

College Students' Attitude Toward and Learning of Differentiated Instruction in Products

Dr. Chin-Wen Chien
National Hsinchu University of Education
Taiwan

Abstract- *Teachers should adjust their curriculum and instructional practice to meet the needs of individual learners, because one size does not fit all (Kaplan, Rogers, & Webster, 2008; Tomlinson, 2003). This study focuses on the implementation of differentiated instruction in products, "tiered assignments," in a Children's English class in a teacher education program in Taiwan. The study concludes that 52 college students held a positive attitude toward these tiered assignments and that they learned theories and instructional strategies not only from lectures and tasks in the university classes but also from completing different choices. Another important finding is that participants' choice of completing these assignments is based on the level of easy of the assignments. Two suggestions are made to effectively implement differentiated instruction in products in teacher education programs in terms of explicitly modeling and explaining differentiated instruction in products and designing tiered assignments based on the levels of challenge as well as learners' readiness, interests and profiles.*

Keywords- *Children's English; Differentiated Instruction in Products; Tiered Assignments; Levels of Challenge; Teacher Education Program*

1. INTRODUCTION

Differentiated instruction has become international educational research and policy in recent decades (Ruys, Defruyt, Rots, & Aelterman, 2013). Teachers should adjust their curriculum and instructional practice to meet the needs of individual learners, because one size does not fit all (Kaplan, Rogers, & Webster, 2008; Tomlinson, 2003). According to Hall (2002), differentiated instruction can be defined as a way for teachers to recognize and react responsively to their students' varying background knowledge, readiness, language, preferences in learning, and interests (p. 2). Therefore, a differentiated instruction provides learners with different avenues to acquire content, processing or making sense of ideas, and developing products (Kaplan et al., 2008).

Teacher education is blamed for insufficiently preparing teachers for differentiated instruction (Holloway, 2000; Korthagen, 2006; Tomlinson, 1999). Differentiated instruction has been implemented less at tertiary levels. In differentiated products, teachers are required to develop and provide multiple means for learners to express their understanding of the curriculum (Kaplan et al., 2008). This study focuses on the integration of differentiated products in a course in a teacher education program in a northern city in Taiwan. This study analyzes 52 participants' attitude toward and learning from differentiated products.

2. LITERATURE REVIEW

The purpose of teachers differentiating instruction is to increase the variety in teaching, learning and assessment in order to reach more learners and respond to their

preferences, styles, interests and strengths (Heacox, 2002). According to Blaz (2006), differentiating the products involves varying the complexity of the products created by students to demonstrate their level of mastery of the unit content (p. 12). Teachers can design differentiated assignments to better respond to learners' specific learning needs and styles (Gregory, 2007; Heacox, 2002; Langa & Yost, 2007; Tomlinson, 1999). Heacox (2002) suggests that teachers can differentiate the assignments based on the levels of challenges, complexity, resources, outcomes, products and process of the assignments (pp. 91-94). These differentiated products are challenging, but should not overwhelm learners or penalize advanced learners. Through these differentiated products, learners can demonstrate learning outcome and be able to apply critical and creative thinking (Blaz, 2006).

Different types of tasks are used to describe the differentiation of products, such as compulsory-plus-optional tasks, open-ended tasks, tiered tasks and bias tasks. In compulsory-plus-optional tasks, "the class is given material or a task and told that a certain minimal component of it has to be learned or done by everyone, the rest only by some" (Ur, 1996; p. 307). "Open-ended" tasks refer to when students are invited to respond to questions that have a range of acceptable answers rather than a single right response (Ur, 1996). "Tiered tasks" are tasks with varied levels of depth complexity and abstractness designed based on various levels of learners' readiness (Parker, 2007; Dahlman, Hoffman, & Brauhn, 2011). Two types of tasks are offered under "bias tasks," including one for weaker students and one for stronger ones (Bowler & Parminter, 2002).

Kaplan et al. (2008) suggest that teachers can use the assessments as in Table 1 taxonomy of objectives to differentiate products and

Table 1. Taxonomy of objectives to differentiate products and assessments (Kaplan et al, 2008, p. 83)

Levels of Bloom's taxonomy	A sampling of different products to demonstrate learning
Knowledge	Flash cards, rebus story, scrapbook, drawing, puzzle, tape recording, mobile, collage, cartoon strips
comprehension	Picture dictionary, pamphlet, news story, book report, diagram, essay, bulletin board, diary
Application	Chart, graph, model, peep show, display, interview, surveys, mini-center, experiment
analysis	PowerPoint presentation, oral report, prepare a video, scroll, collection
Synthesis	Create original poems, songs, games, plays, speeches
Evaluation	Written report, scroll, book review, photo/picture essays, advertisement, editorial, debate, project cube

Kaplan et al. (2008) also suggest that teachers can differentiate products and assessments based on learners' intelligence and learning preference as in Table 2.

Table 2 Applying Concepts from learning preferences frameworks to differentiate assessment (Kaplan et al, 2008, p. 85)

Intelligence	Sample products
Verbal/linguistic	Prepare a report, debate, lecture, paper-and-pencil tests, crosswords, newspaper article
Logical/mathematical	Apply a formula, solve a problem, use the scientific method, puzzles, experiments, calculations, discover or develop a pattern
Bodily/kinesthetic	Role-playing, sports games, acting, cooperative learning, dancing, gesturing, mime
Visual/spatial	Artwork, photographs, posters, PowerPoint, charts, illustrations
Musical/rhythmic	Sing, tap, create a rap, poem, or jingle
Naturalistic	Care for animals or plants, gardening, investigation of nature, experiments, use the scientific method
Interpersonal/people smart	Teach a part of a lesson, oral presentation, peer tutoring, cooperative group learning, role play, debate
Intrapersonal/reflective	Keep a diary, journal, or learning log, independent research, reading, and writing

Heacox (2002) integrates both multiple intelligences and Bloom's taxonomy into differentiated instruction as a matrix plan for teachers to differentiate instruction as in Table 3.

