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The acquisition of professional knowledge through the development of

critical reflection: A pilot study in a teacher training course

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Introduction

To many pre-service teachers, professional knowledge consists of both the theoretical foundations of practice in future classroom teaching and the conceptual arguments from which the explanation of observed phenomena has been found. Teaching is contextualized with one's own narrative knowledge gained through apprenticeship and observation when doing student teaching in real classrooms. On the other hand, professional knowledge, such as the theory of teaching/learning related issues, is commonly learned through discussions in lecture courses designed by the instructors of training programs. The pattern of learning commonly adopted in such lecture courses starts with reading articles assigned for chosen topics and concepts, and then continues to in-class discussions or group activities to reinforce the comprehension of the reading assignments. Such a learning experience is usually teacher-centered and the students are passive receivers of information. It does not require the ability of actively contextualizing professional knowledge with challenges faced in personal situations. As a result, the intellectual discussions seem to have little effect on the minds of preservice teachers.

Learning professional knowledge

The learning experience mentioned above generally depicts the way that preservice teachers acquire professional knowledge in many training programs. Reading and commenting on the readings seem to be the common requirement and the end of such courses. Preservice teachers walk away from this course only with partial memory of the content read and discussed in the classroom. Unfortunately, this is generally what

they can gain through the course.

Critical reflection, on the other hand, helps teachers to re-evaluate what they have learned and encourages them to ponder alternative perspectives in their beliefs on teaching and learning. The re-evaluation of their learning and their examination of multiple perspectives result in belief changes. Elder and Paul (1994) define such a process as the ability of individuals to take charge of their own thinking and develop inner criteria and standards for analyzing and assessing it. For example, Harrison *et al.* (2005) suggest/ that mentors need to adopt strategies demonstrating a more "enquiry/reflecting" mode during the mentor session that, as a result, will encourage new teachers, giving them the capacity to move "…from specific thinking and action on an everyday basis toward specific reflection on incidents and events and then towards a development of understanding through interpretation" (p. 288). The "enquiry/reflecting" mode in the training process offer chances to bridge learned knowledge with students' beliefs and interpretations that ultimately lead to meaningful learning.

In addition, Yost *et al.*, (2000) indicate the importance of prior knowledge in fostering reflection among pre-service teachers. It is important to provide tension and uncertainty for the pre-service teachers to help them discover the problems which arise from the discrepancy between prior thinking and reality. The guided dialogue among other pre-professionals will promote collaborative problem-solving inquiry and transformation of thinking. Dialogue "…allows students to be aware of what they share in common, as well as the uniqueness of each of them as individuals" (Harrington, 1994, p. 192).

With emphasis on self-reflection, inquiry-based learning develops information-processing and problem-solving skills through learning of content. It aims at fostering critical reflection and autonomous learning of students who can actively search for a problem and its solutions (Exline, 2004). Such learning is considered as an experience through which students connect and reflect upon acquired knowledge, while personalizing the recently-studied information through the process of searching for answers. It is student-centered, emphasizing "how to" instead of "what to" know in the process of learning. Knowledge in an inquiry-based classroom is dynamic and socially constructed through cooperation (Crafton & Burke, 1994). In addition, its learning is a power process of knowledge generation and an opening for lifelong learning and questioning (Donnell & Harper, 2005).

Based on a master level course, entitled *Language Learning and Teaching*, in a teacher training program, this study attempts to foster both comprehension of professional knowledge and the attitude of contextualizing knowledge with situational factors. More importantly, this study hopes to help preservice teachers with the development of critical reflection skills through cooperation with others in inquiry-based tasks.

The study

Participants and the course

Participants of this study were twelve preservice teachers in a master's level teacher training program in Taiwan. In their early twenties, this group of preservice teachers was in the/ first year of their master's level program and this course was the first required course in this training program. Preservice teachers in this program received training in two lecture courses, one focusing on professional knowledge and the other,

a practicum-related course emphasizing the practical knowledge related to the local context.

The lecture course in this study was the preliminary, but crucial part, of the training for novice teachers in this /program. In this course, pre-service teachers encountered primary theories and controversial issues relating to language teaching and learning. In this course, readings on topics such as Educational Psychology, Language Acquisition, Teacher Efficacy, and World English were chosen to prepare pre-service teachers with solid theoretical foundations and a better understanding of their role as non-native speaking teachers in the era of English as an international language. While taking this course, pre-service teachers were also doing student teaching in a nearby elementary school once a week. In other words, training at this period of time did not solely come from intellectual readings and in-class discussion; it was also supported and examined by practice in a real classroom.

