教師經由專業發展及教學創新提升學生創造力經驗之探究—敘說取向

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　　本研究的主要目的是採取敘說探究和質性行動研究的方法，以檢視老師訓練學生參加台灣一年一度的創造力比賽所實施的創造力教學而累積的專業發展、教學創信、教學成效的經驗。位在台灣中部的一所高職已經在過去的三年當中連續獲得創造力比賽的第三名，負責創造力教學的老師和幾位獲選參加創造力比賽的同學受邀參加本研究。本研究的進行期程共計一年半，自2007年9月至2009年4月止。藉由教室觀察、師生訪談、教學相關文件、現場文本、研究札記等資料收集與分析，我們期盼從創造力教學的經驗中，可以改進並進一步發展提升學生的創造力的教學方法，以提供其他熱衷於創造力教學的中學教師參考。因此，在如何提升學生的創造力以及促進教師專業發展與教學創新的基礎下，本研究提出一些建議。

關鍵字：敘說探究、創造力、創造力教學、教師專業發展、教學創新

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The Inquiry into Teachers' Experience from Professional Development and Teaching Innovation to Enhancing Students' Creativity:A Narrative Approach

1. Introduction

Recently, the educational policy makers all over the world have made more and more emphases on creativity development and education, including USA, Finland, Australia, New Zealand, Ireland, and the Far East (Fisher, 2006; Tu, 2005). Many of the White Papers on Creativity Education Policy in the world emphasize the importance of creativity and humanistic arts (International Federation of Arts Council and Culture Agencies, 2005). Among the policy document worldwide, creativity is considered as the factor in enhancing economic, cultural, and personal development. Also, the government in Taiwan has been building the "Republic of Creativity" as our vision of education since the White Paper on Creativity was declared by Ministry of Education in January, 2002. The essentials of that vision include: to cultivate the attitude towards living for lifelong learning and the courage to create, to provide the vivid and cheery environment with respect to individual difference, and so on, hoping to establish Taiwan as the "Republic of Creativity" in the age of knowledge economy (MOE, 2002). Therefore, in the 21 century when we focus on knowledge economy, whether a country's economy is successful or not depends on the innovation and manipulation of human resources and knowledge.

Since 1950, the research in creativity has been in full flourish after Guilford proposed the creativity theory (Sternberg & Lubart, 1999). Until 1990s, the books on creativity emerged continually and there are three tendencies for us to notice on the research of creativity (Chiang, 2003): to replace theoretical or conceptual research with applicable and positivistic research; to transfer from general research on creativity to field-bound or domain-oriented research; and to emphasize the affective variables instead of cognitive ability.

Besides, Gruber and Wallace (1999: 112) proposed "a two-part approach: detailed analytic and sometimes narrative description of each case and efforts to understand each case as a unique functioning system" since we would like it "capture very fine detail and represent the precise dynamic sequences in which activity unfolds" rather than "eliminate detail and represent a static version of a type (1999: 93)." As to the viewpoint toward narrative inquiry through lived stories, Barone (1992) proposed that narratives can be accomplished through the creation of research texts in the form of accessible, compelling, morally responsible stories about the lives of schoolpeople, texts

that are at once popular and excellent, while Phillips (1994 & 1997), on the other hand, criticized that narratives seemed to lack for solid epistemic warrant for their positive judgment about the engrossing lived experience. Although there have been a series of debates on the validity of narrative inquiry, Connelly and Clandinin (1990) wrote in the concluding paragraph of their influential article:

> We need to listen closely to teachers and other learners and to the stories of their lives in and out of classrooms. We also need to tell our own stories as we live our own collaborative researcher/teacher lives. Our own work then becomes one of learning to tell and live a new mutually constructed account of inquiry in teaching and learning. What emerges from this mutual relationship are new stories of teachers and learners as curriculum makers, stories that hold new possibilities for both researchers and teachers and for those who read their stories! (p. 12).

Moreover, editors of Harvard Educational Review (2007) have raised the positive agreement about the importance for the researchers to listen to the voice of teachers at school in order to "encourage the connections among the often disconnected enterprises of teaching, learning, and research" (p. 1).