Table 3 Integrating Matrix (Heacox, 2002, p. 82)

Bloom's taxonomy	knowledge	comprehension	application	analysis	evaluation	synthesis
Gardener's multiple intelligence						
Verbal/linguistic						
Logical/mathematical						
Bodily/kinesthetic						
Visual/spatial						
Musical/rhythmic						
Naturalistic						
Interpersonal						
Intrapersonal						

Chapman and King (2008) suggest that teachers can use colors for different levels of assignments, such as “Level 1 (beginning level) Green-I am growing. Zap the gaps,” “Level 2 (approaching mastery) Yellow-I am a ray of sunshine. Grade-level ready” and “Level 3 (high degree of mastery) Red-Fired up! Ready for the challenge!” (pp. 38-40). Blaz (2006) gives examples of differentiated tasks in language learning classes, particularly in writing, speaking and vocabulary as in Table 4.

Table 4 Task (Blaz, 2006, p. 32)

Write Exercise 5 and 6 in the workbook	Speak & write Survey five classmates about their likes and dislikes	vocabulary Do activity 3 in your book.
Write Six things you might need to say in order to purchase food for dinner	Speak With a partner, one of you speaks a typical shopping dialogue as the other mimes the roles of seller and buyer	Vocabulary Make a game or puzzle to practice as many vocabulary words as possible.
Write Make flash cards for vocabulary with a picture on one side, and the vocabulary word on the other	Speak Create a song, poem, or rap that will help you remember the vocabulary, and teach it to someone	Vocabulary Match the video and fill out the video-activity form

Kryza, Duncan, and Stephens (2009) recommend a whole list of weekly vocabulary choices for three levels of learners as given below:

Choose your challenge level. Select vocabulary practice activities that equal 30 points for an A, 25 points for a B, and 20 points for a C.

- Make a set of flash cards for studying your words (10 pts).
- Practice reviewing the words and their meanings with a family member or friend (5 pts).

Table 5. Tiered assignments for space symposium (Olsen, p.14)

Level 1	Level 2	Level 3
<ul style="list-style-type: none"> • Student creates an original teaching tool that clearly illustrates or expresses basic characteristics of the topic. • Questions have been prepared in advance to check for understanding. 	<ul style="list-style-type: none"> • Student creates an original teaching tool that explores in depth characteristics of the topic and is designed so that other students can interact with it. • An assessment tool is included to check for understanding. 	<ul style="list-style-type: none"> • Student creates a complex and original presentation with multiple, interactive teaching tools. Material presented is in depth and includes thoughtful analysis of the information collected. • Others demonstrate their learning by explaining concepts using the interactive teaching tools.

- Create a song or rhyme for each vocabulary word (15 pts).
- Write sentences that show you understand the meaning of each word. Underline the word (10 pts).
- Use a tape recorder to practice words. State each word, give the definition, and then spell it (10 pts).
- Create a word game (15 pts).
- Create a word wall bulletin board with description of each word (15 pts).
- Classify the words according to the parts of speech (10 pts).
- Write a story using all the words. Underline the vocabulary words (15 pts).
- Write a synonym and an antonym for each word (15 pts).
- Use your words in poetry. Underline the words (15 pts).
- Write a newspaper headlines using your words (15 pts).
- Create a word map for each word (15-30 pts.)
- Create your own activity (15 pts) (Ask for approval from the teacher)

(Source: Weekly Vocabulary Choice (Kryza, Duncan, & Stephens, 2009, pp. 85-86)

Hogan’s (2009) study explored how differentiated instruction and tiered assignments could help three male and four female ninth graders in an Integrated Algebra class in a school in New York State. Three tiered assignments were given as follows:

Tier 1 was for beginning students who still had difficulty with certain concepts: combining like terms, or realizing variables can cancel out. At tier 2, students understood how variables can be canceled out by opposites. Students understood the concept of canceling out variables and solving in tier 3 (p. 24).

Hogan (2009) found that differentiation and tiered assignments affected seven ninth graders’ basic understanding of mathematics content and helped them to improve assessment scores in posttests.

Olsen’s (2009) study focused on the implementation of differentiated instruction among seventh graders in science classes in Brazil. Olsen adopted tiered assignments for the space symposium as in Table 5:

Therefore, Olsen (2009) suggested that lower-level assignments have greater structure and fewer facets and higher-level assignments are more open-ended and multifaceted.

In Trask's (2008) study, eight facilitators were sent to seven schools in North East School Divisions to model and collaborate with the local schools in implementing differentiated instruction. Tiered assignments are one of the instructional strategies implemented among all grade levels, such as "the tenth graders were asked to create a brochure related to risky behaviors or safety and the 'right' to be safe" or "seventh graders were asked to do a tiered assignment on An Inconvenient Truth." Teachers and the whole school were given a rubric to evaluate their implementation of tiered assignments as in Table 6:

Table 6. Rubric to measure school level implementation (Trask, 2008, p. 40)

For your school	Emerging	Developing	Fluent	Proficient
DI used in instruction (grouping, choices, tiered assignments, varied strategies)	Minimal use of variety of strategies and grouping. Mostly whole group, one lesson approach.	DI planned into selected units and lessons. Assignments and groupings vary occasionally.	DI planned into selected units and lessons each week throughout the year. Assignments and groupings purposefully, vary focus regularly.	DI is evident in daily planning and instruction. Assignments, strategies, and groupings purposeful. Teaching throughout the DI lens.

Letalova (2008) surveyed 20 language teachers in regular Czech schools and grammar schools regarding their perceptions of and instructional strategies on differentiated instruction. Letalova (2008) found that tiered assignments appeared to be the weakest point of the strategy, because these language teachers prefer to teach in the old-fashioned way: "same conditions and instructions for everybody."

Chen's (2007) study examined 48 Taiwanese college freshmen's perspectives on tiered performance tasks on speaking skills. These three tasks were as follows:

The basic-level task was performing an assigned conversation given in the textbook or an issue of the supplemental material. The intermediate-level task required some modification of the conversation for the basic-level task with a set of information or expressions from either the textbooks or the magazines. The advanced-level task involved incorporating another set of information or expressions into all the requirements for basic- and intermediate-level tasks (p. 116).

The freshmen in Chen's (2007) study regarded the innovative leveled performance tasks as a constructive and authentic form of assessment. These tasks led to the advancement of participants' skills, a sense of ownership, and greater autonomy in their English language learning. However, the increased requirements of the challenges intensified the participants' anxieties about the quality of their performance. Moreover, through tiered tasks, higher-

achieving learners demonstrated stronger motivation, improved English skills and heightened self-confidence, especially in higher-achieving learners.

