# TABLE OF CONTENTS

EDITOR’S COLUMN .................................................................................................................. 2

THE THIRD BIENNIAL WFATE CONFERENCE IN BEIJING, CHINA ................. 4

THE EFFECTS OF THE STUDENT TEACHING TRIAD MODEL................................. 9

FROM COLLEGE TO CLASSROOM: PROGRAMMATIC SUPPORT FOR PRE-SERVICE
TEACHERS FOR MULTILINGUAL AND MULTICULTURAL LEARNERS IN THE
U.S ............................................................................................................................................. 24

PRINCIPLED PRACTICE: WELCOMING DIVERSITY. A JOURNEY IN THREE STEPS
TOWARDS ENCOURAGEMENT OF THE HEART .......................................................... 35

HONG KONG IN-SERVICE TEACHER’ READINESS FOR DIFFERENTIATED
INSTRUCTION ...................................................................................................................... 54

EQUITABLE EDUCATIONAL OPPORTUNITY FOR ALL: THE 21st CENTURY
PARTNERSHIP ...................................................................................................................... 75

IN-SERVICE TEACHER DEVELOPMENT FOR CULTURALLY AND LINGUISTICALLY
RESPONSIVE PEDAGOGY - THE IMPACT OF A COLLABORATIVE PROJECT
BETWEEN K-12 SCHOOLS AND A TEACHER PREPARATION
INSTITUTION ......................................................................................................................... 80

INTERNATIONAL-LOCAL TEACHER EDUCATION NETWORKING FOR KNOWLEDGE
BUILDING INNOVATION ................................................................................................... 102

FOURTH BIENNIAL INTERNATIONAL CONFERENCE ...................................................... 113
EDITOR’S COLUMN

The process of developing a journal is a long and involved one. If it is to be an on-line journal, it can take even longer. The joy has been working with the Board of the World Federation of Associations of Teacher Education. It is great to have professionals who are thoughtful and creative and who trust the process to work well. My thanks to the members of the Board of Directors (listed below), It is with their support and encouragement that this journal exists.

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<th>WFATE Board Members</th>
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This volume of the Journal of the World Federation of Associations of Teacher Education will serve to introduce the Association to the reader. In the next issue, we will introduce you to WFATE more thoroughly thanks to Dr. Maxine Cooper, our first President and our historian. The issue presents peer-reviewed papers from our conference in Beijing China in 2014 and Dr.
Jane McCarthy, our current President, sets the stage for that section. Finally, Dr. Mireia Montane, President-Elect, will present the upcoming conference in Barcelona Spain, April 2016. For more information about the World Federation of Associations of Teacher Education, please go to our website: http://www.worldfate.org.

If you are interested in submitting an article for publication, please think about the thematic issue:

**EDUCATIONAL REFORM: SCHOOLS, COLLEGES, AND POLICY**

*The past decades have been focused on reform: reform of the p-12 schools, reform of institutions of higher education, reform related to school choice, reform related to the actual substance of education, reform related to educator preparation, and on and on. WFATE is soliciting papers, research reports, and policy analyses related to the impact of the decades of reform on education.*

Directions and requirements are given on the website.

I hope you enjoy the excellent articles and I welcome any feedback from readers.

Ann Converse Shelly
Executive Secretary and Editor
acshelly@aol.com
THE THIRD BIENNIAL WFATE CONFERENCE IN BEIJING, CHINA

Jane McCarthy, Ed.D.
President, WFATE

ABSTRACT

Several years of intensive planning and international collaboration resulted in a very successful WFATE conference in Beijing, China October 16-18, 2014. Our partners, the faculty, administrators, and students of the School of Education at Minzu University of China, dedicated themselves to making this conference a truly outstanding success. We are still processing the information, experiences, and friendships we gained as a result of this conference.
THE THIRD BIENNIAL WFATE CONFERENCE IN BEIJING, CHINA

The purpose of WFATE is to share knowledge about successful dimensions of effective teacher preparation across the world and to make access to research and good practice available to teacher educators everywhere, particularly in third world countries that don’t always have access to current information. We are indebted to our partners at UNESCO for helping us build relationships with teacher education providers in many countries. Our 2012 conference in Kenya brought together teacher educators from around the world, but especially enabled people from African countries to meet and share experiences, in many cases, for the first time. It also enabled teacher educators from other countries to experience the challenges teacher educators face in Africa, especially in remote areas where there are few resources. The organizers of this conference, our sponsors from the University of Nairobi, planned activities and experiences that allowed us to see the strengths of Africa’s culture, history and languages with a new perspective. The school visits enabled us to see firsthand the curriculum and instruction taking place in the schools as well as to visit a teacher preparation program.

The WFATE Board of Directors responded to an offer from the School of Education at Minzu University of China to host the 2014 conference. We were excited about holding the conference in China because we believed it would be a travel hub for people from many nations. We also felt the richness of the culture and history of China would be of great interest to our members, as well as the opportunity to visit Chinese schools and visit with Chinese teacher educators. Minzu University of China, one of the most prestigious universities in China, is also known as the college of minorities and students from China’s many ethnic groups study here and prepare for many careers, including that of teacher education. The University also provides a high school for ethnic minority students where they can come and study and live for no cost as they prepare for university admission. The cultural diversity at this university is unparalleled in other institutions and the school builds on the richness of cultures, languages, and history by offering programs in social justice, teaching Chinese as a second or third language, doing anthropological and ethnographic studies in education in tribal and ethnic minority areas, and offering students opportunities to do field work in remote areas. Professors at Minzu are well-known both nationally and internationally, as scholars in their fields.

Minzu University of China School of Education has been an integral part of WFATE for several years. My close relationship with them has resulted in their presence at our annual meetings in the United States at the ATE Conference. A delegation of Minzu professors and the Dean of the school, SuDe, visited the College of Education, University of Nevada, Las Vegas, more than a year before the conference to develop plans and logistics. Ann Shelly, our WFATE Executive Director, and myself, traveled to Beijing to visit the proposed sites for the conference and to meet the people who would be helping us with all local arrangements. Dr. Bing Gao was appointed as the coordinator of the conference and his expertise was invaluable. He established a team of professors and students to assist with the local arrangements and planning. Their considerable expertise with planning and running conferences was most helpful to the success of our venture. They spent many long hours to make sure everything was of top quality.

The site we selected for the conference was the Beijing Friendship Hotel. The choice proved to be a good one. The beautifully landscaped grounds offered space for walking and reflection, the
many meeting and banquet rooms facilitated our program, and its location in Beijing insured that travel to other areas of interest in Beijing was easy. Guests found the accommodations to be conducive to full participation in conference activities.

The theme of the conference was, “Teacher Education in Multicultural Societies: Opportunities and Challenges.” This theme elicited many diverse and interesting proposals for presentation. Several strands were developed to represent multiple aspects of the theme. The topics included: Pre-Service Teacher Education: Multilingual Education; In-Service Education: Specialization of Teaching and Teacher Education; Standards and Accountability; Teaching Technology and Subject Matter; Cultural Diversity; and International Comparative Study of Teacher Education. Submissions were received from over one hundred people. The topics were timely and of great interest. Sessions were well-attended and translators were provided so that all could participate. Main session attendees were provided with headphones for translation.

The participants at the conference came from all over the world to contribute to the knowledge base of teacher education. Some representative countries were China, Turkey, New Zealand, Australia, Spain, Taiwan, Hong Kong (China), the United States, Canada, England, Africa, and Thailand. All participants contributed to the rich sharing of knowledge and theory at the conference. It was important to learn what each nation is doing with regard to teacher preparation and the challenges faced in common among all. New ways of collaboration and cooperation were explored and ways to conduct exchange programs and opportunities for international student teaching were initiated.

The conference attendees also included dignitaries from the Chinese government, department of education, university and educational entities. All were most supportive of our efforts at international collaboration in this most important endeavor- that of preparing teachers for the world.

Keynote speakers offered a variety of perspectives on teacher education. I spoke about the place of teacher education in a global society and the support of quality teacher education for all; Dean SuDe and Yuan Mei of Minzu University spoke about bilingual education for ethnic minorities. Christine Clark, from the U.S., spoke about culturally responsive practice and why it is important. Lorraine Ling from Australia spoke about a critical perspective of multiculturalism and curriculum, and Jian Wang, from the United States and Xing Teng from Minzu University, spoke about teachers’ beliefs of learning and teaching related to minority students’ learning, a comparative analysis of Han and Mongolian teachers. A number of other keynote speakers added to the dialogue about critical issues impacting teacher education today in multiple societies and settings.

The papers presented represented a wide variety of topics relevant to education and teacher education. A number of them will appear in this journal for your interest. Some of them dealt with national models of teacher education or international collaborative projects, such as the Knowledge Building International Project. Many papers dealt with the challenges of bilingual and multilingual education and different methodologies, the effects of poverty on educational attainment, teacher training and retention in rural areas, the use of technology to provide equity of access to education, accreditation of teacher education programs, accountability, and
professional standards for teachers. Other groups spoke about the clinical experiences of teacher preparation and the need for rigorous field experiences before licensure as well as cross-cultural explorations of best practices while others presented comparative studies of teacher education at universities in China and the United States. Sessions were well-attended and participation was lively and interactive.

In addition to the multiple opportunities for professional knowledge building and the development of professional relationships, the conference offered several diverse cultural experiences for participants. The students from Minzu University performed an evening of cultural music and dance that was unsurpassed in its beauty and talent. It was a professional and emotional experience for all as was the wonderful dinner that accompanied it. The students represented many different ethnic groups and traditions and were so very talented in their expression of these traditions. It was a magnificent performance and showcased the diversity of Chinese society and of the student body at Minzu University.

Another wonderful outing was to the Museum of Ethnic Cultures at Minzu University. The exhibits there traced the history of ethnic minorities in China and allowed us to see artifacts, clothing, habitats, and geography. It was especially interesting to see the similarities between dress and jewelry from Mongolia and Tibet to American Indian tribes in the U.S. and Canada. The history of the nation-building of early China was depicted in these exhibits in this well-curated museum.

We also had an opportunity to visit the High School for Nationalities that has a proud history of achievement and service to ethnic minority students. Many of the graduates go on to become leaders in their ethnic regions or in Chinese government. The attached museum allowed us to see the progression of the school from its early days to today and to see the stories of some of their more illustrious graduates, many of whom are well-known figures in Chinese government and society. We also got to visit classes that were in session and to talk with some students about their daily life and experiences at the school. It was most interesting and informative. We also received many lovely symbolic gifts from the school administrators who generously shared their time with us. Their pride in this outstanding school was evident.

During the conference, a number of participants took the opportunity to visit many of the special historical and cultural sights of Beijing including the Lama Temple, the Forbidden City, Tiananmen Square, Old Town, the hutongs, the Summer Palace, the museums, and more. The city offered an opportunity to immerse ourselves in the culture as well as the daily life of its citizens. The Chinese people were most welcoming and kind to visitors.

As the conference came to a close, a number of attendees stayed on for an extra day for an extremely enjoyable visit to the Great Wall- the perfect way to conclude a stay in China. The awesome experience of standing on such a magnificent historical artifact and learning about its history was truly an awe-inspiring and memorable event.

Conference participants left Beijing with renewed energy and many new ideas. Friendships were formed that have lasted and many of us will be together again in Barcelona in April. Teacher education can only benefit from a global exchange of knowledge. Ideas and shared experiences.
The goals and purposes of WFATE were certainly furthered by this international conference. We wish to once again thank our gracious hosts at Minzu University of China for enabling us to have such a profitable and productive experience.

Dr. Jane McCarthy is the Interim Chair of the Department of Educational and Clinical Studies in the College of Education, University of Nevada, Las Vegas. She is the current President of the World Federation of Associations of Teacher Education and a former President of the American Association of Teacher Educators. Her major research interests are the education of the American Indian, working with children in poverty, and teacher education for diverse populations.
THE EFFECTS OF THE STUDENT TEACHING TRIAD MODEL

Heng-Yu Ku
Kimberly Kaufeld
Chelsie Hess
Scott Kreider
Nancy Sileo
Eugene Sheehan

University of Northern Colorado

ABSTRACT

This main purpose of this study was to examine the validity of a student teaching evaluation survey. A survey containing 30 items on a 5-point Likert-type scale completed by 124 teacher candidates, 160 university supervisors, and 60 cooperating teachers to assess the teacher candidates’ proficiency level on student teaching was analyzed. Results revealed that three factors (Good Teaching Practices, Diversity and Professional Development, and Professionalism) were extracted from the student teaching evaluation survey. In addition, the results revealed that teacher candidates consistently rated themselves higher than their cooperating teachers and university supervisors across these three factors. Overall, teacher candidates rated highly on their cooperating teachers and university supervisors’ mentoring efforts during their student teaching experiences. Furthermore, both cooperating teachers and university supervisors reported having a positive experience with the teacher education program.
THE EFFECTS OF THE STUDENT TEACHING TRIAD MODEL

INTRODUCTION

The current climate surrounding colleges of education demands increased evidence for the quality of teacher preparation programs and their graduates. Policymakers and the public are requiring program evaluation that assures teachers candidates’ are well prepared to teach the children in our nation’s schools. In addition, accrediting organizations are requiring colleges of education to have a well-developed assessment system that “collects and analyzes data on applicant qualifications, candidate and graduate performance, and unit operations to evaluate and improve the unit and its program” (National Council for Accreditation of Teacher Education, 2002). Furthermore, the mission of the Council for the Accreditation of Educator Preparation is “advances excellent educator preparation through evidence-based accreditation that assures quality and supports continuous improvement to strengthen P-12 student learning” (Council for the Accreditation of Educator Preparation, 2015). Therefore, it is important to measure the quality of the teacher preparation programs by using valid and reliable evidence.

The University of Northern Colorado has an enrollment of approximately 12,000 students from 48 states and 51 nations. Indeed, the University of Northern Colorado is the largest preparer of teachers and other school personnel in the state of Colorado. At the University of Northern Colorado, the School of Teacher Education is housed in the College of Education and Behavioral Sciences which includes six licensure programs: Early Childhood Education, Elementary Education, K-12 Education, Secondary Education, Post-baccalaureate, and English as a Second Language and Bilingual Education.

Student teaching is a key element in preparing pre-service teachers. The experience provides future teachers the chance to reflect upon their practice as well as gain insight from cooperating teachers and university supervisors. The theoretical framework of this study is the student teaching triad model. The triad model is a common method used during student teaching, which involves teacher candidates, cooperating teachers, and university supervisors.

In past years, researchers have generally used a qualitative approach to study the dynamic of the student teaching triad model from the cooperating teachers (Goodnough, Osmond, Dibbon, Glassman, & Stevens, 2009; Koerner, 1992; Rozelle & Wilson, 2012; Tannehill, 1989; Veal & Rikard, 1998), university supervisors (Bullough & Draper, 2004; Rodgers & Keil, 2007; Slick, 1997; Steadman & Brown, 2011), and teacher candidates’ perspectives (Cheng, Tang, & Cheng, 2006). The existing research typically examines the effectiveness of the student teaching triad model using qualitative data through interviews of the teacher candidates, cooperating teachers, and university supervisors. The present study focuses on the quantitative data gathered from the triad in order to validate the student teaching evaluation survey, investigate teacher candidates’ perceptions toward their cooperating teachers and university supervisors’ mentoring efforts during their student teaching experiences, and assess the cooperating teachers’ and university supervisors’ perceptions toward the teacher education program regarding the student teaching experience.
Purpose

The main purpose of this research is to conduct a factor analysis of the student teaching evaluation survey that was used by the School of Teacher Education for pre-service teachers at the University of Northern Colorado. In addition, the differences among cooperating teachers, university supervisors, and teacher candidates’ ratings from the student teaching evaluation survey were investigated. Furthermore, teacher candidates’ perceptions toward their cooperating teachers and university supervisors’ mentoring efforts during their student teaching experiences were examined. Finally, cooperating teachers’ and university supervisors’ perceptions of the teacher education program were explored.

The research questions were the following:
1. What underlying factors are measured by the student teaching evaluation survey?
2. Are there differences in the ratings of the student teaching evaluation survey from cooperating teachers, university supervisors, and teacher candidates?
3. Are there differences in teacher candidates’ overall ratings of their cooperating teachers and university supervisors’ mentoring efforts?
4. What are cooperating teachers and university supervisors’ perceptions toward the teacher education program regarding the student teaching experience?

METHOD

Participants

The participants included 124 survey responses from 124 teacher candidates in the elementary professional teacher education program who completed their student teaching experiences, 160 survey responses from 160 cooperating teachers who mentored and worked with the teacher candidates in the classroom, and 190 survey responses from 60 university supervisors who are retired principals or teachers that have an affiliation with the university. All participants were located in the Rocky Mountain region of the United States.

Context and Roles

Teacher candidates received a handbook at the beginning of the semester of student teaching. They were responsible for providing a copy of the handbook to their cooperating teachers on the first day of student teaching. In addition, teacher candidates were required to attend four scheduled seminars during their duration of student teaching - three with their university supervisors and one with their cooperating teachers. They were also required to write a weekly reflection journal to reflect on their teaching practice and experiences.

Cooperating teachers worked collaboratively with the teacher candidates throughout the semester. The cooperating teachers evaluated the teacher candidates’ performance on various state content standards twice during the semester, one at midterm, and one at the end of the semester. They also completed three field experience observations forms, which were reviewed and discussed with the teacher candidates. Each cooperating teacher typically mentors one teacher candidates per semester.
University supervisors were required to schedule and conduct three seminars based upon field experience to their teacher candidates during the semester. Their responsibilities included visiting the schools and the school principals during the first week of student teaching, scheduling a meeting at the beginning of the semester with the cooperating teachers, and making one contact per week via email or in person with teacher candidates. Each university supervisor typically supervises two to four teacher candidates per semester.

**Instruments and Procedures**

Three survey instruments 1) the student teaching evaluation survey, 2) the teacher candidate exit survey, and 3) the teacher education program survey were used in this study. First, the student teaching evaluation survey was used to assess and evaluate the performance of teacher candidates by teacher candidates, cooperating teachers, and university supervisors. The student teaching evaluation survey was given once per semester via Qualtrics (an online survey tool) to the teacher candidates, the cooperating teachers, and the university supervisors at the end of student teaching experience. This survey consisted of 30 items completed by teacher candidates (self-evaluation), cooperating teachers, and university supervisors to assess teacher candidates’ proficiency level based upon national content standards. The items were rated on a 5-point Likert-scale ranging from 1 (developing) to 5 (advanced).

Second, teacher candidates also completed the teacher candidate exit survey via Qualtrics at the end of their student teaching experiences. The teacher candidate exit survey was composed of a 7-item questionnaire which assessed the cooperating teachers and university supervisors’ mentoring efforts based on teacher candidates’ perceptions. Some sample questionnaire items included: my cooperating teacher/university supervisor provided effective coaching, my university supervisor/cooperating teacher provided useful feedback, my cooperating teacher/university supervisor coordinated efforts with my cooperating teacher/university supervisor, my cooperating teacher/university supervisor was supportive in interactions with me, etc. The items were rated on a 5-point Likert-scale with items ranging from 1 (strongly disagree) to 5 (strongly agree).

Third, the teacher education program survey was composed of a 5-item questionnaire that assessed the cooperating teachers and university supervisors’ perceptions toward the teacher education program. The items were rated on a 5-point Likert-scale with items ranging from 1 (strongly disagree) to 5 (strongly agree). In addition, an open-ended question on the teacher education program survey asked both the cooperating teachers and university supervisors to provide additional comments and feedback to the teacher education program regarding the student teaching experience. This survey was distributed via Qualtrics to the cooperating teachers and university supervisors at the end of each semester.

**Data Analysis**

Research question 1 (What underlying factors are measured by the student teaching evaluation survey?) was answered by conducting an exploratory factor analysis with SPSS software. This method was employed to uncover the underlying structure of the 30-item student teaching
evaluation survey. Three sets of criterion, Eigenvalues $\geq 1$, Cattell’s scree plot, and salient loadings of $\geq 0.4$, were used to determine the optimal number of factors to be extracted. Research question 2 (Are there differences in the ratings of the student teaching evaluation survey from cooperating teachers, university supervisors, and teacher candidates?) was answered using an ANOVA, which assessed differences between the three group mean scores on the student teaching evaluation survey. To answer research question 3 (Are there differences in teacher candidates’ overall ratings of their cooperating teachers and university supervisors’ mentoring efforts?) and research question 4 (What are cooperating teachers and university supervisors’ perceptions toward the teacher education program regarding the student teaching experience?), an independent sample t-test was used. For the open-ended question, a thematic analysis was conducted to identify emerging themes and patterns.

RESULTS

Research Question 1: Underlying Factors in the Student Teaching Evaluation Survey

**Individual Groups.** Research question 1 investigated underlying factors contained within the student teaching evaluation survey. Three separate exploratory factor analyses were conducted with respect to each of the three groups of survey completers using principal axis factoring extraction and promax rotation. The first factor analysis associated with the teacher candidates’ survey responses extracted six underlying factors from the student teaching evaluation survey, which accounted for 70.5% of the variance. The second factor analysis associated with the cooperating teacher’s survey responses extracted three underlying factors from the student teaching evaluation survey, which accounted for 74.3% of the variance. The third factor analysis associated with the university supervisor’s survey responses extracted four underlying factors from the student teaching evaluation survey, which accounted for 71.9% of the variance.

**Across Three Groups.** Since different numbers of factors were extracted from the student teaching evaluation survey for each of the three groups, a factor analysis forcing a three factor solution was run for each of the three groups. The forced three-factor solution was conducted to assess the patterns of the factor loadings and identify survey items that loaded similarly across these three groups. Exploratory factor analysis indicated that all three factors had an Eigenvalue greater than 1.0. The total percent variance explained by the three factors were 58.8%, 74.3%, and 68.4% for teacher candidates, cooperating teachers, and university supervisors, respectively. The factor loadings for the teacher candidates, cooperating teachers, and university supervisors are displayed in Tables 1, 2, and 3.

The factor loadings displayed in Table 1, 2, and 3, identified a total of 21 survey items that across the three groups loaded consistently into three factors. Factor 1 composed of eleven items (#1, #2, #3, #4, #5, #6, #15, #16, #17, #18, and #21) related to questions such as student teacher’s teaching practices, designing lesson plans, providing feedback, and communicating with other members. This factor was labeled as “Good Teaching Practices.” Factor 2 composed of eight items (#7, #8, #9, #10, #11, #12, #13, and #14) related to questions such as student teacher’s respect to human diversity, intolerant of harassment, bias, and prejudice in others, and building positive relationship with others. This factor was labeled as “Diversity and Professional Development.” Lastly, Factor 3 composed of two items (#25 and #27) related to questions based
upon student teacher’s punctuality, quality of work, and work ethics. This factor was labeled as “Professionalism.” The rest of the nine items (#19, #20, #22, #23, #24, #26, #28, #29, and #30) were deleted due to either being double-loaded on the extracted factors or not being aligned with the factor solutions (See Table 4).

In addition, the internal consistency of each student teaching evaluation factor was estimated by Cronbach’s reliability alpha. The results revealed that the internal consistency was acceptable for the three factors, with Cronbach’s alpha values of 0.94 (Good Teaching Practices), 0.95 (Diversity and Professional Development), 0.81 (Professionalism), respectively.