Procedure and activities

This course was based on lectures and group activities. Differing from many other lecture courses, the group activities in this course extended the in-class lecture into a collective journey of discovery that was carried out mainly through an on-line discussion forum.

Pre-session period. At the beginning of each topic, students were first prompted to approach the topic individually. They were asked to first answer pre-session questions as listed below before delving into the readings. These questions retrieved background knowledge from pre-service teachers while raising awareness of the connection between theory and practice. Three to four students formed a group and shared their

answers in an on-line forum where people could read and respond to each other's message.

Pre-session questions:

What does _____ mean?

Does this topic relate to my previous knowledge on language teaching/learning? If yes, how?

What did I know/learn about this topic?

How does this topic relate to the field of language teaching/learning?

During the session/. The lecture course was conducted mainly in lecture and in group discussion format. However, after the discussion, specific questions extended from the in-class lectures and discussions were posted in the on-line forum. Participants consulted materials other than the assigned readings in order to answer these questions. Then, they shared their answers or responses in the classroom at the end-session of that topic.

Post-session session. This period wrapped up the topic with collaborative works in which participants shared their answers and responses in a group. One thing worth noticing is that members of the in-class discussion group acted differently from that of the on-line discussion forum. Such an arrangement was intended to bring varying perspectives from as many resources as possible. During the discussion, each group synthesized different opinions and presented their final conclusions to the whole class. At the end, the instructor made the final remarks on the discussed topic or issues by providing her own perspectives or correcting some misunderstood concepts. This learning experience is hoped to develop their skills in searching for and synthesizing

information required for understanding the topic. In the on-line forum, participants were asked if their understanding on the topic had changed over this learning process. They were encouraged to reflect upon the newly-formulated knowledge and to examine its effect on their knowledge and belief system.

Data analysis

Data were collected through the on-line discussion forum and the end-of-course interviews. Every thread of the discussions in the on-line forum was analyzed to investigate if any difference occurred in the answers before and after the sessions. The researcher worked with another experienced teacher trainer to read and examine the on-line data. They discussed and reached consensus when identifying the differences in the data collected from different periods of time. Meanwhile, open-ended interviews at the end of the course collected comments of each participant on this learning experience. Each interview took about ten to fifteen minutes. Data from the interview was analyzed and synthesized to reveal the meaning of this learning experience to the studied group of pre-service teachers.

Results and discussions

Responses to posted questions

The analysis of the on-line group's responses to the posted questions in the forum reveals the changes in learning professional knowledge in this theory-based course over the period of the study. In general, pre-service teachers seem to be able to articulate their thoughts better in the post-session discussion with details and examples to support their arguments. Also, the responses tend to be longer and include/ various and extended aspects that the students received from both the in-class

discussions and the on-line forum. Other changes are discussed in the following.

Expand and self-correct the existing knowledge. One pre-service teacher wrote, "*Before, I thought a native speaker of English is a person who speaks English in his daily life. But, after reading the articles and the discussions, I realize it is hard to define "native speaker." … According to readings, being labeled as a native speaker of a language is "of no particular <u>a priori</u> significance, in terms of measuring facility with the language." However, Chomsky's notion of native speaker is that a native speaker is the authority on the language and that he or she is the ideal informant. This notion provides an understandable advantage to the native speaker in grammaticality judgments.*" It is clear that the learning through collective searching for answers assists the awareness of existing knowledge and it further expands the repertoire of knowledge.

Comprehend the core of the concept. The responses in the post-session periods not only contain more information and elaborative points but also point to the core of the discussed topics. For example, through the issues of World English, pre-service teachers start to recognize that the key meaning of English as an international language does not solely exist in the fact that varieties of English accents have become more and more acceptable in educational context. Comments and discussions on the power issues and complexities behind the international status English holds also exist in the responses in the post-session periods.

Connect and compare to similar concepts. The responses to the pre-session questions usually start with a definition of terms or theory and end/ with more explanation of concepts. The responses in the pre-session periods are characterized as more

information-oriented and decontextualized. However, in the post-session period, pre-service teachers are able to reflect upon the discussed theory or issue/ and provide personal opinions. The most commonly found opinion is to connect and compare similar concepts. For example, after summarizing Vygotsky's concept on learning and language development, one pre-service teacher wrote: "*Language to Vygotsky is a tool to communicate our opinions. When children do not learn to speak, they are just like animals since they can not make themselves understood to their surroundings via the use of language. However, I agree more with Piaget since culture cultivates a child rather than reconstruct a child as proposed by Vygotsky.*" In this example, the participant tried to compare Vygotsky and Piaget. Even though the comparison seems to require more knowledge on the related concepts, the attempt to reflect and to connect similar theories indicates a fact that the participant is aware of the possible similarity and difference between these two theories. Such attempts could be an indication of the development of critical reflection.

