was 0.698 ($p < .001$).

RESULTS AND DISCUSSION

The purpose of this paper was to investigate the effects of applying web 2.0 platform on students' collaborative learning process and participation. Students' participation was based on the four elements of collaborative learning (Johnson & Johnson, 1987), (a) positive interdependence,

Table 2. Descriptive statistics of students' collaborative learning process (N=30)

Dimension	Pretest		Posttest	
	Mean	S.D.	Mean	S.D.
Degree of participation	3.28	0.53	3.48	0.40
Sharing of responsibilities	3.44	0.41	3.72	0.25
Interaction quality	3.15	0.42	3.35	0.46
Task execution	3.23	0.45	3.53	0.28
Group contribution	3.24	0.44	3.34	0.48

(b) interpersonal interaction, (c) individual accountability, and (d) group processing.

Collaborative Learning Process

The students' collaborative performance was measured using the Collaborative Learning Process Assessment Scale at the end of the 6th week as the pretest and the 12th week as the posttest. The evaluation results are presented in Table 2.

As shown in Table 2, all dimensions had increased scores in the posttest. The pretest-posttest difference was the largest in the dimension of sharing of responsibilities and this dimension also had the highest pretest and posttest scores among all the dimensions.

Assessment of this dimension focused on whether tasks assigned to each member of a group had been accomplished. In this activity, all members showed trust in each other and recognized the performance of each other. Through use of distinctive colors, each individual member's participation and contribution could be clearly identified. This mechanism had monitoring and motivational effects on each member's contribution.

The group contribution dimension is mainly concerned with whether participants would seek useful resources on their own and offer necessary assistance to their group members. The pretest-posttest difference in this dimension was the smallest. A plausible explanation is that because the students' competencies were widely varying, some of them already had difficulties dealing with their own tasks, and let alone

providing support to peer fellows. Thus, their inability to offer assistance to others affected their group performance in this dimension.

The pairwise t-test results were degree of participation ($t=2.94$, $p=.006<.01$), sharing of responsibilities ($t=5.00$, $p=.000<.001$), interaction quality ($t=3.39$, $p=.002<.01$), and task execution ($t=4.44$, $p=.000<.001$), and group contribution ($t=1.22$, $p=.23$). Except for the dimension of group contribution, the t-test results for all dimensions reached the significance level, suggesting that the students had a significant improvement through the collaborative learning process.

From the students' outstanding performance in the five dimensions, we observed that the students gradually recognized their position in the group and were also able to exploit the features of Google Docs to communicate, discuss, and integrate resources. Besides, through mutual monitoring and assistance, they could maximize the capabilities of their groups.

Positive Interdependence

Positive interdependence refers to the awareness that one's individual success depends on the success of his/her group. In a collaborative learning group, all members are interdependent. They need to share tasks to jointly accomplish the given task and finally enjoy the result of their collaboration (Johnson et al., 1994b).

It is almost a common view of all previous studies that interdependence among group members is critical. Some studies even pointed out that interactions between members may affect

their positive interdependence (Chiu & Hsiao, 2010). Our observation also suggests that positive interdependence may vary from one group to another, depending on the leadership of the group leader and closeness of the members.

Coordination capability and leadership of a leader are positively influential to division of labor among members and group cohesiveness. Take the leader of the fifth group as an example. She was a more aggressive learner and set a higher goal for herself. In the collaborative learning process, her members were very dependent on her, and she always played the role of a promoter. In every learning stage, she would accomplish her task first and then propelled her members to keep up with the progress. She would also use various aids to help them and share useful information with them. Because her members trusted her very much, under her leadership, they could always reach a consensus if any incongruence of opinions appeared. Therefore, members in this group demonstrated a high level of interdependence in the collaborative learning process.

In contrast, members in the second group had relatively lower intention for collaboration due to negative feelings caused by constant arguments. Most of them did not do their best in collaborative activities, because they did not want to work together at all. Those who had finished their parts first were unwilling to lend a hand to those who had not. If they ran into any argument, they would easily reject opinions from a dissident simply because they did not like him/her. As a result, their discussions were usually behind the schedule and unproductive. Besides, without leadership qualities, their leader was unable to maintain a proper order and facilitate communications among members.

The above results are consistent with Milson's (1973) view of group communication patterns. The interactive model of the fifth group belongs to the dominant leader communication pattern. In this communication pattern, the leader dominates all communications. Members propose their ideas to the leader and take orders from the leader. They interact under the

guidance of the leader. The interactive model of the second group belongs to the fragmented communication pattern. In this communication pattern, members do not have sufficient exchange of opinions. Some of them even form another sub-group and thus influence the overall performance of the group.

Interpersonal Interaction

Interpersonal interaction refers to skills for collaboration which can enhance interpersonal relationships and mutual trust between members. If all members in a group have good social skills, this group can demonstrate better problem-solving abilities and collaborative learning outcomes. Members' within-group and between-group interactions also facilitate their learning (Jones & Issroff, 2005). In the web-based collaborative learning process assessment scale, the interpersonal interaction dimension consists of two sub-dimensions, including cooperation and competition. The following paragraphs explain these two sub-dimensions based on our interview and observation of members' within-group and between-group interactions during the learning program.