In Tu's (2012) study, data from questionnaires, interviews and observation among 120 Vietnamese students and 20 teachers of English from four upper-secondary schools was used to study their opinions about mixed-level tasks in English reading classes. Tu (2012) concluded that "open-ended tasks" have been broadly applied in reading classes at some upper-secondary schools in Hue, and "compulsory-plus-optional tasks" have already made their way to English reading classes. However, "tiered tasks" and "bias tasks" still remain new to both teachers and students. The biggest obstacle that teachers faced when implementing mixed-level tasks in reading classes was that the "time constraint to design mixed-level tasks is the biggest concern in teachers' minds" (85%), followed by "lack of classroom management experience to organize mixed-level tasks" (70%), "lack of tools to precisely assess students' reading ability" and "unfamiliarity with some mixed-level tasks"(40%).

Educators provide guidelines on curriculum development, activity design and assessment strategies for differentiating instruction (Chapman & King, 2003, 2005, 2008, 2009; Drapeau, 2009; Gregory, 2003, 2005, 2007; Jones, Clarke, & Enriquez, 2010; Kaplan et al., 2008; Kryza, Duncan, & Stephens, 2009; Tomlinson, 1999; Tomlinson & McTighe, 2006; Turville, 2008; Walpole & McKenna, 2007, 2009; Witherell & McMackin, 2005, 2007). Only a few current empirical studies focus on differentiating instruction in products in content areas in elementary school settings (Goodnough, 2010; Hogan, 2009; Olsen, 2009; Trask, 2008), in English as a second language (ESL) or in English as a foreign language (EFL) settings (Chen, 2007; Letalova, 2008; Tu, 2012). Chen (2007) and Tu (2012) focused on tertiary levels. Teacher education is blamed for insufficiently preparing teachers for differentiated instruction for their daily teaching practice (Holloway, 2000; Tomlinson, 1999). This study analyzed 52 college students' attitude toward and learning from differentiated instruction in products in Children's English classes in a teacher education program in Taiwan.

3. METHOD

This is a qualitative case study. According to Denzin and Lincoln (2005), "qualitative researchers study things in the natural settings, attempting to make sense of, or interpret, phenomena in terms of the meanings people bring to them (p. 3). This study focuses on a university class natural setting and aims to analyze and discuss 52 college students' attitude toward and learning from differentiated instruction in products in Children's English classes in a teacher education program in a northern city in Taiwan. This is a case study with a description and analysis of a bounded system. The case in this study is the Children's English class and the unit of analysis is 52 participants'

learning experience through differentiated instruction in products.

This study discussed the following questions. First, what was participants' attitude toward the differentiated instruction in product? Second, what did participants learn about issues related to Children's English from the differentiated instruction in product?

3.1 Participants and Settings

The 52 participants in this study simultaneously enrolled in this Children's English class in a teacher education program in a northern city in Taiwan. The Children's English class is an elective course for educational majors, but a required course for those who take an elementary school English teacher 26-credit endorsement program. The objectives of the course are to help learners (1) gain background knowledge about how children learn the language, (2) develop skills in designing activities that motivate children's English learning, and (3) collect resources and materials related to English teaching.

The participants included 44 females and eight males with an average age of 19.2 years. Four participants were seniors from the Department of English and four were seniors from the Department of Education and Learning Technology. The rest of the participants were freshmen from the Department of Education and Learning Technology. The class met for two hours each week during the period of the study.

3.2 Data Collection

The product of a qualitative study is richly descriptive with descriptions of the context, the participants involved and the activities of interests (Merriam, 2009). Moreover, the researcher is the primary instrument of data collection and analysis (Merriam, 2009). The study was conducted for one semester, from September 2013 to January 2014. The major data in this study included: (1) participants' projects, (2) participants' responses to presentations, (3) class evaluations, and (4) PowerPoint slides and syllabus.

Table 7 Class Project I

Choices	Descriptions
1. Narrative Story	Describe your English learning experience as a child in the elementary school or language schools. Use the concepts introduced in class to analyze your experience.
2. Interview	Interview an elementary school English teacher about her English teaching experience. Use the concepts introduced in class to analyze this teacher's experience.
3. Observation	Observe an elementary school English teacher's classroom practice. Compare and contrast his/her teaching practice and concepts introduced in class. Use the concepts introduced in class to analyze your observation.

4. Workshop	Attend any workshop on teaching English to young learners. Write down what you've learned. Use the concepts introduced in class to analyze your learning experience.
5. News report	Watch or read a news report about teaching English to young learners. Describe this news. Use the concepts introduced in class to analyze the news report.
6. Kid's experience	Observe a kid when he/she is learning English. Write down your observation. Use the concepts introduced in class to analyze your observation.

Participants handed in class projects I and II. Participants had the six and four choices for class projects I and II as in Tables 7 and 8 respectively. In their class projects, they also had to explain why they chose one particular type of assignment.

Table 8 Class Project II

Choices	Descriptions
1	Design an activity that lasts less than five minutes, including learners' age, proficiency levels, and language focus. Demonstrate this activity to the whole class.
2	Design a teaching aid. Describe how it will be used for, including learners' age, proficiency levels, and language focus. Demonstrate how to use this teaching aid to the whole class.
3	Buy or borrow any English teaching aid available on the market. Describe how it will be used for, including learners' age, proficiency levels, and language focus. Demonstrate how to use this teaching aid to the whole class.
4	Select an online website or an I-pad application. Describe how it will be used for, including learners' age, proficiency levels, and language focus. Demonstrate how to use this website to the whole class.

In the 16th and 17th classes, each participant was asked to present the project for two minutes in class. While one student presented his or her project to the whole class, the rest of the students had to write down their responses to the participants' presentations regarding the question "What did you learn about issues related to Children's English?" On the last day of the class, participants were asked to answer four open-ended questions on the class evaluation sheet. These ten questions were designed to ask participants' opinions about and attitude toward the differentiated instruction in products in this Children's English class. These questions were: (1) How did you feel when the instructor gave you multiple modes of expression in the project? (2) Have you been given assignment choices before? (3) Of the assignment choices, which one did you like the most/the least? Why? (4) Of your

classmates' presentations, which one helped you learn the most/least about Children's English? Why?

