

**The Relationship between Teacher Education and Teachers' Teaching Practices in
Secondary Schools in Belize**

by

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A Thesis Submitted to the
Graduate Faculty in Partial Fulfilment of the
Requirements for the Degree of

MASTER OF EDUCATION

Major: International Workforce Education and Development

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National Taiwan Normal University
Taipei, Taiwan
June, 2009

ACKNOWLEDGMENT

In the process of completing my study, many people participated in my academic experience, and I am greatly indebted to them. First, I give thanks to the Almighty God for giving me the strength and courage to persevere when days seemed discouraging. I would like to express my gratitude to the International Development Cooperation Fund (ICDF) who had provided me with financial support and a great opportunity to further my study at the National Taiwan Normal University. I would like to express my deepest appreciation to Dr. Ted Tsai, my academic and thesis advisor. This study could not have been completed without his guidance and support. I am very grateful to Dr. Sieh-Hwa Lin, who played a great role in assisting me with my quantitative data analysis. Despite his busy schedule, he showed constant willingness and had unselfishly devoted many hours to providing valuable advice and encouragement throughout the process.

I also owe much to my committee members, Dr. Wei-Wen Chang, whose professional recommendations substantially benefited this study. Her insightful comments and warm personality contributed greatly in the earlier formation of my study. Her professional guidance, expertise, and willingness in serving as a member of my committee are matters of profound appreciation. To Dr. Yi-Shyuan Lin, who willingly accepted to serve as my committee member given the short notice, I must extend my gratitude to him.

I am greatly indebted to the principals and vice principals who had granted me the permission without hesitation for my data collection in the different selected high schools in Belize. The participants' time and responses were of immeasurable value.

I express my heartfelt appreciation to the members of my family who have been the greatest support and sources of motivation for me throughout my graduate studies and my life. I further thank my father, Mr. Santiago Makin for being my role model, my inspiration and my teacher. I would like to thank my mother for living the last moment of her life without me by her side which the memories of her served as a drive for me to strive in situation where it seemed very challenging, and to my brothers and my sisters, who have always been there for me and always given me tremendous support. Above all, I am grateful for the support I have received, which helped heighten my spirit during the time I was working on this study.

ABSTRACT

This study examines the relationship between teacher training and teachers' teaching practices in the secondary schools in Belize. It attempts to discover the differences in teaching practices between those teachers who have not been in the teacher training program at the University of Belize. The N=304 were teachers teaching at 20 different high schools. Data was obtained through self-evaluation questionnaire. The One-way ANOVA was used to test the effectiveness, satisfaction level for trained teachers which revealed significant results showing that trained teachers see the effectiveness of the instructional techniques courses in their day-to-day teaching. The teaching practices of the male and female teachers were tested using T-test and showed significance only in the Instructional Material category. The female teachers appeared that they particularly engage students into their lesson. A similar analysis was performed between trained and untrained teachers where no significant differences were found. In respect to the perception of the relationship of experience, attitude, instructional methods, instructional materials and knowledge and skills, the correlation analysis showed that there is a positive and strong relationship except for experience. In addition, the regression analysis conducted on knowledge and skills and teaching practices (instructional methods, instructional materials) showed that acquisition of knowledge and skills can impact these positively. The One-way ANOVA administered on the contextual factors yield that there are significant results on three factors. These results suggested that teachers' perception differ on different issues and appeared to be inconsistent with previous findings. Therefore, more need to be done in providing continuous support for teachers, development of the affective should be emphasized in the curriculum. For teacher practitioners, collaborative work in designing teaching packages and materials should be taken.

Keywords: contextual factors, teaching practices, teacher experiences, teacher education, curriculum studies

TABLE OF CONTENTS

ABSTRACT	I
TABLE OF CONTENTS.....	III
LIST OF FIGURES	V
LIST OF TABLES	VI
CHAPTER I. INTRODUCTION	1
Chapter Overview.....	1
Background of the Study	1
Statement of the Problem.....	4
Purpose of the Study.....	5
Research Questions	6
Significance of the Study.....	6
Delimitations and Limitations.....	7
Definition of Terms	8
CHAPTER II. LITERATURE REVIEW	11
Chapter Overview.....	11
Competences of Teachers	11
Curriculum of the Teacher Education Program	12
Application of Knowledge and Skills acquired in Teacher Education.....	19
Factors that Affect Teaching Practices	21
Differences in Teaching Practices between Trained and Untrained Teachers	24
Relationship of Knowledge/Skills and Teaching Practices	26
CHAPTER III. METHODOLOGY	29
Chapter Overview.....	29
Research Framework	29
Sample	34
Hypotheses	34
Data Collection.....	36
Instrumentation	36
Reliability and Validity.....	37
Data Analysis	37
Research Procedure	38

CHAPTER IV. FINDINGS AND DISCUSSIONS	39
Chapter Overview.....	39
Profile for Respondents	39
Factors that Affect Teaching Practices	50
Relationship between Experience and Knowledge & Skills.....	66
CHAPTER V. CONCLUSIONS AND RECOMMENDATIONS.....	71
Chapter Overview.....	71
Conclusion	71
Recommendations	76
Implications for Future Research	78
Concluding Comment.....	79
REFERENCES	81
APPENDICES	87
APPENDIX A: Request Letter.....	87
APPENDIX B: Questionnaire.....	88
APPENDIX C: Post Hoc for Availability of Facilities	92
APPENDIX D: Post Hoc for Additional Facilities	94
APPENDIX E: Post Hoc for Team Working.....	97

LIST OF FIGURES

Figure 2. 1. <i>Curriculum Framework of Teacher Education of Belize Established Following Bliss' (2004) Framework</i>	14
Figure 3. 1. <i>Research Framework</i>	30
Figure 3. 2. <i>Research Procedures</i>	38

LIST OF TABLES

Table 3. 1. <i>Areas to Measure Competent Teacher</i>	32
Table 4. 1. <i>Frequency for Males and Females Respondents</i>	39
Table 4. 2. <i>Frequency for Teachers' Years of Teaching</i>	40
Table 4. 3. <i>Frequency for Teacher Qualification</i>	40
Table 4. 4. <i>ANOVA for Effectiveness, Satisfaction and Acquired Knowledge for Trained Teachers</i>	41
Table 4. 5. <i>T-test for Instructional Methods between Trained and Untrained Teachers</i>	43
Table 4. 6. <i>T-test for Instructional Materials between Male and Female Teachers</i>	45
Table 4. 7. <i>Correlation for Attitudes, Teaching Practices, Knowledge & Skills</i>	46
Table 4. 8. <i>Correlation for Knowledge and Skills and Teaching Practices</i>	47
Table 4. 9. <i>Regression for Knowledge & Skills and Instructional Methods</i>	48
Table 4. 10. <i>Regression for Knowledge & Skills and Instructional Materials</i>	48
Table 4. 11. <i>ANOVA for Availability of Facilities and Teaching Practices (Group Results)</i> .50	
Table 4. 12. <i>ANOVA for Availability of Facilities</i>	51
Table 4. 13. <i>ANOVA for Additional Facilities and Teaching Practices (Group Results)</i>	52
Table 4. 14. <i>ANOVA for Additional Facilities</i>	53
Table 4. 15. <i>ANOVA for Team Working and Teaching Practices (Group Results)</i>	55
Table 4. 16. <i>ANOVA for Team Working</i>	56
Table 4. 17. <i>ANOVA for Overcrowded Classrooms</i>	58
Table 4.18. <i>ANOVA for Lack of Facilities</i>	60
Table 4. 19. <i>ANOVA for Lack of Support from Colleagues and Administration</i>	62
Table 4. 20. <i>ANOVA for Teacher Preparation</i>	64
Table 4. 21. <i>ANOVA for Experience, Attitude and Knowledge & Skills</i>	66
Table 4. 22. <i>Summary of the Hypotheses</i>	67

CHAPTER I. INTRODUCTION

Chapter Overview

This section of the study provides an insight of the topic for discussion i.e. the background of the study, the problem to be studied, the research questions that the researcher attempted to answer, and its significance. Additionally, conceptual and operational terms are defined for clarification to the readers.