1. Interpersonal interaction in the cooperation sub-dimension:

In terms of within-group cooperation, the students would search for useful resources on their own first and exchange their opinions later. If they encountered any difficulty during the program, such as being unable to find expected data, handle a given task or attend a discussion meeting due to personal reasons, they would seek help from peers and also leave a message on Google Docs to solicit assistance. In their collaborative process, they would show their care of and support for peers. Some of them would also leave messages on Google Docs to help resolve conflicts between members.

2. Interpersonal interaction in the competition sub-dimension:

In addition to cooperation, the students would engage in competition especially when their opinions were incongruent. Because the students had different traits, there were outspoken, shy, and taciturn members in each group. Therefore, in their collaborative processes, occurrence of competitions due to incongruence of opinions depended largely on group composition.

As to between-group competition, regular display of progress of each group could induce positive competition between groups. The students usually compared their groups with others on collaborative progress and forms of presentations. By observing and listening to opinions from other groups, they could examine and modify the way they shared their work load and correctness of their content.

Individual Accountability

Success of collaborative learning is determined by the performance of the entire group rather than that of an individual member. In collaborative learning, teachers should constantly demand and assess each individual's contribution to the group and let everyone recognize the importance of others' learning achievement for their individual achievement. Many scholars have mentioned that insufficient planning of collaborative learning may easily lead to free rides (Johnson et al., 1993). In our assessment scale, individual accountability involves two sub-dimensions, including defining individual accountability through division of labor and assignment of tasks and understanding the level and the importance of individual contribution to the group. A brief explanation of these two sub-dimensions is provided as follows:

1. Assignment of tasks

In the initial stage of the program, the students' tasks were primarily about data collection and organization. When the students proceeded to the field interview stage, they would be assigned tasks depending on the task requirement and individual competences.

For instance, in every group, the member responsible for conducting the interview was usually eloquent and outspoken; the member responsible for recording interview responses was usually clear-minded and quick at writing neatly; the one responsible for audio-taping was usually familiar with taping devices; the one responsible for photographing was usually familiar with how to use digital cameras and preferably with how to capture important moments from a good angle. In our observation, we found that all groups allocated tasks by volunteers' specialties. Hence, all groups were good in this aspect.

2. Understanding the level and importance of individual contribution

Because the tasks assigned to the students in the beginning of the program were mainly about collection and organization of data, the responsibility of each member in the group was less clearly defined. As a result, some members were not productive in the data collection process. They would browse irrelevant websites and even played online games. Other members in the group might have negative feelings after seeing these people taking a free ride on their contribution. Their morale and group performance were likely to be influenced.

With the increase of data added to their collaborative works on Google Docs, the students began to use different colors to differentiate their respective inputs. This mechanism not only made it easy for them to identify the content and progress of each member but also propelled all members to have a positive competitive psychology. All of them wanted to make more efforts to receive recognition of their colleagues. However, some students naively thought that filling the document with more content in their color meant higher individual contribution. They copied the entire page of a website onto the document and were even proud of their individual contribution.

Before the program proceeded to field interviews, all the members had sufficient understanding of the topics of the interview and the data they collected. Hence, they could quickly

and clearly share the workload when they had to collaboratively edit their results on Google Docs. Because they had worked together for several weeks, they had developed some tacit understanding of each other and. Besides, all the documents on Google Docs were accessible to all members. They were allowed to easily get hold of each other's progress and offer a reminder or support to those behind the schedule.

In their mutual assessment, they would consider not only face-to-face interactions but also individual contribution to the collaborative works and historical records of an individual. Therefore, these learners also agreed that Google Docs could help them keep track of their learning process, individual contribution and participation of each member.

Finally, through close cooperation in this program, both the researcher and participants agreed that using Google Docs to compile collaborative works and different colors to differentiate individual contributions allowed them to easily understand the latest progress of their colleagues. By observing colleagues' messages and compilations on Google Docs, they could also monitor their contribution in the collaborative process and be motivated to participate in the collaboration. Therefore, taking free rides could be effectively reduced.

Group Processing

Group processing refers to providing students with sufficient time to analyze their group operations, use of interpersonal skills, and assess their own contributions in pursuit of persistent progress and growth. In our program, we found that through regular meetings for progress sharing and group reflection, the students could offer positive and concrete feedbacks to each other. They could learn from others' good points and experiences of difficulties and maximize their group learning efficiency through constant introspection and reflection. Group processing could enhance learners' skills for collaborative learning, promote cognitive reflections, encourage positive behaviors among group members, and improve the learning performance of the group.

CONCLUSION

Based on the results, the following was the conclusion. In terms of the four dimensions of collaborative learning process, the students' performance in positive interdependence varied depending on their leaders' leadership and their closeness with their group members. In the dimension of interpersonal interaction, the students could quickly reach a consensus and resolve conflicts if any incongruence of opinions arose in their discussion. Besides, through sharing of group progress, all the groups would learn from others and exchange opinions in private. They would also engage in positive competitions due to comparison of their progresses and content presentation methods.