Table 1. *Factor Loading of the Student Teaching Evaluation – Teacher Candidates*

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
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<tr>
<td>1 Intentionally supports oral and written language development.</td>
<td>.841</td>
<td></td>
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<tr>
<td>2 Understands cognitive foundations of learning.</td>
<td>.861</td>
<td></td>
<td></td>
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<tr>
<td>3 Designs appropriate standards-based lesson plans.</td>
<td>.574</td>
<td></td>
<td></td>
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<tr>
<td>4 Differentiates instruction in response to the needs of students identified as exceptional learners.</td>
<td>.722</td>
<td></td>
<td></td>
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<tr>
<td>5 Differentiates instruction in response to the needs of students identified as English as a second language.</td>
<td>.657</td>
<td></td>
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<tr>
<td>6 Applies sound disciplinary practices and interventions strategies in the classroom.</td>
<td>.647</td>
<td></td>
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<tr>
<td>15 Provides constructive feedback to students.</td>
<td>.754</td>
<td></td>
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<tr>
<td>16 Uses formal and informal assessment strategies to plan, evaluate, and strengthen instruction.</td>
<td>.832</td>
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<tr>
<td>17 Fosters active engagement in learning, self-motivation, and positive social interaction and creates supportive learning.</td>
<td>.657</td>
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<tr>
<td>18 Uses technology effectively to increase student achievement.</td>
<td>.821</td>
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<tr>
<td>21 Documents and reports student achievement.</td>
<td>.551</td>
<td></td>
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<td>22 Communicates with parents effectively and respectfully.</td>
<td>.794</td>
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<td>23 Establishes a positive collaborative relationship with families, school colleagues, and agencies in the larger community.</td>
<td>.599</td>
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<td>24 Articulates and models the democratic ideal to students.</td>
<td>.561</td>
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<td>28 Is confident, takes on leadership roles when appropriate.</td>
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<tr>
<td>7 Appreciates human diversity.</td>
<td></td>
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<td>8 Is vigilant to bias and prejudice in oneself.</td>
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<td>.705</td>
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<td>9 Is held in high regard by others.</td>
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<td>.594</td>
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<td>10 Promotes teaching as a worthy career.</td>
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<td>11 Is intolerant of harassment, bias, and prejudice in others.</td>
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<td>.614</td>
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<tr>
<td>12 Interacts respectfully with all and builds positive relationships.</td>
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<td></td>
<td>.838</td>
</tr>
<tr>
<td>13 Reflects on own practice; continually evaluates the effects of their professional decisions and actions on students, families and other professionals.</td>
<td></td>
<td></td>
<td>.544</td>
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<tr>
<td>14 Strives to meet the needs of all students in a caring, non-discriminatory, and equitable way.</td>
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<td></td>
<td>.757</td>
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<tr>
<td>19 Reflects on own practice; actively seeks out opportunities to grow</td>
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<td></td>
<td>.486</td>
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professionally.

20 Seeks feedback and uses it constructively. .468
25 Is always present and on time, misses or is late only for a true emergency. .946
26 Dresses and behaves professionally and appropriately for the situation. .970
27 Demonstrates high quality work and a model work ethic. .794
29 Follows rules and policies. .718
30 Meets legal and ethical responsibilities of a teacher. .593

Table 2. Factor Loading of the Student Teaching Evaluation – Cooperating Teachers

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Intentionally supports oral and written language development.</td>
<td>.697</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Understands cognitive foundations of learning.</td>
<td>.767</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Designs appropriate standards-based lesson plans.</td>
<td>.717</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Differentiates instruction in response to the needs of students identified as exceptional learners.</td>
<td>.695</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Differentiates instruction in response to the needs of students identified as English as a second language.</td>
<td>.741</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Applies sound disciplinary practices and interventions strategies in the classroom.</td>
<td>.669</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15 Provides constructive feedback to students.</td>
<td>.886</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 Uses formal and informal assessment strategies to plan, evaluate, and strengthen instruction.</td>
<td>.777</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17 Fosters active engagement in learning, self-motivation, and positive social interaction and creates supportive learning.</td>
<td>.599</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18 Uses technology effectively to increase student achievement.</td>
<td>.826</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19 Reflects on own practice; actively seeks out opportunities to grow professionally.</td>
<td>.686</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20 Seeks feedback and uses it constructively.</td>
<td>.622</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21 Documents and reports student achievement.</td>
<td>.784</td>
<td></td>
<td></td>
</tr>
<tr>
<td>22 Communicates with parents effectively and respectfully.</td>
<td>.695</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23 Establishes a positive collaborative relationship with families, school colleagues, and agencies in the larger community.</td>
<td>.637</td>
<td></td>
<td></td>
</tr>
<tr>
<td>24 Articulates and models the democratic ideal to students.</td>
<td>.716</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Appreciates human diversity.</td>
<td></td>
<td>.826</td>
<td></td>
</tr>
<tr>
<td>8 Is vigilant to bias and prejudice in oneself.</td>
<td></td>
<td>.857</td>
<td></td>
</tr>
<tr>
<td>9 Is held in high regard by others.</td>
<td></td>
<td>.786</td>
<td></td>
</tr>
<tr>
<td>10 Promotes teaching as a worthy career.</td>
<td></td>
<td>.832</td>
<td></td>
</tr>
<tr>
<td>11 Is intolerant of harassment, bias, and prejudice in others.</td>
<td></td>
<td>.910</td>
<td></td>
</tr>
<tr>
<td>12 Interacts respectfully with all and builds positive relationships.</td>
<td></td>
<td>.891</td>
<td></td>
</tr>
</tbody>
</table>
13 Reflects on own practice; continually evaluates the effects of their professional decisions and actions on students, families and other professionals.  .539
14 Strives to meet the needs of all students in a caring, non-discriminatory, and equitable way.  .788
25 Is always present and on time, misses or is late only for a true emergency.  .950
26 Dresses and behaves professionally and appropriately for the situation.  .806
27 Demonstrates high quality work and a model work ethic.  .674
28 Is confident, takes on leadership roles when appropriate.  .510
29 Follows rules and policies.  .786
30 Meets legal and ethical responsibilities of a teacher.  .748

Eigenvalues
Variance Explained

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>F1</th>
<th>F2</th>
<th>F3</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intentionally supports oral and written language development.</td>
<td>.783</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Understands cognitive foundations of learning.</td>
<td>.845</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Designs appropriate standards-based lesson plans.</td>
<td>.822</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Differentiates instruction in response to the needs of students identified as exceptional learners.</td>
<td>.745</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Differentiates instruction in response to the needs of students identified as English as a second language.</td>
<td>.672</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Applies sound disciplinary practices and interventions strategies in the classroom.</td>
<td>.655</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Provides constructive feedback to students.</td>
<td>.541</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Uses formal and informal assessment strategies to plan, evaluate, and strengthen instruction.</td>
<td>.749</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Fosters active engagement in learning, self-motivation, and positive social interaction and creates supportive learning.</td>
<td>.468</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Uses technology effectively to increase student achievement.</td>
<td>.592</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>Documents and reports student achievement.</td>
<td>.525</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Appreciates human diversity.</td>
<td>.764</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Is vigilant to bias and prejudice in oneself.</td>
<td>.811</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Is held in high regard by others.</td>
<td>.659</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Promotes teaching as a worthy career.</td>
<td>.728</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Is intolerant of harassment, bias, and prejudice in others.</td>
<td>.852</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Interacts respectfully with all and builds positive relationships.</td>
<td>.708</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Reflects on own practice; continually evaluates the effects of their professional decisions and actions on students, families and other professionals.</td>
<td>.534</td>
<td></td>
</tr>
</tbody>
</table>

Note. F1: Good Teaching Practices. F2: Diversity and Professional Development. F3: Professionalisms

Table 3. Factor Loading of the Student Teaching Evaluation – University Supervisors
14 Strives to meet the needs of all students in a caring, non-discriminatory, and equitable way. .720
26 Dresses and behaves professionally and appropriately for the situation. .535
29 Follows rules and policies. .491
30 Meets legal and ethical responsibilities of a teacher. .640
19 Reflects on own practice; actively seeks out opportunities to grow professionally. .611
20 Seeks feedback and uses it constructively. .566
22 Communicates with parents effectively and respectfully. .869
23 Establishes a positive collaborative relationship with families, school colleagues, and agencies in the larger community. .902
24 Articulates and models the democratic ideal to students. .743
25 Is always present and on time, misses or is late only for a true emergency. .596
27 Demonstrates high quality work and a model work ethic. .486
28 Is confident, takes on leadership roles when appropriate. .666

Table 4. Factor Loading of the Student Teaching Evaluation across Teacher Candidates (TC), Cooperating Teachers (CT), and University Supervisors (US)

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>TC</th>
<th>CT</th>
<th>US</th>
<th>Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Intentionally supports oral and written language development.</td>
<td></td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2 Understands cognitive foundations of learning.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>3 Designs appropriate standards-based lesson plans.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>4 Differentiates instruction in response to the needs of students identified as exceptional learners.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5 Differentiates instruction in response to the needs of students identified as English as a second language.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>6 Applies sound disciplinary practices and interventions strategies in the classroom.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>15 Provides constructive feedback to students.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>16 Uses formal and informal assessment strategies to plan, evaluate, and strengthen instruction.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>17 Fosters active engagement in learning, self-motivation, and positive social interaction and creates supportive learning.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>18 Uses technology effectively to increase student achievement.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>19 Reflects on own practice; actively seeks out opportunities to grow professionally.</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>20 Seeks feedback and uses it constructively.</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>21 Documents and reports student achievement.</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>22 Communicates with parents effectively and respectfully.</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>-</td>
</tr>
</tbody>
</table>
Research Question 2: Differences in the Ratings of the Student Teaching Evaluation Survey

To answer research question 2, an ANOVA was conducted for each of the three different factors, to analyze the difference in mean responses from the student teaching evaluation survey among the three groups. The ANOVA results revealed that there was no significant difference between the mean responses across the three groups in Factor 1: Good Teaching Practices, $F(2, 471) = 2.97, p = .052$ and Factor 3: Professionalism, $F(2, 471) = 1.89, p = .151$. The overall means for Factor 1: Good Teaching Practices are 4.19 (SD = .59) for teacher candidates, 4.09 (SD = .69) for cooperating teachers, and 4.02 (SD = .57) for university supervisors. The teacher candidates rated themselves consistently higher on the student teaching evaluation survey than their cooperating teachers and university supervisors across three factors (See Table 5). However, there was a significant difference between the mean responses across the three groups in Factor 2: Diversity and Professional Development, $F(2, 471) = 4.30, p = .014$. The overall means with respect to Factor 2 are 4.63 (SD = .41) for teacher candidates, 4.49 (SD = .67) for cooperating teachers, and 4.44 (SD = .59) for university supervisors. The teacher candidates rated themselves significantly higher in Factor 2 than their university supervisors. Overall, teacher candidates rated themselves consistently higher on the student teaching evaluation survey than their cooperating teachers and university supervisors across three factors (See Table 5).
Table 5. Student Teaching Evaluation

<table>
<thead>
<tr>
<th>Factor</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Factor 1: Good Teaching Practices</td>
<td></td>
</tr>
<tr>
<td>Teacher Candidates</td>
<td>4.19 (.59)</td>
</tr>
<tr>
<td>Cooperating Teachers</td>
<td>4.09 (.69)</td>
</tr>
<tr>
<td>University Supervisors</td>
<td>4.02 (.57)</td>
</tr>
<tr>
<td>Factor 2: Diversity and Professional Development</td>
<td></td>
</tr>
<tr>
<td>Teacher Candidates</td>
<td>4.63 (.41)</td>
</tr>
<tr>
<td>Cooperating Teachers</td>
<td>4.49 (.67)</td>
</tr>
<tr>
<td>University Supervisors</td>
<td>4.44 (.59)</td>
</tr>
<tr>
<td>Factor 3: Professionalisms</td>
<td></td>
</tr>
<tr>
<td>Teacher Candidates</td>
<td>4.61 (.53)</td>
</tr>
<tr>
<td>Cooperating Teachers</td>
<td>4.48 (.72)</td>
</tr>
<tr>
<td>University Supervisors</td>
<td>4.48 (.63)</td>
</tr>
</tbody>
</table>

Note. Responses ranged from 1 (Developing) to 5 (Advanced)

Research Question 3: Teacher Candidates’ Ratings of Cooperating Teachers and University Supervisors

Overall, teacher candidates rated highly on their cooperating teachers and university supervisors’ mentoring efforts during their student teaching experiences. The teacher candidates rated the university supervisors’ mentoring efforts (M = 4.47, SD = .70) slightly higher than their cooperating teachers’ mentoring efforts (M = 4.41, SD = .67). However, there was no significant difference between the overall ratings from the teacher candidates regarding their cooperating teachers and university supervisors’ mentoring efforts at the 0.05 level, t(123) = -0.834, p = 0.406 (See Table 6).

For cooperating teachers, the highest ranked item received from the teacher candidates was “my cooperating teacher was supportive in interactions with me” (M = 4.58, SD = .64) while the lowest ranked item was “my cooperating teacher coordinated efforts with my university supervisor” (M = 4.32, SD = .74). For university supervisors, the highest ranked items received from the teacher candidates were “my university supervisor was supportive in interactions with me” (M = 4.63, SD = .74) and “my university supervisor was available when I needed help” (M = 4.63, SD = .67) while the lowest ranked item was “my university supervisor coordinated efforts with my cooperating teacher” (M = 4.31, SD = .84).

Table 6. Teacher Education Program

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Cooperating Teachers Mean (SD)</th>
<th>University Supervisors Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Made expectations for my performance very clear.</td>
<td>4.43 (.69)</td>
<td>4.36 (.84)</td>
</tr>
<tr>
<td>2. Provided effective coaching.</td>
<td>4.33 (.73)</td>
<td>4.48 (.79)</td>
</tr>
<tr>
<td>3. Provided useful feedback.</td>
<td>4.33 (.62)</td>
<td>4.46 (.85)</td>
</tr>
<tr>
<td>4. Coordinated efforts with my university</td>
<td>4.32 (.74)</td>
<td>4.31 (.84)</td>
</tr>
</tbody>
</table>
supervisor/cooperating teacher.
5. Was supportive in interactions with me.  4.58 (.76)  4.63 (.74)
6. Was available when I needed help.  4.40 (.80)  4.63 (.67)
7. Should be asked to supervise teacher candidates again.  4.50 (.73)  4.49 (.84)

Overall  4.41 (.67)  4.47 (.70)

Note. Responses ranged from 1 (Strongly Disagree) to 5 (Strongly Agree)

Research Question 4: Teacher Education Program Survey

The last research question examined the differences in the mean responses between the cooperating teachers and university supervisors’ ratings of the teacher education program regarding the student teaching experience. Overall, both cooperating teachers and university supervisors reported having a positive experience with the teacher education program. An independent sample t-test was run and revealed a significant difference between the mean responses for cooperating teachers (M = 4.21, SD = .58) and university supervisors (M = 4.38, SD = .55) at the 0.05 level, t(301) = -2.57, p < .05 (See Table 7).

For cooperating teachers, the highest ranked item was “I was able to contribute significantly to my teacher candidates' growth” (M = 4.41, SD = .62) while the lowest ranked item was “The lesson observation form is well designed” (M = 4.04, SD = .76). For university supervisors, the highest ranked item was “I was able to contribute significantly to my teacher candidates' growth” (M = 4.66, SD = .53) while the lowest ranked item was “The lesson observation form is well designed” (M = 4.16, SD = .87).

Table 7. Teacher Education Program

<table>
<thead>
<tr>
<th>Survey Items</th>
<th>Cooperating Teachers Mean (SD)</th>
<th>University Supervisors Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Expectations for me were clear.</td>
<td>4.20 (.69)</td>
<td>4.40 (.70)</td>
</tr>
<tr>
<td>2. Expectations for the student teacher were clear.</td>
<td>4.25 (.73)</td>
<td>4.42 (.69)</td>
</tr>
<tr>
<td>3. I was able to contribute significantly to my teacher candidates' growth.</td>
<td>4.41 (.62)</td>
<td>4.66 (.53)</td>
</tr>
<tr>
<td>4. This final evaluation form is well designed.</td>
<td>4.15 (.74)</td>
<td>4.25 (.67)</td>
</tr>
<tr>
<td>5. The lesson observation form is well designed.</td>
<td>4.04 (.76)</td>
<td>4.16 (.87)</td>
</tr>
<tr>
<td>Overall</td>
<td>4.21 (.58)</td>
<td>4.38 (.55)</td>
</tr>
</tbody>
</table>

Note. Responses ranged from 1 (Strongly Disagree) to 5 (Strongly Agree)

For the open-ended question, most cooperating teachers and university supervisors stated that they welcomed future opportunities of working with teacher candidates. In terms of feedback for the teacher education program, the biggest barriers reported by the cooperating teachers and university supervisors were lack of communication with the teacher education program, lack of communication with the capstone course instructors, and the amount of coursework that teacher candidates needed to accomplish during the student teaching semester.
DISCUSSION AND RECOMMENDATIONS

The findings of this study revealed that three factors (Good Teaching Practices, Diversity and Professional Development, and Professionalism) were extracted from the student teaching evaluation survey. In addition, the results revealed that teacher candidates consistently rated themselves higher than their cooperating teachers and university supervisors across these three factors. Overall, teacher candidates rated highly on their cooperating teachers and university supervisors’ mentoring efforts during their student teaching experiences. Furthermore, both cooperating teachers and university supervisors reported having a positive experience with the teacher education program.

The present study findings have significant implications for the teacher education program at the University of Northern Colorado. Both the quantitative and qualitative results have prompted changes in the teacher education program at our institution. For research questions 1 and 2, since the student teaching evaluation survey from the current study has been shown to be valid and reliable, other universities can adopt the survey to evaluate their teacher candidates’ performance during student teaching. The researchers are planning to collect more data from other teacher candidates, cooperating teachers, and university supervisors to conduct a confirmatory factor analysis to further test the validity and reliability of the student teaching evaluation survey.

For research question 3, the findings revealed that the lowest ranked survey item by both cooperating teachers and university supervisors was their coordinated efforts with each other. The similar themes are also revealed by participants’ responses to the open-ended question in research question where lack of communications between teacher candidates, cooperating teachers, university supervisors, teacher education program, and course instructors of the capstone project. Therefore, the researchers are also planning to conduct focus groups interviews with the teacher candidates, cooperating teachers, university supervisors, and course instructors of the capstone project to gather qualitative data regarding their perceptions toward the teacher education program and ways to improve the communication issue among various parties will also be addressed. In addition, the teacher education program is also exploring the possibility of building a stronger partnership by inviting cooperating teachers and university supervisors to a workshop at the beginning of the student teaching semester and an ongoing professional training for cooperating teachers and university supervisors will be offered. Furthermore, the opportunity to implement a co-teaching model between the cooperating teachers and university supervisors during student teaching will also be explored. Finally, for research question 4, both cooperating and university supervisors ranked “The lesson observation form is well designed” as the lowest survey item. The researchers are planning to meet with the teacher education program coordinators to revise and improve the lesson observation form.

In terms of scholarly significance of the study, this study may assist faculty in other teacher preparation programs with strategies for program evaluation, contribute to data-informed decision making and continuous program improvement. We believe that continuing exploration of student teacher preparation programs is essential. Evaluations of partnerships provide an opportunity to develop, test, refine, and inform practice of supervising and mentoring teacher candidates.
REFERENCES


National Council for Accreditation of Teacher Education (2002). Professional Standards for the Accreditation of Schools, Colleges, and Departments of Education.


22
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FROM COLLEGE TO CLASSROOM: PROGRAMMATIC SUPPORT FOR PRE-SERVICE TEACHERS FOR MULTILINGUAL AND MULTICULTURAL LEARNERS IN THE U.S.

Deborah Romero
Aldo M. Romero

University of Northern Colorado

ABSTRACT

This paper discusses key features and success stories from Cumbres, a unique pre-service teacher support program that includes a living and learning community, and that works closely with academic programs to prepare college students to promote academic achievement for English language learners in K-12 classrooms in the United States. This paper describes how as a pre-service teacher program, Cumbres works to support diverse college students and teacher-candidates in close collaboration with faculty and comprises co-curriculum components and pedagogical experiences. The paper focuses on how the program supports Teacher Education in the U.S. context, and highlights one model for success especially for English language and multicultural learners.
From College to Classroom: Programmatic Support for Pre-service Teachers for Multilingual and Multicultural Learners in the U.S.

As U.S. diversity continues to rise across all sectors of the population, it brings new challenges and opportunities for schools, and in particular for teacher education. The state of Colorado alone has experienced an increase of over 200% in the English learner population in the last ten years, bringing with it a disproportionate growth in K-12 English as a Second Language (ESL) enrollment at 260%, compared to the overall K-12 enrollment growth rate of only 15%. Colorado now has over 109,000 culturally and linguistically diverse (CLD) students, and over 84% of these are Latina/o students, whose first language is Spanish. In addition, other languages include: Vietnamese, Arabic, Russian, Mandarin, Korean, Hmong, Amharic, Nepali and Somali whose speakers for group fluctuate between approximately 1.0% and .5% of the total ESLs (Colorado State of the State, Office of Language, Culture and Equity 2011). In addition, over 80% of ESLs are also on free and reduced lunch, which based on federal income eligibility guidelines means that a family of four is living on less than $24 thousand dollars a year, or $459 a week. This compares to the Colorado state average and median annual family income of $72,000. Despite being the sixth richest state by income, paradoxically, Colorado is the state with the largest growth of children living in poverty nationwide (2010 U.S. Census).

Lamentably, these changing demographics impact schools and classrooms, and often result in unequal graduation rates. Although recent data from the state department of education indicate a gradual increase in overall graduate rates, the difference remains. White high school students’ graduation rate for 2012 was 82%, compared to Latinos and English language learners who lag behind at 62% and 53% respectively (Colorado Department of Education, 2014). In the face of these disparities it is imperative that we do more in teacher preparation to support the success of all students.

In this paper we illustrate how for over ten years, one teacher preparation support program, Cumbres, has successfully recruited, retained and graduated Latino and other culturally diverse students in P-20 education. Using data gathered through student surveys, interviews and in person feedback as part of a comprehensive self-study, we examine the impact of a college cohort model and its components by considering effective strategies pertaining to program design structure, recruitment and living communities, instructional approaches, faculty and peer mentoring, and leadership projects. The analysis examines how Cumbres constitutes a comprehensive and viable model, which may be adaptable to other contexts for recruitment, retention and graduation of teacher candidates, committed to teaching English language learners and other culturally and linguistically diverse students in K-12 schools.

Support for Quality Teachers

Research shows that teacher quality is visibly linked to the school achievement of culturally and linguistically diverse students (Darling-Hammond, 2006; Grossman et. al, 2010; Wilson, Floden & Ferrini-Mundy, 2001), and furthermore that the quality of those programs that graduate new teachers also impacts the school achievement of diverse children (Boyd et. al, 2008; Committee on the Study of Teacher Preparation Programs in the U.S., 2010). Further research identifies the following areas as central to quality teacher education: program purpose, subject matter
requirements, pedagogical knowledge requirements, clinical experiences, and faculty and staff qualifications (Cochran-Smith & Zeichner, 2005; Darling-Hammond and Bransford, 2005). In addition, the qualities needed to teach culturally and linguistically diverse students that count as candidates’ pedagogical knowledge, candidates also need to develop critical abilities to analyze educational equity from race, class, gender or ethnicity perspectives (Castro, 2010; Sleeter, 2008). To these ends, the Cumbres teacher support program works across academic areas in close collaboration with the College of Education and the School of Teacher Education and faculty, and with the Teaching English as a Second Language program, housed in the Department of Hispanic Studies. As we explain below the Cumbres program seeks to support the academic rigor and content knowledge derived from classroom learning and practica experiences, coupled with extra curricular opportunities provided through living, mentoring and leadership opportunities to holistically prepare candidates for teaching culturally and linguistically diverse learners in K-12.

Before moving to an analysis of the Cumbres program we provide here some background information about the University within which the program is located. The University of Northern Colorado (UNC), a public doctoral research institution, recently celebrated its 125th anniversary and was founded as the normal school for teacher preparation in the state. Today UNC prides itself on being a student-centered university that engages undergraduate students seeking innovative and transformative educational experiences. There are approximately 11,000 undergraduate students on campus of whom almost 36% are first-generation college going students. At the time of writing just over 60% of students identified as white, and approximately 16% Latino, 8% African-American, Asian, Native American or multiracial and some 3% international students. UNC’s commitment to teacher preparation continues today. Over 50% of new teachers employed in Colorado are also trained in teacher preparation programs at Colorado institutions of higher education. More significantly still, of those trained in Colorado 54% receive their education from UNC.

The Cumbres program was founded in 1996 by a dedicated group of Latino alumni, who in light of the high dropout rates among Latino students, recognized the need to address a shortage of Latino and bilingual classroom teachers in the region. Cumbres which derives from the Spanish and means ‘peaks’ or ‘summit’, has as its mission to recruit, support and mentor undergraduate students who are pursuing a degree in education and who declare an endorsement in English as a Second-language (ESL) to work with and support the growing numbers of culturally and linguistically diverse students in K-12 education. Currently the program recruits and works with undergraduate students who (a) have been admitted to the University and are pursuing a major in any one of the education programs; (b) who declare an ESL endorsement (delivered through the department of Hispanic Studies); and (c) who are passionate about teaching and working with diverse students. Given the mission and focus of the program, Cumbres naturally attracts many Latino and culturally diverse students and the demographics for the program currently contrast significantly with those of the institution. Over 51% of students in Cumbres self identify as Latino, compared to some 16% across campus as a whole. That said the gender balance is similar to the campus with 85% female. Since its inception the program has graduated over 284 students. The current freshman class consists of 39 students from high schools in Colorado, as well as non-traditional and transfer students. On the U.S. grade system where 4.0 is the maximum grade
point average (GPA), students are required to maintain a 3.0 grade in order to be eligible for teacher licensure in the state. Cumbres students average a 3.25 GPA.