Open-ended interviews

During the interviews, pre-service teachers shared their opinions on the impact of this learning experience to their learning of the professional knowledge designed for this lecture course. The positive attitude to the value of both in-class and on-line group discussions prevailed in this group of participants. This learning experience seemed to be a preparation for doing individual inquiry in/ their future research as required in this master program. In this research, they learn ways of searching for information and materials when looking for answers. More importantly, they practice the ability to evaluate and filter through threads of information to locate the core concepts. And reading and commenting on answers from other group members in the on-line forum clarify their questions or crucial points missing in reading the assigned articles.

Additionally, two other merits of this learning experience stand out in the interview.

Critical reflection. The most frequently shared comment from the students was the development of self-perceived, critical reflection. One female pre-service teacher said, "*Through the weekly group discussion, I receive different information relating to the topic and can always get the answers in my head in the end. In my opinion, it is a good way to train our critical thinking.*" Another teacher said, "*After posting my own opinion, the next important step is to look for different opinions from my group members. Their ideas usually let me to see the topic in different angles and to clarify my thought. Sometimes, I will check the board after the class to review the main points for this week's lesson.*" Exposure to questions and different opinions can partially characterize this learning experience and that inevitably caused some discomfort among participants at the beginning of the course. Most pre-service teachers in this study are used to the way of learning when teachers provide standard and ready-to-go answers. The chance to look for answers on their own and be active in constructing knowledge together with peers is considered foreign but later becomes interesting and enjoyable to them.

Cooperative learning. Some of them, in fact, share the confusion and anxiety which happened at the beginning of this course in being asked to search for answers and accepting different opinions from classmates. However, most of them later acknowledge it as a good exercise of problem-solving skills and a good experience of constructing knowledge together in a group. "*Because of the different information we collect or select, our opinions are different. Hence, we can learn more the topic and understand it from different aspects. I think the on-line discussion is a good model of the cooperative learning. It can help us learn more efficiently than individual works.*"

In a group, each member contributes to the fund of knowledge and is a participant in this collective work through which learning becomes personalized and meaningful.

Conclusion

This study integrates the purposes of communication, i.e. in-class and on-line discussions, with problem solving skills in the process of learning professional knowledge of pre-service teachers. Preservice teachers in this study were assigned with different on-line and in-class groups in which they shared their responses to inquiries relating to theories and issues in language teaching and learning. There were three periods, i.e. pre-session, during-session and post-session, in this course. Pre-service teachers were asked to relate to prior knowledge and encouraged to identify unknown areas that interested them. This step stimulated the awareness of their learning by locating the gap between known and unknown. In the during-session period, the instructor of this course posted some questions relating to the core concepts of the discussed topic and required individual inquiry into all the questions of each participant. During this session, all participants separately surfed the Internet and visited the library to look for information they believe could apply to the question. This step encouraged the ability of exploring and identifying solutions to problems. Pre-service teachers later posted their answers on the on-line forum, a community where they were supported by reading others' answers. In the in-class group discussion, they exchanged their views on the assigned problems and raised questions to the whole class when diversity among those viewpoints occurred. Then the instructor answered those questions and clarified confusing points, if any, at the end of this period. In the post-session period, pre-service teachers recapped and synthesized knowledge learned throughout this process.

The results from posted messages on the on-line forum indicate the growth of knowledge during the period of the study. In the messages shared in the post-session forum, pre-service teachers provide more in-depth viewpoints and support their arguments with examples. Also, they were able to contextualize professional knowledge by relating it to their own context. Professional knowledge became the source of answers when facing challenges in real-life teaching and learning. This was the ultimate purpose of this paper: to connect the unknown with the known. Such a purpose successfully plants /seeds in this group of pre-service teachers through the activities in this study. Through this experience, problem-solving skills and an inquiring attitude are nurtured. The results of this study highlight the importance of having problem-solving skills and using cooperative learning in learning professional knowledge for pre-service teachers. It also fosters the spirit and skills for life-long learning.

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