In the aspect of individual accountability, all the members in each group could gradually understand the traits and specialties of each other through cooperation and coordination. Therefore, members in each group would share workloads evenly and in a way that allowed each of them to demonstrate his/her skills.

Many scholars have mentioned that assessment of collaborative learning is difficult, mainly because some members may free ride on the contribution of others and fail to go through the entire learning process (Johnson et al., 1993). In our program, we required each member to use a distinctive color to present their inputs. When used with the records of revisions, this mechanism allowed all members to clearly identify the content and progress of each individual. This mechanism could not only motivate learners to win recognition of peers but also help them to get hold of each other's progress and provide necessary assistance or reminder. Therefore, free rides were effectively avoided.

However, it should be noted that a few students had a wrong belief that filling the document with more content in their colors meant more individual contribution. Such misconception resulted in accumulation of irrelevant data on the platform. In terms of group processing, through regular sharing of progress and the final group reflection, the students examined and modified themselves to improve their skills

for editing their presentation and group interaction, which could be a reference for their future collaborative learning.

In the assessment of collaboration outcomes, we focused on students' collaborative process and results. The students showed a significant improvement in all dimensions except group contribution. The pretest-posttest difference in sharing of responsibilities was the largest. According to the researcher's observation and interview results, this difference was attributed to our use of the distinctive color mechanism that helped learners monitor each other and motivated their involvement in the collaboration. It should be noted that the difference in group contribution was the smallest and did not reach the level of significance. Some students reported that they faced difficulties handling the tasks assigned to them and let alone providing support to their peers. Their inability to lend a hand to group members affected their overall performance in this dimension. Thus, teachers should consider students' prerequisite knowledge in the instructions and avoid setting excessively high goals for them. In task assignment, they should guide students to take into account the competences of relatively more disadvantaged members, fairly distribute the workload, and offer support to these members to enhance their performance.

IMPLICATIONS AND SUGGESTIONS

Based on the above conclusions, we proposed the following implications and suggestions for educators and researchers.

1. Edit conflicts affect students' emotions and even group cohesiveness

During our collaborative learning program, edit conflicts were constant problems of Google Docs. Edit conflicts occurred when more than one student were editing the same section of a document at the same time. In such event, students were usually unable to recover their

inputs and thus had some negative emotions. Some of them would even pin blame on each other, seriously affecting their morale. Our solution was to use separators to divide the editing area into multiple sections and ask each member input their data in their own section and using their own color. Through regular integration of data, edit conflicts could be effectively reduced. If an edit conflict still occurred, one member would be assigned to recover the revision independently. Overlapping or loss of data due to repeated recoveries could then be avoided.

2. Collaboration rules should be clearly defined

The presence of clearly-defined rules for collaboration is beneficial for communication, mutual trust, and cooperation. From the participants' collaborative processes, we found that some members would maliciously delete the content input by peer members or post improper opinions on the shared document because they had different opinions or lacked control over personal behaviors. These behaviors would affect the atmosphere of collaboration. Some members would also modify their peer fellows' content out of a good intention. However, such behavior would usually displease the original author and affect their mutual trust. Therefore, if there were clear rules demanding that all members' inputs should be respected and cannot be modified without prior consent, within-group cooperation could have been smoother.

3. Persistent sharing of progress is a key to success of web-based collaborative learning

In a longer collaborative learning program, students may gradually lose their motivation due to difficulties encountered in the task execution process or absence of immediate results. Therefore, in addition to teachers' proper participation in the learning program, persistent sharing of progress among learning groups is also critical. In our program, between-group sharing of progress at the end of each stage

created a positive atmosphere for learning and competition, because the students were able to know their relative progresses compared with other groups. By observing the progresses and suggestions of other groups, they could learn from others and modify their directions. The instructor could also understand students' collaborative processes and results in each stage.

4. Composition of each group should be carefully arranged to facilitate students' adaptation and cooperation

The goal of collaborative learning is to let students adapt themselves to different individuals and develop their interpersonal skills through constant coordination and communication. However, in grouping of students, teachers should avoid compelling students to join a group they dislike, because such arrangement will only cause disputes in the collaborative process and distort the original intention to use collaborative learning. During the last few weeks of our program, we found some students who did not like each other in the beginning began to accept each other, probably due to motivation from sharing of progress and long-term cooperation.

5. Students' information organization and analysis abilities should be reinforced

The primary goal of information education is to develop students' skills to make use of technologies and solve problems rather than to simply teach them information technologies. In our research, we found that our participants lacked sufficient abilities to analyze and organize information from vast online resources. Hence, accumulation of data occurred from time to time. However, such abilities cannot be developed in only a few months. Teachers should begin to reinforce students' abilities to evaluate, process, and apply information, and more importantly, analyze data and propose personal ideas, while they were still in the first or the second year.

In this paper, we implemented only a project-based collaborative learning program on Google Docs. In the future, other learning domains can be integrated to explore and validate the effects of this collaborative writing platform on students' learning processes and outcomes. Because our collaborative program was project-based, students' learning outcomes were evaluated through self-assessment, mutual assessment, and teacher assessment. The assessment results were directly computed according to the criteria set up by the instructor. No standardized test of students' learning outcomes was performed. Future researchers are suggested to conduct quantitative experiments in other domains to investigate students' collaborative learning performance in other dimensions.