Cumbres recruitment efforts and success is largely due to the close collaboration that exists between graduates of the program who are practicing teachers in local and state high schools, faculty recommendations, the institutional admissions office, and cultural centers on campus. In this way, prospective students are aware of the opportunities that the program provides and many students come with recommendations from their teachers. Cumbres staff, non-program faculty, and allies (community members who know about the program and recognize the benefits it offers students) also recommend students. All participants in the program receive an annual stipend of $1500 that may be used towards tuition or academic materials. Stipends for students are made possible through sponsors and donations that are managed through the institutional foundation (office for fundraising), and reside in endowment and scholarship funds. Cumbres administration is centrally funded through the institution. Cumbres also works closely with two-year colleges, school districts and other educational organizations both for recruitment and professional placement purposes after graduation.

As an educational support program the goal of Cumbres is to impact schools and linguistically diverse students to graduate from high school and ideally have a desire to pursue higher education, leadership roles, and to become responsible, contributing members of society. Recognizing the complexities and challenges that are faced by many students in higher education, especially those who are first-generation or themselves culturally and linguistically diverse, Cumbres consists of four core components each designed to promote academic and social success. For the purpose of this study we define success as referring to multiple outcomes, including (a) student access, retention (Titus, 2004) and degree completion and academic achievement (Titus, 2004) and degree completion and academic achievement (Miley, 2004; Stevenson, 2006); (b) academic performance and achievement (Miley, 2004); and (c) development of values, attitudes, and competencies (Gardner, 2009). We also acknowledge that not unlike high school graduation rates, Latino success and achievement at the university level is significantly lower than that of their white counterparts (Miller, 2004), and Latino students traditionally face more educational challenges than any other population group in the United States (Fry, 2002).

Cumbres as a Model for Support and Success

Cumbres is comprised of four interrelated components: (a) living community, (b) learning community, (c) mentorship program, and (d) leadership development. The living component of Cumbres is foundational because it brings together students in their first year of college in a common and shared living environment. As is typical for college campuses in the United States students are expected to live in university accommodations, previously called dormitories and now often referred to as residence halls or student housing. Students who have been accepted into the Cumbres program are placed together in the same living facility. Accordingly, they are provided with a supportive and inclusive environment that allows them to make a home-away-from-home while they transition and adjust to college life. By living together and in close proximity students are able to build meaningful relationships that support their coexistence and learning with their peers. These relationships typically persist and prove beneficial for the rest of their time at college.
In addition to the living community first-year students also take some classes together following a cohort concept or cluster model. Placing students in the same courses with their peers from the program allows both students and faculty to become better acquainted, understand one another's learning styles and needs, and more generally participate in collaborative learning activities. One such example of this is found in a course freshmen take in Mexican-American studies in which they learn about Mexican culture and society. As part of this class students participate in a *Día de los Muertos* assignment and festival where they experience what it is like to produce a Mexican altar in commemoration and remembrance for a deceased loved one or famous person. This learning activity brings with it multiple benefits. For the Latino students in the program it validates and recognizes their cultural backgrounds, and for the white students it provides them with an authentic experience and opportunity to participate in Latino culture. For all students the activity exemplifies ways that they can recognize and support diversity in the K-12 classroom.

In addition to the peer support that is provided through the living and learning communities, Cumbres also ascribes to a mentoring component. The program works in partnership with the office of housing and residential education and another academic advising program to hire a resident assistant, two dorm mentors and an academic peer advisor, all of whom are upper level students in Cumbres. All students in the program are also paired with a faculty mentor, a senior peer mentor, and most recently a practicing ESL teacher mentor, many of whom are also former Cumbres students. Students are required to meet regularly, ideally once a month, with their mentors and to visit their mentor teachers in the K-12 classrooms from their freshman year. Cumbres staff work to maintain close relationships and coordinate with mentors so as to track student performance and development. Program experience has shown that providing undergraduate students with additional mentoring support beyond that of their regular academic advisor in their program area has been beneficial and allowed students to explore their professional and educational needs in additional contexts.

The fourth and final component of the program consists of leadership development. Students are required to participate in leadership workshops that introduce them to challenges and issues of educational and community leadership and in turn prepare them to frame and develop a leadership project. Preparation for this project begins in students’ freshman year, a proposal is developed in their second, or sophomore year, and the projects are completed in the third year, one year before graduation and student teaching. Students present the final project and outcomes in their senior year. The nature and scope of leadership projects has some variation but typically students design and develop a support program or workshop for English language learners, or their families, or another type of extracurricular engagement activity. The leadership projects although often developed and conducted within the U.S. have also taken place during students’ study abroad experiences. Examples of recent leadership projects included hosting a science fair at an elementary school, promoting literacy language and art at home, developing an English conversation corner with students in China, working with a local young authors program for immigrant and refugee students, designing a knowledge and resource box to help other college students in the Cumbres program prepare for the state licensure exam, and designing and hosting a social justice workshop. In addition to the culminating leadership project, students are also required to complete community service activities and work together on collective fundraising initiatives throughout the duration of the program. In so doing the program encourages students
to step out of their comfort zones, assume advocacy roles, and take initiative to become leaders within different circles of influence.

Supporting Rigorous Curriculum and Academic Excellence

The Cumbres program and the components described here are designed and intended to support academic and professional success, with a special focus on serving English language learners and their families. Accordingly all students in Cumbres also have to declare a major in education and an ESL endorsement. Both the education program and the endorsement are nationally accredited programs by the Council for Accreditation of Educator Preparation (CAEP), and by the professional association for Teachers to Speakers of Other Languages (TESOL), and by the Colorado State Department of Education. Because the focus of this paper is on support for multilingual and multicultural learners we briefly review here the ESL endorsement curriculum to provide evidence for the knowledge and skills that students develop in the program. As one of the leading teacher preparation institutions, education is viewed as a transformational enterprise and instructional approaches are grounded in a knowledge base derived from empirical research, disciplined inquiry, informed theory, and practice. The contributions of many educators, philosophers, researchers, and practitioners give direction to the professional education programs that are also inspired by the scholarship of Dewey, and the work of critical educators such as Freire and Kozol among others. This approach embraces the historical shift in pedagogy from teaching as a mechanical process of delivering information to a concept of informed practice based on reflection, caring, and inquiry.

The ESL endorsement program is housed in the College of Humanities and Social Sciences, which means that it is also influenced by the liberal arts tradition and through the courses in ESL program candidates learn about the past, present, and future contributions of individuals and societies, particularly with regard to the education and politics of underrepresented and linguistically diverse students, and promotes learning as a cultural and social process, and helps students understand how to integrate language and content in classroom instruction for ESL students’ academic success (Gibbons 2009; Mohan 1986; Schleppegrell, 2004).

The endorsement curriculum is comprised of 18 credit hours and includes courses theoretical and research perspectives on language learning and teaching, courses in multiculturalism and the role of culture in teaching and learning, theories of second language acquisition, applied linguistics for ESL teaching, methods and approaches to teaching ESL, and a culminating TESL practicum experience. If students are to support English language learners they need to understand language, and cross-linguistic issues encountered by learners of English (Swan & Smith, 1987). Therefore there is an explicit emphasis on promoting students’ understanding of language and linguistics informed by applied approaches such as the sociopsycholinguistic framework (Freeman & Freeman, 2004), and Systemic Functional Linguistics (Halliday, 2007), as well as World-class Instructional Design and Assessment standards (WIDA, 2012).

Because all ESL candidates are dual endorsed (teaching licensure and ESL endorsement) they are required to complete their Elementary or Secondary student teaching experiences, as well as an ESL practicum. This practicum field experience occurs over one semester, before student teaching, and students are placed with an ESL certified “host teacher,” primarily from UNC
partner schools. Cumbres teacher candidate placements and host teacher assignments are coordinated through the university practicum professor and the local school district’s ESL coordinator. It is important to note that schools locally have undergone significant demographic changes in the recent years, and the already highly diverse student population increased in Latino students from 51.5% to 59%, approximately 25% of whom are also second language learners. This is coupled with a dramatic rise in speakers of other languages from immigrant and refugee populations, so that within one district there are now students speaking over 50 different languages. The number of students eligible for free and reduced-price meals under federal poverty guidelines has also increased from 48% to 64%. This diversity provides unique opportunities for Cumbres students to interact, engage and learn with diverse students, while also developing their teaching and professional skills.

As part of the ESL practicum experience, candidates are required to plan, develop and implement at least three lessons for English language learners, following the Sheltered Instruction Observation Protocol (SIOP) (Echevarria, Vogt, & Short, 2004). The teachers who receive the Cumbres ESL candidates are all certified and have received training on the SIOP model. They are also required to conduct an oral or written language assessment using the Student Oral Language Observation Matrix (SOLOM) or other instrument, and to write an in-depth reflection on their teaching experiences in which they critically examine what they planned, what they taught, and what were the outcomes. This is designed to promote conscious, self-reflection as one key to improving candidates’ professional development and ultimately their teaching abilities and skills. In addition, students are also required to conduct an oral or written language assessment using the Student Oral Language Observation Matrix (SOLOM) or other similar instrument, and to write an in-depth reflection on their teaching experiences in which they critically examine what they planned, what they taught, and what the outcomes were in terms of student learning. This is designed to promote conscious, self-reflection as one key to improving candidates’ professional development and ultimately their teaching abilities and skills. Enhancing these practicum and student teaching experiences, students also engage in additional experiences with ESL classrooms, ELLs and underrepresented communities through various assignments and assessments in additional courses.

Evidence of Student Success and Paying-it-forward

Cumbres has as its goal to support and graduate teachers so that students at all levels, including English Language Learners, meet or exceed state standards. Cumbres graduates serve as role models and leaders in the schools and districts where they are placed. A recent survey conducted with the Cumbres students examined student understanding of the program’s core components and requested open-ended feedback about their experience in the program. Over 90 students responded to the survey at an approximately 80% response rate, of whom 43% were Latino. Students overwhelmingly indicated that they understood the purpose of the living communities and felt this experience to be beneficial and allowed them to make new friends. They also recognized the value of learning communities and cohort classes and considered these valuable support mechanisms that help make the academic component more manageable. In the words of one student, “Cumbres has the highest expectations for all students and provides a positive learning environment throughout college.”
Another student acknowledged how, “the Cumbres program has personally helped my transition from high school to college. I feel like this program has been a positive support to my academic success and personal issues.” A recent Latina graduate explained, “I chose Cumbres because its mission was to prepare teachers for the exact population I wanted to serve: families with ELL needs and because it encouraged an educational philosophy I am very passionate about: bilingualism.” This same graduate went on to describe in more detail the significance of the program and how she was able to engage, “with like-minded peers: passionate about education, social and educational equity, and those with diverse experiences.” In addition she described how the program provided her with the “support that I desperately needed from staff. Because I was first-generation, I had no idea of the volume of resources available on-campus, and later on, off-campus.” Finally, when discussing the relevance of the program for her career she explained, “Cumbres connected me to other districts, and helped me in my exploration of the major and of the opportunities available upon graduation, and fostered a strong personal development in leadership.”

Further testimony to the success of the program is the fact that many students in Cumbres receive offers to teach at schools even before they graduate. Schools and principals looking to hire graduates frequently contact the program. Other graduates, committed to paying-it-forward, have gone on to complete postgraduate studies in Educational Leadership, Principal Licensure, and masters degrees in Culturally and Linguistically Diverse Education. Several graduates have received teaching awards and recognitions for their professional work; most notably, last year a Latino male student received the prestigious Milken Educator of the Year Award. This award recognizes early to mid-career educators for their outstanding accomplishments and future promise. In an interview about how Cumbres impacted his professional development, he explained that it helped deepen his understanding about how to create and provide “inclusive educational environments that address the needs of all students.”

Limitations and Opportunities for Growth

This paper has highlighted the structure, components, and academic success of the students and graduates in one teacher preparation support program with a view to illustrating what works in the model. We have also described key elements of the academic curriculum that students in the program pursue, as part of their teacher preparation and ESL endorsement. Strengths of the program include the ability to support and graduate diverse college students and future teachers, who will in turn work with culturally and linguistically diverse students in schools and classrooms. Findings from a survey indicate that students in Cumbres also appreciated and valued the program structure and resources. Nevertheless, it is worthwhile to acknowledge some potential limitations to both the program discussion and implementation. Perhaps one of the most significant limitations concerns the current funding availability and restrictions on the number of scholarships that can be issued each year. Although the number of diverse and eligible students is at times greater than the number of scholarships the program can currently only accept 25 to 30 students each year. As a program and given the field of teacher education, Cumbres would like to recruit more male students, and particularly students of color or culturally and linguistically diverse backgrounds; current student demographics tend to reflect those of both the institution and the field of teaching, except for the number of Latinos. As the number of
diverse students increases there is also a recognized need to provide more college level academic support for those students in the program who are also English language learners.

Notwithstanding these limitations, there are still opportunities for growth and development that have been identified and which include expanding leadership workshops and other activities in collaboration with other units and programs across campus, such as the leadership studies and honors programs. Given the recent success of the new mentoring model, pairing students with mentor teachers, many of whom were Cumbres alumni, there is room for expansion and continued alumni participation.

Ultimately, Cumbres is one program that aspires to make a difference in teacher preparation, at a time when one of the greatest educational challenges for 21st century is the search for a socially just curriculum that engages all learners, bringing meaning to their lives (Freire, 1998; Cochran-Smith, 2001; Ben-Peretz, 2001). This paper has shown that when pre-service teachers are able to engage in a comprehensive and supportive college experience, this in turn empowers them to make educational transformations. Cumbres graduates are not only leaders and role models in education, but also who inspire others to participate in educational improvement. As such, we are confident that they join their colleagues and the field of teacher preparation for the purposes of renewing schools, professional education programs, and impacting student lives (Goodlad, 1990; Sergiovanni & Moore, 1989).

REFERENCES


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PRINCIPLED PRACTICE: WELCOMING DIVERSITY. A JOURNEY IN THREE STEPS TOWARDS ENCOURAGEMENT OF THE HEART.

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ABSTRACT

This paper presents the findings of a small qualitative research project which enquired into the lived experience of Tongan student teachers studying in a New Zealand tertiary institution. The study was motivated partly by the description in the literature of the high non-completion rate of Pasifika tertiary students in New Zealand. It was also motivated by the institution’s desire to be supportive of Pasifika students so they could successfully embrace opportunities offered in New Zealand.

The researcher drew on initial observations, then explored relevant literature and finally engaged with research participants through talanoa – the Tongan word for a highly relational discussion which seeks to arrive at consensus. The move away from the more objective paradigm of a structured interview or focus group was a growth point for the researcher who, having recently read work by Bourdieu, wanted to engage in the active and methodical listening he proposes, that is, to engage in intellectual love.

The study revealed particular challenges faced by the participants for whom English is a second language. Some of the challenges were already documented in the literature, but several new ones were identified. Additionally, cultural traditions and expectations arising from educational experiences in Tonga added to the challenges as they settled into study in a new environment.

The data revealed key practices for an institution to observe when supporting Pasifika student teachers. In addition, the paper offers key principles which may apply whenever student teachers engage in tertiary study in a foreign country where the language of instruction is not their first language.
PRINCIPLED PRACTICE: WELCOMING DIVERSITY. A JOURNEY IN THREE STEPS TOWARDS ENCOURAGEMENT OF THE HEART.

The journey’s starting place

For several years there have been Tongan students enrolled in New Zealand based programmes at Bethlehem Tertiary Institution (BTI), a private provider of NZQA-approved degrees in teaching, counselling and social work. This number has never exceeded five at any one time, but because of the size of the Institution, even a small cohort of Tongan students is very noticeable. The key basis for being chosen by these students as their tertiary provider is a shared Christian faith, but perhaps the institution has relied too heavily (or easily) on this factor and ignored the myriad of differences that exist between the two cultures.

In the past few years I have noticed my developing sensitivity towards, and heightened awareness of Tongan students’ participation in the learning community (Mason, 2002). This sensitivity was increased by multiple visits to Tonga, where I have been working with teachers and academics. My expanding knowledge base and my observations of the incomplete embedding of Tongan students in our particular community have resulted in a growing sense of dis-ease about the tensions experienced by Tongan students on-site.

Why do Tongan students struggle when they are successful in their own context? Is it merely a factor of English as a second language or are there other issues at play? Importantly, is there something BTI can do, something we can change, that would make the learning experiences more accessible? I decided to begin a journey of three steps towards understanding this conundrum.

Step One: What I already knew – or thought I knew – based on listening and observing

The first step in my journey was to list all that I already knew about Tongan learners. This knowledge came from observations, from careful listening and informal reading relating to cultural, political, familial and educational aspects, all of which I wrote into my research journal. These areas are, of course, inter-related and I noted many interesting factors, but for the purposes of this paper I will briefly outline the key ones I initially believed directly affected the teaching/learning relationships within tertiary education.

Education is highly valued in Tonga, although it is viewed as the school’s responsibility rather than the parents. In the classroom there is reliance on the teacher for knowledge. The teacher is seen as a parent figure, compliance is expected, and classroom style is often dictatorial. There is respect for the teacher, some of which is generated by the fear of physical/corporal punishment. For the learner there is strong reliance on both oral and rote learning.

In New Zealand, responsibilities within the extended family continue to impinge on full participation in study. Students may be tentative or even non-participant members, perhaps because they are hesitant in their use of English. They appear unwilling to seek help and may have difficulty maintaining self-directed study practices.
Step Two: Looking into related literature

Would my observations prove to be helpful? The next step in my journey was to engage in a review of literature related to Pasifika students in the New Zealand tertiary environment. I recognise that the discussion in some of these articles centres on a generic Pasifika or Tongan student, and for that matter a generic palangi (western) student. No one person fits exactly the cultural caricature contained within the literature. However, the generalisations made do give a starting point for analysis of the current documented low completion rates of Pasifika students, and their seeming inability to perform well at tertiary level in New Zealand (Horrocks, Ballantyne, Silao, Manueli, & Fairbrother, 2012; Kalavite, 2010).

With the increase of Pasifika students enrolling in New Zealand tertiary studies, the effect of cultural differences between Pasifika culture and the dominant palangi culture are under scrutiny (Kalavite, 2010). These differences are not only superficial and obvious. They are also at the very root or foundation of the culture. For example, Tongan culture is described as “plural, collectivistic, holistic and circular” as opposed to the western approach which is “singular, individualistic, analytical and linear” (p. 77-78).

Pasifika groups have different ways of “creating meaning and constructing reality” (Taufe’ulungaki, 2001, p. 6). An example of this is ta-va kainga, the relationship between time and place. It is difficult for Tongans, for example, to relate to time as a finite commodity. For them “…time is limitless, flexible, natural, meaningful, conscious and patient…it is not forced upon people for they are never a slave to time…time comes and it will continue to come” (Pacific Conference of Churches, 2001, cited in Davidson-Toumu’a & Dunbar, 2009, p. 76). This concept of time definitely influences Pasifika students’ time management and seeming lack of regard for conventions with time keeping. Va is related to space and is most often used in reference to socio-spatial connection, that is the distance between people, rather than physical space (Horrocks et al, 2012). The behaviours resulting from these cultural ways of being are often misinterpreted in the western context.

A key factor in developing an individual’s cultural identity and protocols is the family. Tongans have a strong family orientation, which carries multiple obligations (fatongia) to an “inclusive relational web of extended family membership” (Sterne, 2006, p. 64) and this obligation also extends to whoever is staying in the household, even if not related (Kalavite, 2010). Tongan students then are mindful of parental expectations, and their deep respect for authority means they faithfully remain totally committed to the welfare of family. This commitment extends to household chores, and to church responsibilities, which are often given priority over study. Education is valued, but parents often see the education of their children as the responsibility of school or tertiary provider, not the home (Fanene, 2007; Kalavite, 2010).

Another example of cultural patterns which do not cross easily into a western paradigm arises from the economic status of Tonga as a country and thereby Tongan families as citizens of Tonga. A subsistence mentality is prevalent amongst commoners, with Tongans living ‘in the moment’ as a way of life. This understandably causes financial pressures because of the tendency to have large households and also affects their ability to plan ahead (Benseman, Coxon, Anderson & Anae, 2006; Kalavite, 2010; Sterne, 2006).
Academic experiences
It becomes obvious then, that cultural values affect students’ study approaches (Davidson-Toumu’a & Dunbar, 2009). When considerable expectations are required by family and church, students get tired and their studies suffer. The economic situation discussed earlier affects study space, availability of materials, resources etc. In addition, Pasifika tertiary students are often also first in the family to engage in study at tertiary level and so there is no passed-on knowledge of how to ‘be’ in a tertiary context. Therefore Tongan students need help to understand and interpret the culture of the academy, for example, the role of lecturer, the purpose and practice of study skills, a wise approach to assignments, to name a few (Benseman, et al, 2006; Fanene, 2007; Kalavite, 2010).

Many Tongan secondary classrooms encourage students’ reliance on the teacher to tell them everything they need to know and do, thus developing a dependency mode of learning. The teacher is often seen as a model, a guide, a parent figure, certainly a person of authority (Sterne, 2006). In New Zealand tertiary environments, these students then meet inquiry learning, self-directed study expectations, formative assignments and collaborative teaching/learning methods, and find that cramming before an examination (a common habit in Tonga) proves ineffective (Kalavite, 2010).

When help is needed, Tongan students may face a cultural barrier, since silence is a sign of politeness and asking questions might be thought to indicate inattention in class, or to be critical of the teacher’s ability to explain, both of which would be seen as disrespectful. The students may also feel that they are intruding into the teacher’s space (va) (Atatoa, 2006; Davidson-Toumu’a & Dunbar, 2009). Thus the students are embarrassed about speaking in class, asking questions, or offering a differing view. These responses have been ‘schooled’ into the Tongan students for all of their educational lives and it can be difficult to break into these cultural patterns of education and then adopt different approaches when they come into a western paradigm.

It is not always clear how to provide appropriate study support. Explicit teaching pedagogy is needed initially, with time taken to explain things taken for granted in the dominant culture. Face to face support is highly effective and so Tongan students benefit from small tutorial groups and especially mentoring relationships. It is in such settings that the students can receive pastoral care (Benseman, et al, 2006; Fanene, 2007; Mara & Marsters, 2010; Sterne, 2006).

Academic success is often linked to writing well (Fanene, 2007), but writing well depends on English mastery, including all the idioms and figurative language, and English has not always been well taught in Tonga (Atatoa, 2006). This language difficulty also influences the Tongan students’ response to readings, where they are unlikely to cover all those requested by a course lecturer. Subject specific support is very important, as is providing content feedback, and teaching Pasifika students how to revise their writing (Fanene, 2007; Kalavite, 2010).

The key success factors are availability of staff, provision of resources, planned long term support, and validation and celebration of cultural identity (Davidson-Toumu’a & Dunbar, 2009, p. 78). These elements are not necessarily only available through Pasifika teachers. There are
some reported cases of such teachers speaking too academically for the Pasifika students to understand. However, whether the lecturer is Pasifika or Palangi, the resounding notion in the literature is that learning is affected when there is no relationship, as Tongans benefit most noticeably when there is “encouragement of the heart” (Sterne, 2006, p. 64).

**Institutional constraints**

There is an expectation that institutions have a moral responsibility to ensure the quality of their learning environment (Benseman, et al, 2006). However, since “teaching practices are cultural relays of the distribution of power in society” (Fanene, 2007, p. 10), and since school organisation, curriculum and pedagogies are “culturally generated” (Nakkid, 2006, p. 300) there is often a marked cultural gap between “the expectations of the curriculum and those of the cultures in which students are socialised” (Thaman, 2002 cited in Kalavite, 2010, p. 7). Thus for Pasifika (and in this case Tongan) students, places of education become “sites of struggle” (Rio & Stephenson, 2010, p. 8).

Academic success is often attributed to individual effort, and this can stop institutions looking at how system/beliefs might be disadvantaging some students (Fanene, 2007; Sterne, 2006) and contributing to their disengagement and non-completion. Some writers describe the failure to provide an engaging environment as covert exclusivity (Benseman, et al, 2006). Often universities maintain existing inequalities by treating everyone the same. Nakkid (2006) reports that some tertiary lecturers even struggle to see it as ethical to provide additional support for Pasifika students. She then asks how ethical is it when students are held accountable for their own achievement without educators taking any responsibility for their opportunities to achieve? (p. 303). Adding to the dilemma is the issue of how to educate for cultural diversity as well as for the national expectations of rigour in professional qualifications (Rio & Stephenson, 2010).