The development of highly effective and competent teachers is the goal of many teacher education programs. In preparation to meet the challenges that this ‘global world’ is bringing forth, young men and women need to be fully equipped to face the world. As a result, many educational institutions had established programs to enrich and enhance teachers’ knowledge in executing information to students in the classroom. This paper attempted to find the relationship between teachers’ training and their teaching practices. The importance of the role of the teacher as an agent of change, promoting understanding and tolerance has never been more obvious than today. This is echoed in the mission statement of the University of Belize’s Faculty of Education and Arts “empowering teachers as catalysts of change in response to national need”.

Background of the Study

Belize has come a long way in establishing education programs that cater for both primary and secondary school teachers. The history of education showed that teacher education has evolved from colonial education to where it is today. In 1855, an act was passed that required the headmaster and mistress to be certified teachers from a school in Britain. The qualification was abolished in 1863 (Lewis, 2000). Some training began to occur in 1937, but in 1954 the teachers training college opened in Belize City. By 1964 there were three teacher training institutions: the Intermediate Training Centre, St. George’s Training College and the Roman Catholic St. John’s Teachers’ College. From 1965 to 1980 the teacher education program increased from one year to three years. During this period other options for teacher education and higher education became available through the opening of the University of the West Indies in Jamaica (Lewis, 2000). As early as in the 1940s teachers were sent to Jamaica to pursue a program similar to that which is now offered in Belize. This

continued until a teacher's college was established in Belize in 1954. However, since the early 1980s, a large number of teachers have gone to the U.S.

In 2000, the teacher training programs that were once offered by Belize Teacher's College and University College of Belize were transferred to the now University of Belize's (UB) Faculty of Education and Arts. The upgrading of these two colleges that once offered teacher training provides teachers with opportunities to receive pre-service training through degree programs. Secondary-school teachers take courses at UB leading to a Bachelor's Degree in one of the Teacher Education program, for example, Bachelor Degree in Math Education. For completion of the degree, student-teachers do practical semester and a research paper. In June 2005, UB graduated a total of 108 trained teachers. Ninety had Primary Level and eighteen had Secondary Level training (Tun, 2006). Although there are a small percentage of trained teachers at the secondary school, it is important to know how their teaching practices help students learn.

Training of secondary school teachers in the 1980's

It was only for a short period during the 1980's that the high school teachers were considered to be a part of the training system. But this initiative was categorized in a way that both high school and sixth form graduates were accepted, and the term to finish the program depended on the Caribbean Examination Council (CXC) passes for high school graduates and A' Level for sixth form. Moreover, with this trend the University College of Belize (UCB) was established which began offering an undergraduate degree program in secondary education. Students enrolled in the undergraduate program in secondary education finish the program within two to three years. Statistics for 1991-92 showed that 35% of the teachers had pedagogic training (National Report, 1996). In the late 1980's about 7,300 students were enrolled in secondary schools. But what one should note was that before and during this time, primary education was sufficient for many skilled and semiskilled jobs in the public and private sectors. But this was not the case during this period. More was required of the newly graduate entering the workforce. As a result, training students to develop critical and creative thinking began to be the topic of discussion in any teacher training program. Therefore, training secondary school teachers should be prioritized so that they become more qualified to prepare student for the workforce and life-long learning.

According to Miller (2001), the traditional authoritarian i.e. teacher centred teaching methodologies began making transition to the student-centred teaching methodologies such as teamwork and collaboration, greater networking with communities. This student-centred approach had begun to spread through at a later time in Belize. Although this approach was penetrating in Belize, the question was that 'Is teacher educators fully prepared to guide student teachers to use the student-centred approach'? However, attempting to sensitize teachers was a step forward which began to implant in teachers to include students in the process skills. This was a good beginning at that time although high school teachers were not very much involved in the training programs.

Teacher education in 1990's

Educational reform started in the 1980's and continued in the 1990's. It was recognized that effective teachers are critical to student learning. The upgrading of college that offered training to teachers began to offer pre-service training through degree programs. In this preparation of teachers, much of the focus is changing pedagogical practices. If teachers are to use less didactic approaches in the schools it is imperative that their training in colleges be conducted using pedagogic practices which are student centred. However, there was no project that was geared toward improving the quality of education at the secondary level. This created an inadequacy during the early 90's of trained teachers who were teaching at the secondary school level.

At this time, there were 30 high schools with a total of 10,147 students and a total of 740 teachers (Belize: National Report on the Development of Education, 1996). The major problem was the insufficient number of teachers qualified for instruction as well as the shortage of teachers in the various disciplines which comprised the curriculum of Belizean secondary schools. Secondary school teachers are people who are hired based on their degrees of studies. For example, someone who majored in Chemistry at the sixth form level was recruited to teach the subject. In many cases, persons who were hired in this way only had an associate degree. This created a major setback for qualified teachers at the secondary level because most of these graduates did not have education theory to teach their content. Knowing the content doesn't necessarily mean that one knew how to impart the knowledge to the students. Therefore, for further specialization, the person sought to complete a bachelor degree at the University College of Belize for another two years with a focus in education or

the individual teacher would go abroad to pursue higher studies. In most instances, when a recruited person sought further education in the subject area, one would not go for teacher training but for salary benefits.

Teacher education in the twenty-first century and beyond

Belize Teachers' College was established in the 1950's to train Belizean teachers and education professionals. But in 2000, the amalgamation of the Belize Teacher Training College was subsumed into the University of Belize as the Faculty of Education and Arts (Pinados, 2000). Teacher training was understood as a response to social and educational priorities at the local level. The two colleges that once offered teacher training provided teachers with opportunities to receive pre-service training through degree programs. Presently, many teachers are entering and graduating from the degree programs, but the relationship of their training and teaching practices is yet to be fully investigated. Thus, this is the reason why the researcher is investing time to collect data in this context.

Statement of the Problem

The impact of teacher education on teachers' performance is a recurring issue in the literature. According to Brouwer & Korthagen (2005), a gap between theory and practice seems to persist across different times and contexts. This means that teachers who went through teacher education training found it difficult to apply theories into practice due to different factors into the workplace. Today more and more teachers are being enrolled in the different education program at the University of Belize such as in the English Education, Mathematics Education, Biology Education, and Business Education. These programs provide teachers with both professional (educational courses) and curriculum courses (content of the specific subjects and pedagogical content knowledge). The final semester is a practicum (practical training) where student-teachers taught 15 hours per week, and during this term they are expected to transfer skills learnt into the real classroom. However, after the practicum little is known of the teachers' performance. Although many schools have an evaluation system where the principal or head of department goes in the classroom to observe teachers' teaching, the reports from these observations have not indicated if there is a difference between teachers who went through training at the different educational programs at the university and those who have not been. Tun (2006) mentioned that there are critical

areas that need evaluation such as the effectiveness of the teacher training programs and to find out what the trained teachers who went through these programs are doing.