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Discovering the Life Stories of Modern Hakka Mothers in a Classroom

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ABSTRACT

This study examines the life stories of Hakka mothers by a systematic approach in a classroom. In order to grasp a vivid portrait of the so-called "Hakka Mother", a series of courses that allow every student to revisit the life stories of mothers are proposed. This investigation explores the life stories in two different scopes: the food habit and dressing style. Throughout the dialogues among children and mothers, the life stories embedded in those two scopes have been discovered and the parent-child relationship of each family has been revealed. The results are archived on a social network platform called Ning which enables the Web 2.0 interactions and sharing processes among different users at different platforms such as Facebook and Youtube. This feature enhances the understanding of the cultural aspect of Hakka mothers and invites more people to care about the life story and to contribute their own stories in a similar manner on the social networks.

Keywords: Hakka Mother, Life Story Interview, Personal Narratives, Social Network, Web 2.0

INTRODUCTION

Telling the stories of our lives has drawn much attention in many academic circles in recent years. Life stories told from generation to generation carried invaluable legends and transmitted virtues of personality. Psychologists evaluate the importance of personal narratives for the life-story model of identity (McAdams, 1993). Anthropologists also capture the cultural

similarities and variations by every individual case study of life history (Abu-Lughod, 1993). Sociologists explore life stories to understand social relationships, group interactions and associated memberships (Linde, 1993). Historians also find that using the life story approach, the narrative materials can provide a convincing source of local history (Allen & Montell, 1981). A life story is the story that a person (interviewee) wants to tell about the life he or she has lived and is usually extracted from a guided interview by another (interviewer).

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The basic elements of a life story contain some important events, highlighted experiences and emotional impacts or feelings of a lifetime. Through a proper arrangement of the life story interview, it always helps to realize the past and the present of the interviewee more subjectively and possibly to find a way to setup a personal legacy for the future.

McAdams (2008) proposes six common principles for the personal narratives of life stories as follows. (1) The self is storied. This means the self is both the storyteller and the stories that are told. The self encompasses a subjective storytelling “I” whose stories about personal experience become part and parcel of a storied “me” (2) The stories integrate lives. Psychologically speaking, life stories may provide synchronic and diachronic ways of integration of lives. The stories show how the individual person encompasses so many things at the same time (synchronic way) and encounters things step by step, for example, from an impoverished childhood to his or her current state of affluence (diachronic way). (3) The stories are told in social relationship. It is a simple but profound truth that any life storytelling may vary from who their audiences are and what their audiences want to hear. That is, people narrate personal events in different ways for different listeners, and they may switch back and forth between different modes of telling. (4) The stories change over time. This principle is an interesting consequence of the change of people’s motivations, goals, concerns and social positions. (5) The stories are cultural texts. Every life story shares and represents a considerable degree of cultural knowledge about the life course. (6) Some stories are better than others. This can be evaluated as relatively good or bad from a psychological viewpoint through a process of story reformulation and repair.

Basing upon McAdams’s six principles for the personal narratives of life stories, in the present study, we would like to investigate the life stories of Hakka mothers in order to enrich our understanding of Hakka culture or so-called Hakka image. There’re numerous studies focusing on the essence or characters of Hakka people

and associate interracial/intercultural behaviors in Taiwan. One of the most challenging topics is how to construct or reconstruct a common image or identity of Hakka people from different viewpoints. Wang (2005a) has investigated some popular Hakka images from respondents of different ages and ethnic groups in fifteen Hakka villages in Hsinchu County and Miaoli County. The results showed that the majority of Hakka images such as their virtues and food habits are coincident among those respondents. However, from the analysis results, it also reveals some subtle changes of Hakka image from different ages and backgrounds. Basing upon the detailed ethnic text analysis of several Hakka broadcasting shows, Lin (2003) explored the image of Hakka according to the hypertexts extracting from the call-in programs. The total duration of the shows is about eighty hours and that accumulates a great amount of information. His analysis results show that there is a significant ethnic group boundary of Hakka people from a global point of view. The results also reveal a cultural representation of Hakka in a convincing way. More importantly, in those two-way call-in processes for every broadcasting show, the image of Hakka is not totally stationary, but some interesting part of it such as the scope of “Taiwan Hakka” evolves in a dynamical manner.

One the other hand, the significance of Hakka female on shaping the image of Hakka has drawn much attention in the recent years. Wang (2005b) discussed the variations of the ethnic group boundary on those intermarriage Hakka mothers between Hakka and Min-nan. The results showed that the collective memory (Olick & Robbins, 1998) and ethnic identity (Lim & Hsiao, 2009) of Hakka are very sensitive on the life experiences of those Hakka mothers. Hsu (2007) has proposed another interesting aspect from foreign Vietnam spouses on the images of both Hakka and Min-nan ethnicity. It is true that the amount of those foreign spouses grows up significantly in recent years for many Hakka counties. Therefore, the viewpoints from them will become more important in the near future. The results show that the influences of Hakka

identity or image on those Vietnam spouses are not as sensitive as those on Hakka or Min-nan spouses. This draws another interesting issue on the enlarging scope of Hakka mother with foreign spouses and its subsequent effect on shaping the new image of Hakka in the future.