Figure 1 reveals the participants' learning through differentiated instruction in products in this study. In addition to issues and theories discussed in class, participants in this study learned Children's English through completing one of the six and four choices in projects I and II and listened to participants' presentations. Choice 5, "news report," of project I and choice 4, "website," of project II could be completed through a virtual environment. Participants could complete the rest of the assignments through reflections on their own English learning experience, interviewing an English teacher, attending an English-related workshop, observing an English teacher's or a kid's English learning, designing an activity or making a teaching aid, or buying a commercial teaching aid in the society as a community.

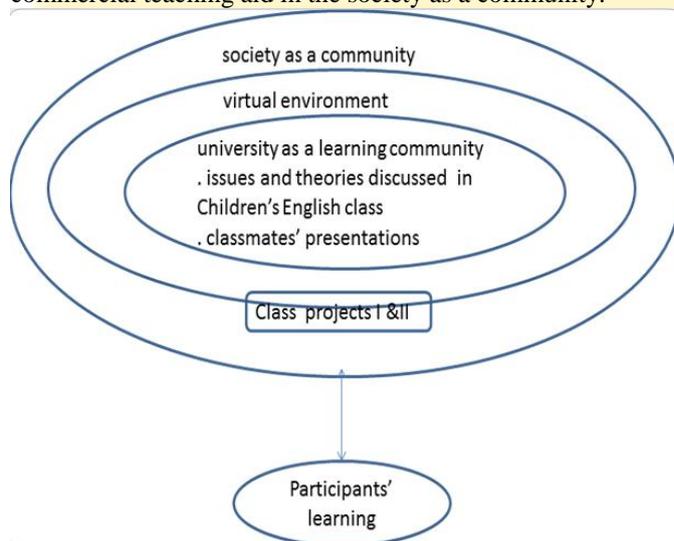


Figure 1. Participants' Learning Through Differentiated Instruction in Products

3.3 Data Analysis

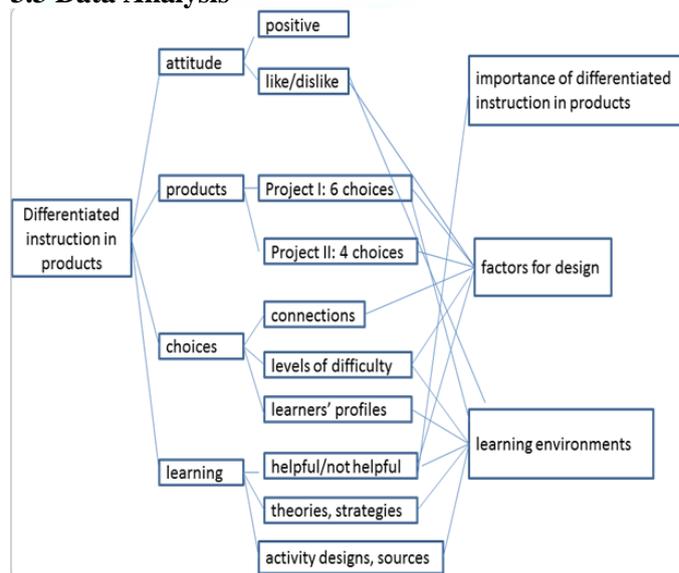


Figure 2. Data Analysis

Participants' projects, responses to presentation, class evaluation and PowerPoint slides were transcribed into raw field notes. The data was coded in the following three stages. First, the researcher read through all the notes and marked the data with a code (e.g. positive, choices, connections, etc.). Secondly, while reading through these codes, the researcher labeled tentative categories (e.g. attitude, products, choices, learning). Finally, the data was sorted on the basis of its relevance into topics that reflect the research questions, as in Figure 2. A set of codes for thematic analysis that captures the meaning expressed by the data was constructed (Flick, 1998).

4. RESULTS

Based on the data collection, the discussions were analyzed and discussed in terms of participants' attitude, projects and learning.

4.1 Participants' Attitude

All participants liked to be given multiple modes of expression for their class projects, and their responses included "I like the idea of having different choices. I can choose one assignment based on my learning interests or expertise. Moreover, I can learn a lot of creative ideas from other classmates' different presentations"; "I feel happy when I can choose the assignment I like"; "It was great. Our creativity will be limited if there is only one type of assignment"; or "It's free and stressless to do class projects. It is fun and relaxing. But we can still learn something and reflect on our own learning." Only three participants were given different choices for assignments before and they wrote, "We can choose our own topics, such as movie reviews or book reviews."

Learners in a class can be very different in terms of interest, background knowledge and ability and such variations are influenced by language, gender, culture and ethnicity. Differentiated instruction in products can make instruction and classrooms more responsive to the needs, intelligence, talents and interests of the learners (Tomlinson, 1999). These tiered tasks or activities can allow learners to utilize more intelligence and knowledge with more independence in their own learning and demonstrate their own ways of learning. Moreover, the entire class can benefit more from each other's work (Fisher & Frey, 2001).

With regard to class project I, the choice that participants liked the most was choice 1 "narrative story" (n=22, 42.3%), followed by choice 2 "interview" (n=10, 19.2%). Eight participants liked all the choices and none of the participants chose choice 4 "workshop." On the other hand, the choice that participants liked the least was choice 5 "news report" (n=11, 21.1%), followed by choice 6 "kid's experience" (n=7, 13.5%). Twenty participants wrote "None" when asked "What's your least favorite choice?"

As for project II, 33 and nine participants liked choice 1 "activity design" and four "web introduction" respectively. Eight participants liked all these four choices. However, 20

participants claimed that their least favorite choice was choice 3 “buy a teaching aid and design an activity.” Twenty-seven participants’ wrote “None” when they were asked “What’s your least favorite choice?”

4.2 Participants’ Projects

With regard to project I, the most popular choice of participants was choice 1 “narrative story” (n=27, 51.9%), followed by choice 2 “interview” (n=9, 17.3%), 3 “observation” (n=7, 13.5%) and 5 “news report” (n=6, 11.5%). Only two and three participants chose Choice 4 “workshop” (n=2) and 6 “kids’ experience” (n=3) respectively.

Participants chose choice 1 “narrative story” because writing a story about their own English learning experience was easier. Participants wrote responses such as “It was interesting and easy to recall and write my own English learning experience,” “I have a very good memory of my English learning experience when I was a child” or “My past English learning experience made me feel English was fun and interesting, so I wanted to share this with my classmates.”