Government intentions for Pasifika students have been included in New Zealand Tertiary Education Strategies over the last eighteen years, but statements of commitment alone are not enough. There needs to be adequate resourcing, and personnel intentionally assigned to oversee the implementation of these aspirational statements (Horrocks et al, 2012). Within an institution the same broad view is needed: a clear vision statement, a determined effort to effect institutional and individual change, and a person or persons assigned to monitor the holistic progress of the Tongan students within the learning community.

Much of what I initially wrote in my diary is supported in the literature. The many constraints on Tongan students’ time was acknowledged, along with the effect that these, and economic status have on study habits. In particular, literature affirmed my observations regarding the view of the teacher and the teacher’s role, the respect offered at least in practice, and the way the cultural avoidance of asking questions creates barriers to seeking for help.

But what new aspects did I uncover through reading the relevant literature and what challenges lie therein if we are to welcome diversity and support all learners? A key idea expressed is teacher as interpreter (Sterne, 2006, p. 65), who can support Tongan students through cultural as well as academic shock. Do we spend enough time explaining to Tongan students the systems,
the associated language, the regulations, and especially the facilitative role of teacher along with the participatory role of the student within tertiary contexts in New Zealand?

The discussion in the literature about ta/va is also new information for me. I knew about the proverbial ‘island time’ but my reading revealed the philosophical and traditional reasons for these concepts and the impact they have on Tongan students’ study patterns, and willingness to seek support. In addition, it is important for the institution to have a clear vision statement and adequate resourcing to respond to the needs of these students. Without such, we are simply maintaining inequalities by treating everyone the same.

Most revealing for me, though, was the significance given to purposefully monitoring the holistic progress of the Tongan students. This includes discussing aspects of faith, which our Institution is well placed to do, but also extends to emotional, social and physical well-being, as well as academic progress and challenges. Tongan tertiary students in a New Zealand context respond well to a personalised support system, and the building of genuine relationships with their teachers, which then allows for encouragement of the heart.

It can be seen from the literature that Tongan students who choose to study in New Zealand position themselves within multiple realities (Kalavite, 2010). Writers such as Jones (1999) suggest we may have to be comfortable with never really knowing and understanding another’s culture, and also accept that the Pasifika students may not really want to be known. I am not content to leave it there. I want to at least try to find out how much Tongan students quieten their own voice; firstly because of cultural protocols and secondly because of being in an unfamiliar academic environment. Is it possible to hear the true voice from the Tongan students at BTI? We need to use this privilege (having Tongan students) as an opportunity to celebrate and learn about cultural differences – to value and respect these differences, and to allow for the differences to contribute to the overall programme and the specifics within it (Rio & Stephenson, 2010).

**Step three**

**Intentional research**

What is the actual ‘lived’ experience of Tongan students on the BTI campus, that is, the students who come from Tonga to study, and then return to live in Tonga? How close is their experience to that depicted in the literature? What is it like to inhabit their world when they choose to study with us? What aspects of our expectations/protocols/pedagogies are accessible to them, and which aspects hinder or even impede their academic success?

I needed to hear stories which “bring coherence to the students’ experience” (Lee & Johnson, 2007, p. 237). I was interested in how Tongan students perceived our practice (Brew, 2006) so that we at BTI could “transform the teaching and enhance the learning” (p. 114). I was willing to have my practice challenged, to examine my own, plus the institutional habitus, our ways of thinking, which can be “deeply enshrined in what we consider to be normal or natural in tertiary education” (p. 135). This qualitative research then, drew on a phenomenological approach which focuses on understanding the meaning that contexts and events have for participants, and therefore occurs as part of a social process and within a social and cultural context. The goal was to explore significant features and provide plausible interpretations (Bassey, 1999, p. 62), while drawing on Bourdieu’s ideas about interviewing. The tone I adopt and the questions I ask can
give the interviewee a sense that even though I am not in their situation, I am capable of understanding their situation, of “mentally putting myself in their place” (Bourdieu, 1999, p. 613), that I am listening to understand their individual experience. Bourdieu named this attention to the interviewee as “intellectual love” (p. 614) which was the result of “practice (that is) reflective and methodical without being the application of a method or the implementation of a theory” (p. 608).

As a result, talanoa was the chosen method to gather data. Talanoa is a phenomenological approach which is ecological, oral and interactive (Vaioleti, 2006, p. 21). Oratory and verbal negotiation have deep traditional roots, so talanoa is the preferred means of communication across the Pacific (Otsuka, 2005; Prescott, 2008). Talanoa involves personal face to face verbal encounters where people “story their issues, their realities and aspirations” (Vaioleti, 2006, p. 21). The purpose of talanoa is to convey knowledge, stories, views and feelings in both a personal and formal sense, and through discussion to come to common understandings.

Many research methods do not require a personal relationship between researcher and participant but in talanoa the relationship thread is central. There is no separation between researcher and participant. Such trust and co-operation facilitates a free flow of information (Vidovich, 2003). Both contribute to the discussion and the researcher cannot take a distant or neutral position. Talanoa is a vehicle that allows participants consider the wider community view not just their own opinion (Vaioleti, 2006, p. 135), and the unspoken expectation of talanoa is that new knowledge gained will be used for the betterment of the community, not the individual (p. 28). This is valued because of the communal nature of Pasifika society.

Talanoa interactions occur within very clear protocols and rituals, but without the rigid framework so often present in research interviews from other paradigms. Talanoa often begins with protocols of introduction, talking informally about family etc., followed by the purpose for the talanoa and the broad issues to be discussed. There is usually a clear purpose but the lack of a formal agenda, and the open format allows participants to raise any matter they feel relates to the issue. Vaioleti (2006) and Prescott (2008) both provide many practical and specific suggestions about how to conduct an effective talanoa for research purposes, including advice on timing, inclusion of prayer, record keeping, selection of participants, the place of food, introductions, interviewer dispositions etc. The talanoa finishes when it loses its sense of life or begins to go over topics already covered.

When considering together the need for rapport as the researcher and knowledge of culture, I wondered if a palangi such as myself could participate in talanoa, and further, use talanoa as a research method. I was heartened to read comments that suggested it could indeed be a relevant and accessible strategy for me to use as I seek to both understand the experience of Tongans at BTI and inquire into my own abilities to truly listen to participants in the research. The researcher needs context and cultural understanding to be sure of the meaning of what is shared in talanoa. Over the years of my visits to Tonga I have a growing understanding of foundational concepts and customs. In addition we have shared our home with Tongan visitors, one for a year. Knowing the culture provides some common ground between me as researcher and the students I invite to talanoa with me (Prescott, 2008). Furthermore, in any talanoa situation there is a range
of knowledge represented, from expert to novice, even uninitiated so my presence is not inappropriate (Liuaki Fusitia, personal communication).

In Tonga a person is defined by relationships, social status and position. When the researcher is personally known content is more open and frank (Vaioleti, 2006). I knew the Tongan students, related to them regularly on campus, but I have also met with them in Tonga and know their parents and their educational leaders. In some cases I have been in their homes, worshipped with them in Church, celebrated weddings and birthdays and grieved with them. I believed they understand who I am and would therefore accept my invitation to talanoa (Prescott, 2008). I still needed to keep in mind however, that negative critique of people in positions of authority is not seen as acceptable in Pasifika culture (Fanene, 2007). In addition I needed to remember that in any setting there is a hierarchy with no two people being at the same level (Kalavite, 2010).

Methodology

I planned to have an individual talanoa with each participant first, in the hope this would address the issue of seniority and talking rights. Once all participants had shared with me I held a group talanoa, so as to seek clarification, to offer new opportunity to share perceptions, and to agree on interpretations. No notes were taken during the talanoa to allow me to fully focus on listening, but permission was given by the participants to record each talanoa so that a partial transcript was generated from each discussion.

The transcripts were analysed for major themes, and considered against the literature review and my earlier assumptions. Through the talanoa I was able to help the participants interrogate their experience and together we identified what was truly significant (Mason, 2002). Mason also warns that “what we notice is what we are prepared to notice” (p. 153), so again the group talanoa was helpful in checking what I noticed in the individual talanoa and my interpretation of the data gained. Out of all that analysis and discussion I hoped to be able to offer important principles and practices that will better support Tongan students. Representative statements are included in this report to provide “internal evidence of trustworthiness” (Bassey, 1999, p. 162) and to allow the participants to tell their own story. Throughout the research process I shared with a critical friend, a colleague who also teaches Tongan students, as a means of ensuring that the participants were treated with integrity and that the resulting report is fair, educative, and authentic (Bassey, 1999; O’Leary, 2010).

The three participants were currently students at BTI, but not studying within the programme in which I teach. Ana is a single female and the youngest in the group so obviously she is considered the junior! She completed a degree at another New Zealand tertiary provider. Her years there met with mixed success and she was very willing to talk about these difficulties and relate them to her current experience at BTI. At the time of the research, Ana was studying towards a graduate diploma in teaching. Her parents still live in Tonga and she planned to return there to work.

Finu is a single male, completing his second year of study at BTI. He is currently being home-stayed with a palangi family. He earlier completed a tertiary qualification in Fiji, but has spent most of his life in Tonga, and intends to return there when he completes his study next year.
Within the participant group he would be second in seniority. Finau’s response to my request to be part of the study greatly encouraged me in my endeavour. He said “My heart is burning within me to do this thing”.

Susana is a mature woman, a mother, married to a pastor, and attended secondary school in New Zealand, before commencing tertiary education. She is currently a flexi-student and willingly travelled from another city to talanoa with me individually. Then Ana, Finau and I travelled to her house, where we participated in a ‘feast’ before sharing our group talanoa. She is considered the ‘senior’ member of the participant group, since she is older, is married and has children.

The usual ethics procedures were adhered to for this project, since I wanted to be caring, respectful, to act mindfully and tactfully towards the participants, ensuring no harm came to them (Van Manen, 1997).

**Findings**

There are several repeated themes evident throughout the talanoa transcripts and offered here as representative of the group’s views. They have been collated and then categorised under two main headings: factors within Tongan life that may impede tertiary study in New Zealand, and factors within New Zealand that may impede tertiary study. The themes were further verified in the group talanoa. I invite you to listen to snippets of the conversation first, as they relate to these key themes, rather than in chronological order. Then we will discuss the significance of the data. The speaker’s name is followed by either IT (individual talanoa) or GT (group talanoa) to enable the reader to know the context wherein the conversation took place.

**Factors within Tonga that may impede tertiary study in New Zealand**

Much of each talanoa was taken up with talk about issues related to asking questions, seeking help, and being seen as ‘smart’.

“Culturally we don’t really ask questions. We get to know the other person through the process of walking or talking or eating. In the classroom we accept what we are told.” (Finau IT)

“One minute there is a deep yearning to know about the information but the Tongan in me asks ‘How do I approach the teacher?’ ... the Tongan mind-frame kicks in and even though you want to shift, it doesn’t seem to... It’s that whole fear of not wanting to offend your lecturer... the embarrassment of not wanting to let your lecturer know you were not listening... of being found out that you’re not a good thinker or that the things you think about are really very different from what everyone else is learning. It’s an embarrassing thing. And if they say ‘Is there anyone who doesn’t understand this’...it just shuts me down.” (Susana IT)

“In Tonga I would hardly approach a teacher for what I need, it’s kind of scary. They say you are asking a silly question so I always back away from asking questions just in case they say that to me. My parents always taught us English at home but in school I always try not to speak in English or everyone would start talking about you. We would always get mocked by others but we learned to ignore that. I think it’s because
of that fiepoto, once you know how to speak English that’s smart. Also students and teachers laugh at you if you don’t speak English correctly... because English is the world known second language... being able to speak in English they referred to you as being smart and if you continued to speak in English then you would be fiepoto...putting down people is very common... when you say something wrong they tend to laugh.” (Ana IT)

This led quite naturally to discussing humility and false humility, and the participants’ view of palangi (non-Tongans, especially Europeans).

“I think our understanding of a value is misleading and that value is humility. I think Tongans think of humility as everyone will be up there and I will be down here, and if I go beyond them or if I above them then I’m not a humble person... Humility is not taking us to real humility; it’s taking us to inferiority.” (Finau GT)

“It’s very hard as a Tongan to have pride because you’re always taught humility. I realise about false humility though. False humility is not interested in other people – I saw it in leadership, everyone building their own little empire- this is my moment – no-one is to interrupt me – how dare you have your own opinion!” (Susana IT)

“When I was a child I wanted to be a palangi...white skin...blue eyes.....but when I came to NZ I was still Tongan!” (Susana GT)

“My view of pakeha is that they are very knowledgeable and higher than me.” (Finau IT)

“I always thought that palangi would just always score well because they know English but I know they are growing through the same things. I hear the students talking about how hard the study is and it makes me... gives me relief.” (Ana IT)

Unexpectedly, this also lead to interesting discussions about culture versus tradition.

“The va between teacher and student is ... quite spacious! It’s because of the respect for elders etc Respect should be there but the relationship should also be there. I have both respect and relationship here (at BTI) so there is more respect. In Tonga there is no relationship, no true respect of teachers. Only do it to their face. Respect in our actions like but not in attitude... But I think that’s tradition, that’s how it is, how you know it is but it’s what you grow up with. The teachers wanted respect but tried to get it by giving punishments. Close relationship is part of my culture not distant relationship, but this is tradition, it’s just the fear – the fear of the teacher of seeming dumb when challenged by a student and the fear of the student of being punished by the teacher that keeps the relationship like that.” (Ana IT)

“Sometimes I feel like I need to differentiate between culture and bad behaviour, because bad behaviour can be seen as part of the culture, but it’s not part of the culture at all. But it has become a pattern. We value community as you know but in terms of discipline, we discipline our children in unhelpful ways...what Tonga needs is
education…unless they are able to see that from a different, more helpful perspective they are unable to change that behaviour. ... we value community, the church and the preaching of the word of God but when you go to the classroom you see a different picture… Many people in Tonga don’t realise why they act that way. It’s something they have seen in the past and they continue to do that because that is what they have seen, which is very sad.” (Finau GT)

Challenges faced in New Zealand

Studying as a tertiary student in New Zealand brings many challenges which stem from the issues discussed above and manifest in tensions between process and relationship, dependence and independence, and concepts of self-discipline. In addition there is the challenge of a new culture and language.

“We have values in Tonga that we value more than time. I remember when I first came here the first paper that I was late was in my Maori paper and it was so funny because I didn’t know the strategies, the process of applying for extension so what I had in mind was a Tongan idea... emailing my lecturer and saying I’m sorry I can’t finish this assignment in time, and the lecturer was waiting to hear some sort of applying for extension but I was more keen on communicating through the relationship than through the process... and I think in Tonga most of the time we develop relationship to address something like that rather than the process... we do have our own process in Tonga, but I think we haven’t really managed to make it straight...to make those processes straight.” (Finau GT)

“Being just too flexible with due dates and things like that I think it’s because you know who your teacher is, and you know you can just come around and ask for an extension...and even being late you’re always excused... so you think you’ll get by even if you’re late and you come with that attitude from Tonga, which is a small island and everyone knows everyone and to come to NZ and try to fit in with that same system... it’s a struggle.” (Ana GT)

“In Tonga we are quite dependent on our parents. Even though I am already thirty years old I am still living with my parents. That’s our culture...until we find a spouse for ourselves. The idea of depend on someone else is sometimes not accepted here and that is a struggle in itself. I’ve started to make decisions I’ve never done before. In Tonga I’m not given options...my parents don’t ask those questions like, Tea? Coffee? Sugar or no sugar? And I have to struggle with those questions.” (Finau GT)

“I struggled with the freedom...the expectations in Tonga of being a minister’s daughter and he being a headmaster and all the expectations round being a girl in society... and to come here and there’s none of that around you. No one knows you, or knows who you are and nothing’s expected of you... total freedom for me to do whatever I wanted to do and I used it for the wrong things... so when you go back to Tonga you are always reminded of that (the obligations)...which is good, to also keep that in mind. I think in the past months I have grown more mature and realise that
although I am in a different culture I should still be aware that there are values that I need to uphold. Not just because people are expecting it of me but because I choose to.” (Ana GT)

“Before I never wanted to be alone, the only person… I didn’t like people to see me sitting by myself – now I just don’t care… I can be alone and not worry. In Tonga being a loner is bad, so you choose options because friends choose them… even sitting at a computer doing my work I’d think ‘Ooh I’m here on my own… I don’t have any friends’…I’d even stop working and go and find someone to hang with. My friends were like that so I didn’t think I was the only one to feel like that. We have a name for that in Tongan but I don’t know how to put it into English- fakatamaiki. It was hard at first when I came to NZ. That’s why I failed so many times because what was important to me wasn’t what was supposed to be important.” (Ana IT)

“The words and all the things we study are very new for me when I first came. Some things I’ve never heard of before. It’s the style of learning here that is very different than in Tonga –here in NZ interaction within the classroom was so strong, so thoughtful. I love it. I think this is how it should be. This is how learning should be because it helps me to think critically and think beyond other things…. I was thinking if BTI would sort of develop an option for people like myself especially in terms of time that would be very helpful, because English is a second language. Yes mainly for me language is a barrier. Studying counselling and teaching we have to write a lot more than say mathematics. I spend more time writing than research and reading, because I try so hard to be able to write. I still read but not as much as I would like to because I keep thinking about having to do the writing. What I need is just time … time to process them and get them done and I think that is my enemy. My enemy is time.” (Finau IT)

“Sometimes I read ten times but still don’t understand – that’s exhausting... I think metaphors and figures of speech is a totally new world... when you grow up in a culture where you’re challenged not to ask questions or give feedback or answer back its very hard as an adult learner to do that – to critique a piece of writing when the author is an expert. Reading and rereading has helped me a lot but it is very time consuming.” (Susana IT)

“Talking fast is a problem, even though I can use English and another difficulty is teachers using words I don’t understand and I don’t want to stop and say ‘What does that mean?’ so I wait to look it up later but the problem is I often forget what it is I wanted to know. I’ve probably written it down on some piece of paper and then I can’t find it. So I’ll never find out what that word means. I prefer someone to tell me – to explain rather than to read it, or looking in the dictionary. I learn better if I hear it and explain it and even better if it is translated into Tongan...(long pause). Writing is difficult. I like talking better. I’d always want to say a speech rather than write essay. With the readings I struggled with summarising what is important, I can’t make out the main point – it is all important to me, I don’t know how to cut it down in case I miss a main point.. a struggle for me...” (Ana IT)
“The hardest part for me is that all of a sudden I am in NZ last year. I flew in from Tonga on Saturday and I am at BTI on Monday. Seeing new things, access to all kinds of information in NZ that we never access in Tonga and that in itself is overwhelming for me… I felt inferior. I felt very low. I had a low confidence to be in a different place...a sense of overwhelm was there...something to do with how I was brought up in Tonga, in a very little community and a very little world that I was accessing to, then coming to New Zealand, it’s quite big, eh, and the feeling of being inferior has been sitting within me quite a while...” (Finau IT)

“Experiencing a new culture can bring with it personal issues...so stressful...enough to break a students’ spirit. You put yourself on a measurement scale. I classify myself as an average learner… I’m in a group and we have discussion and I hear people talking... It’s not that you’re jealous of the person or you feel resentment but all of a sudden you’re thinking I shouldn’t be in this group. These people are very elite. Why am I in this group? They seem to understand what they are talking about... so for me I think in that manner. It was just so exhausting having to struggle with that, with the sense that I am in an institution and that I felt I didn’t deserve to be a part of that,. but I lived in that mind frame for such a long time and it really imprisons... too exhausting... the conflict of being Tongan in a palangi context...a dense weight on your shoulders...carrying not only your own sense of being but the Tongan reputation, the institution’s view of Tongans. I don’t want to fail. I wanted my performance to reflect that I am a hard working Tongan student with determination. I want the lecturers to know that Tongans are determined people and people of strength who show persistence.” (Susana IT)

**Discussion**

In terms of Tongan students studying in New Zealand, several factors identified in the literature were also mentioned in the talanoa which formed the basis of my data. Firstly, my participants agreed that schooling and curriculum studies in Tonga had ill-prepared them for the style of interactions that occur in a New Zealand tertiary setting. In addition the style of teaching, the role of the teacher, and classroom ethos are very different here (Fanene, 2007; Sterne, 2006). Particularly significant is discomfort in being expected to ask questions of the teacher, or seek additional help from the teacher. This has a debilitating effect on the students and certainly limits their understanding and critical analysis of course content.

Secondly, the concept of ta-va is definitely an influence (Horrocks et al, 2012), affecting relationships but also limiting Tongan students’ adherence to processes within the institution. My participants highlighted again the need to assist them to adjust not only to New Zealand culture, but also to the academic culture within the institution in which they are studying (Kalavite, 2010). Tongan students benefit from accepting the different view of time and space that operates within the New Zealand tertiary context.

There is an acknowledgement that heavy expectations from family and church involvement can take students’ attention from their study. However in the case of my participants, two of them are
home-stayed with palangi families and thus are released from many of these obligations, with a resulting “more simple life” (Ana IT).

Finally there is alignment between the literature and my data in the area of institutional processes and systems. Finau, at the beginning of our talanoa noted that all difficulties could be categorised as stemming from personal, academic or systemic factors. The discussion in the talanoa of systemic factors seemed to focus mostly on assignments, due dates and extensions. There was also some reference to study support.

Language difficulties featured in both the literature (Fanene, 2007), and the talanoa. What is different though is the participants’ discussion of specifics rather than the generalisations offered in the literature. Issues raised included the need for help with writing, time for mastering the figurative and metaphorical language as well as the discipline-specific language, help with specific skills such as summarising, expository writing, vocabulary extension and tools for analysis of readings and research material.

I was surprised by how deeply imprinted Tongan values and traditions were. Even after being in New Zealand for some time, Susana’s study was affected by her Tongan upbringing, but she was learning to take “tiptoe steps”. Finau and Ana both talked about the difficulty of changing long-held patterns, even though they are younger. They are now able to articulate these influences, which will hopefully make it easier to make some adjustments. This was not highlighted by authors I read in the literature review.

Because of these difficulties, Tongan students may experience tremendous emotional strain as they attempt to study in the New Zealand context. There are so many things to juggle, so many habits to change or at least subdue, so many new expectations that can combine together to seem overwhelming. Added to this is the burden of knowing they represent their country and indeed hold the reputation of Tongan students in their hands. This factor was not really discussed in the literature I read. This is a significant factor since Tonga is a small country, family connections weave through society, everyone knows each other and news of students studying in New Zealand soon reaches home. There is shame attached to failure in the New Zealand system. However, when students come to New Zealand, they are suddenly unknown, are anonymous and maybe even unnoticed. Thus, the temptation can be to discard any sense of responsibility and enjoy the new freedom.

My participants spoke more freely about fatamaiki than I have read or heard before. This phenomenon is very influential in Tongan students’ success and I think is worthy of more consideration by tertiary providers. The desire to be part of the group is so strong, the desire for friendship, companionship, social interaction, if not met, can be a huge distraction from study.

The biggest ‘revelation’ to me from the talanoa was the comments related to Christianity. As stated at the beginning of this report, Tongan students who select BTI as a place for tertiary study have in the main done so because it is a Christian tertiary provider. For our part, we have assumed that a shared Christian world view would aid the Tongan students’ sense of belonging and contributing. It is clear from the discussions, both individual and group, that this issue is far more complex than initially thought. It was perhaps naive of us to consider that all Tongans hold
the same commitment to Christ and/or Christianity, even though Tonga’s motto is *God and Tonga are my inheritance*, and on any given Sunday over 90% of the population will be in church.

The purpose of my study was to find out how BTI might better serve Tongan students. I had anticipated finding many avenues of possible change. A heartening outcome is that each student affirmed the positive aspects of studying with us, as can be seen in the following quotes.

“(BTI is) an amazing community and a lovely place of learning... Seeing how the teachers operate and how they love the students, it just really helps me to feel that I am safe to go to them. I don’t think BTI needs to change because I do love the atmosphere of BTI... just a little bit of add on.” (Finau IT)

“I have seen the genuineness of the lecturers and the support they offer.” (Susana IT)

“The staff are approachable but more than that...because the lecturers talk to me, it makes me want to talk. It feels like a community, a family, everyone is helping everyone. Lecturers here know I don’t know these things and don’t mind teaching me these skills... instead of telling me I should have learned that in Tonga. It’s very different here. I have both respect and relationship. This is very different to my experience at (another NZ provider). You are here and teachers are there and labelled and you are here to get a qualification. Here at BTI you are here to learn and grow. It feels like I want everyone to see what I see.” (Ana IT)

Because the experiences are so positive, the students have a reciprocal view of how to improve our teaching and our systems, that is, they see it as being a two-way process. They have identified particular ways in which BTI could offer additional support, but at the same time they freely accept responsibility to hone their own study skills, to diligently seek knowledge and to be proactive in asking for support. Material read in preparation for my investigation did not seem to emphasise the way forward as being a bipartite task. Most emphasis was on the need of the institution to respond, react, initiate change, and accommodate and so on. My participants took pains to emphasise that they see it as a dual responsibility.