Therefore, in this article a way of understanding how two experienced teachers as a team developed their personal and practical knowledge of teaching for creativity is offered. This study is based on the assumption that it is likely that experienced teachers usually hold a certain kind of knowledge, knowledge that is practical, experiential, and shaped by a teacher's purposes and values on the context of the professional knowledge landscape full of conduits (Clandinin, 1986; Clandinin & Connelly, 1995; Connelly & Clandinin, 1999). Before we introduce the present study, first of all, let's take a look at the theoretical parts in the fields of narrative inquiry, professional development, instructional innovation, creativity and their interrelationships.

2. Searching for a Path to Narrate Stories of Teachers: The Theoretical Backgrounds

2.1 Why Narrative?

Narrative analysis is an approach to qualitative interviews (Mishler 1986) that can be applied to human being's life stories. As a universal human form for reconstructing and interpreting the past (Polkinghorne 1988), narratives link our experience of the world and our efforts to describe that experience, or make meaning of it by translating what we know into what it is told. Education researchers Clandinin and Connelly (2000) emphasize the dynamic and dialogical nature of narrative

research in their definition.

> Narrative inquiry is a way of understanding experience. It is collaboration between researcher and participants, over time, in a place or series of places, and in social interaction with milieus. An inquirer enters this matrix in the midst and progresses in this same spirit, concluding the inquiry still in the midst of living and telling, reliving and retelling, the stories of the experience that make up people＇s lives, both individual and social. Simply stated…narrative inquiry is stories lived and told (p. 20).

Narrating personal experience can be done in many ways, but the hearer may not ＂listen to＂ what is important to the narrator. Therefore, it was widely considered subjective, not theoretical, trifling, and worthless that teachers narrate their own stories or lived experiences of teaching lives in schools. But over the past two and half decades or so, a significant body of narrative inquiry has been produced which studies the lives of teachers and the practice of teaching in K-12 settings around the world (Elbaz-Luwisch, 2007) because Johnson & Golombek (2002) declare, in teacher development we must first acknowledge such narrative inquiry propels teachers to question and reinterpret their way of knowing:

> We believe that narrative inquiry enables teachers to organize, articulate, and communicate what they know and believe about teaching and who they have become as teachers. Their stories reveal the knowledge, ideas, perspectives, understandings, and experiences that guide their work. Their stories describe the complexities of their practice, trace professional development over time, and reveal the ways in which they make sense of and reconfigure their work. Their stories reflect the struggles, tensions, triumphs, and rewards of their lives as teacher. We believe that, ultimately, narrative inquiry enables teachers not only to make sense of their professional worlds but also to make significant and worthwhile change within themselves and in their teaching practices (p. 7).

Especially right after the conception of criteria and language for narrative inquiry had been promoted (Connelly & Clandinin, 1990), numerous qualitative researchers emphasized that teachers＇ narratives is of great use in the context of teachers＇ professional knowledge landscapes (Clandinin & Connelly, 1995) and professional learning (Beatie, 2000), contextualizing teacher knowledge (Craig, 1999), describing teachers as curriculum planners (Conle, 2000), and rationalizing the research on professional development (Conle, 2001). Therefore, narrative inquiry in Canada and North America

generally has become a tool for research into teaching in funded research projects (eg. the one at the Ontario Institute for Studies in Education in Toronto, Canada), as well as in dissertations by doctoral students (Davies, 1996; Rose, 1997; He, 1998; Brown, 2004).

As to teachers' knowledge, some researchers (Clandinin & Connelly, 1987; Elbaz, 1981) have shown the best way to investigate teachers' knowledge is narrating teachers' personal stories in the teaching field for the sake of holding back their own viewpoints and voices. Therefore, there are many narrative studies on teachers' knowledge by the method of interview and observation. On the research of teachers' thinking, culture, and behaviors, more and more researchers proceed the study of teachers' narratives; that is, to look into teachers' own stories. Along the way, Connelly & Clandinin (1990) would be one of the typical examples to take narrative inquiry as the research method.

As for narrative inquiry in Taiwan, much like other researchers of narrative inquiry in the west, it gradually has also become a tool for research into teaching in funded research projects (e.g. the project funded by NSC, at the Graduate Institute of Instruction and Learning, National Central University, Chungli, Taiwan), as well as in theses and dissertations by master's and doctoral students, but seldom did they focus on vocational high school teachers' stories and stories of vocational high schools here in Taiwan. Being researchers on teacher education, what we really concern about is what kind of teachers' knowledge will be constructed in the process of professional development through the teaching life experienced and the stories lived.