Connections are very important in terms of learning. A connection should be made between the new learning and the learners’ previous experience, knowledge or interests. Therefore, Blaz (2006) claims that any connection has a positive effect on learning and is a major goal of any differentiated-instruction lesson (p. 3).

Below is an example of a participant’s narrative story regarding her English learning experience through games and competition.

Student Project 1: Narrative Story

My teachers used games and competition to increase our involvement in class. When we faced difficulties in games and competitions, the teachers gave us hints and help. Teachers’ support and help are a kind of scaffolding.

Narrative inquiry is a way of thinking about and studying experience (Connelly & Clandinin, 2006). Connelly and Clandinin (2006) define narrative inquiry like this: “The study of experience as a story, then, is first and foremost a way of thinking about experience. Narrative inquiry as a methodology entails a view of the phenomenon” (p. 477). Narrative provides a way of bridging different worlds and connecting learning experiences. These connections are often mediated through reflection during the writing process itself (Smith, 2006). In this study, participants’ narrative entailed English teaching among children as a phenomenon of games and competitions.

While two participants’ relatives are English teachers, so they interviewed or observed their relatives for this assignment, seven participants interviewed their friends or teachers who taught children English. They wrote, “My aunt is an English teacher, so I have the time and chance to interview her. I want to learn how a class is delivered” and “I want to be a teacher. So I went to observe this teacher to learn some instructional skills.” These participants employed their “social capitals” (Bourdieu, 1986), relationships between individual members of the

community. They employed the social links of trust between members, as they develop in social networks to help them complete this assignment. As shown in Figure 2, they extended their learning from the university as a learning community to the society as a larger learning community.

Below is an example of a participant’s interview with an elementary school English teacher regarding her perspectives on child-centered theory.

Student Project 2: Interview

Chou: How do you apply the child-centered theory in your teaching?

Ms Lin: When I design activities, I think how learners may enjoy the learning. Instead of lectures, I design activities for learners to use the language. Learners become the center of the class.

Chou’s footnotes: In child-centered classrooms, children enjoy themselves and they learn naturally and actively. They are spontaneous and their eyes shine brightly.

Games and activities can change the pace of a lesson and help to maintain children’s motivation. Moreover, games and activities lighten more formal teaching and help to renew children’s energy, so children can be involved in informal language analysis and take note of language items or rules through games and activities such as problem-solving and puzzles (Brewster, 2002). Through choice 2 “interview,” the participant in the above example learned the importance of using games and child-centered classrooms in English language teaching.

Below is an example of a participant’s observation of an English lesson taught among elementary school fourth graders. This participant highlighted the importance of classroom management and classroom language in English classrooms.

Student Project 3: Observation

During today’s observation, I learned an important lesson: “classroom management.” If the teacher can control the class well, all the activities will go smoothly. The teacher should say “I say ____ and you say ____” to get students’ attention.

Classroom observation is a useful tool in learning to teach and it is regarded as a central component of teacher preparation and development (Barocsi, 2007; Lasagabaster & Sierra, 2011; Wajnryb, 1992; Zepeda, 2012). Through observing experienced second-language teachers, pre-service or student teachers can develop an awareness of the principles and decision-making that underlie effective teaching and identify techniques and practices they can apply to their own teaching (Day, 1990; Wajnryb, 1992; Zepeda, 2012). Therefore, through observing an English teacher’s class, the participant in the above example learned to use classroom language as the code of conduct in an English classroom.

With regard to project II, the majority of the participants chose choice 1 “activity design” (n=32, 61.5%), followed by choice 4 “overview of a website” (n=18, 34.6%). Only one participant chose choice 2 “make a teaching aid and design an activity” or choice 3 “buy a teaching aid and

design an activity.”The majority of participants chose choice 1 “activity design” because “Games and activities are fun. These games and activities can be used not only in English classes but also in other classes,”“Learners will engage in fun and interesting games and activities” or “When I learned English, my teachers used games and activities. So I want to design activities for my future students.”

Games and activities are widely used in language classrooms and they should have pedagogic purposes. Games and activities should be engaging and fun and involve all the students (Harmer, 2012). Through games, learners can use the target language in a more creative way rather than simple repetition (Brewster, 2002).

The following is an example of a participant’s activity design including background of learners, materials, objectives and teaching procedure. This activity is similar to message sender where one student passes on the answer to the next one and the last one has to shout out the answer.

Student Project 4: Activity Design

Learners’ age and proficiency levels: elementary school students at three proficiency levels including beginning, intermediate and advanced.

Objectives: Beginners can identify alphabet letters. Intermediate learners can identify the picture and corresponding words. Advanced learners can identify the challenging words.

Procedure: Divide learners into a group of three. All learners face the blackboard and stand in a line. The teacher shows the answer to the last person of each group. Each group passes on the answer to the first one who rushes to write down the answer on the blackboard. The winner is the group that is the fastest and gets the correct answer.

Games should have clear understandable procedures and rules and be easy to organize. When designing games and activities, the age, levels, interests and cultural background of learners should be taken into consideration (Harmer, 2012). Therefore, Student Project 4 clearly included learners’ age, proficiency levels, objectives and procedures.

Participants chose choice 4 “website introduction” because they liked that particular website and would like to share that website with their classmates, as indicated by the following responses: “I like this website a lot and wanna share”; “I like to surf English learning websites, particularly online games”; “I learn English through this website and I find it useful”; “People rely on multimedia a lot. This website provides a variety of resources. Learners will be interested in learning English through this website”; or “I want to integrate technology and multimedia into classroom practice.” The following is an example of a participant’s overview of a website and an activity design including background of learners, materials, objectives and teaching procedure.

Student Project 6: Website

Overview of the website: This website is good for those who want to practice phonics and phonemic awareness.

Learners’ age and proficiency levels: Elementary school young learners who are just beginning to learn phonics.

Objectives: Students will be familiar with the phonic rules.

Procedure: Clip on the sound and listen to the words. Choose the pictures that begin with the same consonants, such as boy and book. You can accumulate your book points when you get the correct answer.

The participant in the above example used the website to design activities for young learners to practice phonics and acquire phonemic awareness. Through technology and websites, children can find learning English fun, motivating and stimulating. Moreover, websites can provide a full context for language with sounds and vision, so children can use the language and their learning becomes memorable (Brewster, 2002).