“It is not just up to BTI… Not just up to Tongans… But coming together, working together is the key. Hopefully this research project will help us take bigger steps towards being genuinely inclusive and learning from each other.” (Finau GT)

“I need to change the ways I do things but I can’t change it on my own. I actually need the teachers to help me change that.” (Ana IT)

They see the challenges as growing points for their own development.

“It’s simply coming from a different culture to another one... and those differences will happen... and no good answer to fix this... anyone who is going to study overseas will experience this... I worked on this and I am growing so much...if dilemma wasn’t there I wouldn’t grow so much.” (Finau GT)
“I don’t wish anything was different. Support is good. Readings are hard but that’s because of me and my lack of understanding. I don’t wish they were easier because this is how we learn.” (Ana IT)

I have been concerned that the expectations we have for students to ‘fit in’ might in fact be causing disequilibrium in their sense of culture. I see how many things we ask them to change: their cultural view of the teacher, their cultural view of their right to speak and ask questions (or remain silent), a cultural view of time. Is it ethically acceptable for us to force them into a structure? Is it acceptable for us to have all these expectations, or does it in the end damage their sense of who they are, their sense of culture? Susana went some way towards putting my mind at rest when she stated,

“I think it’s not bad to change. I don’t think it’s a culture we need to change. I think it’s tradition... I think we can use traditional as a reason to not push ourselves… hand in assignment when you want to, and so on. It’s not culture, it’s just asking me to change a few of my habits.” (Susana IT)

**Helpful hints: some dos and don’ts**

What are the immediate suggestions to come out of this project? What changes do I see as possible, and likely to effect change in the lived experience of Tongan students? The ideas fall into two categories; teaching/learning and process/systems. Teachers/lecturers will be encouraged to implement the following initially.

* Take time to explain key vocabulary within any discipline area.
* Do not wait for questions – be proactive and engage the students in discussions/seminars etc
* Offer a variety of assignment styles, use strength based assignments and formative assessment.
* Allow some aspects of rote learning, especially in early papers within a programme of study. E.g. tests as well as formative assignments.
* Encourage study groups to invite Tongan students to be members.
* Recognise the complexity of the adjustment needed by the students.
* Build relationship by talking. Herein lies the heart (and the art) of encouragement, which both the literature and the participants identified as key. Be approachable, but also initiate contact. Talanoa with the student after class to check on understanding, any questions etc.
* Keep repeating messages about approachability. “Let me know you. Then I can relax. You get to know me by talking not by asking questions.” (Finau IT)
* Show models of what they are aiming to produce
* Sometimes annotate readings or encourage to work with another student (reciprocal teaching strategy)
* Explicitly explain the learning process, especially the role of questions and discussions. Allow them to see others asking questions.
* Remember that as oral learners they may prefer explanations rather than readings (or dictionaries).

In terms of processes and systems, the participants seemed to perceive that the onus is on them to change habits and work in with the system. However, there is much we could do at BTI to make that an easier transition.
* Provide a clear explanation of the processes around enrolment, assignments, extensions, grievances etc
* Discuss the need for self-discipline
* Physically introduce the student to all support staff and facilities
* Allow extra time for assignments to compensate for language difficulties
* Assign a buddy student, especially in the first few months.
* Explicitly explain the need for two way accommodation of each other- so that growth occurs in both parties.
* Expect to meet agreed deadlines

However, the innovation most likely to have significant effect (as supported by the literature and the participants) is to appoint a suitable staff member to be a mentor to any Tongan students on site. This mentor would be responsible for the holistic care of the students. The duties and responsibilities could include being a parent figure, a study guide, a process informer, an introducer to academic culture but also NZ culture, setting up study timetables, checking assignments, offering hospitality, sharing food, having a set time to get together each week, also time for prayers and devotions.

**Conclusion and recommendations**

This research project has contributed in a small way to increasing knowledge, in regards to the Tongan students’ interactions with the learning and teaching contexts and also in regards to interacting with the processes and regulations. I have seen that BTI is already doing much to support the Tongan students on campus. However challenges still remain and require effort from both parties; from the institution and its teaching staff, and from the students themselves. Rather than having an overarching expectation that Tongan students comply with BTI ways of being, there has been a meeting of the ways, a negotiated path that the two parties can walk along together in mutual trust and openness. There is still much to be done before Tongan students can really shine to their full potential. The will to be inclusive is insufficient of itself. Knowledge is needed to make the intent active and visible.

Conducting this research project has shown me “the value of simply talking and listening with spirit, to stay present in conversation, and experience the other through empowered and heart-centred relationships” (Lambert, 2011, p. x). I have tried to see the “insiders’ perspective” (Tolich and Davidson, 1999). I have taken a journey with a desire to welcoming diversity through the application of principled practice and found the destination of the journey to be encouragement of the heart.

**REFERENCES**


**AUTHOR BIOGRAPHY**

*Marion Sanders is a senior teacher educator at Bethlehem Tertiary Institute. Her research interests include mentoring, diversity, gifted education, teaching and learning. E-mail is m.sanders@bti.ac.nz*
HONG KONG IN-SERVICE TEACHER’ READINESS FOR DIFFERENTIATED INSTRUCTION

Sally Wai-Yan WAN
The Chinese University of Hong Kong

ABSTRACT
Catering for learner diversity is one of the key areas in the recent Hong Kong curriculum reform (CDC, 2002, 2014). Whole-school approach and inclusive education are highlighted by the government educational policy (EDB, 2010). Differentiated instruction is nothing new and is believed to be an effective research-based strategy to cater for learner diversity (Tomlinson, 2003; Tomlinson & Allan, 2000). Differentiation involves finding multiple ways to structure a lesson so that each student is provided with an opportunity to work at a moderately challenging level. Previous studies, however, found that teachers were not well prepared and insufficiently equipped with skills and knowledge about differentiated instruction (Casey & Gable, 2011; Chan et al., 2002; Chong et al., 2007; Forlin, 2007; Wan & Wan, 2012; Yuen et al., 2004). The purpose of the study is to examine in-service teachers’ readiness for differentiated instruction. Using a sequential mixed-methods design, with reference to Casey & Gable (2011)’s framework, a questionnaire was used to investigate teachers’ readiness for differentiated instruction, as followed by semi-structured focus group interviews that are done to in-service teachers of two case schools. The participants in interviews are randomly selected. Qualitative data as obtained from the interviews is used to explain the quantitative data. Exploratory findings including teachers’ level of readiness for differentiated instruction and its relationships between and demographic characteristics (i.e. years of teaching experience, professional training, and so on) will be presented. Implications for curriculum development, professional development and research directions will be discussed at the end of the paper.
Hong Kong In-service Teachers’ Readiness for Differentiated Instruction

Introduction

Facing the “pedagogical shift” in the 21st century (Swaffield & Guske, 2011), inclusive education and whole-school approach have been promoted in Hong Kong schools (EDB, 2008, 2010), where catering for individual differences has been highlighted in the recent curriculum reform (CDC, 2002, 2009; Forlin & Rose, 2010; Sin & Law, 2012). Differentiated instruction is regarded as the most effective strategy to cater for learner diversity. Instead of “one-size-fits-all” approach, differentiation emphasizes the roles of teachers who have to address students’ diversity in readiness, interest, and learning profile (Gregory, 2008; Tomlinson, 2003; Tomlinson & Allan, 2000). Nowadays in Hong Kong classrooms, Confucian beliefs about teaching for all are still prevailing (Chan, 2003; Carless, 2007; Chan & Elliott, 2004; Huang & Leung, 2004; Kennedy, 2002; Pratt et al., 1999). Though Confucian heritage cultures emphasize that every student is teachable and receive equal opportunities to learn and teachers adapt their teaching according to students’ needs [有教無類，因材施教you jiao wu lei yi cai zi jiao], teachers face enormous pressures in preparing students for good academic results in public examinations, alongside with great parental expectations (Lam, Ho & Wong, 2012; Lau, Yuen & Chan, 2005). Different literature indicated that Hong Kong teachers are struggled with dilemmas and challenges in their instructional practice (e.g. Ng & Rao, 2008). Whether Hong Kong teachers are able to successfully carry out differentiated instruction depends on their teaching beliefs and preparedness. This paper attempts to explore teachers’ readiness of differentiated instruction.

Literature review

Differentiated instruction

Based on constructivist approach (i.e. John Dewey, Jean Piaget, and Jerome Bruner, Brooks & Brooks, 1993, Erickson, 1998, as well as Wiggins & McTighe, 1998), differentiated instruction aims to address the diverse needs of individual learners (Tomlinson, 1999; Hall, 2002; Hall et al., 2003; Tomlinson et al., 2003) who are provided with an opportunity to work at a moderately challenging level (Adams & Pierce, 2006). In differentiated instruction, students’ needs are addressed in an organized, flexible way of proactively adjusting teaching and learning according to their ability level and helping all students achieve maximum growth as learners (Tomlinson, 1999; Matthews & Foster, 2009). Differentiated instruction is done through structuring a lesson with the key elements of curriculum and assessment strategies that can be differentiated by content, process and product (Alogzzine & Anderson, 2007; Chapman & King, 2005; Tomlinson, 1999, 2003). Differentiation by content means varying what we teach or how students gain access to that content, in which the same concepts are addressed but their degree of complexity are adjusted with reference to students’ interest, readiness, or learning style (Tomlinson, 1999, 2014; Tomlinson & Allan, 2000). Differentiation by process refers to how a student comes to understand and assimilate facts, concepts and skills (Anderson, 2007). Differentiation by product allows students to have various ways of demonstrating what they have learned (Anderson, 2007; Nunley, 2004). Undoubtedly, differentiated instruction does show positive impacts on student learning (Muijs & Reynolds, 2005; van Houtte, 2006). There is a
strong need for teachers who can proactively respond to and reach the varied needs of diverse student populations, grouped heterogeneously, at a high-level” (Tomlinson, 2005: 10). Tomlinson (1995) suggests a range of skills of differentiation to facilitate change in the classroom:

1. Developing a rationale for differentiation
2. Preparing students and parents for a differentiated classroom
3. Managing a differentiated classroom
4. Defining key concepts and generalizations to be taught
5. Differentiating what is to be taught
6. Differentiating how students think about what is taught
7. Differentiating how students show what they know
8. Understanding / Developing models for planning differentiated lessons
9. Establishing interdisciplinary differentiated lesson / units
10. Expanding instructional strategies for differentiating content-process-product

In spite of positive impacts as shown in different studies, little differentiation or negative effects on teachers occurs in curriculum and instruction in reality (Adams, & Pierce, 2009; Hettiarachchi & Das, 2014; Hootstein, 1998; Latz, Speirs Neumeister, Moon, Callahan, Tomlinson, & Miller, 2002; Reis et al., 2004; Tomlinson et al., 2003; Westberg, Archambault, Dobyns, & Salvin, 1993). Any success of curriculum implementation relies on teacher preparation, which plays an influential role in affecting teachers’ curriculum decisions in different levels, including classroom teaching, lesson planning and organization, and so on (Watts-Taffe et al., 2012). This study thus intends to study the extent to which teachers are ready for using differentiated instruction in order to provide relevant schools, staff developers and teacher educators with more accurate and useful information for planning and designing professional development activities that suit teachers’ needs.

**Teachers’ readiness and differentiated instruction**

Few studies were done on the perceptions and applications of pedagogical designs for catering for individual differences in different sectors, including kindergartens, primary and secondary schools in Hong Kong (e.g. Carless, 2001; Forlin & Rose, 2010; Li, 2003; Lo, 2009; Lo & Pong, 2005). Local studies indicated that both primary and secondary teachers make relatively few adaptations to accommodate differences among their students (Chan et al., 2002; Forlin, 2007; Wan, 2012; Wan & Wan, 2013; Yuen et al., 2004), whereas teachers lacked confidence and were unprepared for differentiated teaching practice. It was found that teachers had limited views about curriculum and assessment strategies for catering for learning diversity (Berry, 2006) and lacked incentives to integrate pedagogical content knowledge with the needs of students (Chong et al., 2007). This is consistent with the findings of other studies outside Hong Kong, revealing that teachers are ill-prepared, struggling towards inclusive education and lack the support in delivering effective instruction in the daily classroom teaching (Dee, 2010; Tomlinson & Allan, 2000). Casey & Gable (2011) conducted a study about beginning teachers’ perceptions of preparedness to do differentiated instruction. Their study discovered that beginning teachers were more likely to be more confident in implementing surface-level differentiation than deep-structure differentiation. Using the framework by Casey & Gable (2011), Wan & Lam (2014) explored pre-service teachers’ readiness for differentiated instruction during an undergraduate teacher education course about catering for individual differences. This indicates that although there had been progress towards the use of differentiated teaching strategies after the completion
of the course, few pre-service teachers in the study had lower expectations on students and did not tend to agree that all students could succeed due to lack of teaching experiences and uncertainties about classroom practice. Yet limited local studies were carried out to explore in-service teachers’ readiness for differentiated instruction. This study thus attempts to investigate in-service teachers’ readiness of the use of differentiated instruction. It is hoped that this study would contribute to the limited research in this area in the local context. The findings would also help to provide school leaders and curriculum developers with relevant information about teachers’ professional development needs upon differentiation. The study is also expected to help inform teacher educators to facilitate changes among pre- and in-service teachers in teacher education. The central research questions of this study are as below:

1. To what extent do in-service primary teachers feel they are ready for differentiating instruction for diverse students?
2. Is there any relationship between readiness for differentiation and demographic characteristics?

Method

Research setting and participants
Being carried out from January to July 2014, this study was part of an exploratory study that investigated teachers’ perceptions of differentiated instruction in primary government subsidized schools in Hong Kong. Taking a random sampling approach, the author focuses on data collected from the survey and focus group interviews with teachers from two primary schools (i.e. P01 and P12). The religion of both schools is Christianity. Only those who showed consent participated in this study. 15% of teachers in P01 received special education training. P01 has been established since 1961 and it contains 12 classes during the academic year 2013-14. On the other hand, P12 is a younger school, which was founded in 1984, enrolling 24 classes in 2013-14. However, both schools consist of more than 70% of P01 and P12 teachers with ten years or above of teaching experience. Both schools put catering for student diversity as one of foci in school development plan.

Research design
In order to “develop more effective differentiation [that] involves addressing the full range of teachers’ thinking and practice” (Davies, 2000: 201), this study used a case study approach to explore how in-service primary teachers perceive their readiness for using differentiated instruction. An exploratory mixed methods design (Creswell & Clark, 2007) is thus applied in the study for getting a more holistic understanding of the study topic.

Data collection
The data was primarily collected from a questionnaire and interviews while curriculum and school documents were a source of secondary data. Together with an extensive literature review of teacher beliefs and differentiated instruction studies, a questionnaire was developed according to the studies by Scott & Spencer (2006) as well as Casey & Gable (2012). The questionnaires were of high reliability in the previous studies. There are three parts in the questionnaire, including Part 1 teaching beliefs about differentiated teaching practice, Part 2 readiness for differentiation, Part 3 open ended questions about teacher’s perceptions of differentiated instruction, and Part 4 demographic information. The participants were asked to rate their level of agreement towards the items in the Parts 1-2 by responding to a 6-point Likert response scale, ranging from strongly agree (1) to strongly disagree (6). Besides, an interview guide was
developed for focus group interviews and individual interviews. Semi-structured guiding questions were designed to obtain in-depth information. This paper focuses on the discussion of the findings of readiness of differentiated instruction, together with the qualitative data as obtained from the focus group interviews.

Concerning the content validity of the questionnaire and interview design, the researcher asked for professional advice from three experts specialized in teaching efficacy, differentiated instruction, and curriculum research methods respectively (Gable & Wolf, 1993). As the questionnaire is bilingual, the Chinese version was read and revised after consultation from two Chinese tutors. Finally, the questionnaire was pilot tested among a group of in-service teachers who were not included in the sample. The pilot study was carried out in early January 2014. After collecting the questionnaire results, a focus group interview was conducted to draw opinions and comments on the questionnaire design in February 2014.

**Data analysis**

**Questionnaire**

The quantitative data from the questionnaire was analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including frequencies, percentages, means and standard deviations, are used to analyze data from the questionnaire. In the quantitative survey, the reliability of the part on teachers’ readiness for differentiated instruction is high, i.e. 0.97. A total of 69 in-service teachers from two schools responded to the survey. The response rate was good in the two case schools (see Table 1). 25 out of 44 (96.15%) completed the survey in P01 whilst 44 out of 48 (91.67%) responded to the survey in P12. A focus group interview with three teachers was carried out in the two case schools on 5th May and 7th July 2014 respectively.

<table>
<thead>
<tr>
<th>School</th>
<th>No. of responses</th>
<th>No. of teachers</th>
<th>Response rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>P01</td>
<td>25</td>
<td>26</td>
<td>96.15%</td>
</tr>
<tr>
<td>P12</td>
<td>44</td>
<td>48</td>
<td>91.67%</td>
</tr>
</tbody>
</table>

Note: To 2 d.p.

Table 2 shows that the demographic characteristics of the respondents. Like many other primary school sectors in Hong Kong or other countries, both schools employed more female teachers. Many respondents in the survey are experienced teachers while less than 15% of the respondents got 0-5 years of teaching experience. Similar to the local school distribution of job ranking, half of the respondents are regular teachers while others are of delegated leadership roles (i.e. at the rank of Assistant Primary School Mister/Mistress (APSM) or above). More than a half of respondents in both schools obtained general training related to catering for learner diversity. Less than a quarter of the respondents got special education training in both schools. However, more respondents of P12 received training in gifted education than those from P01.
Focus group interview

Three teachers of each case school were randomly drawn from the list of survey participants who agreed to be interviewed. Table 3 shows the basic information about the interviewees of both schools. The informants played delegated roles as curriculum leaders with specific duties in being subject panel chairs, head of department of curriculum development, head of department of academic studies. All the informants are responsible for special education and/or gifted education.

Data gathered from the focus group interviews was reported and analyzed by clarifying the information into categories, themes and dimensions according to the key research questions. The qualitative analysis of the focus group interviews included coding the raw data, repeated listening to the interview audiotapes, and reviewing the copies of the transcribed interviews by reading and re-reading. Color coding method was used to generate and categorize emerging themes and issues (Stake, 1995). The researchers merged quantitative and qualitative datasets of each test in order to compare, triangulate (Stake, 2000) and determine to what extent the data could be converged and confirmed.

Table 2. Demographic variables for survey respondents.

<table>
<thead>
<tr>
<th>Variable</th>
<th>P01 (N=25)</th>
<th></th>
<th>P12 (N=44)</th>
<th></th>
<th>Overall (N=69)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%*</td>
<td>N</td>
<td>%*</td>
<td>N</td>
<td>%*</td>
</tr>
<tr>
<td>Gender</td>
<td>Female</td>
<td>20</td>
<td>80.0</td>
<td>36</td>
<td>81.8</td>
<td>56</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>4</td>
<td>16.0</td>
<td>8</td>
<td>18.2</td>
<td>12</td>
</tr>
<tr>
<td>Years of teaching experiences</td>
<td>0-5 years</td>
<td>3</td>
<td>12.0</td>
<td>7</td>
<td>15.9</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>6-10 years</td>
<td>2</td>
<td>8.0</td>
<td>8</td>
<td>18.2</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>11-15 years</td>
<td>3</td>
<td>12.0</td>
<td>7</td>
<td>15.9</td>
<td>10</td>
</tr>
<tr>
<td></td>
<td>16-20 years</td>
<td>7</td>
<td>28.0</td>
<td>12</td>
<td>27.3</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>&gt; 20 years</td>
<td>10</td>
<td>40.0</td>
<td>10</td>
<td>22.7</td>
<td>20</td>
</tr>
<tr>
<td>Highest academic qualifications</td>
<td>Certificate/diploma</td>
<td>2</td>
<td>8.0</td>
<td>0</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>Bachelor</td>
<td>13</td>
<td>52.0</td>
<td>26</td>
<td>59.1</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>Master</td>
<td>10</td>
<td>40.0</td>
<td>18</td>
<td>40.9</td>
<td>28</td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Ranking</td>
<td>CM</td>
<td>11</td>
<td>44.0</td>
<td>20</td>
<td>45.5</td>
<td>31</td>
</tr>
<tr>
<td></td>
<td>APSM</td>
<td>6</td>
<td>24.0</td>
<td>12</td>
<td>27.3</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>AM</td>
<td>3</td>
<td>12.0</td>
<td>3</td>
<td>6.8</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>PSM</td>
<td>3</td>
<td>12.0</td>
<td>6</td>
<td>13.6</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>SPSM</td>
<td>1</td>
<td>4.0</td>
<td>2</td>
<td>4.5</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>others</td>
<td>1</td>
<td>4.0</td>
<td>1</td>
<td>2.3</td>
<td>2</td>
</tr>
<tr>
<td>Teacher training related to catering</td>
<td>No</td>
<td>9</td>
<td>36.0</td>
<td>13</td>
<td>29.5</td>
<td>22</td>
</tr>
<tr>
<td>learner diversity</td>
<td>Yes</td>
<td>16</td>
<td>64.0</td>
<td>31</td>
<td>70.5</td>
<td>47</td>
</tr>
<tr>
<td>Teacher training related to special</td>
<td>No</td>
<td>19</td>
<td>76.0</td>
<td>33</td>
<td>75.0</td>
<td>52</td>
</tr>
<tr>
<td>education</td>
<td>Yes</td>
<td>5</td>
<td>20.0</td>
<td>10</td>
<td>22.7</td>
<td>15</td>
</tr>
<tr>
<td>Teacher training related to gifted</td>
<td>No</td>
<td>21</td>
<td>84.0</td>
<td>26</td>
<td>59.1</td>
<td>47</td>
</tr>
<tr>
<td>education</td>
<td>Yes</td>
<td>3</td>
<td>12.0</td>
<td>17</td>
<td>38.6</td>
<td>20</td>
</tr>
</tbody>
</table>

*The number of respondents varied because of missing cases.
Table 3. Information about teachers interviewed.

<table>
<thead>
<tr>
<th>Teacher</th>
<th>Teacher T</th>
<th>Teacher K</th>
<th>Teacher C</th>
<th>Teacher N</th>
<th>Teacher F</th>
<th>Teacher L</th>
</tr>
</thead>
<tbody>
<tr>
<td>School</td>
<td>P01</td>
<td>P01</td>
<td>P01</td>
<td>P12</td>
<td>P12</td>
<td>P12</td>
</tr>
<tr>
<td>Years of teaching experience</td>
<td>20</td>
<td>14</td>
<td>17</td>
<td>19</td>
<td>18</td>
<td>27</td>
</tr>
<tr>
<td>No. of years of teaching in the case school</td>
<td>20</td>
<td>10</td>
<td>15</td>
<td>19</td>
<td>18</td>
<td>26</td>
</tr>
<tr>
<td>Roles and responsibilities in the case school</td>
<td>Class teacher, Team Leader of Learning Support Team</td>
<td>Class teacher, Team member of General Affairs Team</td>
<td>Class teacher, Team Leader of IT Team, Computer Studies panel chair</td>
<td>Curriculum Leader</td>
<td>Prefect of Academic Studies</td>
<td>Vice Principal</td>
</tr>
<tr>
<td>Subject(s) taught</td>
<td>English, General Studies, P.E.</td>
<td>English, General Studies, Computer Studies</td>
<td>English, Computer Studies, Visual Art</td>
<td>Chinese, Math</td>
<td>Chinese, General Studies</td>
<td>English, General Studies</td>
</tr>
<tr>
<td>Responsible for SEN / Gifted education</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>

**Ethical considerations**

In the data collection process, it is important to build up trust relationship with the participants. The researcher informed them about the purpose of the research and indicated the extent of commitment required. The research data was kept confidential. A consent form was distributed to all participants. All participating in-service teachers were voluntary and had the rights to withdraw at any time. It was clearly stated before the questionnaire and interview that no person would be identified. After gaining all participants’ consent, the questionnaire was distributed and collected by the research assistant. Concerning the interviews, the researchers re-stated that the purpose of study and the names of the participating teachers would be kept confidential and pseudonyms for individual participants would be applied in order to protect their identities.