In this study, we would like to elucidate the image of Hakka by discovering the life stories of Hakka mothers from different cultural backgrounds including Hakka, Min-nan and some foreign countries. From the viewpoints of children in those selected families, we have delivered several courses in three elementary schools and one junior high school within a couple of months. The key features of the courses are emphasized on the interactions between the parent and child for the topics of mother's favorite food or their most beautiful dresses. Those attendees are asked to grasp their mothers' life stories into articles, photographic comics and documentary videos. The results are archived on a Ning website which enables effective sharing of stories to the public social networks such as Facebook or Youtube channel.

COURSE DESIGN AND PROCEDURE A CONCEPTUAL MODEL FOR COLLECTING LIFE STORIES

In this study, we adopted the conceptual model of effective story-collecting processes proposed by Chen, Liu, Feng, and Wu (2010) in order to collect some insightful life stories of Hakka mother in a classroom. This model is generally intended to provide a qualitative and effective guideline for researchers to find out their target stories that are valuable to explore in a limit time span. The ordinary application is to build up the collective memory of Hakka mothers from the researcher's own social network. In this study, the students in the same class are asked to interview their mothers' stories according to the conceptual model of story collection.

Figure 1 displays our conceptual model of story-collection. First, the inner circle indicates the core story embedding in a key person.

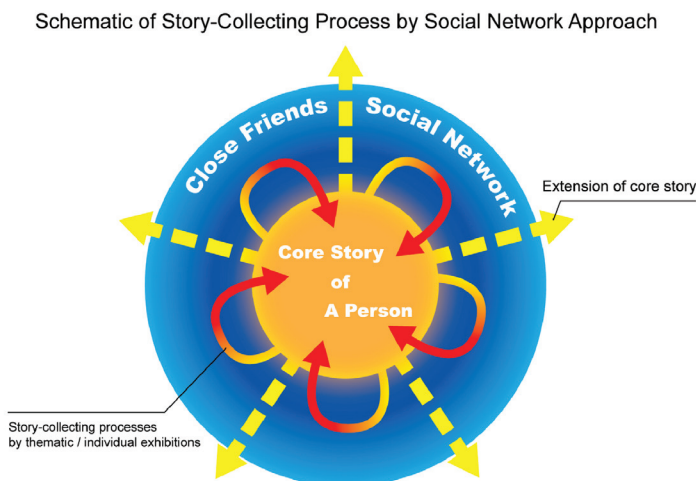
Then, it is natural to enlarge the size of the core story from the scope of the key person to his or her social network which is indicated by the outer circle. The life stories corresponding to the outside circle (social networks) can be explored in a similar way to the core story of the key person. Therefore, the stories collecting for the key person as well as for the outer-circle social network may possibly form a collective memory for the Hakka mothers. The procedures of story-collecting can be performed for several times in order to grasp essential features and shared memories among the families or friends. The quality of the story-collecting process may depend on the searching direction of the stories.

In the present study, the core story in our model is provided by a well-trained expert. That expert may share his or her personal narratives of life story in order to set a pattern of story that students can follow as well. Basing upon the life story interview proposed by Atkinson (1998), every life story is extracted and expressed in a suitable manner. This strategy will ensure the quality of stories that have all necessary details such as important events, emotional impacts and etc. In this study, we ask students to express the life story as article, comic and video. By archiving all the digital contents on a social network platform Ning, the results can be further promoted to other platforms such as Facebook, Twitter or Youtube channel. In this promotional stage, Facebook, the leading social network in the world, has provided a great opportunity for us to spread the story effectively in every social network (Zhao, Grasmuck, & Martin 2008).

COURSE DESIGN AND PROCEDURE

Musser and O' Reilly (2006) had said that Web 2.0 was the basis of next generational network created jointly by a series of tendency of economy, society and technology (Blood, 2002; Henning, 2003; Nardi, Schiano, Gumbrecht, & Swartz 2004; Herring, Scheidt, Bonus, & Wright, 2004; Williams & Jacobs, 2004;

Figure 1. The Schematic of the Conceptual Model of Story-Collecting Process (adapted from Chen et al., 2010)



O'Reilly, 2005; Mason & Rennie, 2007; Chang & Liu, 2008). It was a more matured and unique media, featuring users' attendance, open-endedness and network effect. Via National Digital Archives Program "Legend of Modern Hakka People – The Stories of Hakka Mothers", this study adopted Web 2.0 for its spirit of mutually creating and sharing (Liu & Chang, 2010) and recorded various expressions and affections of Hakka mothers of last generation in terms of Hakka children of present generation. Therefore bare and real life history of Hakka population at the present age could be preserved effectively in a most natural way.