Participants’ Learning

Participants regarded choice 3 “observation” (n=19, 36.5%) and 2 “interview” (n=13, 25%) as the most helpful. While none of the participants regarded choice 4 “workshop” as helpful, nine participants thought that all choices were helpful. The top least helpful choice was choice 5 “news report” (n=12, 23%), followed by choice 6 “kids’ experience” and choice 1 “narrative story” (n=6, 11.5%). A total of 24 participants answered “None” when asked “Which choice was the least helpful?”

With regard to participants’ learning from choice 3 “observations,” the most common responses on the response cards included: “learners’ learning community,” “the horseshoe seating arrangement,” “phonics with the KK system,” “good classroom management,” “Teachers should teach children not only English but also strategies for memorizing vocabulary or pronunciation rules” and “Teachers should review the previous lessons to freshen students’ memories.”

As for participants’ learning from choice 2 “interviews,” the following responses were shown on participants’ response cards: “Teachers should give remedial education to those who fall behind,” “attend workshops to increase teachers’ competence and skills,” “child-centered,” “Teachers should teach difficult concepts first, because kids will concentrate less as time goes on,” “be patient with kids” and “explain the objectives of the lessons at the beginning of the lesson.”

Day’s (1991) professional knowledge source continuum reveals that teachers can develop professional knowledge as a result of teaching or merely through lectures and readings. Along the continuum, different activities can help pre-service teachers develop professional knowledge such as observation, simulation and role-play. Kelly, Grenfell, Allan, Kryza, and McEvoy (2004) suggest that the incorporation of classroom observations into pedagogical courses as well as classroom management to improve pre-service and student teachers’ managerial competence could be included in language teacher education programs. Therefore, through class lectures, choice 2 “interviews” and choice 3 “observation,”

participants in this study gained professional knowledge on English language teaching.

With regard to the most helpful choice of project II, while 13 and 15 participants chose choice 1 “activity design” and 4 “web introduction” respectively, 16 participants wrote “all.” Participants regarded choice 3 “buy a teaching aid and design an activity” as the least helpful one, but 31 participants wrote “None” to the question “Which choice do you think was the least helpful?”

As for participants’ learning from choice 1 “activity design,” participants wrote down activity names or descriptions, such as Guess Who, Bingo, Railway, Drawing & Running, Fishing or My Territory. The following responses were related to participants’ learning from choice 4 “website introduction and activity design”: Digital Library, Starfall, picture book website, videos, Bembo’s zoo, etc.

In this study, participants learned different types of activity designs through choices 1 and 4 from class project II. Teachers should be provided with wide-ranging resources of practical ideas that are easy to use and adapted flexibly and creatively to different contexts and situations. Therefore, training in language teaching methodologies and in state-of-the-art classroom techniques and activities should be included in language teacher education in order to equip language teachers with the necessary competence (Kelly et al., 2004).

5. DISCUSSION AND IMPLICATIONS

This study analyzed 52 participants’ attitude toward and learning of the integration of differentiated instruction in products in a Children’s English class in a language teacher education program in a north-west city in Taiwan. Based on the analysis of participants’ projects, class evaluations, participants’ responses to projects and class PowerPoint files, this study has the following findings. First, participants had a positive attitude toward differentiated instruction in projects and the majority of them had never experienced differentiated instruction in projects before. Second, the projects that most participants chose to complete for class project I were regarded as their favorite ones, but not necessarily the ones that helped them the most. The main reason for completing choice 1 “narrative story” was “It was easy to write my own narrative story of my past English learning experience.” However, participants learned most from the observations and interviews because observations and interviews offered participants practical experience. Third, participants learned theories, issues and instructional strategies from class project I and activity design and useful websites from class project II.

In order to effectively integrate differentiated instruction in products into teacher education programs for pre-service teachers, two issues are discussed in terms of the importance of differentiated instruction in products and factors for designing differentiated instruction in product.

5.1 Importance of Differentiated Instruction in Product

Differentiated instruction is a useful pedagogical principle in education. Tomlinson (2003) suggests that every teacher can meet the diversity in the educational demands of children by means of differentiated instruction in terms of content, process and product. Although teachers acknowledge the need to address the difference among students, they often adopt a one-size-fits-all approach in their classrooms. Teacher education fails to prepare teachers for the variance among learners (Ruys et al., 2013). Swennen, Lunenberg, and Korthagen (2008) suggest that teacher educators and trainers need to intentionally model the desired pedagogical theories and practice. Therefore, the importance and implementation of differentiated instruction in products should be introduced to pre-service teachers in teacher education programs.

According to George (2005),

Educators must move forward, rapidly and visibly, in the successful implementation of classroom-level strategies that provide a differentiated curriculum, instruction and assessment; strategies that, when implemented effectively, result in challenging and supporting students within the regular, mixed-ability, heterogeneous classroom (p. 186).

Therefore, in courses offered for teacher education programs, such as the Children’s English class, teacher educators should implement and model what differentiated instruction in products or tiered assignments are. Moreover, teacher educators should explain to pre-service students or student teachers the desired pedagogical behavior by linking the designs to and underpinning them with theoretical notions (Swennen et al., 2008).

5.3 Factors for Designing Differentiated Instruction in Products

Teacher educators or trainers should practice creating a more responsive curriculum and instruction to meet the diverse needs of learners (Fisher & Frey, 2001). Therefore, differentiated instruction in products or tiered assignment is used to develop multiple pathways for learners to demonstrate their competence. Tiered assignments offer levels of difficulty so that the range of learners in the classroom can successfully respond (Fisher & Frey, 2001). Blaz (2006) claims that products should be regarded not just as a way to measure learning but also as a logical outcome or extension of that learning. Reflection is a vital component of the product process (p. 12).

Several factors need to be taken into consideration when educators or teacher trainers design differentiated instruction in products. Varied levels of depth, complexity and abstractness of the products should be designed based on participants’ ability, readiness, interest, learning styles or intelligence levels (Blaz, 2006; Parker, 2007; Theisen, 2002). Moreover, the products should be relevant to learners so these products can be accessible and challenging but not overwhelm learners (Blaz, 2006, p. 12). Products should emphasize critical and creative

thinking as the learners apply what they have learned (Blaz, 200).