**Findings and Discussion**

**Teachers’ readiness for differentiated instruction**

The overall mean score of teachers’ readiness for using differentiated instruction is positive, with a mean score of 4.32 (SD=0.66). Table 4 shows that there is just a minimal difference in the mean score when comparing both schools, where P01 (M=4.31, SD=0.79) has a slightly higher mean score than P12 (M=4.29, SD=0.63). However, P01 is less prepared for the use of differentiated instruction strategies, in which P01 got six items with a mean score of 4.0 or below, including: B5 “Higher level tasks” (M=3.88, SD=0.93), B17 “Product form” (M=3.92, SD=1.15), B20 “Compacting” (M=3.96, SD=0.79), B21 “Learning contracts” (M=3.96, SD=0.79), B23 “Interest centers/ groups” (M=3.80, SD=1.26), B24 “Learning centers/ groups”
There was around 20-36% of the respondent teachers in P01 who tended to disagree in those six items (see Table 6). However, P12 got less items with a mean score of 4.0 or below, including: B24 “Learning centers/ groups (M=3.80, SD=1.03), B23 “Interest centers/ groups” (M=3.84, SD=1.14), B20 “Compacting” (M=3.89, SD=0.99), B21 “Learning contracts” (M=3.93, SD=1.02), where 25% to 34% of the respondents in P12 tended to disagree with these four items (see Table 7). It is interestingly noted that there was no item with a mean score of 5.0 or above. During the focus group interviews, when being asked to self-assess personal readiness for differentiated instruction with the rating scale 1-10 (i.e. 1 is the least; 10 the most), all teachers gave themselves seven. The following are the reasons behind their judgment.

“… because actually there are many policies that incorporate with catering for individual differences. And I have been teaching for so many years. That’s fine for me.” (Teacher K, P01, focus group interview, 30th May 2014)

“I think there are many constraints… time is the most important. You face so many people. So many people, heavy curriculum, really no time to think and design activities for students. I don’t think I can do it perfectly.” (Teacher C, P01, focus group interview, 30th May 2014)

“I give myself 7… because I think I still have something that was not done so well. Like for those Primary 6 gifted students, due to big classes, … most students can’t handle the contents and I need to repeat what has been taught. I feel very sorry for them. They need to listen to what has been taught for many times, and they actually have already understood.” (Teacher T, P01, focus group interview, 30th May 2014)

“I give a 7. It’s because we have already tried various approaches and teaching strategies to cater for diverse learners yet it still hard to make achievements. Still we are trying hard.” (Teacher L, P12, focus group interview, 7th July 2014)

“I will give a 7 too. This year, I have the opportunity to enroll in the foundation course for gifted education as well as a course on special topics in gifted education. This is how I better prepare myself. Other than that is sharing experiences between colleagues in order to know more about the thoughts and skills to support diverse learners. Talking about empathy- we all know its importance in working with kids- still we need to know how to do it, like looking from the perspective of the young learners to better understand them so that we can help them.” (Teacher N, P12, focus group interview, 7th July 2014)

“I guess 7 for me too because there is always room for improvement. If you want to better cater for diverse learners, you have to keep learning the latest approaches and thoughts.” (Teacher F, P12, focus group interview, 7th July 2014)

From the above, not every teacher is fully ready for using differentiated instruction in classrooms. There is still room for better equipping teachers in the use of differentiation strategies. Personal factors (including experiences, incentives), as well as external factors (including school policies, provision of professional development, workload) should be taken into account in getting teachers ready for applying differentiation.
Table 4. Mean scores of teachers’ readiness for differentiated instruction.

<table>
<thead>
<tr>
<th>Readiness</th>
<th>P01 (N=25)</th>
<th>P12 (N=44)</th>
<th>Overall (N=69)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.31</td>
<td>0.79</td>
<td>4.29</td>
<td>0.63</td>
</tr>
</tbody>
</table>

Note: To 2 d.p.

Table 5. An overview of mean scores of teachers’ readiness for differentiated instruction strategies.

<table>
<thead>
<tr>
<th>Items</th>
<th>P01 (N=25)</th>
<th>P12 (N=44)</th>
<th>Overall (N=69)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differentiate using major concepts</td>
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Table 6. Frequency of readiness for differentiated instruction strategies (P01) (N=25).

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**Teacher readiness: Do demographics matter?**

ANOVA was used to examine the correlation between readiness and the demographics of the respondents. There was no correlation found between teachers’ readiness for differentiation and demographic characteristics as well.

**Catering for diverse needs: Student-centered or teacher-centered?**

Interestingly, most of the top ready items are teacher-directed. In the study, the top five items with the highest mean score include: B19 “Formative/ Summative evaluation” (M=4.70, SD=0.94), B11 “Real and relevant problems” (M=4.59, SD=0.83), B10 “Learner profile” (M=4.58, SD=0.76), B4 “Applications of knowledge” (M=4.57, SD=0.80), B3 “Support mechanisms” (M=4.48, SD=0.92) (see Table 5). These “surface differentiation” strategies seemingly are easier to be managed by teachers (Brighton 2003; Wan et al., 2015).

On the contrary, those bottom five items with the lowest mean scores are student-centered in nature (Tomlinson, 1995, 2005), including: B24 “Learning centers/ groups” (M=3.82, SD=1.11), B23 “Interest centers/ groups” (M=3.84, SD=1.17), B21 “Learning contracts” (M=3.92, SD=1.13), B20 “Compacting” (M=4.01, SD=0.93), and B22 “Independent study” (M=4.02, SD=1.18). These items are based on students’ active learning (Tomlinson, 2005), where students have choices in engaging themselves in the learning process, rather than being instructed by the teacher. During the focus group interviews, teachers of both schools mentioned about the use of teacher-led activities for addressing students’ individual needs, including tiered task sheets, using group work and using designated teaching strategies or principles. One teacher shared her teaching strategy for helping students to learn, saying that,

“Possibly I use color pens to highlight the phonics to let students see when teaching English. That helps them focus on the language foci more, that is language structure or vocabulary, because their memory is quite short-span. So there requires more repetitions and repetitions which help them remember firmly. We narrow down contents and be more focused.”

(Teacher T, P01, focus group interview, 30th May 2014)

Teachers of P12 also shared that,

“We try our best to design lessons that can best enable students with diverse abilities to achieve learning objectives in class. The level of difficulty of the worksheets attempted by each student is varied. More capable students are given more challenging ones whereas the struggling students are given the less challenging ones.”

(Teacher F, P12, focus group interview, 7th July 2014)

“Since supporting diverse learners is the major goal of our school, whenever teachers make curriculum or lesson planning we have a set of...
the guiding matrix for teachers to follow. For example, we have Bloom’s Taxonomy, which prescribes a wide range of cognitive levels involved in different learning stages from the more factual recalling to the use of creativity. This provides teachers with an approach to design their lessons. For General Studies, we have 13 strategies for the gifted which contains different graphic organizers and thinking tools. These serve as guidelines for teachers to design teaching strategies.” (Teacher L, P12, focus group interview, 7th July 2014)

“I am most confident with questioning. We have introduced thinking skills for many years. Teachers are well prepared for this strategy as there were experts visiting the school to share with us how to apply it into teaching. This initiative has been implemented in the school for several years.” (Teacher N, P12, focus group interview, 7th July 2014)

Teachers very seemingly require school guidelines or rules for designing lesson contents and activities, in which they can have more control over what and how is taught and feel more ready for application. On the contrary, student-led activities are hardly used in daily teaching. Teachers expressed their concerns about the abilities of students and did not feel comfortable about the use of student-centered approaches to help students learn. Teachers shared their difficulties as encountered in their daily teaching.

“Their levels are comparatively low, like within 26 students, I think around 6-7 are ok, but if you need to cater for the other 20 students, you have to walk in a slow pace. You need to talk about the contents some more times. … I asked students to set questions on their own, you will see the differences between the high and low ability students. Some of them seem to be dead. when they do that, they will die. … if that is General Studies, their confidence will be greater. If English, that is more difficult. … Some students are okay, but how much contents they can present is hard for them.” (Teacher T, P01, focus group interview, 30th May 2014)

“Teachers have to spend a long time and efforts to prepare for teaching. Teachers’ workload such as teaching, administrative work and caring for students, etc. The situation is getting more demanding for teachers. I think being a teacher now is not as easy as it used to be and they are facing more and harder challenges.” (Teacher N, P12, focus group interview, 7th July 2014)

This finding is similar to another study by Wan, Wong & Yeung (2015), indicating that teachers put less focus on students’ orientations and they are less ready for using student-centered approaches in addressing student diversity, albeit differentiated instruction is based on students’ interests, learning profiles and readiness (Tomlinson, 1995, 2014). This could be again explained by the influence of the Chinese heritage in Hong Kong classrooms. Moreover, that may be related to big class problem where teachers lack in-depth knowledge about their students and are unable to use independent study or interest groupings within limited space. Some previous studies also showed that teachers were reluctant to “buy-in” or practice student-centered strategies such as cooperative learning because of the class size problem (Blatchford & Mortimore, 1994; Wan, 2015).
Assessment for learning? Do teachers know where students are?

Interestingly, teachers in the study are quite ready for using assessment for differentiated instruction in school. The item B19 “Formative and summative evaluation” is within the list of the top two items with the most readiness in P01 (M=4.72, SD=0.98) and P12 (M=4.70, SD=0.94) respectively. However, referring to another assessment-related item, B28 “Assess where students are”, P01 got a mean score of 4.20 (SD=1.32) but P12 got 4.41 (SD=0.95), where approximately more than 20% of P01 teachers and 10% of P12 teachers tended to disagree that they were ready for this item, while the overall mean score is 4.33 (SD=1.09). Similar to the survey results, when being asked about their usual ways of catering for individual differences, teachers of both schools in the focus group interviews mentioned about the use of dictations, tests and examinations for identifying students’ learning outcomes. Yet they did not mention about the use of pre-assessment for understanding students’ prior levels of knowledge and checking students’ learning progress for planning and organizing the curriculum. This can be explained threefold. First, this may be related to assessment cultures in Hong Kong, which put much emphasis on “assessment of learning” more than “assessment for learning” in the Confucian heritage culture (Carless, 1997, 2007, 2011; Davison, 2004). Students in Hong Kong are always assessed for the purpose of finding out the learning outcomes more than using assessment data for designing or adapting the curriculum. Second, most Hong Kong teachers are insufficiently prepared and lack confidence in using assessment data for giving feedback to students for improving and developing the curriculum (Carless, 2011). This also echoes the findings of a recent study by Wan, Wong & Yeung (2015) who indicated that teachers had higher professional development needs in the aspect of assessment and evaluation. Besides, teachers tended to be whole-class oriented rather than pre-plan or proactive modify lessons. Tomlinson et al. (2003) found that teachers did not plan lessons for individuals or change their ways to do assessment. This finding is also echoed by Smit & Humpert (2012) who found that teachers typically provided individual tasks (tiered assignments), adapted the number of tasks or provided more time for certain students to work on tasks while only a few used the complementary strategies about assessments (e.g. diagnosing prior knowledge or conducting a formative assessment).

Conclusion

The study aimed to achieve two specific purposes. First, it targeted at examining teachers’ perceived levels of readiness for using differentiated instruction strategies in two primary schools in Hong Kong. Second, it intended to explore if there existed any relationship between teachers’ perceived levels of readiness and demographic characteristics. The results indicate that teachers in this study generally held positive attitudes towards the use of differentiated strategies. However, there seemingly is still a struggling paradigm from teacher-centered to learner-centered curriculum in the Confucius heritage classrooms. School leaders have to be aware of how the infrastructures of the school including administrative measures (such as timetabling and work allocation) can benefit the emergence of a learner-centered curriculum (Law et al., 2011).

More attention should be paid to teacher training and development in the use of deeper forms of differentiated strategies. Readiness of stakeholders is a determinant of any successful curriculum change or initiative. The importance of preparing and equipping teachers with appropriate pedagogical skills and knowledge should not be neglected. McLaughlin (2005) recalls the notion of value of how research informs practice. With the findings of the study, the foci of professional development should be put on those less-ready items such as learning centers, interesting groups, learning contracts, and so on. To strengthen and build up teachers’
capacities in curriculum modifications for addressing students’ learning needs, differentiated professional learning opportunities should be adopted and embedded in professional learning communities (Grierson & Woloshyn, 2013; Hettiarachchi & Das, 2014; Ruys et al., 2013), where “knowledge (are) constructed by and with practitioners in their own context” (McLaughlin, 1997: 80), and team collaboration sets a foundation to implementation of differentiated instruction (Smit & Humpert, 2012). Besides, with regards to the findings of the study, not every single teacher is well prepared for using differentiated instruction. Sufficient teacher education in differentiated instruction should not be neglected to prospective teachers (Ruys et al., 2013).

Finally, there are still some limitations of the study. There is a small number of participants in the study. This study is not supposed to be generalized to other schools or countries. Further studies can be done for further inquiring the extent to which teachers’ readiness levels will be changed after the findings are shared with the schools. Other sources of data collection can be used for getting a more holistic picture about how differentiated instruction is implemented at different levels within one school context, for example, curriculum planning and management, teacher development, as well as classroom teaching. As this study has not taken other contextual factors into account, follow-up studies can be done in investigating the relationships between teachers’ readiness and contextual factors including school climate, leadership, and so forth.

Acknowledgements
The author would like to express sincere thanks to all the teachers and schools participating in the study. Sincere thanks are also due to her research assistants who helped in the data collection process. This study is funded by The Chinese University of Hong Kong Direct Grant for Research 2012-2013 (2nd Round) (Project Code: 4058008).

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Appendix A: A flowchart of the elements of differentiated instruction (Tomlinson & Imbeau, 2013)

**Differentiation**

is a teacher’s proactive response to learner needs

shaped by mindset

And guided by general principles of differentiation

<table>
<thead>
<tr>
<th>Building Community</th>
<th>Quality Curriculum</th>
<th>Teaching Up</th>
<th>Respectful Tasks</th>
<th>Ongoing Assessment</th>
<th>Flexible Grouping</th>
<th>Flexible Management</th>
</tr>
</thead>
</table>

Teachers can differentiate through

<table>
<thead>
<tr>
<th>Content</th>
<th>Process</th>
<th>Product</th>
<th>Affect/Environment</th>
</tr>
</thead>
<tbody>
<tr>
<td>The information and ideas students need to grapple with in order to reach the learning goals</td>
<td>How students take in and make sense of the content</td>
<td>How students show what they know, understand and can do</td>
<td>The climate or tone of the classroom</td>
</tr>
</tbody>
</table>

According to student’s

<table>
<thead>
<tr>
<th>Readiness</th>
<th>Interest</th>
<th>Learning Profile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative standing to the learning goals</td>
<td>Passions, affinities, kinships that motivate learning</td>
<td>Preferred approaches to learning intelligence preferences, gender and culture</td>
</tr>
</tbody>
</table>

Through a variety of instructional strategies such as RAFTS...Graphic Organizers...Scaffolding Reading...Tic-Tac-Toe...Learning Contracts...Menus...Tiered Assignments...Learning/Interest Centers...Independent Projects...Intelligence Preferences...Orbitals...Expression Options...Varied Homework...Small Group Instruction...Complex Instruction...WebQuests&Web Inquiry...etc.
EQUITABLE EDUCATIONAL OPPORTUNITY FOR ALL: THE 21st CENTURY PARTNERSHIP

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Linda Quinn
Lois Paretti
Shaoan Zhang

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ABSTRACT

For the past several years, teacher education faculty have been working closely with district personnel and teachers in one of the nation’s largest school districts to create a climate for enabling and empowering educators to address underserved populations. In the course of developing the 21st Century Schools Partnership, we have modified strategies for selecting, training, and retaining highly qualified candidates for placement in diverse settings. Innovative curriculum for teacher education has been developed. Site facilitators and mentor teachers have all been trained in the co-teaching model. Through this program, researchers are able to collect valid and reliable data on candidate effectiveness and student achievement. The analysis of student work assignment help teachers differentiate instruction and help teachers make decisions based on all students’ learning. We have worked systematically, one school at a time, with the local school district to create a strong K-12 network of elementary, middle, and high school partners who are willing and eager to work with our preservice teachers. A culminating electronic portfolio provides evidence of teacher candidates’ knowledge and skills with regard to teaching underserved populations.
Equitable Educational Opportunity for All: The 21st Century Partnership

Part 1: Setting the Stage: Building Collaboration

The 21st Century Schools are a teaching and Learning Partnership between the Clark County School District and the University of Nevada, Las Vegas.

We built an environment to provide dynamic, clinical learning experiences for teacher education candidates through the 21st Century Schools Partnership with Clark County School District. The development of this partnership involved collaborative planning with administrators, deans, chairs of departments, university faculty involved in preparing teachers, superintendents, and the Director of Professional Development from the school district.

Three critical features of teacher preparation.

The three critical features of teacher preparation involved integration among courses and between course work and clinical work in schools, extensive and intensive supervision of clinical work, and proactive relationships with schools to develop and model good teaching (Boyd, et.al, 2008).

Step 1: Establish Goals

The following goals were established as part of the process:

1. Create an innovative teacher education program
2. Develop a quality, intensive one-year internship
3. Create opportunity to study and implement research-based teaching practices, and results-driven instruction
4. Increase the number of high-quality teachers, including those from under-represented groups
5. Train experienced teachers as preservice mentors and school-based teacher educators
6. Increase collaboration between UNLV and CCSD
7. Provide continuity among stages of teacher professional development.

Step 2: Select Partnership Schools and Identify School Characteristics

-Agree to an annual review process
-A visionary and shared instructional leadership
-A school culture conducive to professional development
-An interest in developing learning communities
-Have a population of high-poverty, diverse, ELL students in an inclusive environment
-Evidence of reform-minded teaching
-A commitment to closing the achievement gap
-Use of multiple assessments to evaluate student learning
-Possess a technology rich environment
Part 2: Facilitating Activities at the School Sites

The program elements of Practicum One for students included 90 hours of site work spent on the following: supervision from a highly experienced mentor; identifying and examining three different theories and teaching strategies; and developing and teaching three lessons. The program elements of Practicum Two included 125 hours of site work (recently increased to 150 hours due to state law) with a newly assigned mentor and school. Additionally, students completed five hours of community service benefitting the school and needed to develop and teach five lessons on their own.

Student teaching.

Student teaching is the final semester of field-based experience and is considered a true internship. It is a full-time placement for five days a week in the same classroom as in Practicum Two (when candidates completed 125 hours in the field). The goal is to make the transition from student to that of an entry-level teacher. The candidate also creates a website to commemorate his/her time in the field.

During the student teaching experience, candidates meet with the mentors to discuss progress and provide next steps and receive frequent feedback from their mentors as they develop their classroom skills (through the Collaborative Assessment Log -CAL). Candidates progress through the semester with the goal of becoming lead-teacher for a minimum period of three weeks. They participate as fully as possible in all aspects of school life during their tenure as student-teacher. A co-teaching model is maintained throughout the experience.

Co-Teaching

Co-teaching involves “two or more professionals delivering substantive instruction to a diverse group of students in a single physical space” (Cook and Friend, 2004). Co-teaching partners must share decision-making resources, responsibility, and accountability. Through these processes, they establish and support mutual respect.

The Role of the Site Facilitator

The site facilitator (SF) is the administrator of the student-teaching onsite, and he/she serves as leader of the site cohort. The SF supports principals, mentors, and teacher-candidates. He/She serves as a coach and guide.

Part 3: Course Curriculum/On-Site Activities/University Assessment System

Teacher education course curriculum alignment requires connections between the university and the school and a link between theory and practice. The following courses and assignments create those connections and maintain the alignment: General methods; Content methods; Pedagogy courses more closely connected to the experiences (Practicum 1, 2, and student teaching) teacher education candidates were having in the field; and Classroom management.
Microteaching
Step 1: Practice teaching in the general methods class feedback from peers and instructor
Step 2: Practice teaching in K-12 classrooms feedback from mentors and/or peers
Step 3: Reflection

The Advising and Field Placement Center
This is a key online resource for student-teachers, mentors, and site facilitators. It contains guides, templates, and documents needed for the process and vital resources for a successful experience. http://education.unlv.edu/afp/

Part 4: Candidate Professional Development - ePortfolios
The overarching e-portfolio goals are to facilitate candidates’ assessment of their own learning; to help candidates reflect on the ways in which their beliefs, knowledge, and skills influence their teaching behaviors; and to demonstrate ways candidates have helped their students learn. Through portfolio development, teachers and candidates share best practices. Cohort candidates
collaborate with one another through the process, sharing effective lessons and strategies lessons for student learning. There is a specific website for the development of these portfolios.

**Conclusion**

Authenticity in working with students from diverse backgrounds and with a range of abilities is a process (Hart Research Associates, 2010). By including teacher education candidates, classroom teachers, administrators, college faculty and directors in the process of change, field-based teacher education programs can emerge.

**Bibliography**


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IN-SERVICE TEACHER DEVELOPMENT FOR CULTURALLY AND LINGUISTICALLY RESPONSIVE PEDAGOGY - THE IMPACT OF A COLLABORATIVE PROJECT BETWEEN K-12 SCHOOLS AND A TEACHER PREPARATION INSTITUTION

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Margaret Berg
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ABSTRACT

This paper addresses the gap in both research and practice in teacher education by examining an in-service teacher development project in a variety of school contexts, including math, science, and social studies instruction where teachers typically do not see students’ language development as their responsibility. The study, employing a mixed-methods approach to analyze the process of teacher development and document changes over time, explores how a culturally responsive and linguistically sensitive approach to teacher development makes an impact on teachers’ efficacy, their classroom practice, and student performance in schools. Data were collected over a period of 18 months from forty K-12 certified teachers from five high need school districts. Data sources include pre- and post-surveys, interviews, self/group reflections, lesson plans, classroom observations, and student writing samples collected by the participating teachers prior to and towards the end of the grant project. The qualitative and quantitative evidence provided by the project strengthens the argument for the importance of incorporating culturally responsive and linguistically sensitive pedagogy into all teacher development programs. The findings shed light on opportunities and challenges for teacher education in a multicultural society.
IN-SERVICE TEACHER DEVELOPMENT FOR CULTURALLY AND LINGUISTICALLY RESPONSIVE PEDAGOGY - THE IMPACT OF A COLLABORATIVE PROJECT BETWEEN K-12 SCHOOLS AND A TEACHER PREPARATION INSTITUTION

In the past decade, the rapid growth of immigrant children enrolling in U.S. K-12 school systems has presented a challenge to the schools and teachers at all levels. Faced with more and more linguistically diverse students in the K-12 classrooms with the aspiration to attend college, classroom teachers have the obligation to work with this student population to develop the necessary academic knowledge and skills. One area of struggle for school teachers is how to help students who are learning English to competently perform academic tasks in school settings. Pressured by ambitious goals set by educational reforms (e.g., No Child Left Behind Act, 2002; Race to the Top National Competition, 2009), and facing classes of students from culturally and linguistically diverse (CLD) backgrounds, classroom teachers often feel professionally unprepared to meet their students’ needs given that teacher preparation programs historically lacked attention to linguistically diverse learners (Balserrama, 2001; Darling-Hammond, Chung, & Frelow, 2002; Gandara, Maxwell-Jolly, & Driscoll, 2005).

According to the U.S. Government Accountability Office, “the English language learner student population…is among the fastest growing demographics in the country” (GAO, 2009, p. 6). Nevertheless, “no more than 20 percent of (teacher preparation) programs required at least one course entirely focused on English language learners” (p. 15). Such a gap has led to a growth of interest in both pre- and in-service learning opportunities for teachers who will be working with emerging bilingual students. While research has provided ample evidence to support systematic integration of language and content in classroom instruction for CLD students’ academic success (e.g., Gibbons, 2009; Mohan, 1986; Schleppegrell, 2004), there is limited research on how teachers are prepared to integrate language and content instruction for CLD students. This paper reports on an in-service teacher professional development program with a focus on content and language integration and teacher linguistic sensitivity, to understand how this approach might impact teachers’ instructional practices and student performance in schools.

Background of the Study

The growth of interest among teachers and schools seeking professional development (PD) that focuses on English Language Learners (ELLs) is a pressing challenge for the field of teacher education. While linguistic and cultural dimensions of learning are identified as salient aspects that will make an impact on students' language and conceptual development (de Jong & Harper, 2005), an examination of existing literature reveals an imbalance in the research on teachers' cultural responsiveness versus teachers' linguistic sensitivity. Numerous studies have argued for a culturally responsive approach to instruction (Cartledge & Kourea, 2008; Garcia & Ortíz, 2006; Gay, 2010), but a culturally responsive agenda with no emphasis on developing teachers’ linguistic sensitivity, will not be able to address the issue of culturally diverse students struggling with mainstream linguistic resources in academic settings (Commins & Miramontes, 2006; de Oliveira & Athanases, 2007; Huang & Laskowski, 2014; Sleeter, 2008). Research efforts, though
limited, have clearly pointed to a direction for developing linguistic sensitivity of teachers for linguistically responsive ESL education (de Jong & Harper, 2005; Jeménez & Rose, 2010).