2.2 Teachers' Professional Development

The relationship between teachers' professional development and enhancing students' creativity is central to our narrative inquiry in this present study. It would be reasonable to assume that the teachers in the training team have had developmental experiences as teachers that are separate from, and unconnected to other personal growth experiences in their lives, especially the interplay between teachers' professional development and other aspects of personal development derived from directing student participants who attended the competition for creativity among my teacher colleagues.

As Raymond, Butt, and Townsend (1992) assert, in teacher development we must first acknowledge the interplay between the personal and professional lives of teachers:

The link between personal and professional dispositions makes it important for teachers to have opportunities to examine their own personal commitments, histories, and teaching styles. Discovering and making explicit the roots of their commitment, understanding the personal grounds that underlie their professional work, being clearer about the types of educational contexts that best suit their biographical dispositions – all these kinds of reflection might assist the process of teacher development

(p. 155).

Goodson (1992) also adds to Raymond et al.'s call for listening to the person for whom all teacher development research is apparently carried out:

> What I am asserting here is that, particularly in the world of teacher development, the central ingredient so far missing is the teacher's voice. Primarily the focus has been on the teacher's practice, almost the teacher as practice. What is needed is a focus that listens above all to the person at whom 'development' is aimed. This means that strategies should be developed which facilitate, maximize, and in a real sense legislate, the capturing of the teacher's voice (p.114).

Furthermore, Goodson (1992) itemizes that the teachers' voice must be heard not only as it concerns the act of teaching, but it concerns the teacher's entire life:

> Listening to the teacher's voice should teach us that the autobiographical, 'the life,' is of substantial concern when teachers talk of their work. And at a commonsensical level I find this essentially unsurprising. What I do find surprising, if not frankly unconscionable, is that for so long researchers have ruled out this part of the teacher's account as irrelevant data (p.115-116).

Therefore, in order to understand my colleague cohort, as these researchers on teacher development suggest, I need to embrace some consideration of their personal lives as the developmental context for their growth as teachers. As they have lived as adults in the wider world, maturity must have been visited upon their teaching. Their development as guiding teachers in the competition for students' creativity has been, to some degree, a development as general teachers in daily routine instruction, and vice versa.

2.3 Enhancing Students' Creativity

As the importance of creativity mentioned above in the introduction, Piirto (1998 & 2004) elaborates that many researchers engage themselves in writing out the mysterious, magical, and phenomenological process before and while a person is creating because they think that more people will become more creative if the process can be duplicated. But occasionally the person simply stumbles into a wholly unpredictable situation and arrives at a creative discovery without any preparation (Csikszentmihalyi, 1996). Ironically speaking, as Csikszentmihalyi (1996) points out, "it is quite strange how little effect school－even high school－seems to have had on the lives of creative

people (p.173)〞 although Piirto (2004 & 1998) itemizes several programs about creativity training in the schools or twelve suggestions for enhancing creativity in schoolchildren.

Accordingly, Gruber and Wallace proposed 〝a two-part approach: detailed analytic and sometimes narrative description of each case and efforts to understand each case as a unique functioning system (1999: 112)〞 since we would like it 〝capture very fine detail and represent the precise dynamic sequences in which activity unfolds〞 rather than 〝eliminate detail and represent a static version of a type.〞 (1999: 93) We take the narrative inquiry into teachers' experience from professional development and teaching innovation to enhancing students' creativity for a further study.

3. Stories behind Professional Development, Instructional Innovation and Students' Creativity

3.1 Story Telling from the Beginning

When I was at a summer reading club in 2007 hosted by Prof. Shinn-Rong Lin right after I was allowed to attend the Doctoral Program, Graduate Institute of Learning and Instruction, National Central University, I learned much about narrative inquiry from reading 〝Narrative Inquiry: Experience and Story in Qualitative Research〞 written by Clandinin & Connelly in 2000. When Prof. Lin asked me, after one of the once-a-week meeting for the reading club was over, whom I would like to invite among all of my school colleagues as the first participant in my narrative inquiry research to shape his/her experience from professional learning to personal growth in instruction, it suddenly occurred to me that one of my colleagues I am familiar with, Mr. Chen would be my favorite participant selected to share his teacher narrative in his teaching career up to now. Because he has been dedicating himself so much to his teaching, student guidance, classroom management, leading the selected contestants to compete with those from other schools in various skill and artistry competitions, there is indeed something invisible inside him. And that's also the reason why the experience in my co-working with Chen has partly changed my outlook on the life of teaching. Through Chen's recommendation, Lai was invited to participate in this research for my interviewing and observation because Lai played another important role in this team.