6. CONCLUSION

This study focuses on the implementation of differentiated instruction in products, “tiered assignments,” in a Children’s English class in a teacher education program in Taiwan. The study concludes that 52 college students held a positive attitude toward these tiered assignments and that they learned theories and instructional strategies not only from lectures and tasks in the university classes but also from completing different choices. Another important finding is that participants’ choice of completing these assignments is based on the level of easy of the assignments. They regarded “observations” and “interviews” as the most helpful because they could learn both theories and practice from those being observed and interviewed, but these two assignments were at the appropriate level of difficulty to be completed. Two suggestions are made to effectively implement differentiated instruction in products in teacher education programs in terms of explicitly modeling and explaining differentiated instructions in products and designing tiered assignments based on the levels of challenge as well as learners’ readiness, interests and profiles.

From the perspective of language teacher educators, this empirical study presents a framework for the integration of differentiated instruction in products into teacher education. In order to help prepare future elementary school teachers to meet elementary school students’ diverse needs, the findings of this study have provided teacher education programs and teacher educators with a framework for the design and implementation of courses with the integration of differentiated instruction for potential teachers through explicitly modeling, practicing and explaining the pedagogical practice of differentiated instruction in products.

From a research perspective, drawing on previous empirical research on differentiated instruction in products in elementary schools and language classrooms and at tertiary levels (Chen, 2007; Goodnough, 2010; Hogan, 2009; Letalova, 2008; Olsen, 2009; Trask, 2008; Tu, 2012), this study adopts multiple sources of data and rich and thick descriptions to contextualize the study on differentiated instruction in products in a teacher education program. Finally, this study discusses how participants could learn both theories and instructional practice about children’s English from completing tiered assignments in the intertwined learning community of the university, virtual environment, and the society.

As the number of the participants in this study was very small (only 52 participants), the findings of this case study cannot be generalized to a larger teacher education population. However, the triangulated data collection can be used to explain undergraduate students’ professional learning of issues about Children’s English through

differentiated instruction in products and tiered assignments.

The Children’s English class is offered in two different programs at this university, one in the Department of Education and Learning Technology and the other in the elementary school education program. Except for eight seniors enrolled in the elementary school education program, this study mainly focused on freshmen in the Department of Education and Learning Technology without taking educational courses. Future research could be conducted among participants in the elementary school education program. Such a study could discuss whether the participants’ accumulated learning about educational theories and practice influence their attitude, projects and professional learning on differentiated instruction in products or tiered assignments.

REFERENCES

- [1] Barocsi, S. (2007). The role of observation in professional development in foreign language teacher education. *WoPaLP*, 1, 125-144.
- [2] Blaz, D. (2006). *Differentiated instruction: A guide for foreign language teachers*. Larchmont, NY: Eye on Education.
- [3] Bourdieu, P. (1986). The forms of capital. In J. G. Richardson (Ed). *Handbook of theory and research for the sociology of education* (pp. 241-258). New York, NY: Greenwood Press.
- [4] Bowler, B., & Parminter, S. (2002). Mixed-level teaching: Tiered task and bias tasks. In J.C. Richards, & W. A. Renandya (Eds.) *Methodology in language teaching: An anthology of current practice*, (pp.59-64). Cambridge, UK: Cambridge University Press.
- [5] Brewster, J., & Ellis, G. (2002). *The primary English teacher’s guide*. Essex, England: Penguin English Guides.
- [6] Chapman, C., & King, R. (2003). *Differentiated instruction strategies for reading in the content areas*. Thousand Oaks, CA: Corwin Press.
- [7] Chapman, C., & King, R. (2005). *Differentiated assessment strategies: One tool doesn't fit it all*. Thousand Oaks, CA: Corwin Press.
- [8] Chapman, C., & King, R. (2008). *Differentiated instructional management: Work smarter, not harder*. Thousand Oaks, CA: Corwin Press.
- [9] Chapman, C., & King, R. (2009). *Differentiated instruction strategies for writing in the content areas*. Thousand Oaks, CA: Corwin Press.
- [10] Chen, Y. H. (2007). *Exploring the assessment aspect of differentiated instruction: College EFL learners’ perspectives on tiered assignment tasks*. (Unpublished doctoral dissertation), University of New Orleans, USA.
- [11] Connelly, F. M., & Clandinin, D. J. (2006). Narrative inquiry. In J. L. Green, G. Camilli, & P. Elmore (Eds.), *Handbook of complementary*