Multimedia Course for Food and Cooking

In the part of course design, this study offered a three-module course of multimedia project and one course of writing for the memories of clothes. For the first part of multimedia project, each module took 4 weeks and for every Wednesday afternoon the attendees had to do practicing the computer skills and completed their results for three hours. The course was led by a well-trained teacher and three accompanied course assistants. The number of attendees is

about one hundred and thirty students coming from two elementary schools and one junior high school. These three modules included (1) learning and getting used to write and share blog articles via Web 2.0, (2) drawing comics featured with mothers' photos and livings into meaningful photo stories, and (3) simply recording and editing videos of Hakka food that is made by their mothers. The attendees are turned around these three modules. The first two weeks are for the training of computer skills and the last two weeks are for the students doing the course project.

In the first module, students learned how to use blog, and in the rest two modules they visited each other's blog and gave advices for multimedia project. With students' sharing and comments, peer support was expected to be achieved. The detail of teaching outline was shown as Table 1. We also conducted a course blog at <http://www.wretch.cc/blog/hakka2u> to announce news or to demonstrate some good pieces of works. In the second module, students learned how to use digital camera for photograph storytelling. The most interesting part of this module is students were asked to design storyboards for their own stories. It is

Table 1. Course Module

Module	Content and Procedures
Blog production	<ul style="list-style-type: none"> -Spirit of Web 2.0 creating and sharing -Building up individual blogs -Related setup of blog -Writing articles together -Quoting and sharing articles and authorization of creative commons -Selling blogs
Photographic comics	<ul style="list-style-type: none"> -Skills of camera operation and photographing -Creating a comic theme and its story together with mothers -Simple instructions of Photoshop -Editing photos and subtitles, posting original articles to blog and asking for comments -Uploading articles to the project website "Ning"
Interviewing videos	<ul style="list-style-type: none"> -Learning how to use camera and record videos -Creating a comic theme and its script together with mothers -Posting the theme and script to blog and asking for comments -Grouping and recording videos -Instruction of Microsoft Movie Maker -Editing videos, after-effects and subtitles -Uploading articles to the project website "Ning"

very helpful for students to tell story in screenplays which are the basis of good storytelling. A well-trained teacher here plays the role of key person as in the above mentioned conceptual model by providing the core story. One of the co-authors shares his own experiences and interesting stories of making for dinner with his mother in childhood. He also demonstrated an example of the cooking process with his mother: how to select a fish with high quality or where to buy the freshest vegetables and eventually how to cook a delicious and nutritious dinner for the family. All the cooking processes have to pre-organize as a storyboard before going to market. Then, by following the storyboard, we can take pictures for the entire event. After that, the raw pictures are compiled into photographic comics with dialogues and are uploaded to the project website for peer comments.

In the third module, students were trained to use digital camera (with video recording function) to make short films of their mothers' stories. Basing upon the storyboard training in the second module, students can organize their stories and take the film according to their screenplays under the instructions of corresponding teachers and teaching assistants. In

this module, the editing of the film was done by the popular Microsoft Movie Maker. It provides hands-on guides for the beginners and easy-to-use user interfaces. Most of the students can take movies and can edit the movies by themselves. The video results were uploaded to the project website via <http://hakkamama.ning.com> for peer comments.

Writing Course for the Memory of Clothes

In the second part of the course design, we invited about one hundred and twenty students from an elementary school to join our two-month course. This course includes two stages of learning activities. In the first stage, students are taught to make a simple life story interview with their mothers or grandmothers at home. The focus of interview is about the story of cloth and clothing. The idea is inspired from our preliminary study of life stories for a famous fashion designer Ms. Huang Wen-Hei who lived in Toufen Township for over fifty years. Students are asked to grasp the stories of mothers' or grandmothers' and write into articles. Every article is posted on the project website for peer supports and forming a web-

based community (Liu, 2007). Several teachers involved in this course then made decisions according to the quality of each writing is good or not. The authors of most of qualified writings are invited to join the second stage of course with their parents.

The second stage of course was held in two days. In the first day, we invited Ms. Huang Wen-Hui to share her viewpoints and feelings about the cloth and clothing. We have promoted her works as a thematic exhibition before the course. She shared very valuable knowledge to students about the clothing of Hakka and gave a hands-on training on sewing techniques for the students. In the first day evening, we invited some parents of the students to share their stories of clothes for our professional video recordings. During the interviews, every family is asked to share the stories as dialogues between the children and parents. In the second day, we have an exhibition for the course results and we shared the results to the public media such as cable TV channel or newspaper.

RESULTS AND DISCUSSIONS

The Stories of Food and Cooking

In this study, the image of Hakka mother is partial understood by the food habits or recipes of selected families. Students are asked to present photographic narratives of the cooking process for each dish. The detailed procedures are presented as follows. (1) In the beginning of the course, the teacher shared his own interesting stories with his mother on the food preparing and cooking in order to inspire more imaginations from the students. (2) Then, the teacher encouraged students to think about their own experiences or to discuss with their mothers for some interesting stories of food after class. (3) Choose the interested recipe and design the storyboard before going out for taking photographs. (4) Take the photos according to the storyboard. (5) Edit the photos and to arrange the photos as a comic story.