Much like other researchers of narrative inquiry try to give the experience in the lives of the subjects shape, our own work on teacher narratives has tried to capture the very something invisible in teacher thinking and theorizing. This paper presents narrative accounts expressed by Chen and his teammate, Lai, vocational high school progressive-looking teachers, that show how they have created their personal practical knowledge through the inquiry into teachers' experience from professional development and teaching innovation to enhancing students' creativity.

3.2 The Way HE and i Tell the Story

More than ten years ago, I started to work at National YLCS Industrial Vocational High School, where Wei came to know Chen, a home tutor of Refrigeration & Air-conditioning Department at that school. Generally speaking, he possesses not only qualities such as passion, personality, and enthusiasm, but capacities for resilience, survival and innovation, as well as the requirements for knowledge, skills, and beliefs. As far as I knew from my previous observation, Chen has been dedicating himself so much to his teaching, student guidance, classroom management, leading the selected contestants to compete with those from other schools in various skill and artistry competitions since I became one of his colleagues. Through this natural context, "HE and i" had created and woven a shared life.

I am the story teller and also play a role in this story.

I am also the onlooker as one of the researchers in this teacher narrative inquiry, instead of the tool of collecting data and information. I entered the field with his hearty feelings, expectations, and ideals. I am not only an observer but also a participant in this field --- National YLCS Industrial Vocational High School. Chen is not only a data provider but also a model of teaching, which I have been learning something from, to be invited to participate in the present study.

Another member of this team for directing students' competition for creativity is Lai, who is not only the Chief of Practice in the Practice Office of that school, but also plays an important role, either like a broker as what Wenger proposed (1998) and similar to the conduit initiated by Clandinin & Connelly (Clandinin & Connelly 1995; Connelly & Clandinin 1999).

3.3 The Context for this Study and Sources of Data

In keeping with the organization of their team for directing students' competition for creativity at National Taiwan Normal University, Chen and Lai began their team teaching during the first semester of the school year 2006. There are six departments in this school, including Department of Computer Science, Department of Electronic Engineering, Department of Chemical Engineering, Department of Refrigeration and Air-conditioning, Department of Interior Space Design, Department of Furniture Design, and Department of Athletics.

4. Method

4.1 The Setting: A Professional Knowledge Landscape

According to Clandinin & Connelly (1995), it would be better to narratively understand the professional knowledge landscape as a changing one with a history of its own. Therefore, it is

necessary for us to introduce its historical background of the school, National YLCS Industrial Vocational High School, Taiwan. Over my past 10 or more years of involvement with this school as one of the faculty, I have seen a shift in the school's professional knowledge landscape. I noted the shift by searching back through the school's stories, teachers' and my own stories of their experiences on the landscape. For example, the principal lived and told a story of the school as a "demonstration" school (Connelly & Clandinin, 1995) in which he hoped to renew all the equipment, hold various kinds of activities or conferences assigned by the government, and raise the students' academic literacy. Besides, some of the teachers had expert practices that could be demonstrated to other teachers from other schools and to preservice teachers just graduated from universities.

4.2 Subjects

The subjects of this study were from Grade 10 and Grade 11 of National YLCS Industrial Vocational High School, Taiwan. Specifically speaking, fourteen (14) student subjects from Department of Refrigeration and Air-conditioning, Department of Electronic Engineering, Department of Chemical Engineering, and Department of Interior Space Design enrolled with their interests in creativity were initially selected in the creativity-training team for the study. Due to personal reasons, however, the final number of students involved was 12 in this nonrandomized case study. As to the teachers, Chen, graduated from Department of Industrial Education, National Taiwan Normal University in 1992, and Graduate Institute of Electric Engineering, Da-Yeh University in 2004, was the home tutor of the 10th Grade students, Department of Refrigeration and Air-conditioning, while Lai, with 17 years of teaching experience, came to this school as a teacher of Department of Electric Engineering and Mathematics in 1998, and now also serves as the Chief of the Practical Training Section in the Practice Office.