- methods in education research (3rd ed., pp. 477–487). Mahwah, NJ: Lawrence Erlbaum.
- [12] Dahlman, A., Hoffman, P., & Brauhn, S. (2011). Classroom strategies and tools for differentiating instruction in the ESL classroom. *MinneWITESOL Journal*, 25, 1-22. Retrieved from http://minnetesol.org/journal/vol25_html_pages/17_Dahlman.htm
- [13] Day, R. R. (1990). Teacher observation in second language teacher education. In J. C. Richards & D. Nunan (Eds.), *Second language teacher education* (pp. 43-61). Cambridge, UK: Cambridge University Press.
- [14] Denzin, N. K., & Lincoln, Y. S. (2005). *The Sage handbook of qualitative research*. Thousand Oaks, CA: Sage.
- [15] Drapeau, P. (2009). *Differentiating with graphic organizers: Tools to foster critical and creative thinking*. Thousand Oaks, CA: Corwin Press.
- [16] Fisher, D., & Frey, N. (2001). *Responsive curriculum design in secondary schools: Meeting the diverse needs of students*. Lanham, MD: Scarecrow.
- [17] Flick, U. (1998). *An introduction to qualitative research*. Thousand Oaks, CA: Sage Publications.
- [18] George, P.S. (2005). A rationale for differentiating instruction in the regular classroom. *Theory into Practice*, 44, 185-193.
- [19] Goodnough, K. (2010). Investigating pre-service science teachers' developing professional knowledge through the lens of differentiated instruction. *Research in Science Education*, 40(2), 239-265.
- [20] Gregory, G. H. (2003). *Differentiated instructional strategies in practice: Training, implementation, and supervision*. Thousand Oaks, CA: Corwin Press.
- [21] Gregory, G. H. (2005). *Differentiating instruction with style: Aligning teacher and learner intelligences for maximum achievement*. Thousand Oaks, CA: Corwin Press.
- [22] Gregory, G. H. (2007). *Differentiated instructional strategies: One size doesn't fit it all*. Thousand Oaks, CA: Corwin Press.
- [23] Hall, T. (2002). *Differentiated instruction: Effective classroom practice report*. Washington, DC: US Office of Special Education Program.
- [24] Harmer, J. (2012). *Essential teacher knowledge: Core concepts in English language teaching*. Essex, England: Pearson Education Limited.
- [25] Heacox, D. (2002). *Differentiating instruction in the regular classroom: how to reach and teach all learners, grades 3-12*. Minneapolis, MN: Free Spirit Publication.
- [26] Hogan, E. R. (2009). *Differentiated instruction and tiered assignment*. (Unpublished master's thesis), St. John Fisher College.
- [27] Holloway, J. H. (2000). Preparing teachers for differentiated instruction. *Educational Leadership*, 58(1), 82-83. Retrieved from <http://www.ascd.org/publications/educational-leadership/sept00/vol58/num01/-Preparing-Teachers-for-Differentiated-Instruction.aspx>
- [28] Jones, S., Clarke, L. W., & Enriquez, G. (2010). *The reading turn-around: A five-part framework for differentiated instruction*. New York, NY: Teachers College Press.
- [29] Kaplan, P., Rogers, V., & Webster, R. (2008). *Differentiated instruction made easy*. San Francisco, CA: John Wiley and Sons, Inc.
- [30] Kelly, M., Grenfell, M., Allan, R., Kriza, C. and McEvoy, M. (2004). *European profile for language teacher education—A frame of reference. A report to the European Commission Directorate General for Education and Culture*. Brussels, Belgium: European Commission Directorate General for Education and Culture.
- [31] Korthagen, F. A. J., Loughran, J., & Russell, T. (2006). Developing fundamental principles for teacher education programs and practices. *Teaching and Teacher Education*, 22(8), 1020-1041.
- [32] Kryza, K., Duncan, A., & Stephens, S. J. (2009). *Inspiring elementary learners: Nurturing the whole child in differentiated classroom*. Thousand Oaks, CA: Corwin Press.
- [33] Kryza, K., Duncan, A., & Stephens, S. J. (2010). *Differentiation for real classrooms*. Thousand Oaks, CA: Corwin.
- [34] Langa, M. A., & Yost, J. L. (2007). *Curriculum mapping for differentiated instruction, K-8*. Thousand Oaks, CA: Corwin Press.
- [35] Lasagabater, & Sierra (2011). Classroom observation: desirable conditions established by teachers. *European Journal of Teacher Education*, 34(4), 449–463.
- [36] Letalova, M. (2008). *Practical use of differentiated instruction at Czech schools*. (Unpublished bachelor's thesis), Masaryk University, the Czech's Republic.
- [37] Merriam, S. B. (2009). *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.
- [38] Olsen, L. D. (2009). *The effects of differentiating instruction in individual and group work settings in seventh grade science*. (Unpublished master's thesis), Montana University, the U.S.A.
- [39] Parker, C. (2007). *Applying differentiation strategies: Teachers' handbook for secondary*. Huntington Beach, CA: Shell Education.
- [40] Ruys, I, Defruyt, S., Rots, I., & Aelterman, A. (2013). Differentiated instruction in teacher education: A case study of congruent teaching. *Teachers and Teaching: Theory and Practice*, 19(1), 93-107.

- [41] Smith, T. (2006). Self-study through narrative inquiry: Fostering identity in mathematics teacher education. In P. Grootenboer, R. Zevenbergen, & M. Chinnappan (Eds.), *Identities, cultures, and learning spaces*. Proceeding of the Twenty-Ninth Annual Conference of the Mathematics Education Research Group of Australasia (pp. 471-478). Canberra: MERGA.
- [42] Swennen, J. M. H., Lunenberg, M. L., & Korthagen, F. (2008). Preach what you teach! Teacher educators and congruent teaching. *Teachers and Teaching: Theory and Practice*, 14 (6), 531-542.
- [43] Theisen, T. (2002). Differentiated instruction in the foreign language classroom: Meeting the diverse needs of all learners. *LOTE CED Communique*, 6. Retrieved from <http://www.sedl.org/loteced/communique/n06.html>
- [44] Tomlinson, C. A. (1999). *The differentiated classroom: Responding to the needs of all learners*. Alexandria, VA: Association for Supervision and Curriculum Development.
- [45] Tomlinson, C. A. (2003). Deciding to teach them all. *Educational Leadership*, 61(2), 6-11.
- [46] Tomlinson, C.A., & McTighe, J. (2006). *Integrating differentiated instruction & Understanding by design (Connecting Content and Kids)*. Alexandria, VA: Association for Supervision and Curriculum Development.
- [47] Trask, D. (2008). *The differentiated instruction facilitator project in the North East School Divisions: A story of our journey*. Washington DC: North East School Divisions.
- [48] Tu, D. T. C. (2012). An investigation into the applications of mixed-level tasks in reading classes. *Journal of Science*, 70(1), 265-274.
- [49] Turville, J. (2008). *Differentiation by student learning preferences: Strategies and lesson plans*. Larchmont, NY: Eye on Education.
- [50] Ur, P. (2012). *A course in language teaching*. Cambridge, UK: Cambridge University Press.
- [51] Wajnryb, R. (1992). *Classroom observation tasks: A resource book for language teachers and trainers*. Cambridge, UK: Cambridge University Press.
- [52] Walpole, S., & McKenna, M. C. (2007). *Differentiated reading instruction: Strategies for the primary grades*. New York, NY: Guilford Press.
- [53] Walpole, S., & McKenna, M. C. (2009). *How to plan differentiated reading instruction*. New York, NY: The Guilford Press.
- [54] Witherell, N. L., & McMackin, M. C. (2005). *Teaching writing through differentiated instruction with leveled graphic organizers*. New York, NY: Scholastic.
- [55] Witherell, N. L., & McMackin, M. C. (2007). *Teaching vocabulary through differentiated instruction with leveled graphic organizers*. New York, NY: Scholastic.
- [56] Zepeda, S. J. (2012). *Informal classroom observation on the go*. Larchmont, NY: Eye on Education.

Author Biography

Chin-Wen Chien received her Doctor of Education degree from the University of Washington (Seattle, USA). She is an assistant professor in Department of English Instruction of National Hsinchu University of Education in Taiwan. Her research interests include language education, language teacher education, and curriculum and instruction.