The success of any education program requires a change in attitude of trainees. Many teachers are accustomed to the banking system which can be done through lecture method. Conversely, trained teachers should use the methodologies they learnt into their teaching practices (Geneva Report, 1996) because rote learning is no longer the ideal way of learning. Critical thinking is being highly promoted (Lewis, 2000). As a result, a definite need for teacher training has been called upon. Overall, the education training program gives greater attention to the development of teachers' pedagogical content skills but how much of these are being used in the classroom is not investigated.

Purpose of the Study

The emphasis of this study was to discover the relationship between teacher education and teachers' teaching practices. To find this relationship, the researcher conducted a self-evaluation questionnaire that measured teachers' ability in transferring the theoretical learning into practice. The focus was to investigate teachers' teaching practices i.e. are they employing various teaching techniques, utilizing alternative forms of assessment, developing more expert ways of seeing and knowing about teaching and learning. Many times teachers are quick to go back to their old way of teaching as soon as training is over for them. Thus, outlined below are the aims:

1. To investigate the relationship between teacher education program at the University of Belize (UB) and teachers' teaching practices.
2. To examine factors that affect teachers' teaching practices.
3. To find out the differences between trained and untrained teachers in their teaching practices.
4. To discover relationship between knowledge and skills and teaching practices; relationship between years of teaching and knowledge and skills.

Research Questions

A. Curriculum of the program

1. How does the teacher training program help student teachers' develop their teaching practices?

B. Satisfaction within the training program

2. Are teachers satisfied with the pedagogical content knowledge learnt within the program?
3. Does the acquired knowledge from the teacher training program help teachers to develop confidence and their comfort level in their teaching practices inside the classroom?

C. Non-curricular program condition

4. Do years of teaching experience associated with the development of knowledge and skill and confidence in teaching practices?
5. Is there a difference between trained and untrained teachers' teaching practices?
6. Is there a difference in teaching practices between female and male teachers?

D. Contextual Factors

7. What are the contextual factors (class size, teaching load, administrative support and facilities) that affect performance in actual teaching practices in school environment?

E. Relationship between knowledge/skills and teaching practices

8. Does knowledge and skills of teachers relate to their teaching practices?

Significance of the Study

According to the researcher's experience, this kind of study has not been carried out particularly in the Belizean context. A study on the relationship of teacher education and teachers' teaching practices has not been done. The transfer knowledge and skills acquired during teacher training was not investigated and whether teacher education can make a difference in teachers' teaching style and competence. Therefore, the result of this study can make an attempt to fill this lacuna in the literature. According to Tun (2006), there is a need for critical analysis of the effectiveness of the training programs and the curriculum effectiveness. This was done when comparison was made between trained and untrained

teachers. Moreover, the report from this study attempted to display whether the goals of the program and the curriculum were met relatively or not. The results of this study would provide suggestions and implications for future studies.

Delimitations and Limitations

The delimitations of this study were that only high school teachers were included in the study, an attempt to represent various schools and districts in Belize influenced how schools were chosen and results depended upon responses of the teachers. Additionally, it was delimited to the staff; the principals did not take part in the survey. As was mentioned in the significance of the study, one of the intended outcomes was to examine whether the goals and objectives of the curriculum were met but this widens the scope of this study and demands a longer study. Due to this reason, this was not achieved. Another delimitation is the dimensions this study used to measure teaching practices and the findings indicated otherwise such as the respondents who remained neutral about working with students one-on-one. There may be other factors that hinder their performance such as time, which is not included in this scope of this study.

One limitation is lack of generalizability. Due to the condition of the instrumentation – self-evaluation questionnaire-, the response may be subjective. As a result, teachers' performance may be biased. Also respondents may have felt drawn back to complete sensitive questions such as questions raising the issue of support from administration and colleagues and may have not given their honest feedback.

Definition of Terms

In this section, the key terms are explained in the context that they are being used in this study. These terms are both defined in their conceptual and operational perspectives.

Curricular studies

The two areas teachers must have to teach i.e. teacher's knowledge of subject matter (SMK) and pedagogical content knowledge (PCK). PCK is the transformation process whereby teachers' subject-matter knowledge (SMK) is converted into a form appropriate for teaching Schulman (1987).

Contextual factors

What teachers encounter in the school environment that may either affect their teaching practice positively or negatively. This includes class size, teaching load, administrative support and facilities.

Teacher education

The policies and procedures design to equip teachers with the knowledge, attitude, behaviors and skills required to perform their task effectively in the school and the classroom. Teachers who go through this process are the trained teachers. These teachers had gotten a first degree in any one of the education program i.e. Math Ed., Biology Ed., Business Ed. and English Ed. This paper also looked at the untrained teachers who are teaching but had not gone through the education programs. These set of teachers only have content knowledge.

Teacher experience

The individual teachers' years of teaching had helped in improving performance i.e. developing knowledge, skills, and confidence/comfort level which this study would consider as a variable that affect teaching practices. For example, a teacher may have been teaching for four years, so this teacher has four years teaching experience.

Teaching practices

This refers to teaching methods that a teacher may select carefully to execute the lesson plan planned for a class session, and the instructional materials used to help students learn a concept i.e. creating instructional games, charts, and other visual aids.

Secondary schools

Refers to educational institution that follows on from primary or elementary education, in Belize it's a four-year institution.

Teaching performance

The actual activities teachers carry out in their teaching i.e. using different teaching methods and teaching materials to reach out to their students learning needs.

CHAPTER II. LITERATURE REVIEW

Chapter Overview

This chapter presents the review of previous scholarly literature concerning the topic at hand. These reviews offered views on what are the competences of an effective teacher is, the curriculum of teacher education, application of knowledge and skills acquired, factors that affect teaching practices and differences in teaching practices of trained and untrained teachers. The findings of the previous studies supplemented and provided evidence on some issues that were investigated and tested in this study.

Competences of Teachers

Moore (2004) confirmed that teachers are trained in the acquisition of certain competencies related to aspects of classroom management, long-term, medium-term and short-term planning, recording and reporting students' work leading to the achievement of prescribed, assessable and (presumably) acquired-for-life standards. A teacher need not only be a good one but an effective one also. The dissimilarity between good and effective teachers is effective teachers demonstrate introductory knowledge, skills, and understanding of concepts related to the use of materials needed for instructional process and the continual growth in knowledge and skills to stay abreast especially of current and emerging technologies (Ololube, 2006). Moreover, they are well versed in the characteristics of students of different ages, abilities, and cultural backgrounds that can affect the teaching practices employed. In addition, Miller (2001) concluded that effective teachers know when and how to assess learning through various forms of traditional and authentic assessments. Ololube found out that teachers' professional qualification improves their job effectiveness because his findings showed that professionally qualified teachers ensure quality in the teaching-learning process.