4.3 Data Collection

In studying the experiences of enhancing students' creativity from instruction on teachers' personal knowledge, the study employed a qualitative design on the basis of deep interview and classroom observation using a team of student contestants from Department of Refrigeration and Air-conditioning in National YLCS Industrial Vocational High School, Taiwan. More specifically, the qualitative design adopted in this research was the nonrandomized case study.

The process of the data collection is shown as follows in Figure 1.

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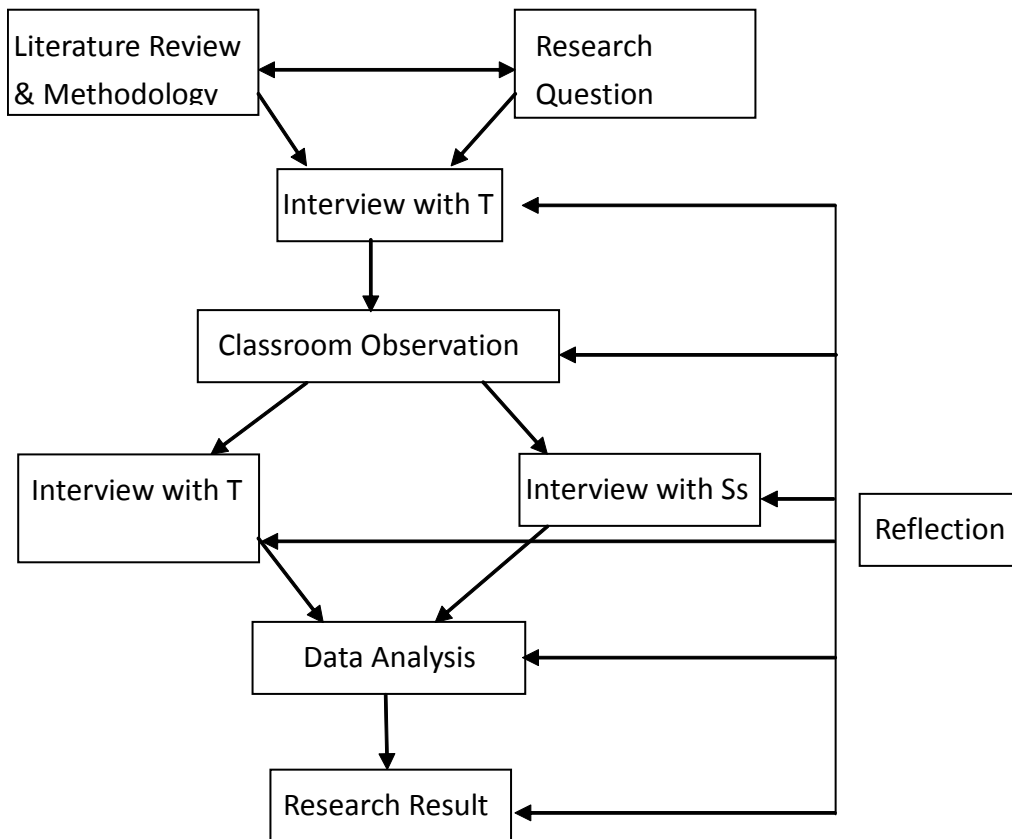
Figure 1. Process of Data Collection

The rationale for our use of video in our methodological framework derives mainly from the work of a growing number of researchers and teachers in teacher education who have begun to understand the benefits of capturing and evaluating classroom activity through the use of videotape. Accordingly, nearly one hour of video data per month was collected in Chen and Lai's creativity training class. This particular class in the name of "creativity club" met weekly for instruction from approximately 3:00 P.M. to 5:00 P.M. on Wednesday, and for practice and discussion from around 8:00 A.M. to 12:00 A.M on Saturday. Classes were taped or observed one time per month or so during the period from September of 2007 to April of 2008. Since the classes for instruction were about 100 minutes long, usually two (one-hour) digital videotapes were used to capture the entire instructional time. The camera was positioned on either the right or left side of the classroom so that all aspects of the classroom could be seen (i.e., the front board, each of the design tables, etc.). Yet, since the classes for practice and discussion were about 200 minutes long, usually note-taking was

used to capture the observational data in real instructional time. The classroom actually consisted of nine long tables for designing that could be used for students to proceed with their creativity to be developed collaboratively. On the contrary, according to the interview with Lai, it will be better if the administrative system of this school can provide another classroom with larger space for the exhibition of prior creations by the student contestants in the previous years.