Figure 2 shows the comic results by six selected students. Figure 2(a) shows the

standard procedures of making the so-called “Hakka Orange Sauce” by one of the mothers of the attendees. This student arranged the storyboard in a logical manner showing that how the orange sauce can be processed. His parents are all native Hakka people and are capable of making many traditional Hakka dishes. Figure 2(b) shows detailed steps of cooking Sushi. This student does a very good job by using a sequence of close-ups to show the complicated procedures of cooking Sushi. Figure 2(c) shows a good technique on the post processing of the photos. Figure 2(d) displays a lovely family life on cooking for meals. The photographic comic shows the steps including selecting the vegetables and fruits on the traditional market, preparing the dishes, cooking, and enjoying the meal. Figure 2(e) shows a famous Hakka dish which is called “Fried pork with vegetables, Hakka style”. And the storyboard of the recipe is also attractive to tell the whole story. Figure 2(f) shows an interesting source of vegetables on the cooking. Some of the vegetables are harvested from their own garden and thus the dishes are very natural and healthy.

On the module of movie making, the students were learnt to interview effectively by preparing the rundown. But in practical situations, the parent-child interactions play a key role of the atmosphere. Fortunately, the naive and active responses of the children can always relax their mothers so that she can tell the story easily and be full of family affections. All the videos are uploaded to our project YouTube channel at <http://www.youtube.com/dmd2u>. We choose several tags such as “Hakka mother”, “vegetables”, “Hakka food” to attract more people to see our videos. Interestingly, one video that is about a student introducing her family farm to the audience has attracted more attention (see <http://www.youtube.com/watch?v=BiYaC4uQfWQ>). Another lovely video story shows that the mother shares her personal experience in the childhood to her daughter about her favorite beef noodles (see <http://www.youtube.com/watch?v=tMYo-Q1Unu8>). In that video, it is true that the mother tells the story by integrating her mem-

Figure 2. Photographic comics of food and recipes



ory in childhood, wonderful taste for beef noodles and virtues. This observation coincides with some of McAdam's six principles of life story narratives. In the life story interview, the social relationship of mother and daughter makes them talk without stress and shares some personal stories. Moreover, from the life story, we can easily identify some culture texts such as diligence and family love.

As a further development of the course results, we also submit our videos to a competition held by a local leading newspaper at <http://udn.com>. The UDN news is one of the most important news media in Taiwan. One of our submitted videos won the prize of the competition and it has about three hundred people watching this

video in a couple of months (see Figure 3 and <http://video.udn.com/video/Item/ItemPage.do?sno=344-233-2B4-23303d32333d4-233-2F303-2F3c-21-3D> on UDN.com and <http://www.youtube.com/watch?v=j1oLY0znaLQ&feature=related> on YouTube). Besides, on our Youtube channel, this video is also received high attention about five hundred times of watching. This is because, for that UDN competition, we have shared this video from Youtube and UDN to our Facebook social networks. It received some comments and responses on the author's wall on Facebook. From the results, the sharing on the Facebook wall is proved to be very effective to advertise our stories.

Figure 3. A video wins the prize for a competition by UDN.com

The screenshot shows the UDN.com website interface. At the top, there is a navigation bar with links for '行動|新聞|理財|追星|電子報|數位閱讀|資料庫|Blog|便利貼|求' and a search bar. Below this is a main navigation menu with categories like '首頁', '時事', '財經', '生活', '消費', '娛樂', '校園', '綜合', '合作夥伴', and '活動'. The main content area features a video player for a recipe titled '媽咪的創意甜點 環保豆渣餅'. The video player shows a young girl in a yellow shirt cooking in a kitchen. The video player includes a play button, a progress bar, and a 'MORE' button. To the right of the video player, there is a sidebar with video statistics and a '我要推薦' button. The sidebar includes fields for '推薦: 2', '瀏覽數: 285', '來源: iReporter 阿笠博素', '發表日期: 2010-05-08', and 'Tags: @媽咪私房菜'. There is also a '摘要:' field with a summary of the video content.

The Stories of Clothes

This part of study is originated from the story of Ms. Huang Wen-Hui, the so-called Hakka Lady of Cloth (Chen et al., 2010). The most interesting part of her story is “the wrapping dialogue between cloth and dress” which expresses her deep feelings about the interactive dialogue among the cloth, herself and the customer during the process of dressmaking. Ms. Huang also promoted the benefits of the recycling of clothes which is a virtue of Hakka people in common (see her life story interview via <http://hakkamama.ning.com/video/ke-jia-ma-ma-de-yi-ke-jia-yi-2>).

In this study, we first announced a message to invite all the students to seek for the touched stories of clothes from their mothers or grandmothers. The writing of each story is a good start and an understanding for the children to discover what their parents or grandparents experienced in the past. It would be very help-

ful for the attendees to share the memory of the preceding generations. We choose about twenty stories out of over 100 submissions. Most of those selected stories are talking about the memories of the bridal garments and wedding anniversary dress. In the naive and frankly writings, those stories reveal precious husband-wife love, the parent-child relationship and the family love. One of those pieces of writing is translated as follows.