Krainer & Goffree (1999) and Shulman (1987) supported the idea that the aim of an effective teacher training are: to increase student teachers awareness of theories of instruction, to assist students in the development of criteria to select and evaluate teaching methods and instructional materials, to provide knowledge and analytical tools so that student teachers may expand their repertoire of teaching methods, and to encourage student teachers to engage

in reflective practices. But Shulman went further to explain that there is another area where teachers must demonstrate competency and that is the knowledge of the subject taught. So in all, competent teachers demonstrate understanding of the subjects taught a repertoire of explanations and representations of the concepts, an awareness of appropriate materials, and appropriate professional motivation and interpersonal skills. The implications here is that subject matter and how to teach the concepts are an integral part of being an effective teacher. It's not sufficient to be well-versed in the subject matter and not know how to make it accessible to the clients (students taught). This is what the different education program attempt to address.

Curriculum of the Teacher Education Program

What must be the components of a teacher education program? There are literatures showing many dimensions about what teacher education should teach to student teachers. Vygotsy (1978), Russian psychologist, developed theories that many education programs adopt in their curriculum framework. One of his greatest contributions is the constructivist theory in which he claimed that learning does not occur in isolation. This facet of learning had led many planners to transform teacher training programs (Bliss, 2004) that at least should have three major components: the professional studies, curricular studies and practical training. With these components integrated within the teacher education program, bridging the gap between theory and practice could be minimized (Taskin, 2008; Yuksel, 2007). Following this framework, teachers would be adequately prepared to alter the way of teaching from a traditional to a more constructivist approach.

The University of Belize's program curriculum reflects this framework. Each education program has the professional core, the major core courses which are the specific subject major, for example, English Education Major has to take English course such Critical Writing and Research, English Methods, Advanced Composition I & II etc. Each education program has its own set of content area but the pedagogical contents are similar in some areas and differ in others. The subject area courses is up to 24 courses including the prerequisite, and the pedagogical content courses is up to 9 courses also including the prerequisites. The professional course contains 7 courses which all student teachers enrolled in different education program need to take. Similarly, the last semester is the Field Experience (internship) which is the practical component; again every student teacher must fulfill this

requirement. During internship, the student-teacher is assigned a university supervisor who makes frequent visits to assess the teacher. This practical part is 9 credit hours and the student teacher had to complete 15 hours teaching in the class per week. Students enrolled in any of the education programs have to complete a maximum of 93 credit hours prior to graduation and before enrollment in any of the programs, one had to take prerequisite courses which amounts to a maximum of 79 credits. These include courses in Humanities, Math & Natural Science, Social Sciences and Professional studies. So combined prerequisite credits and the core courses credits add up to a maximum of 166 credits. Following the framework that Bliss (2004) proposed that teacher education program should be structured with three components, the researcher analyzed the syllabi and divided them into the three components. Since the researcher could not access any structured framework offered by the University of Belize, the syllabi accessed had helped in establishing the framework displayed on the next page.

Displayed below is a framework constructed to reflect the courses offered in the educational programs at the University of Belize.

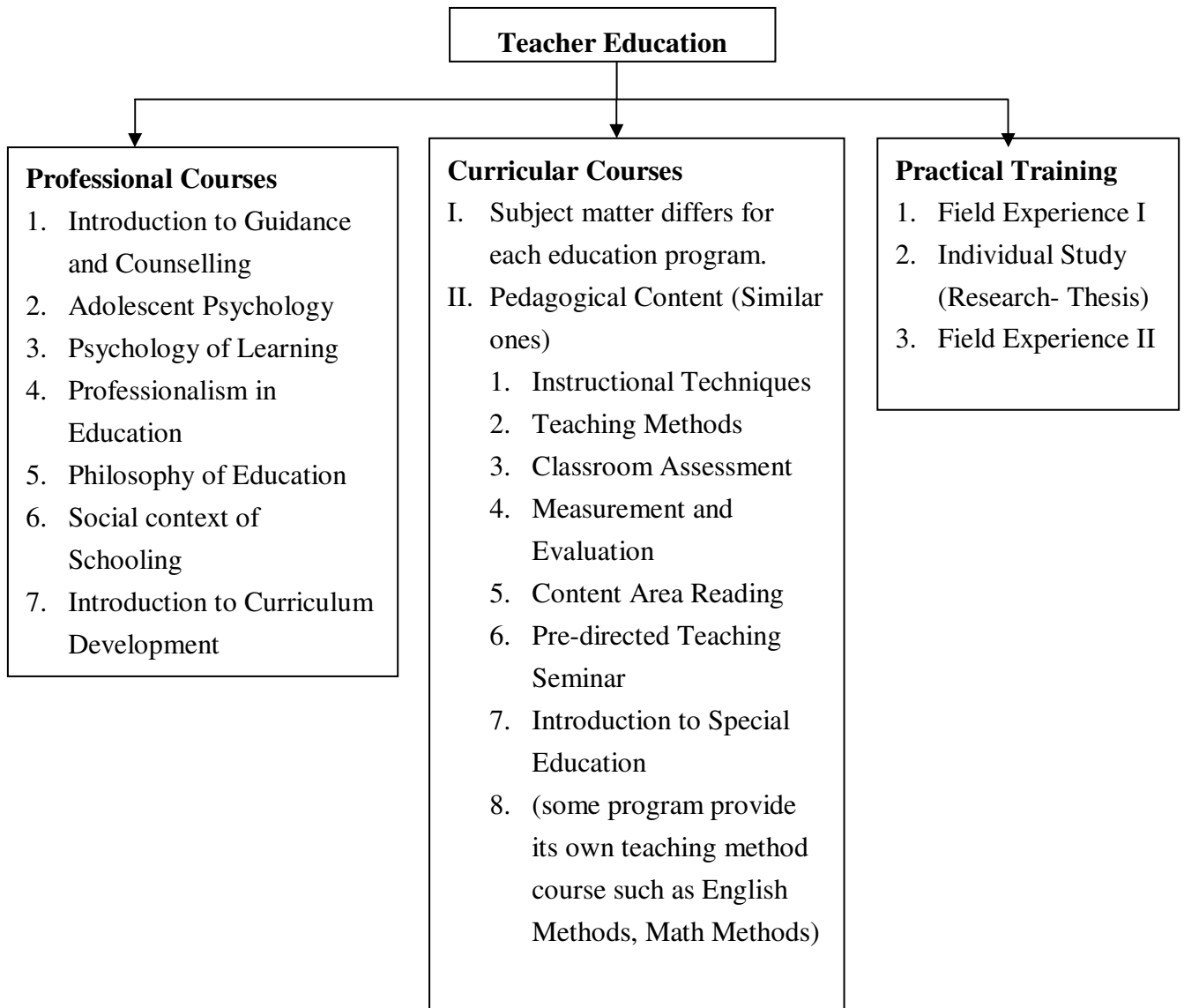


Figure 2. 1. *Curriculum Framework of Teacher Education of Belize Structured Following Bliss' (2004) Framework*

Professional studies

This aspect is the theoretical knowledge and skills required for the teaching profession. Basically, this part offers the foundation courses. Taomi (2004) contended that more teaching of these courses be introduced so that teachers be equipped to counsel, discipline, empathize and understand students. Having skills to teach the content and how to teach it are two major elements but the task of the teacher does not end there. Students come with many problems that need to be addressed in the classroom and out of the classroom. Such courses include Psychology of Learning, Sociology of Learning, Guidance and Counseling (Tun, 2006).

Not only would the content of these courses help teachers to make connections between their experiences in and out of schools but also give them a foundation to overcome the problems that they encountered. At the end of the day, the teacher developed the reflective self (Shulman, 1990). These professional courses also help teachers identify students' needs and discipline certain behaviors. Those teachers who did not take these professional courses had difficulties in teaching the subject matter and were not able to critically and extensively reflect on the problems met while teaching. Teachers could not develop their perspectives in educational issues and problems, think from a wide point of view and evaluate the problems they met because they have limited theoretical foundations.