5. Data Analysis

After a series of classroom observation, videotaping, and interviews, a corpus of several fifty-minute tapes of classroom interaction between the teacher and the students in the classroom were transcribed and analyzed. Data were mainly analyzed in a more qualitative way, since the boundaries during classroom interactions within the teachers' talk are difficult to be clearly divided. These narrative excerpts from classroom observation and the interviews with Chen, Lai, their students in the school team, or even the principal present the voices of the progressive-looking teachers as they deals with their most pressing issues and concerns, examines prior knowledge in the light of new understandings, and constructs new knowledge through the processes of reflection, dialogue and inquiry.

As Chen and Lai became increasingly comfortable in their new arrangement for directing student contestants to the competition for creativity, patterns suggesting an accepted division of labor grew apparent. Although both teachers were involved in teaching activities during the entire period, each had preferred roles that became apparent: Chen devoted himself more with circulating around the room and talking to students individually or in small groups in order to induce their creativity, while Lai often took control at the blackboard in the role of lecturer for advancing their professional knowledge. Contradictions to these patterns were indeed evident, for instance, when Lai would circulate or Chen would deliver part of a lesson at the blackboard; however, the roles in which each seemed more comfortable were increasingly noticeable as the video data were analyzed longitudinally.

Once video data were captured, analysis began with longitudinal explorations using field notes, journal entries, comments by the teacher and students from interviews and reviewing tapes on normal and fast forward, in order to gain a general perspective of teaching practices and activities occurring in the classroom. The interview analysis then moved to a microscopic level that allowed for descriptions of teacher and student practices.

6. Results

After analyzing dozens of video and audio data from classroom observation and interviews, we illustrated how the teachers, based on their professional development and teaching innovation working as a team, enhanced students' creativity for the annual competition.

6.1 Living the "Principal as Promoter" Image

Just like Craig (1999) described vividly the "principal as rebel" image lived on the professional knowledge landscape, the principal of National YLCS Industrial Vocational High School surely had an image reflected on this professional knowledge community. Ten years ago I started working at National YLCS Industrial Vocational High School, where I came to know Liu, the principal, seven years ago. During my time at the school, I could see that Liu influenced school practices, colleagues, and students through expressing a particular image of the principalship in his administrative practices. From time to time, Liu would make a speech to the students on the stage of the activity center at school, in order to introduce the importance of creativity in their lives to the students and propose the integration of creativity into instruction to the teachers. He would emphasize that creativity is as important as intelligence based on the theory of multiple intelligences.

Besides, Liu would play a role as "promoter" originally proposed by Lin (2007) by demonstrating how to hold an activity with creativity. For instance, he would invite the institutes, organizations, associations, and high schools in the near neighborhood to join the parade around the downtown of that community before the sports tournament of his school proceeded in last November.

6.2 The Roles Chen and Lai Play in the Training Program

Many of the video and audio data from classroom observation and interviews suggested that Chen tried to enhance students' creativity by building social and symbolic capital with the students because he regarded it as one of the most important goals and basic beliefs to be pursued to establish a productive learning environment. Another role that Chen expressed in several interviews was that of the creative force behind many of the hands-on activities because he elaborated that he is a man of curiosity and interest in something strange and mechanical.

After I analyzed many instances in the data I collected from observation and interview, it was evident that three models in Lai's practices could be found: first, his sense of accomplishing varied activities he organized prior to the lecture during the class period, and second, his concern with delivering the lesson in front of the class comfortably. In addition, being the Chief of Practical Training Section, Lai also played a role of "conduit cleaner" between the training team and the school administrative system. Frankly speaking, it is Lai who is responsible for applying for the expenditure on training from school and communicating with Liu and Chen. Thirdly, Lai prefers to set up the goals for the training program to cheer up those student contestants or take it for granted to win the prize as the one and only objective.

6.3 Teaching activities, schedule, and materials for the competition

Student contestants will attend the 3-day research activity held by the sponsor for learning basic knowledge in creativity. Later after the research activity, Chen would take them to the Toys "R" Us

(玩具反斗城) for inputting and enhancing more ideas for creativity and design by appreciating the structure, creativity and design of those toys because Chen has a motto on creativity which says, "The more input you have got, the more output you can present (Chen-20080318-I)." Chen would divide the students into several groups for competition with time limited and ask them to go searching as a team for something creative, interesting, and funny. After the competition, each member in each group had to output and present what he/she had observed and thought as good and bad critically as his/her output to all the other companions.