“When I went upstairs and opened the wardrobe, I found a suit of modified cheongsam with beautiful purple color and an elegant style. It was bought by grandmother for the wedding of mother and father. My grandmother is known as a thrifty person and is very unusual to pay so much money for the garment. The dress is full of the affection out of my grandmother to my mother” (Lin Yu-Chen). In this article, the life story of the memory of cloth is very touching. It reveals many precious aspects of the social relationships among family members and some

cultural contexts on women virtues or customs for a wedding.

In order to have more vivid image on the life stories, we invited those good storytellers (parents and children) to attend our course and exhibition on 14, January to 15, January 2010. Figure 4(a) shows that Ms. Huang was teaching the sewing techniques to the students for a cell phone pocket. In the class, we also taught the students how to use camera to take pictures and to make short videos in Figure 4(b). In the evening of 14, January, we invited some of the parents to school and introduced the idea of this project. After that, we took the videos on the story of clothes from mothers or grandmothers family by family in Figures 4(d) through 4(f). All the videos are compiled as <http://hakkamama.ning.com/video/guo-ke-hui-ke-jia-ma-ma-ji-hua>. In these clips, we can see many wonderful moments and dialogues between mother and

child. Talking about the story of clothing plays a pivotal role to connect their common interests and eventually the memory of the story can be transformed or internalized from mothers to children. And this is the very power of life story telling by family member as mentioned by McAdams (2008).

In the afternoon on 15, January, the exhibition was held and all the other students attending the first stage writing activities were also presented in Figure 4(g). Some reporters of the local media from a cable TV channel and a broadcasting station were also interested in this exhibition in Figure 4(h). All the interviews from eight families can be viewed on YouTube via http://www.youtube.com/watch?v=rx_JIX8GW3k. After the formal exhibition, those cell phone pockets made by the attendees in the course of Ms. Huang Wen-Hui were also demonstrated on site in Figure 4(i).

Figure 4. A special course of the memories of clothes for Hakka mothers



Figure 5. The Snapshot of the Project Website at <http://hakkamama.ning.com>

Archiving on the Social Network Platform Ning

In this study, the project results including articles, photographic comic and video clips are all archived on a powerful social network platform which is provided by Ning (<http://www.ning.com>). Ning is an all-in-one, open online social network environment that enables the features for collaborations on story-collecting in the spirit of Web 2.0. It allows users to create their own contents such as blog articles and to upload digital contents such as photographs and videos. Figure 5 display the snapshot of our project website via <http://hakkamama.ning.com>. It is noted that every article or video we upload to that site can be shared to any social networks such as Facebook or Twitter. This function enhances the promotion of the life stories and it is easier to receive feedbacks from friends.

The most prominent feature of Ning is that it can organize each user's contents in a structural manner by tagging mechanism. This key feature allows us to invite all the interested people to share their stories of Hakka mother. In the present, all the digital contents produced by the attendees are archived in this platform. On the other hand, Ning also provides two-way sharing mechanisms from itself to other social networks such as YouTube, Twitter or Facebook. This feature allows the users to easily deploy their contents from any other opened social networks in an effective manner.

CONCLUSION

In this study, we design a variety of classroom activities or courses to discover the life stories of modern Hakka mother. In order to have

convincing portraits on the Hakka mothers, we invited over 200 students from three elementary schools and one junior high school to contribute the first-hand stories about their mothers. In the first part of the multimedia class, the students are asked to present their mothers' food habits or home-made recipes using the technique of storyboard and some photographic computer skills. The resulting comic is so attractive and fruitful. They reveal very rich information of the Hakka food culture such as two famous dishes: the Hakka Orange Sauce and Fried port with vegetables, Hakka style. In the video clips of the cooking process, many mothers share their own experiences and memory about the dishes. They always recalled that her memories of the favorite dishes are all bounded by her mothers' home teaching and family love. It is surprising that it arises many interesting and touching life stories of favorite food or home-made recipes for every family.

In the second part of this study, we focus on the training of writing skills of the students in order to express their understandings of mothers' stories of clothes. The selected students and their families are invited to school so that we can have a video interview to recite or to share their stories to the public on the internet. In the exhibition of the course, after watching the resulting video, many students that are not good enough to be selected in the course in the first stage showed high interests to report their own stories of clothes once more. It is true that throughout these story-collecting processes, some of mothers' memories of food or clothes are implant into the children's mind for sure.

In this study, we also adopt the conceptual model of story-collecting for a social network to that for classmates. The entire model is unchanged and is very suitable for every Hakka mother we're interested in. The close friend's social network as indicated in the model now becomes the learning social network. In the classrooms, we can collect every student's story according to this model under the guidance of the teacher. Additionally, we also use the powerful Web 2.0 website Ning to archive everything we

have collected and to share the stories that are contributed by the users. Using Ning, we can also share our stories to other social network platforms such as Facebook, Twitter or Youtube channel. This sharing mechanism of Ning enables us to simultaneously archive the results as well as sharing the stories by associated social networks. We believe that under the framework of this conceptual model and the help of using Facebook, more life stories can be shared and be exchanged in an effectively manner.

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