The professional standards established by the Teachers of English to Speakers of Other Languages (TESOL, 2006) require that teachers be able to integrate language and content instruction, which means that they must not only be experts in their content area, but they must also have a good understanding of how language functions in content learning, which demands knowledge of linguistics. Recent advances in the field of CLD educational research have drawn on Systemic Functional Linguistic (SFL) (Halliday, 1994), to theorize learning as a linguistic process in which learning language, learning through language, and learning about language are conceived as a unified whole (Halliday, 2007). In this view, the child learning language for the first time is seen to be learning language and simultaneously learning through language, that is, learning about the world. Researchers focus is on “how people use language to make meanings with each other as they carry out the activities of their social lives. They do this through their selections from the sets of choices that are available in the language systems” (Christie & Unsworth, 2000, p. 3). The application of SFL in classroom settings has led to improved CLD students’ academic language/literacy skills for school success (de Jong & Harper, 2005; Huang, 2004; Llinares & Pena, 2015; Schleppegrell & de Oliveira, 2006). Our research draws on SFL as a theoretical foundation for our approach to teacher development in culturally and linguistically responsive pedagogy. Particularly, we target effective integrated content and language/literacy instruction for the academic context.

Among studies addressing teacher development for content specific literacy and language instruction (e.g. Glaeser, Leuer, & Grant, 2008; Pawan, 2008; Pytash, 2013), most limit their inquiry to teachers’ beliefs, perceptions, and knowledge development. An exception is a study by Hart and Okhee (2003), which examines change in teacher beliefs as well as instructional practices as a result of a PD for 3rd and 4th grade in-service teachers. Among the very few studies using a functional linguistic perspective that examine professional practice as a result of teacher development, Aguirre-Munoz, Park, Amabisca, & Boscardin (2008) examined the effectiveness and instructional impact of a professional-development program designed to increase teachers' understanding of the characteristics of academic language. However, this study provides no data on change in student performance as a result of teacher development in middle school language arts. Even scarcer are studies focusing on improvement of student performance as a result of teacher development, such as the effort led by Schleppegrell (2010a; 2010b) at the University of Michigan.

The Study

Our literature review suggests that 1) there is a need to develop culturally responsive and linguistically sensitive teachers (Commins & Miramontes, 2006; Jeménez & Rose, 2010; Lucas & Villegas, 2013), in order to facilitate emerging bilingual students’ academic success; 2) previous research is limited on how teachers developed knowledge and skills in order to integrate language and content instruction for ESL students; 3) studies that recognize the importance of linguistic sensitivity in teacher professional development are extremely limited in their scope and do not cover school subject content areas; and, 4) few studies connect teacher professional development effort to its impact on student performance. This study, addresses the gaps in both
research and practice in CLD teacher education, examines how professional development of teachers that emphasizes culturally responsiveness and linguistic sensitivity particularly for academic language/literacy, can make an impact on (a) teachers’ sense of self-efficacy, (b) their classroom practice, and (c) student academic writing performance in schools. Advocating for pedagogy with integrated content and language instruction, the study examined a variety of content areas—including math, science, and social studies instruction—where teachers typically do not see students’ language development as their responsibility.

Among the efforts to make connections between language and content from Halliday’s functional view are register theory (Halliday, et al., 1964), genre analysis (Martin, 1992), and the Knowledge Framework (KF) (Mohan, 1986 & 2001). For our PD project, we have chosen Mohan’s Knowledge Framework to guide teachers’ planning since it has been successfully used to help classroom teachers organize instruction that leads to a wide range of form-meaning connections (Early, 1991; Huang, 2000; Tang, 2001). The Knowledge Framework, which takes a SFL approach as the basis for analyzing language related activities, serves both as a theoretical foundation for systematic integration of language and content as well as a practical guide to academic task analysis, instructional design, and assessment implementation. Approaching the analysis of content topics from the perspective of “knowledge structures” (Abelson & Black, 1986, p.1), the Knowledge Framework provides a vehicle for reflecting upon the relations between the language used and the knowledge activated. Used as a guide for instructional planning, it helps teachers categorize a content topic in six core knowledge structures (KSSs): classification, description, principles, sequence, evaluation, and choice. Each Knowledge Structure (KS) has its own linguistic features and involves particular thinking processes. For example, when one engages in an activity of a certain KS in a certain context (like categorizing different types of trees) particular linguistic features associated with that KS are used: vocabulary in relation to types of trees (deciduous, coniferous), syntactic structures signaling taxonomic or part-whole relations (Y is a type of …), and discourse devices that connect sentences together to make the whole text—oral or written—coherent in expressing the content meaning of how trees are categorized. Additionally, organizing structures relevant to the thinking processes associated with a content topic are likely to be used (e.g., classifying, categorizing, defining, etc.). Thus, the Knowledge Framework (KF) helps teachers identify linkages between specific aspects of content and specific language features at the word, sentence, and discourse levels, while at the same time providing opportunities for various levels of cognitive engagement.

**Methodology**

The imperative for this study came from a state adoption of, and mandate to implement, the 2012 WIDA—World-class Instructional Design and Assessment—Standards (WIDA 2007, 2012), which are informed by Halliday’s (1976, 1994) functional approach to language and literacy development. Local school districts expressed a need for teachers working with ELLs to further develop their CLD instructional practices. A theory-driven development program was designed to meet the districts’ and teachers’ needs, and a grant was provided by the state. The program included coursework with a functional linguistic perspective that provides the most theoretically convincing argument for effective integration of language/literacy and content in the classroom setting. A cohort of teachers was provided two college courses of second
language (L2) developmental methods and assessment. The teachers were also provided with on-site mentoring by a university professor.

**Setting and Participants**

Twenty three K-12 teachers, with teaching experience ranging from 1-12 years, from one urban and three rural school districts took part in this study. There were 13 elementary level (K-6) teachers and 10 secondary level (7-12) teachers. The content areas taught by these teachers included: math, science, social studies, language arts, visual arts, computing/technology, family and consumer sciences, theatre/drama, health, music, special education (elementary, math and literacy), world languages, pull-out ESL, and other subjects.

The university professors, and authors of this paper, were also the researchers. We were assisted by graduate students in teacher education and statistics at different points in the project. The courses taken by teachers were specifically designed for the needs of the districts that took part in the professional development; however, the courses covered much of the material in the regular CLD graduate program. Teachers entering the program could apply the coursework toward a Master’s degree in CLD Education if desired.

**Data Collection and Analysis**

Data were collected in a variety of forms throughout 2012 to 2013. Pre- and post-surveys to capture teachers’ change in knowledge and perceptions; mid-project semi-structured interviews for in-depth understanding of teachers’ change in attitudes and behavior; instructional planning at different project stages to reveal progress in instructional planning; classroom observations at different stages to examine impact on teachers’ instructional behavior, and K-12 student writing samples produced at different project stages to provide evidence of the impact of the project on student performance.

**Pre-survey and interview**

When teachers signed up for the professional development program they were given a pre-survey to determine demographics, teaching assignments, and perceptions on their pedagogical practices. This survey information was collected and analyzed with Qualtrics, a web-based survey tool. At the end of the second L2 course, teachers were interviewed using a protocol that asked them to look back at their responses on the pre-survey and discuss their perceptions after the initial two classes. Five of the questions focused on their changing perceptions about input, output, preparedness, teaching to various language proficiency levels, and the WIDA linguistic features of vocabulary, sentence, and discourse. Three other questions related to what they would consider before teaching their content that they would not have considered prior to the course work, what differences if any they expected to emerge in their classroom, and their confidence level for implementing lessons designed in the courses. Semantic units in responses were analyzed using a constant comparative method (Strauss & Corbin, 1988), adjusting categories and subcategories as necessary with the examination of each piece of additional data.
Instructional plans

When teachers entered the program they were asked to submit as baseline data a lesson plan they usually used. In the first course, the teachers were required to design two lesson plans for a content area (other than Language Arts, if an elementary teacher) that included outcomes for oral language production and written language production among other elements. This assignment was given with a rubric that provided questions to have teachers consider the course work they had been doing. Teachers were encouraged to create their lessons based on their current curriculum. They were also required to design an entire unit using the Knowledge Framework (Mohan, 1986) to identify the content to be learned and the associated language functions to be realized through the use of specific linguistic resources. Such instructional design pushes teachers to consider how the desired thinking related to specific content learning could be realized linguistically. The baseline, lesson plans, and unit design were all analyzed using pre-designed rubrics with rating scales that were analyzed through paired t-tests.

Classroom observations

All teachers were observed at least twice during the period of the initial two courses: The baseline data was taken within the first three weeks of entering the program, and the second observation took place toward the end or after the first L2 course. A pre-designed rating scale from highly evident (4) to not evident (0) based on the SIOP Protocol (Echevarria, Vogt, & Short, 2007) with additional elements of the 2012 WIDA standards was filled out at each observation. The completed protocol was analyzed using a paired t-test.

Student writing samples

Data in the form of writing samples from students was limited to the classes of teachers who taught the same subject and grade for two consecutive semesters. Six teachers instructing in subjects other than language arts submitted both a baseline student sample set and a second sample set. As a result, a total of 205 writing samples were collected from the students of six teachers teaching math or science in kindergarten to high school settings.

To measure the level of improvement in student writing, a rubric highlighting elements such as ideational content expressed and use content specific language (as shown in Table 4) was developed based on the Features of Academic Language in the 2012 version of WIDA Standards (see Appendix A). This rubric, having good reliability in regards to this project’s sample population with a Cronbach alpha of.927, uses a Likert-like scale of 5 (clear and/or detailed requirements/feedback was given to the student) to 1 (no requirements or feedback was given to the student). For students’ writing samples, text analysis was conducted using a systemic functional linguistic lens, paying special attention to ideational meaning, i.e., “meaning in the sense of content” (Halliday, 1985, p. 101), as conveyed by semantic relations expressed in writing and linguistic resources used in the form of lexicon, syntactical structures, and discourse features for meaning construction. Appendix A shows the WIDA definition of features of academic language, which “operates within a sociocultural context for language use” (WIDA 2012). These definitions serve as our guide for linguistic analysis of the collected writing samples. Specifically, an approach similar to knowledge structure analysis (Huang & Morgan,
2003; Mohan & Huang, 2002) was adopted as shown in the following steps for each writing sample analysis:

- Identify the topic of the writing (to see if it is as required);
- Identify the language function realized in the writing (i.e., compare/contrast, describe, explain, etc.);
- Identify semantic relations realized in writing and rate the richness of the expressed content;
- Rate the use of vocabulary, sentence, and discourse (as defined by WIDA) for appropriateness of grade level and the topic in the designated content area.

**Findings and Discussion**

**Teachers’ Self-Efficacy**

The analysis of the survey data focuses on the participants’ demonstrated improvement in self-efficacy in regards to their ability to effectively teach academic language. As shown by Table 1, the 20 participants that completed both surveys demonstrated a statistically significant increase in their sense of self-efficacy in regards to (a) teaching academic language, (b) teaching academic language for students to express their learning of content knowledge, and (c) differentiating instruction for students at different levels of English language proficiency.

**Table 1. Quantitative Comparison for Surveys: Cronbach Alpha: .605; Sample Size: 20**

<table>
<thead>
<tr>
<th>Questions</th>
<th>t-test</th>
<th>P-value</th>
<th>df</th>
<th>Significant?</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) How capable do you feel to teach academic language for students to learn content area knowledge?</td>
<td>3.040</td>
<td>.007</td>
<td>19</td>
<td>Yes</td>
</tr>
<tr>
<td>(b) How capable do you feel to teach academic language for students to express their learning of content knowledge?</td>
<td>3.901</td>
<td>.001</td>
<td>19</td>
<td>Yes</td>
</tr>
<tr>
<td>(c) Do you feel confident in differentiating instruction for ELLs at different levels of English language proficiency?</td>
<td>4.856</td>
<td>.0001</td>
<td>19</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Comparing the pre-survey data with teachers’ responses in the interviews, we noticed increased attention to students’ language development. This attention to language reflects a functional perspective that views language as content specific and a resource for meaning making that goes beyond vocabulary to recognize the importance of targeting the level of discourse in their instruction, attention to teaching language/literacy skills entails recognition of the disciplinary context in which language/literacy skills are used and the language features at the discourse level beyond the sentence; for example, a paragraph that compares or describes, or a listing of steps bulleted within a sequencing text. Math and language arts were content areas
strongly represented by teachers in the study (32% and 61%, respectively). Comments from the teachers demonstrate the increased understanding of discourse and the need to explicitly teach it.

For instance:

_You need to come up with the language and teach the students how to address--the language of math, the discourse level. So, in designing my math lessons, I will definitely think about that, how to highlight the language of math at the discourse level in addition to vocab...and just that it's the way the sentences are structured too._ (Collette)

This attention to language in their instruction, in order to realize the desired articulation of content knowledge, occurred more than any other theme in the interview data (19 occurrences/16 teachers).

Linguistic sensitivity for students at various points in the language learning, and cultural adaptation, is another theme emerging in relation to differentiated instruction. Most of the teachers had learned about differentiated instruction as an effective way to help students with special needs. Unfortunately, when it comes to ELLs, and without an understanding of second language acquisition and language proficiency, teachers may discredit the role of language and its impact on students’ academic performance (de Jong & Harper, 2005), and tend to identify causes of students’ academic struggles as related to learning, developmental, or emotional difficulties (Cheatham, Jimenez-Silva, Wodrich, & Kasai, 2014). In our study, the teaching of contextualized second language acquisition and language proficiencies seems to have encouraged teachers to consider differentiated instruction that targeted students’ linguistic needs in the context of specific content areas and grade levels. The teachers began to view language diversity not only as a variety of different mother tongues, but also as variations of students’ English proficiency levels by content and grade level. This new understanding of language diversity seems to have led the teachers to view variations of language proficiency as a need for differentiated instruction.

In teachers’ responses at interviews, the recognition of different proficiency levels and planning for them was often coupled with an increased sense of responsibility:

_You know what, really truly? This sounds terrible, but I never considered the levels of those kids. And, I think, now, I’m going to look at those kids and what can I do as the classroom teacher. What can I do to help you have success in my room that falls back on me. So, I’m going to look at their levels and then I’m also going to look at what I can do, instead of pawning it off on someone else and having someone else do my job._ (Katy)

The above comment illustrates Katy’s growth from no consideration for students’ linguistic needs to taking ownership of her classroom and the recognition of the success she can foster with her students by attending to the contextualized linguistic needs of students at different language proficiency levels.

The interview data also reveals teachers’ perceptions of change in their instructional practices. Jenny’s comments demonstrate a double focus on ownership, or engagement, and its connections to language output in the content area—in this case, language arts/journalism:
Lately, it’s been student engagement...I’m trying very deliberately to make sure that I am holding students accountable to those objectives and finding ways to assess them on it. And, while I’m still struggling to find out how that works, it’s been interesting to see the kids’ reaction to them. So, in some cases, I see kids using more of the vocabulary. Like a kid came in class today and said, “Oh, are we still discussing media?” Instead of asking “Are we doing the TV thing?”

Though the comment on students’ use of language is still limited to content specific vocabulary, the teacher seemed to have realized the importance of focusing on student output in language use as a way to assess learning and “hold students accountable” to the learning objectives.

**Instructional planning**

The measurement tool as shown in Appendix B was used to examine the instructional planning data. The analysis reveals the impact of the professional development on teachers’ instructional planning. To evaluate the participants’ ability to produce a lesson plan that includes objectives and outcome measures for content and language usage, teachers submitted a copy of their lesson plans prior to attending this program, after completing the first CLD program methods course, and again after completing the second methods course in our program. Findings as shown by Table 2 reveal that the teachers demonstrated statistically significant improvement in their ability to effectively develop a lesson plan that includes outcome objectives for content and language.

**Table 2. Findings: Instructional Planning**

<table>
<thead>
<tr>
<th>Overall Results by Evaluation Guide</th>
<th>Baseline Lesson Plan</th>
<th>Planning for Integration</th>
<th>Unit Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample Size</td>
<td>23</td>
<td>23</td>
<td>23</td>
</tr>
<tr>
<td>Cronbach Alpha</td>
<td>.783</td>
<td>.676</td>
<td>.741</td>
</tr>
<tr>
<td>Grand Mean</td>
<td>1.76</td>
<td>3.28</td>
<td>3.04</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.56216</td>
<td>.44587</td>
<td>.57583</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Overall Mean Score Differences by Evaluation Guide</th>
<th>Baseline Lesson Plan – Integrated Lesson Plans</th>
<th>Integrated Lesson Plans – Unit Design</th>
<th>Baseline Lesson Plan – Unit Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Difference</td>
<td>-1.52</td>
<td>.239</td>
<td>-1.28</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>.68221</td>
<td>.61919</td>
<td>.84797</td>
</tr>
<tr>
<td>t-test value</td>
<td>10.698</td>
<td>1.852</td>
<td>7.254</td>
</tr>
<tr>
<td>df</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Significance (2-tailed)</td>
<td>p &lt; .0001</td>
<td>p = .077</td>
<td>p &lt; .0001</td>
</tr>
<tr>
<td>Comment</td>
<td>Significant</td>
<td>Not significant</td>
<td>Significant</td>
</tr>
</tbody>
</table>

The change in instructional planning from the baseline lesson to the integrated lesson at mid-point and the baseline to the unit lesson are both statistically significant, \( t(22)=10.698, \)
p<.001 and \( t(22)=7.254,\) p<.001 respectively. However, a significant change does not occur between the mid-point integrated lesson and the final unit plan. The Cronbach Alpha of .676 on the mid-point measurement would indicate that the growth from the baseline to the unit design is the more reliable measure. The teachers did in fact improve their ability to plan for linguistically diverse students over the professional development period.

When teachers began the PD, the baseline lesson plans often showed a focus on writing in isolation from ideational content. Neither the objectives nor the activities provided concrete guidance for desired student output. However, the lesson plans produced later revealed a much clearer focus on content related language development that not only tentatively addressed students’ proficiency levels, but also embraced explicit linguistic features desired for student use. Though there was still confusion in the use of jargon (such as language functions), the increased attention to content specific language development was evident.

**Instructional Practice**

The analysis of classroom observation data connects the professional development project to changes in teachers’ instructional practice. Three classroom observations were conducted with 24 teachers. Table 3 shows the mean scores between the baseline and final classroom observations. The change in the grand means was statistically significant, \( t(22)=4.717,\) p <.0001, demonstrating that the teachers improved their ability to provide explicit instruction to their students on how to use the linguistic features for the expression of content knowledge.

<table>
<thead>
<tr>
<th>Cronbach Alpha</th>
<th>Area of Focus</th>
<th>Baseline Mean</th>
<th>Final Observation Mean</th>
<th>p-value (alpha = .10)</th>
</tr>
</thead>
<tbody>
<tr>
<td>.975</td>
<td>Grand Mean</td>
<td>2.08</td>
<td>2.90</td>
<td>p&lt;.0001</td>
</tr>
<tr>
<td>.814</td>
<td>Preparation</td>
<td>2.01</td>
<td>2.90</td>
<td>p=.005</td>
</tr>
<tr>
<td>.891</td>
<td>Implementation</td>
<td>2.42</td>
<td>3.53</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td>.873</td>
<td>Prior Knowledge and Background</td>
<td>2.64</td>
<td>3.60</td>
<td>p&lt;.001</td>
</tr>
<tr>
<td>.836</td>
<td>Comprehensible Input and Pushed Output</td>
<td>2.65</td>
<td>3.68</td>
<td>p&lt;.01</td>
</tr>
<tr>
<td>.965</td>
<td>Strategies and Activities</td>
<td>1.99</td>
<td>3.31</td>
<td>p&lt;.0001</td>
</tr>
<tr>
<td>.887</td>
<td>Review/Assessment</td>
<td>2.46</td>
<td>3.70</td>
<td>p&lt;.0001</td>
</tr>
</tbody>
</table>

The focus areas of our observations—Prior Knowledge and Background, Comprehensible Input and Pushed Output, Strategies and Activities, and Review/Assessment—show increases across the board. In each of the four areas, these increases are statistically significant. The results illustrate that not only did teachers’ perceptions and planning skills improve, but so did their instructional practice in the classrooms. The improvement in the use of strategies and activities, in particular, demonstrates that the teachers became capable of providing greater support for language and thinking in connection to the content and language objectives, \( t(22)=4.71,\) p<.0001. This strengthened alignment illustrates that the teachers could implement what
they had learned in the course in terms of theory and their application of it. In conferencing with teachers after observations, many of them expressed a greater sense of empowerment with the ability to make connections back to the objectives. In the urban school district teachers had been using SIOP-inspired content and language objectives, but as one math teacher said, “I’d just write ‘em up on the board and didn’t really know what to do with them. But now I know how to really use them” (Sofie).

While the PD made a positive impact on changes in teacher efficacy and instructional practices, data analysis also revealed nuances that simple statistical analysis would not be able to address. For more in-depth and comprehensive study analyzing the changes and challenges facing the teachers in knowledge acquisition and classroom practice, please see Berg and Huang’s study (2015).

Impact on Student Performance – Content Specific Writing

To examine the change in students’ content specific writing, we focus on both ideational meaning expression in terms of richness and the use of language in terms of sophistication. We start with a comparison of students’ use of language in the forms of words, sentence, and discourse.

Pamela is a fourth grade math teacher. For the baseline writing sample, on the topic of Equivalent Fraction Rule, her students were provided with a scenario with a fictive student, Margot, who solved a problem incorrectly. The writing requirement is to “explain or show Margo that she is wrong”. The teacher uses a generic rubric as shown in Appendix C to guide the students writing. From this rubric, it is very difficult to gain a sense of the topic-specific linguistic features expected of the students. It is through reading the teacher’s feedback that we come to realize that the teacher expected students to use the following words in their writing: fraction, add, multiply, numerator, denominator. The following are two typical examples of what the students produced:

Baseline Writing Sample 1
Margot is wrong because she did plus not multiplying.

Baseline Writing Sample 2:
Margo got it wrong because if you times the numerator by two you get 2 and if you times the denominator by two it sill equall 8. So the right answer would be 2/8. So Margo got a half not a fourth. (Aliyah)

As shown in these examples, the students used one or three of the required mathematical terms as shown by the underlined word. Sample 1 contains one sentence consisting of two clauses with one conjunction “because” indicating reasoning. Sample 2 contains three sentences consisting of seven clauses with one conjunction “so” indicating reasoning.

For the exit writing samples, students were given a problem on the topic of Multiplying Decimals. This time, the teacher provided not only the generic rubric as shown in Appendix C but also a Math Language Writing Rubric (see Appendix D). In addition, the teacher provided
students with a list of topic related specific linguistic features in the form of vocabulary, sentence structures, and the discourse expected of learners at different language proficiency levels. The following is an example typical of what Pamela’s students produced at exit:

First I looked at 2.9, and realized it was closest to 3. Then I estimated by multiplying 3 x 5 = 15. Then I took out the decimal and multiplied 29 x 5 = 145. Then I put the decimal back in according to what was closest to my estimate which was 14.5. Therefore, 2.9 x 5 = 14.5.

In this example, the student used three required vocabulary terms multiple times in five sentences consisting of 13 clauses. In addition, two types of conjunctions were used (a) sequential such as “first”, “then”, and (b) causal such as “because”. A comparison of Pamela’s students’ baseline and exit writing shows that in the exit writing, students tended to use more required vocabulary. In fact, 70.59% of the students used 3 to 6 required vocabulary words in the exit writing while only 31.82% of students did the same in the baseline data. Change in linguistic sophistication in the form of amount and density of the text is demonstrated by an increased number of clauses used in each text. In the baseline writing, 22.73% of the students produced texts that contained more than five clauses, including only one text (4.55%) with 10 clauses. In the exit writing, 88.24% of students produced texts that contain more than five clauses including 47.06% of texts that contain 10 to 21 clauses.