On the other hand, it had been argued that these courses prevent student-teachers from mastering the subject-matter in their area of study. The argument was supported by a study in which teachers argued that these courses rarely contributed to their teaching and gave little value to the courses (Katz & Raths, 1982; Sirotnik, 1990). The inferred issue was that these teachers were saying that teaching can be learnt in the classroom. But there could be factors that influence the utterances such as teaching experiences prior to entering the teacher program.

Curricular studies

This component entails the subject knowledge and pedagogical skills which are essential to be an effective and confident teacher in the classroom. The two areas under this component are reviewed below – Pedagogical Content Knowledge (PCK) and Subject Matter Knowledge (SMK).

Pedagogical content knowledge (PCK)

Though subject matter is significant in teaching, it does not adequately equip a teacher to do effective teaching. The theory of Pedagogical Content Knowledge (PCK) provides a new insight in perceiving how teachers should carry out their day-to-day tasks. PCK is the blending of content and pedagogy into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction. These include the skills involved in managing a classroom, conveying clear instructions, being able to construct and interpreting valid tests, and even communicating valuable knowledge and skills (Scriven, 1996; Shulman, 1987). Courses like Classroom Assessment, Instructional Techniques, Measurement & Evaluation, and Introduction to Special Education are some of the core teaching methods that are relevant to teaching practices (Tun, 2006). Then it is imperative that trainees in colleges be taught using pedagogic practices that are student and learner centred. Apparently, these are the areas where an effective teacher displays competence. It is in performing these tasks effectively that one can say that the teacher is competent which is very important for teacher in the classroom. In this case, Shulman is implying that content and pedagogy differs and that content knowledge is not sufficient for beginning teachers to teach students. Dijk and Kattmann (2007) in their research suggested that there is a difference between knowing the subject matter and using this subject matter knowledge for teaching. PCK then is the demonstration of the teacher's skills to deliver the content knowledge to the receiver. This can be obvious when the teacher integrate lessons with hands-on activities and strategies such as concept maps, games, simulations, experiments, cooperative learning (group or team work), brainstorming, real-world connections; problem-based learning; project-based learning; self-directed and inquiry learning and utilizing meaningful alternative assessments like portfolios and rubrics (Lynch & Harnish, 2003).

While Shulman (1987) and Scriven (1996) perceived pedagogy encapsulated in the school context, Giroux and Simon (1988) argued that pedagogy goes beyond the school context. They (Giroux & Simon), like Paulo Freire believe that educators need to understand their students and to address the context of their everyday lives. Then what does this mean for teachers? Teachers should construct curricula that draw upon the cultural resources that students bring with them to the school. This suggests integrating what is taught in schools to the dynamics of everyday life. While not diminishing pedagogy's concern with "what's to be done?" in classrooms, Giroux and Simon explained that pedagogy is more than "the integration of curriculum content, classroom strategies and techniques, a time and space for the practice of those strategies and techniques, and evaluation purposes and methods." (p. 12). To accomplish such great tasks in teaching, teachers are to use less didactic approaches in the schools rather act as guide and facilitator.

Other researchers in this field suggested that PCK includes a third element. This element of PCK which is 'subject matter knowledge for teaching' enables the teacher to react flexible in different and unanticipated situations. Furthermore, Dijk and Kattmann (2007) stated in their review of the literature on PCK that studies of teachers' PCK indicate that subject matter knowledge is a prerequisite for the development of PCK and that it develops in the actual teaching practice of teachers. Therefore, teaching experience is essential for the development of PCK and this implies that beginning teachers usually have little or no PCK at their disposal. Observation indicated that specific courses or workshops have the potential to influence its development.

Increasing teachers' ability to transform the content into a form accessible to learners was the goal of the teacher educators and the teacher education planners. To achieve this goal, the program should focus on the integration of six of Shulman's domains of teacher knowledge (i.e., subject matter knowledge, curricular knowledge, pedagogical knowledge, knowledge of schools, knowledge of learners), which complements Vygotsky's theory. Many schools of education provide no coverage of major skills required in the classroom or school environment which indicated that teaching can be learnt on the job. Given this perspective, Krainer & Goffree (1999) discovered that student teachers developed working skills needed in cooperative planning, selecting and organising of teaching materials and its utilization to meet the environment while already in the school environment. This thought is valid because having teachers enter the working environment with expectations and when their expectations

were not met, they become disillusioned and quit teaching. Nonetheless, having them learnt about teaching/learning, pedagogies and theories is not a waste of time.

Subject matter knowledge (content knowledge)

Content knowledge is defined here as knowledge of the central concepts, principles, and relationships in a curricular domain, as well, knowledge of alternative ways that is represented in instructional situations (Etkina, 2007).

Extending this review to Belize, the teacher education program offers a maximum of 24 subject matter courses whether be in Math, English, or Biology Education. This of course includes the prerequisite subject matter courses which many student teachers had to take. The Professional Core for these programs is designed to adequately prepare teachers with a strong content base (Tun, 2006).

Earlier on it was mentioned that PCK needs content knowledge and here content knowledge need PCK. So what is this view signifying? The two cannot be isolated, but PCK can be learnt as a teacher gained experience. In a study conducted by Jones (1997) in Barbados Secondary Schools illustrated that there was little evidence of substantial difference between the competences of teachers who enter via a training college and those who enter with a subject matter degree. Further investigation into their performance on specific indicators of effective and ineffective teaching revealed small differences between the two groups in their treatment of instructional organization and development and presentation of subject-matter. This result further supported the arguments that teacher education programs still have a lot more to work in terms of restructuring the program in preparing Secondary School teachers. A lack of content knowledge seemed to add to teachers' frustrations over content coverage. Those teachers who reported to know less about their content area expressed greater apprehension about what content to include (and exclude) in a unit (Caron, 2004). Moreover, teachers who had a hard time contextualizing subject matter often resorted to traditional methods to convey the concepts.

Practical training

The last important component is the practical aspect. Learning the teaching methods passively is not sufficient for any aspiring teacher. In a study conducted by Taskin (2008) student teachers were introduced into the real classroom setting at different phases while enrolled within the program. This practice created an awareness of what the real situation was. The teacher education that was investigated in this study showed that in the first year of their program, the student teachers only observe class teachers for four hours a week for one semester. In the first semester of their final year, student teachers visit schools for a second time for 4 to 8 hours a week. The purpose of the visits is to apply various concepts and techniques acquired on campus, and to practice teaching on a small scale. In their final semester, student teachers teach about 12 hours a week to develop their professional teaching skills. It was pointed out that student teachers can indeed learn through watching experts' teaching. Relating this aspect to the Belizean teacher training system, UCB began offering first degrees in education with concentration in Mathematics, English, Biology and Chemistry. The program consists of two years after junior college. Half of the courses are taken in education and half in the content area of specialisation. A practicum of one semester must be completed by prospective graduates.

Application of Knowledge and Skills Acquired in Teacher Education

Several studies had indicated that trained teachers were exposed to many skills that could possibly make the teaching/learning process very interactive and fun for students. In this regard, teacher education programs are essential in order to change teachers' views of teaching and learning and their practice. One thing to remember though is that learning theories had gaps that can be challenging to fill. For example, what students expect teaching to be about and what they experience it to be about during the learning-to-explain process (Kinach, 2002) may be very different. This in itself could create emotional tensions within the newly trained teachers. This may contribute to not applying what is learnt from the training program. The gap between theory and practice widens but prospective teachers upon graduation were expected to apply them on their own.