Besides, as to the theoretical framework on creativity, Lai would arrange and organize the content and materials (Clandinin & Connelly, 1992) from the Internet for both Lai and Chen to teach students for enhancing their thinking and imagination, such as interesting ads, creative short films, etc. Some regulations and experiences about the annual competition for creativity would also be introduced to the student contestants in two periods of classes or so. But being their lack of time, Chen would ask each of the students to search for the knowledge of new technology on the Internet or from the newspaper and think of the idea and originality behind the knowledge of new technology for sharing and discussing with other companions' and answering their questions, hoping that all the student contestants would make it a habit to actively search for something new, creative, and interesting, ask critical questions, and learn about the originality and creativity behind the new technology. Also, Chen and Lai would collect the knowledge of new technology from the newspaper and on the Internet by themselves for enhancing the student contestants' creativity. Periodically, Chen and Lai would design some situations based on the knowledge of new technology collected by then for these groups of student contestants to imitate for training as a real competition.

The practices as training before the annual competition for creativity would be divided into two phases according to the schedule of the competition: the semifinal in March and the quarterfinal in May. Before the semifinal, the training would be mainly focused on project designing and the composition of words, pictures, etc. Each group in turn would have a representative to orally present their basic ideas behind the project and then accept the questions from other groups before answering them as the feedback. However, it (a dilemma) occurred to Chen that he sometimes felt it would be a little bit late to give suggestions after they finished their projects although he also felt afraid that these suggestions would probably limit students' originality of their projects. That is, he would change the training process in which he could give them some suggestions prior to their project designing as a team in case they didn't get the main idea of the situation designed for retrieving their creativity. If one of the groups trained as the school team has the chance to attend the quarterfinal in May, Chen and Lai will ask that team to revise their ideas behind their projects and put them into practice.

Much more to my surprise, Lai and Chen put the schedule or curriculum of the training program

for creativity into practice not only as "team-teaching," in which they teach together to decrease the workload, to create opportunity for each other to teach in his specialty, or to offer resources at the planning stage that each of them would not have otherwise, but also as "coteaching" (Roth & Boyd, 1999; Roth & Tobin, 2005; Tobin & Roth, 2006), in which it explicitly brings them together to increase what they can offer to the students and makes them teach all the while providing opportunities for each other to learn to teach. Therefore, it optimizes the learning opportunities both for students to manipulate that arise from the collaboration of the two teachers and for teachers themselves to expand their possibilities in "coplanning", "codirecting", and "cotraining".

6.4 The Tension between Lai and Chen

One of the challenges for codirecting students to participate in the training program is the enhanced ability for teachers to transition into the teacher role－sharing the teaching responsibility with another individual allows someone else to step in and help out if needed. On the contrary, since this is a team work for two teachers and several students to participate in the learning community in order to win the annual competition for creativity, the negotiation among one another seems to inevitable and essential. However, during one of the interview with Chen, he shared some tension between Lai and him, which goes as follows:

> I felt a little bit uncomfortable with the standard for Lai to choose the student contestants since he simply let anyone take the training program without any screening. But in my opinion, anyone who wants to join the team should have strong motivation and basic requisites instead of the interests in this program only. For example, Lin (director of Interior Space and Designing Department) simply chose one of the students from that department by throwing the dice because there are too many students who are interested in attending the competition. Lai accepted the result without any comment. Maybe the only way to solve the problem is to hold a competition for creativity at our school because it would be fair and easy to choose some students to take part in the school team and to be trained to attend the competition. (Chen-20080318-I)

On the contrary, Lai also unintentionally told me another tension between Chen and him during the personal communication one day in March 2008. In the beginning, I invited him to have an interview with me during the first midterm exams in the afternoon of April 1 or 2. To my surprise, Lai popped the topic about the tension between them, which goes as follows:

I felt a little bit embarrassed with the attitude Chen dealt with the money spending on the materials for student contestants to practice in the training program without any application for the

help from school expenditure. But in my opinion, anyone who engages himself in the public activity should apply for school expenditure to pay for the bill. I have told him about this many times, but he just ignored it. (Lai-20080321-personal communication)