Enriched content is also demonstrated by students’ use of discourse features conveying more semantic relations in the exit writing. While the baseline writing mainly shows the use of “because” to indicate reasoning, the exit writing utilizes more linguistic choices in the form of both conjunctions and phrases to indicate sequence such as “first”, “second”, “then”, “to start with”, etc. In addition, conjunctions and lexicon are also used to reason or to justify:

1. ... so my answer should be near that” (Kness)
2. I added ... because... (Fliana)
3. If I moved ... so my answer is ..., that is not reasonable to my estimate... So... (Cadenee)
4. Therefore, the answer is... (Emma, etc).
5. So I knew ... (Abby)

The use of an increased number of clauses may not necessarily come from increased number of sentences in the exit writing. Very often, it is the use of complex sentences that increases the number of clauses:

6. The number closest to 15 was 10.45 which is the answer. (Kalab)
7. I looked at my estimate which was 15 and placed the decimal between the 4 and 5 (Zack)
8. Then I put the decimal back in according to what was closest to my estimate which was 14.5 (Will)
9. I made 15 into a decimal and put the decimal after the 5 in 15 which made 15.00 (Mckinnely)

From the six cases, a total of 114 baseline and 91 exit writing samples from six teachers were conducted. Table 4 summarizes the result of our written discourse analysis of all the writing samples collected by the six teachers. Due to the limited data samples, statistical analysis for
significance was not conducted, but the result is encouraging. As shown by Table 4, aggregated data of students’ writing showed a tendency for improvement in their content specific writing. Though students’ writing from one teacher shows a decrease in writing performance, the general trend is encouraging. Deeper analysis of each teacher’s situation was presented in a different study (Huang, Berg, & Damsri, 2014).

Table 4. Summary of Writing Sample Analysis: Aggregated

<table>
<thead>
<tr>
<th>Components</th>
<th>Details</th>
<th>6 teachers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Base</td>
</tr>
<tr>
<td>Ideational content expressed</td>
<td>Content related to the content area</td>
<td>24.37</td>
</tr>
<tr>
<td></td>
<td>Content related to the topic</td>
<td>18.52</td>
</tr>
<tr>
<td></td>
<td>Semantic relations expressed as required by</td>
<td>12.69</td>
</tr>
<tr>
<td></td>
<td>the topic</td>
<td></td>
</tr>
<tr>
<td>Use of content specific language</td>
<td>Vocabulary Usage (Specificity of word or</td>
<td></td>
</tr>
<tr>
<td></td>
<td>phrase choice</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• General, specific, and technical language</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Multiple meanings of words and phrases</td>
<td>13.14</td>
</tr>
<tr>
<td></td>
<td>• Formulaic and idiomatic expressions</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Nuances and shades of meaning</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Collocations</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Language Forms and Conventions (Types, array,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>and use of language structures):</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Types and variety of grammatical structures</td>
<td>12.78</td>
</tr>
<tr>
<td></td>
<td>• Conventions, mechanics, and fluency</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Match of language forms to purpose/perspective</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Linguistic Complexity:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Amount of speech/written text</td>
<td>11.86</td>
</tr>
<tr>
<td></td>
<td>• Structure of speech/written text</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Density of speech/written text</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Organization and cohesion of ideas</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Variety of sentence types</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion**

Research shows that the simultaneous learning of language and content requires teacher knowledge and development across three areas: (a) understanding of how language works in content, (b) planning for it across a unit, and (c) supporting students’ linguistic engagement in classroom activities (Schleppegrell & O’Hallaron, 2011). Our study drew upon a comprehensive set of data gathered through: (a) teacher pre/post surveys and interviews; (b) instructional plans at the beginning and end of the PD; (c) classroom observations of the teachers; and (d) student writing samples from teachers in the program. Analysis of this data, using paired t-tests, the SIOP observation protocol, and discourse analysis applying a systemic functional lens, has demonstrated how a systemic functional approach to PD can engage teachers in growth across all...
three aspects. Specifically, the study documents that an increase in linguistic sensitivity led to an increase in recognition for the different language levels associated to content areas, and the essential need for culturally responsive instruction (Cartledge & Kourea, 2008; Garcia & Ortiz, 2006). Moreover, the teachers’ increased linguistic sensitivity was reflected in their design of instruction that in turn supported students’ linguistic engagement in the process of content learning. Ultimately, instructional planning focusing on integrated content and language instruction made an impact on teachers’ classroom practice and ability to purposefully instruct for content specific language/literacy.

This study is not without limitations and thus points to directions for further research. For instance, the grant that supported this research was distributed in such a way that we were unable to compare individual student school performance over an academic year. We were limited to two and a half years for most participating teachers when collecting data, thus the writing samples, though from the students of the same teachers teaching the same content and grade level, may be tainted by such factors as the different semesters. Comparative studies following the same teachers with the same students would help to focus on the relevant variables when interpreting data across an academic year. Also, while the study managed to connect increase teachers’ sense of self-efficacy to instructional planning, and classroom teaching to their students’ growth in content specific writing, the lessons that led to the collected writing samples were not observed. Thus, it is difficult to determine with precision what specific instructional practice leads to the kind of writing desired. A focused study, following a small number of teachers from PD through changed classroom instruction to the resulting student performance, is needed. Finally, while an increase in teachers’ linguistic sensitivity in both planning and instruction is evident, the rubrics that teachers’ tended to use for the writing samples tend to generic in their use of linguistic resources. If students had missed the instruction on the target language for the assignment, they would have difficulty recovering the intended outcome whether on the vocabulary, sentence, or discourse level. Finally, how to help the teachers better connect the assessment tool, particularly rubrics, to established learner outcomes for student language use remains a challenge for both teachers and researchers.

However, given the constraints imposed by time and the wealth of data analyzed, we consider the general trend to be very encouraging. The findings provide evidence indicating that a functional approach to teacher development does make a positive impact not only on the development of teachers’ knowledge and skills, but also on students’ performance in linguistically diverse classrooms. This study is one of the few that has managed to connect in-service teacher development to students’ use of academic language; thus, contributing greater insights into the impact of teacher development on student performance. The functional linguistic perspective provided us with an analytical tool to examine student writing in an intricate way that explicitly connects discipline specific content and linguistic features for demonstrating that content. Ultimately, through the empirical evidence presented, the study strengthens the argument for incorporating linguistic knowledge into all teacher PD programs.
REFERENCES


APPENDIX A. The Features of Academic Language in WIDA Standards

<table>
<thead>
<tr>
<th>Performance Criteria</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Discourse Level</strong></td>
<td><strong>Linguistic Complexity</strong></td>
</tr>
<tr>
<td>(Quantity and variety of oral and written text)</td>
<td><strong>Language Forms and Conventions</strong></td>
</tr>
<tr>
<td><strong>Sentence Level</strong></td>
<td>(Types, array, and use of language structures)</td>
</tr>
<tr>
<td><strong>Word/Phrase Level</strong></td>
<td>(Specificity of word or phrase choice)</td>
</tr>
</tbody>
</table>
**APPENDIX B. Tool for Analysis of Instructional Planning**

Areas of focus:  

<table>
<thead>
<tr>
<th>Highly Evident</th>
<th>Somewhat Evident</th>
<th>Not Evident</th>
</tr>
</thead>
</table>

1. Content objectives/outcomes matched to the academic content standards adopted by the school district and clearly defined, displayed, and reviewed with students.

2. Language objectives/outcomes phrased to require language function(s), explicitly relate to the established content objectives (content stem), and articulate instructional support for the language function to be realized by students;

3. For identified ELLs, language objectives/outcomes requiring specific linguistic features to be used by student at the levels of discourse, sentence, and word/phrase clearly displayed and reviewed with students.

4. Instructional materials selected, adapted, and used to facilitate student learning of the defined content and language objectives (e.g., texts, graphic organizers, visual, etc.)

5. Adaptation of instructional activities (text reading, assignments, etc.) to all levels of proficiency.

6. Meaningful activities that engage students in demonstrating defined content outcomes and using the required language features (in speaking, listening, reading, or writing) to realize the defined language outcomes.

*Comment:*
APPENDIX C. Rubric provided by the teacher for Baseline 1 writing

Math SCR Rubric

4 Points
The response accomplishes the prompted purpose and effectively communicates the student’s mathematical understanding using accurate and appropriate vocabulary. The student’s strategy and execution meet the content (including concepts, technique, representations, and connections)

3 Points
The response provides adequate evidence of the learning and strategic tools necessary to complete the prompted purpose. It may contain overlooked issues or misleading assumptions.

2 Points
The response partially completes the task, but lacks adequate evidence of the learning and strategic tools that are needed to accomplish the prompted purpose.

1 Point
The response demonstrates some evidence of mathematical knowledge that is appropriate to the intent of the prompted purpose. An effort was made to accomplish the task, but with little success.

0 Points
The response lacks any evidence of mathematical knowledge that is appropriate to the intent of the task.
APPENDIX D. Rubric provided by the teacher for Exit Language Writing

Math SCR – Content Rubric
Math SCR – Language Writing Rubric

4 Points
The written response contains key vocabulary that is grade appropriate and accurate using
the specific vocabulary: **estimate**, **multiply** and variations of the base word, **decimal**, **decimal
point**, **algorithm** or names of specific algorithms like **lattice** or **partial products**. The sentence
structure is 4th grade appropriate and the discourse is logical and explicit.

3 Points
The written response contains key vocabulary that is accurate and specific. Specific
vocabulary would include: **estimate**, **multiply** and variations of the base word, and **decimal**. The sentence
structure and discourse is 4th grade appropriate. A few errors may be present, but it does not impede meaning.

2 Points
The written response contains some key vocabulary. Some of the vocabulary is accurate,
but less academic. For example, the use of “**times**” instead of “**multiply**”. The sentence
structure and discourse is falter and may impede meaning.

1 Point
The written response uses generic vocabulary with an occasional use of key vocabulary.
Meaning is impeded due to improper sentence structure.

0 Points
Illegible or no effort present.
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INTERNATIONAL-LOCAL TEACHER EDUCATION NETWORKING FOR KNOWLEDGE BUILDING INNOVATION

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ABSTRACT

Collaborative innovation networks “are the most productive engines of innovation ever” according to Swarm Creativity author Peter Gloor. We guess he is right: Knowledge Building teams operate in this mode and are demonstrating advances that are newsworthy on several fronts: the refocusing of education as a knowledge creating enterprise; the development of professional networks that believe that complex educational change take a decade; the concerted effort to bring innovations and innovators together; and technology that enables self-organization around idea improvement, in-and out-of-school.
INTERNATIONAL-LOCAL TEACHER EDUCATION NETWORKING FOR KNOWLEDGE BUILDING INNOVATION

Over the past few decades, societies have transitioned from being industrialized and existing in isolation to being globally-entwined and based in knowledge. Methodologies are needed in diverse settings for business, government and education that promote self-motivated people with a collective vision enabled by technology to collaborate in achieving a common goal by sharing ideas, information and work. The most effective methodologies are those utilized in a Collaborative Learning Network, a learning environment or community where members can share knowledge and practice to benefit reciprocally from personal mastery and the collective knowledge accumulation of the group. Knowledge Building constitutes the bedrock of a Collaborative Learning Network in education, particularly in primary and secondary education where students acquire critical skills needed to achieve academic success.

Knowledge Building is manifested in different types of classroom-based, as well as out-of-school learning environments, primarily in student engagement, where content is contextualized and a curriculum is based in phenomenon learning, or "teaching by topic". It incorporates technology with methodologies that allow learners to interact with the content of classroom instruction in a deep and thoughtful manner through an interdisciplinary approach. In a knowledge-building class, educators – teachers, principals and technology staff – can become coaches and facilitators of learning rather than simply deliverers of pre-determined content. With Knowledge Building, students and teachers alike are co-learning, gaining knowledge from the experiences of others to achieve their learning objectives around the production and continual improvement of ideas. Knowledge-building classrooms create opportunities for students to acquire 21st Century skills that support real-world problem-solving, related to so-called STEM skills, particularly analytical skills and the scientific method. We refer to these skills as the “4Cs of Future Education” – Critical thinking • Collaboration • Communication • Creativity - that will prepare students for success throughout the education continuum. These skills will also contribute to their preparation as engaged citizens and as productive workers in an era of volatile economies with surging unemployment and under-employment, particularly among young adults, and a rapidly changing, globalized labor market.

The 4Cs of Future Education – Critical Thinking, Collaboration, Communication and Creativity

The 4Cs of Future Education are integral to Knowledge Building, which also supports deep learning through which students will develop a set of competencies to master the subject matters of their curriculum and instruction. They are able to understand academic content and apply their knowledge to problem-solving by engaging the 4Cs: thinking critically, working collaboratively, communicating effectively in the classroom, and applying creativity to come up with innovative solutions to the problems of the world. After all, the ability to imagine, create or discover should
not fade as a person grows; rather it should be nurtured and strengthened before students are crippled by the norms of an industrial-era education system that is currently mainstream for learning and teaching. With the 4Cs, students will also develop academic mindsets for the classroom as well as for the job later in life. The 4Cs prepare students to achieve at high levels and gain mastery of core academic content, whether in traditional subjects or in interdisciplinary fields that merge several key fields of study. It is here that knowledge-building pedagogy and methodologies are most effective, giving the students tools to ask the right question of effective learning.

In basing learning on knowledge-building principles, developed and researched over a period of over 25 years by an international network of educators and researchers, we took cues from several education systems in countries consistently at the top of international rankings of learning assessments such as PISA (Program for International Student Assessment) regarding reading, mathematics, and science literacy. We found that they had built high-quality pathways to learning for their children in primary and secondary education by rethinking teaching and learning. They had drastically changed their education methods to introduce a curriculum of subject-specific lessons in core subjects such as Geography, History, Math, Economics, Biology, Earth Sciences that are transformed to multi-disciplinary studies through project-based learning, aligning them to accountability standards. This is the phenomenon learning, or teaching by topics, of a knowledge-building classroom where pedagogy, technology and methodologies come together to support student growth.

These models also reimagine learning, where the format of the traditional, more passive approach to learning is replaced by a more collaborative method of learning. Instead of sitting and listening to the teacher standing in the front of the classroom, students are encouraged to work together to discuss and solve problems in a collaborative small-group learning environment. Knowledge-building pedagogy mimics those high-quality education systems by supporting the following elements:

* Computer-supported collaborative learning around topics through the use of education technology developed specifically to support the highly-researched principles of knowledge-building pedagogy;
* Bringing education technology into the classroom and utilizing embedded assessment tools to track student growth and conduct formative and summative assessments in real time;
* Partnering classrooms world-wide to build relationships between students and between educators, including teachers, principals and technology staff;
* Teacher training in the use of education technology developed to support collaborative learning around topics through a multi-disciplinary approach while promoting proficiency in information and communication technologies and UNESCO’s Information and Communication Technologies (ICT) Competency Framework for Teaching (CFT).
Knowledge Building becomes an effective tool toward achieving the goals and objectives of UNESCO's ICT CFT, which is arranged in three successive stages of a teacher’s development:

- Technology Literacy enables teachers to acquire competencies to incorporate technology, learning materials, and ICT equipment to inspire student motivation to use ICTs in order to learn more efficiently. Teachers need to be equipped to help their students become tomorrow’s knowledge worker. To address this challenge, UNESCO has created, in partnership with industry leaders and global subject experts, an international benchmark which sets out the competencies required to teach effectively with ICTs.

- Knowledge Deepening enables students to acquire in-depth knowledge of their school subjects and multi-disciplinary approaches to content mastery around topics and apply it to complex, real-world problems.

- Knowledge Creation enables students, citizens and the workforce they become, to create the new knowledge required for more harmonious, fulfilling and prosperous societies.

Knowledge Building in Computer-Supported Collaborative Learning Networks

Methodologies incorporating knowledge-building pedagogy, educational technology, teacher training, and tools for formative and summative assessments of student growth were created specifically to support these approaches to 21st Century education based on the twelve highly-researched principles of knowledge-building theory. Working with Knowledge Building in the classroom, we are able to partner classrooms K-12 learning environments (standard classrooms, after-school programs, alternative learning venues, international baccalaureate coursework, etc.) in places across the globe. It is an effective model to support students acquiring 21st Century skills, particularly the 4Cs of future education.

Through computer-supported collaborative learning incorporating knowledge-building pedagogy, students become self-directed learners, researching the topic being studied and formulating their theories on what could be innovated solutions to the problems associated with the topic. Learning not only becomes relevant but engaging and interesting, primarily because the students are preparing for threats they themselves might come to face or problems impacting their own community. Knowledge Building supports higher-level thinking skills such as metacognition, problem solving, and critical thinking. With Knowledge Building, students retrieve information from their environment and apply it to the educational objectives at hand, transforming information to produce new information. Knowledge–building classrooms function in the same way as scientific communities, where members of small groups are able to formulate theories and utilize scaffolding to arrive at answers and to defend their theories in dialogue with their peers, which encourages learning from a reality-centered point of view around ideas.

Theme-based learning and exploration, coupled with activities based on real issues applicable to everyday life, convert the classroom into living labs, engaging teachers and students alike in personalized, meaningful learning through a methodical, systematic approach. The results: a
multi-disciplinary perspective to improve student growth and academic achievement through deep learning, supporting mastery of core academic content, and building skills critical to academic and professional success in the 21st Century. The use of ICTs and specialized knowledge ware, primarily the Knowledge Forum electronic workspace, support the constructive use of authoritative information in acquiring knowledge around a theme. Students learning in knowledge-building learning environments not only develop competencies and increased literacy skills because they are constantly reading and writing, but also come to see themselves and their work as part of a society-wide effort to advance knowledge frontiers. They are able to create new knowledge from the workings of the group for applications for a global community. When students work collaboratively on revolving their studies and research around a common theme, they are able to apply the “act locally/think globally” philosophy to turn local issues into global issues, again taking a multi-disciplinary approach to studying different subject matters. By partnering with other classrooms around the globe, an international exposure is brought to the work students do on building knowledge around problems affecting their community, such as with the example of water, a common theme in the Knowledge Building International Project.
Teachers across the globe can be partnered with their colleagues teaching the same age groups and subject matters in other parts of the world, still focusing on a common topic. In our experience with the Knowledge Building International Project, teachers came from Quebec and Toronto, Canada; Barcelona and Tarragona, Spain; Helsinki, Finland; Bari, Italy; Oslo, Norway; Porto and Lisbon, Portugal; the United States; Bogota, Colombia; Puebla, Mexico; and Hong Kong. They instructed their students in the study of the water topic from both a local perspective as well as a global perspective and a multi-disciplinary, phenomenon-learning approach. Several examples of questions posed by the teachers to their students included: “Why are the fish dying in the St. Lawrence River?” “How did an oil spill in the Gulf of Mexico reach the shores of Finland?” “What type of forests nourished with rainwater provide raw material for the housing boom in China and how does pollution impact the cycle?” “What is happening with global warming and sea levels rising?”

Knowledge Building in the Classroom

With Knowledge Building, we propose a true paradigm shift with a model that reimagines learning, where the format of the traditional, more passive approach to learning is replaced by a more collaborative method of learning. Instead of sitting and listening to the teacher, students are encouraged to work together to discuss and solve problems in a collaborative learning environment, led by the teacher who becomes a facilitator of learning rather than a transmitter of pre-determined content. In this process, students acquire important 21st Century skills they can apply to the study of topics rather than specific core subjects.

Knowledge-building students in small-group learning environments are members of a “knowledge community”, functioning collaboratively in similar fashion to a scientific community of investigation and research. Here, students actively engage in brain-storming ideas, identifying problems, researching for solutions and evidence, debating and engaging in discussion and discourse with their classmates and with their peers. These activities have a clear goal of co-creating new perspectives and advancing knowledge beyond the limit of an individual. A knowledge-building classroom uses networked computers, where a number of students can simultaneously contribute “notes” - theories, working models, plans, evidence, and reference material – to a common database hosted on the platform supported by the Knowledge Forum electronic workspace. The entries in the database, taken collectively, provide process accounts of the contributions of each participant, and accounts of how those different inputs were combined to lead to the collective achievements of the group. Portfolios are simply new views created by an author, a group or a class to highlight different aspects of this work. The evolution of ideas can be studied, through searches and analytic tools. For example, the work that led to a new theory can be analyzed. Additionally, the process of constructing portfolios affords deeper student reflection about their own knowledge and puts self- and peer- assessment into evaluative accounts of student learning. The platform supports knowledge building both in the creation of
these notes and in the ways they are displayed, linked, and made objects of further work. Revisions, elaborations, and reorganizations over time provide a record of group advances, like the accumulation of research advances in a scholarly discipline. When notes (text, graphics, multimedia, videos, etc.) are added to the database, students are able to search existing notes, comment on other students’ notes, or organize notes into more complex structures.

As the database grows, the platform provides a progressive trace of how ideas have evolved in the class, and the database helps to formally show and document the classroom community’s knowledge advancement and help students further advance their ideas. After the teacher identifies certain learning goals, customized scaffolding allows students to frame their thoughts and strive for continual idea improvement around the topic, which then become the objects of discourse within the community. Knowledge Building involves creative, sustained work with ideas where the over-arching objective is to work collaboratively to improve those ideas, thus promoting guided discovery. Students work collaboratively and progressively to understand the problems the class has formulated, and have a responsibility to make their ideas available to the knowledge-building community and to help each other improve the ideas. They formulate problems, develop conjectures and hypotheses, examine alternative explanations, revise theories, and examine others’ ideas in improving collective knowledge. The mechanism for providing feedback from the group discourse consists of customizable scaffolding through which the student progress to ultimately achieve a synthesis, or “rise above”. To promote student reflection as their work progresses and to engage students in going beyond idea diversity to coherence, the teacher will initiate discussions about what are the knowledge advances achieved through the knowledge-building process.

While mainstream schooling focuses on tasks, Knowledge Building focuses on ideas, with dynamics of epistemic agency, idea improvement and the advancement of community knowledge within learning environments that support a culture of inquiry and evidence. Learners take on progressive problem solving, seeking to understand problems and issues at deeper levels rather than memorization techniques. And because they are constantly reading and writing, students gain mastery of the subject being studied and do better in standardized testing. Additionally, students in classrooms where deeper learning is the focus are motivated and challenged. They apply what they have learned in one subject area to newly-encountered situations in another, and they can see how their classwork relates to real life. Deeper learning leads to the acquisition of knowledge and skills students must possess to succeed in 21st century jobs and civic life. At its heart is a set of competencies students must master in order to develop a keen understanding of academic content, able to apply their knowledge to problems in the classroom and later on the job. Moreover, in the computer-supported collaborative learning environments supported by knowledge-building pedagogy, there is lots of peer learning going on, and students can learn better when they learn from each other.
Assessment tools embedded in the Knowledge Forum can be leveraged to support a teacher’s development as an effective educator. Under the status quo of K-12 education around the world, teachers are expected to be content conveyors, following pre-defined curriculum in preparation for accountability tests; utilizing Knowledge Building in the classroom, teachers become effective, creative agents at the complex intersection of navigating academic content and student cognition, thereby helping improve student achievement. Student growth can be assessed on an individual basis or through a universal overview of an entire classroom. Formative assessment techniques supported by the Knowledge Forum identify where students are and then move them toward intended learning goals, making students more accountable for their own learning. Assessment tools embedded in the Knowledge Forum also evaluate students’ thinking and progress toward acquiring knowledge as their classroom work proceeds. Rather than waiting until year-end or completion of a unit of work or study to provide feedback, when it is too late to make adjustments, these assessment tools allow data to be collected and analyzed in real time. Thus, teachers are able to adapt materials to ensure learning objectives are achieved and adjustments can be made on the fly. This constitutes an additional innovation of knowledge-building pedagogy for supporting effective teaching. Java-based applets perform an internal assessment of reading, writing, vocabulary growth and subject mastery, with an important indicator being the growth of vocabulary, and the increasingly important the growth of STEM lexicon.

A Community of Practice for Teachers

Student progress in the types of learning environments supported by Knowledge Building does not happen naturally without facilitation. Teacher intervention is needed to coordinate the small-groups and mediate their interactions. Additionally, acknowledging the role of the teacher in raising a student’s achievement is of utmost importance. A Community of Practice is being designed to provide initial training, ongoing mentoring and support for teachers to serve as leaders, motivators and facilitators of learning while gaining proficiency in the use of technology in the classroom. It also supports the interactions between principals, technology staff and other faculty. An important objective of the teacher training is partnering educators with their peers and colleagues for mentoring. The Community of Practice facilitates virtual interactions, archived material, and an exchange of information as well as ongoing professional development. Educators are partnered with their peers – teachers with teachers, principals with principals, able to communicate on a regular basis through a closed-system videoconferencing service. Students are also able to interact with their peers in partnered classrooms through videoconferencing, as well as working together in the Knowledge Forum electronic workspace on a common topic selected by their teachers.

The activities supported by knowledge-building pedagogy dovetail with the goals of professional development for K-12 teachers: to ensure opportunities that improve the craft of teaching with
tools to do so, while providing data that school systems can use in determining whether students learn more as a result. Such a Community of Practice would also contribute to professional development and training research bases. Here, educators - teachers, principals, tech support and other faculty members - can be trained, use the tools, methodologies and resources, make reference to literature, case studies and best practices, and interact with each other on an ongoing basis.

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