The question now is how much of the knowledge and skills acquired are transferred into the classroom? Ellis (1965) and Olsen (1998) defined transfer of knowledge and skills as the process of using what is acquired in one context to a new or varied context. Furthermore,

transfer is a measure of the knowledge learned actually being transferred and used on the job for which it was intended. This practice can bring forth answers to the question, “Is what was taught being demonstrated on the job?” If and when the answer to this question is positive then changes as a result of training has taken place. If there is no change then Ellis categorized this as Zero Transfer. What would cause zero transfer? Perhaps the task at hand had no relations with what had been acquired or what the teachers had been taught were far from reality of the nature of teaching in the classroom so then closing the gap between theory and practice cannot occur. Considering this existing gap, it is important to make the theories simple and describe conceptual change strategies in such a way that they may become part of teachers’ normal routines (Duit & Treagust, 2003).

Another school of thought about transfer argued that evidence of transfer is difficult to find because of the way in which transfer has traditionally been defined i.e., applying learning in new situations. Accordingly, Bransford and Schwartz (1999) proposed an alternative view of transfer, which emphasizes the ability to draw on resources in the environment to learn during transfer. It is in this context that the researcher would be investigating the learning transfer of trained teachers into the classroom. The researcher took also into consideration the factors that may affect learning transfer. It is reasonable to think and say that when people are “prepared for future learning,” they can change the situation to suit their needs but this can be easily done if teachers were given the myriad of support in the working environment to apply the knowledge acquired. A teacher can only do much to make the situation a learning experience. Therefore, teachers have to be prepared for transfer because transfer depends on the ability to see similarities between the prior learning and the situation and to find opportunities for using prior knowledge to solve problems (DeCorte, 1999).

Greeno (1997) argued that the key to knowledge transfer lies in the consistency or inconsistency of patterns of participatory processes across situations and, of course, in the learner’s capacity to identify those patterns. To some extent other researcher agreed that the robust patterns of transferable knowledge carried by the student teachers from one placement to another centered on developing understanding of how to deliver the curriculum (Edwards & Protheroe, 2003) which can alter the mode of the teaching/learning process. Now not only do the teachers need to have content knowledge, pedagogical content knowledge but also curriculum knowledge i.e. knowing the objectives and goals of the curriculum of a particular

school. Identifying teaching problems that might be solved by the application of theoretical principles is a much different way of working than applying theory to practice. Teachers typically complain that theory is not relevant to practice, and indeed it may not be, if teachers are handed particular theory-based practices, one by one, and asked to apply them, no matter what their teaching situations, student contexts, and problem scenarios may be at the time. Randi and Corno (2003) contended that one goal of research for practice should be preparing teachers by promoting their ability to identify and call up, as needed, general principles and theory-based practices that resolve their immediate problems.

Factors that Affect Teaching Practices

Although teachers may acquire the knowledge and skills, there are factors that influence of how these knowledge and skills can be used or transferred in the classroom. The influence could both be internal and external. To conduct choices and to adapt them to students, the teachers have two systems of references: internal which contains the teacher's knowledge of the concept to teach, of their relations with other concepts and his/her own experience of learning, own working methods; external is the knowledge of scholar institution, syllabuses of ulterior grades, or students' projects. According to Ertmer (1999) and Linad (1999), the first-order barriers i.e. lack of access to facilities and administrative supports, class size, teacher qualification, school size and other school variables may play an environmental role in students' achievement are external to teachers.

Many teachers complained that principals are not often disposed to trying out new ideas. Instead they were asked to stick to familiar (traditional) methods. A body of support in the workplace can make a huge difference in making transfer of learning doable. In an interview with newly trained teachers, the teachers pointed out that a significant factor that affected their work and developed their skills as teachers was the context of the specific school in which they worked. The interviewees put a great deal of weight on the supporting systems at school, support from the principal, help from the school counselor, collaboration with colleagues had helped them in their teaching (Maaranen, Kynaslahti & Krokfors, 2008). In addition, these group of teachers sought relevant and helpful literature themselves which were recommended by school management staff and colleagues. Nevertheless, lack of support from administration can add more to this mishap in terms of not providing the proper equipments or facilities to carry out different activities planned. Without the effort of the

management and colleagues to support their fellow teachers, the teaching life of a teacher can be a difficult journey. White (2006) supported the idea that teachers who had undergone teacher training need to get support from principal and colleagues.

The findings discovered that feedback, reflection and review need to occur at critical points throughout student-teachers' professional practice and in course content related to that practice. Directing students in how to apply their college-based learning in the school and the classroom workplace and then commenting on that application are important aspects of feedback. The feedback also needs to align with the students' own reflective practice, by giving students the confidence and security to try out ideas, to ask questions and to seek answers and support from their associates. Discussions with colleagues inside or outside the school community were of great importance. The students, therefore, do not see previous teaching experience as an obstacle in obtaining the theoretical perspectives offered by education, rather the workplace learning continued to develop their teaching skills but now integrated to the on-campus studying. In a study by Goffree, Oliveira, Serrazina & Szendrei (1999) clearly showed that teacher-students believed that the integration of their work into their studies succeeded, and their work was taken into account in the studies.

Another major challenge that teachers encountered into the classroom is the student populations. They differed by age, socioeconomic status, minority status, ability level, and experience in and motivation toward class content and this greatly affected the teacher's choice of strategies (Lynch & Harnish, 2003; White, 2006). This diversity led to the issue of classroom management. Teachers perceive loss of control. However students' behavior can also be a positive factor, for example, student teachers claimed that students' behavior in classrooms was an important factor in influencing their teaching practice (Taskin, 2008). These student teachers indicated that students were respectful; therefore, this behavior had helped them to achieve the objectives of their planned lesson.

But the loss of control on the behavior aspect had been the cause of much frustration. Although these factors may be viewed as those that keep teachers from performing better, they may also act as mediators for teachers to develop the skill of 'thinking on their feet', which means that teachers need to make decisions in a split of a second. Moreover, Stokking, Van der Schaaf, Jaspers & Erkens (2004) also maintained that teachers' working conditions have a strong impact on the development of expertise. In this context, the development of expertise is context sensitive. As a result, some scholars reject the idea of expertise as

denoting a fixed level of teacher competence and instead view teacher expertise as an ongoing process of acquisition and consolidation of competences needed for a high level of mastery in one or more domains of teaching student.