6.5 Students' Work during Training

As mentioned above in section 6.3, after passing the semifinal in March and before the chance to attend the quarterfinal in May, Chen and Lai will on schedule ask that team to revise their ideas behind their projects and put them into practice. According to Lai's training objectives, he expects that the work after students' creative designing should be as perfect and mature as the products which could be manufactured already because the premise that the students attend the training program for the creativity competition should be to win the prize in the contest.
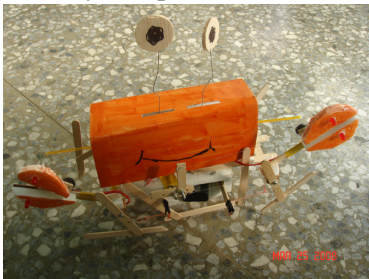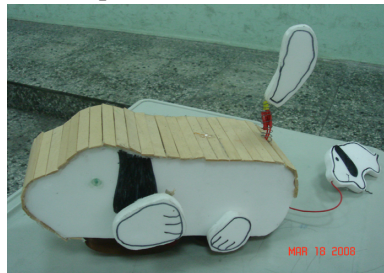

Figure 2. Electric Crab   Figure 3. Walking Doggies   Figure 4. Dancing Queen

The figures (from Figure 1 to Figure 3) shown above are some products finished as the achievements after scheduled training, in which student contestants tried their best to integrate electrics, mechanical engineering, into art designing with creativity.

7. Conclusion: Never Ending Stories

The environment around us is itself a vigorous teacher, the significant variable that classroom teachers can perceive, criticize, construct and re-construct to everyone's advantage. A basic challenge for teachers is to create an environment that will challenge and nurture the wide range of students who actually enter our classrooms. There must be multiple entry points toward teaming and a range of directions to success. It is the teacher who has to build the context: the teacher's ideas, preferences, values, instincts, and experiences are worked up in the learning environment, such as, schools and classrooms. It is essential to reflect about what we value, our expectations and standards and the dimensions we work with are not just feet and inches but also hopes and dreams.

Although problems arose during the practical direction for the competition for the students, participant teachers and me, overall the experience was successful and we plan to continue using team teaching and team learning as the model for developing teachers' profession and enhancing students' creativity. However, professional development and enhancing students' creativity

concurrent with team teaching and co-planning require that the teachers involved assume co-responsibility for developing teachers＇ profession and enhancing students＇ creativity. Under this kind of circumstances when teachers devote themselves to these actions, they establish and build upon social networks, as a community of practice, between each other and their students.

Through this teachers＇ story of our inquiry, we hope that it will prompt you to recall, rethink, and reconstruct your own ways of knowing how to examine yourselves and your teaching and to develop alternative conceptions of teaching and instructional practices. After the narrative inquiry into teachers＇ experience from professional development and teaching innovation to enhancing students＇ creativity at our school, being a researcher, also a colleague, and a teacher of those who participated in the training team, Liu, Chen, Lai, and the students, I want to dedicate my respect to these highly adorable companions.

"A teacher affects eternity," *said Henry Adams.* *"He can never tell where his influence stops."*

Cited from Barone (2001: 1)

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The Inquiry into Teachers' Experience from Professional Development and Teaching Innovation to Enhancing Students' Creativity: A Narrative Approach

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The purpose of this study, methodologically based on narrative inquiry and qualitative action research, is to scrutinize the experience from creativity instruction for students to attend the annual creativity competition in Taiwan to teachers' professional development, teaching innovation, and teaching/learning outcomes. In this vocational high school near middle Taiwan, which has won the third place of that creativity competition for the past three years so far, several leading teachers and some students who are selected to join the school teams for the yearly creativity competition are invited to participate in this present study. The research has been conducted from September 2007 to April 2009, lasting for about one and half a year. By way of data collection and analysis from classroom observation, interviews with teacher and student participants, teaching-related documents, field notes and the research journal, we hope, from the experience of teaching for creativity, to improve the way to develop creativity instruction in order to enhance students' creativity for the further reference of other high school teachers who are eager to explore or further their creativity instruction. Therefore, some suggestions are proposed on the basis of how to enhance students' creativity and further teachers' professional development and teaching innovation at the same time.

Keywords: Creativity, Creativity instruction, Narrative inquiry, Teacher professional development, Teaching in novation

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