Whereas second-order barriers involved the beliefs about teaching and learning; and reluctance to change are internal to teachers. This trend of thought coincides with teachers' beliefs about teaching/learning process i.e. if teachers see themselves as agent of change then this belief can be reflected in the way how the individual teaches by demonstrating the willingness to explore the newly acquired knowledge into the working environment despite the many setbacks encountered. Besides teacher's belief, there are other internal factors such as subject matter and teacher's comfort and confidence level. Teachers who do not feel comfortable with their ability, their situation (i.e., the atmosphere in their school), or had less confidence in their students tend to utilize fewer strategies. For example, in an observation conducted by Wood (2003) indicated that teachers who questioned their teaching practices continued to build knowledge about teaching/learning process. They reflected on what they have learned from experience. They openly aired classroom struggles and asked colleagues for help and colleagues on the other hand were willing to help. There was a clear link to demands of everyday practice. Teachers began to think of themselves as primary agents for necessary changes in teaching and learning. In order for their students to achieve more, they knew they needed to be constantly learning. Together, they shouldered responsibility to systematically inquire into present practices, consult outside expertise, reflect on what they had learned from experience, and engage in searching conversations with one another. In the process, they were building effective pedagogical knowledge that the students they served needed so badly (Wood, 2003). Moreover, another finding revealed that teachers need to develop internal interest in what they do by integrating reading relevant literature to continuously acquire knowledge about teaching. Learning to teach cannot only be learnt by being exposed to theories in training programs but teacher's work could be learnt from experience in the workplace (Maaranen, Kynaslahti & Krokfors, 2008).

Earlier it was mentioned that subject matter is internal to teachers; however, it can be both intrinsic and extrinsic to the teacher; the condition overlaps at some point in planning, executing and managing of lesson especially in math and science. While planning, first time teachers find it hard to think of context and to be creative specifically under the condition that there is pressure to "cover material" therefore, they stick to the book. Subject matter becomes

external during executing and managing of time allotted to deliver the lesson. For example, if a class last for 55 minutes and if the teacher has poor time management there would not be enough time to develop and prepare students. In addition, teachers were asked to keep up with state curriculum and what would be on the test. With all these hindrances that a professionally qualified young teacher encountered can make the individual teacher's task more difficult to achieve. The recurring factors that affect teachers' teaching practices are institutional constraints about contents, syllabuses, institutional constraints about students' work, level of students and teacher's beliefs, teachers' own relation with contents, teachers' belief about learning importance of their own work (Jeanne and Glorian, 1999). It seems that beliefs are the best indicators of the decisions teachers make throughout their teaching lives because this influenced their perception and judgments, which in turn affect their behavior in the classroom in relation to their teaching practices (Loughran, 2006).

On the other hand, in the Belizean context, teachers at the secondary school have traditionally been hired with the minimum qualification of a Junior College diploma the equivalent of an "A" level education. This meant that teachers had an understanding of the subject but do not have the pedagogical aspect. The program has improved the supply of teachers in some areas but there is still a shortage of teachers especially in Chemistry and Physics. Although UCB has become part of the recently formed national university, the University of Belize (UB), secondary level teacher education has escaped reform. The faculty of education under UB continues to offer the same programs (Penados, 2000) with a little improvement.

Differences in Teaching Practices between Trained and Untrained Teachers

In an observation conducted by Lynch & Harnish (2003), it was found that trained novice teachers had very active classrooms with students working together, constant teacher and student interaction both with the large and smaller groups. Instruction tended to build on knowledge and prior experience from a multidisciplinary perspective which indicated that teachers were skilled to integrate other aspects of discipline into their teaching so that students could begin to see that every subject is interrelated. Students and teachers offered assistance to each other, and the environment was structured to facilitate movement and use

of team and small group work. Teachers were organized to the extent that teachers used authentic assessments to evaluate students' performance such as the use of portfolios.

On the other hand, the academically qualified teachers also used different teaching strategies, but less frequently and sometimes reluctantly. They felt pressured to keep up with the curriculum, so they drilled on vocabulary and cover questions that might be on the test. They view using different teaching strategies as distracting to the mastery of content that might be tested. The purpose of education here loses its essence that is developing a holistic individual who would be able to make decisions, think critically and contribute effectively within the society. Elaborating more on the academically trained teachers, learning to teach develops through experiences. Learning through experiences described situations in which a person who works as a teacher without a teacher's qualifications learnt through everyday experience. They may benefit from models that other teachers have provided. One way to manage the work is to imitate familiar methods. Another riskier way is to experiment with new teaching methods.

Conversely, the teachers who took part in a survey reported that their work as teachers had changed because of teacher education. The student teachers began to demand more of themselves as teachers and reflected on their work more theoretically in describing these practices and they also pay attention to such things as the learning environment and the media used (Goffree, Oliveira, Serrazina & Szendrei, 1999). To sum up, more reflection on action may improve teachers' activities which in turn may lead to new questions and reflections. But this interplay between action and reflection is not only confined to the learning of individual teachers, it can also be used as a starting point for professional exchange among teachers: the learning process is directed towards autonomy as well as towards networking. The interplay of both action and reflection lead to progress.

Similar findings were observed by Ololube (2006) that professionally trained math teachers had positive effect on students' achievements. The students who were taught by the trained Math teachers attained high scores. This finding was in alignment of Moon, Mayes & Hutchinson's (2004) investigations who found that trained teachers not only use their ability to impact and influence students' performance but also had strength in understanding others, working out the significance of behaviour of students. Evidently these studies uncovered that trained teachers knew different teaching styles so that they can reach their students' abilities to learn. On the other hand, students studying under the guidance of academically trained

teachers remained deprived from the latest pedagogical supports due to unawareness of their teachers in pedagogical skill areas (Farooq & Shahzadi, 2006). The academically trained teachers knew the content but not the pedagogy to deliver it to students of different abilities to learn.

Similarly, Hammond (2006) used a semi-structured protocol and interviewed 23 graduates who were enrolled in training program from 1999 and 2000. The graduates were asked about their teaching experience prior to any training they might have had and what areas these graduates were assisted in by the training program. It should be noted that these interviews were conducted on experienced teachers i.e. teachers who had been in the teaching profession before they entered training program. The result indicated that there was: (a) increased effectiveness working with struggling students; (b) greater sophistication in curriculum planning, particularly in identifying and matching long-term objectives and assessment; (c) greater appreciation for collaborative teaching and ability to nurture collegial support; (d) structured opportunities for feedback and reflection on teaching practice. This further proved that teacher education programs contributed to the development of teachers' competence. Another group of researchers had a different view that indeed teachers may improve their PCK by exposure to different teaching methodologies. However, trained teachers often revert quickly to old habits especially those who have been teaching prior to enrolment in the teacher training program. As a result, training activities have little effect on their motivation and ability to use the innovation or good practices they were exposed to during training (Navarro & Verdisco, 2000).

Relationship of Knowledge/Skills and Teaching Practices

With all the learning process that took place in the teacher education program, student teachers at the end were expected to acquire knowledge and skills about teaching. According to Gatbonton (2008), novice teachers seemed to have acquired training and minimal teaching experience through teacher training program. The teacher education program has the practicum aspect in different phases. There were similarities in the two groups of teachers that had been investigated. Novice teachers who had less teaching experience than their experienced counterparts yield similar result in their teaching practices. The fact that the novice teachers were similar to the experienced teacher suggested that at this early stage of development, novice teachers already acquired or were in the process of acquiring many

skills expected of experienced teachers. This early development could be attributed to the teacher training that the novice teachers had completed which included two one-term teaching methods courses, one term foundational course such as psychology courses as part of their education, six-week intensive, on-campus practicum in which they planned and taught authentic lesson. In addition, a 12-week experience of teaching authentic high school students, under supervision was provided.

Navarro & Verdisco (2000) and Hammond (2006) discovered a significant aspect that is overlooked many times i.e. to tap the teachers' pedagogical knowledge and skills in relation to how teachers teach, the approach taken was to ask teachers what they were thinking about at particular moments during teaching and to deduce from their replies what teaching knowledge likely guided their actions. Although the responses vary, they were easily recognizable as concerned with the act of teaching. Similarities confirmed the areas of pedagogical knowledge that seemed essential to the performance of the pedagogical task.

With all the reviews done on the different aspects of relationship between teacher training and teachers' teaching practices, one can see that at the secondary schools in Belize half of the teachers do not possess a professional qualification. Most teachers have academic qualification which means that they lack the pedagogical element of teaching. If this trend continues i.e. having teachers who are academically qualified to be present at the high schools, they would still be producing students who lack the necessary skills that are needed in the workplace. In order to improve the quality of education and the output at the Secondary School, it is very essential to prioritize training high school teachers.

CHAPTER III. METHODOLOGY

Chapter Overview

This chapter provides an insight of the procedures undertaken in establishing the research framework, which illustrates both the independent and dependent variables that were investigated. Next, the research methods include the collection of data that stems from the self-evaluation questionnaire used, the sample size which was 304 in total. Statistical Package for the Social Science (SPSS) software was utilized for analysis. The testing conducted was from reliability testing, t-test, One-way ANOVA, Post Hoc, Correlation, and Regression.

Research Framework

In the research framework, the process of acquiring knowledge and skills and the transferability into the teaching practice are indicated by several inputs. The variables are grouped within the component A, B and C which are regarded as the independent variables and the ones grouped within the component D, E and F are dependent variables. But during the analysis some of these variables may be treated as intervening variables especially the ones labelled experiences. Figure 3.1. illustrates the process i.e. pre-service (teacher education line) and in-service (work situation line) that trained teachers go through. The interest is to know how these variables interact in the process of transferring knowledge and skills acquired from teacher education program into the classroom which can lead to the formation of an effective teacher.

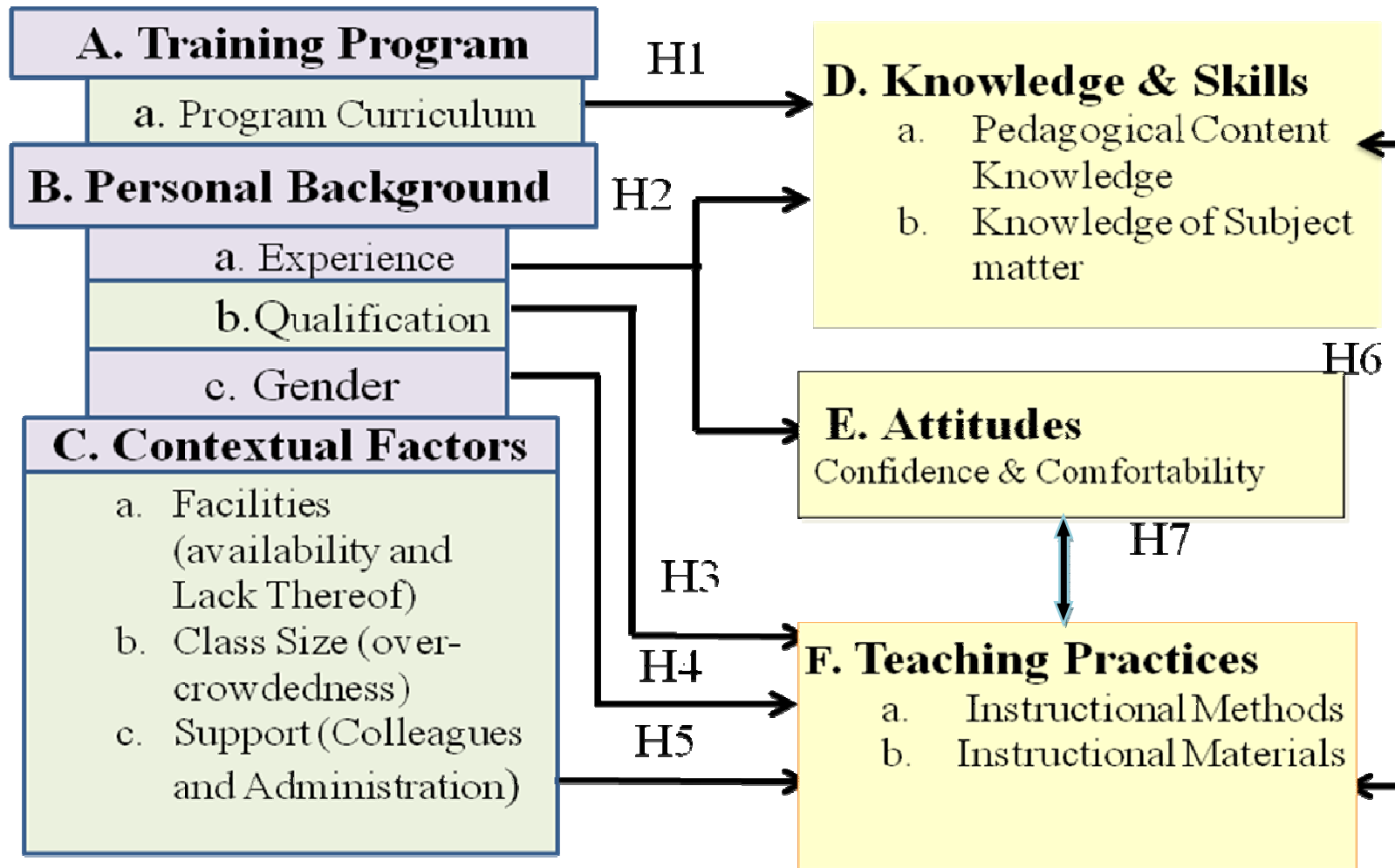


Figure 3. 1. *Research Framework*

In this framework, both inputs and outputs that contribute in the makeup of a competent, effective, and trained teacher were recognized. The inputs for component A are:

- i. curricular conditions i.e. the courses offered that are related to help teachers to identify teaching strategies
- ii. non-curricular condition refers to the hidden curriculum that enhances teachers' learning and development, for instance, teaching experience.

Component B contains demographic information such as experience and gender. The researcher is interested to know how these variables have an effect of teachers' comfortableness and confidence level in their teaching practices and also to know how experience contribute to knowledge and skills.

Component C examined the contextual factors that affect teachers' teaching practices, positively or negatively and has the following factors:

- i. class size: How does this help or inhibit teacher's confidence level?
- ii. teaching load: The researcher would be examining how this affect teachers' teaching practices.
- iii. support from colleagues and administration: Does collaboration with fellow teachers affect teaching practices?
- iv. facilities: Do the availability or lack of these things affect teachers from carrying out activities planned for teaching?

These factors can be constraints or pathways to create effective teachers. The result would indicate to the researcher whether these factors affect teaching negatively or positively. Professionally and academically qualified teachers face these issues everyday throughout their teaching career.

Table 3.1. below indicates the variables to be measured in terms of the teachers' teaching practices.

Table 3. 1. *Areas to Measure Competent Teacher*

Dependent Variables	Measures
Attitudes	<ul style="list-style-type: none"> Confident using new teaching methods Comfortable trying out new teaching methods Comfortable teaching students using student-centred approach
Knowledge and Skills	<ul style="list-style-type: none"> Understand and teach content area in a way accessible to learners Skilled in selecting appropriate teaching methods Capable of learning new teaching techniques through trial-and-error approach
Teaching Methods	<ul style="list-style-type: none"> Encourages student to explore (constructivist approach) Pairs a more-competent with a less-competent child Works with children one on one Create learning centres in the classroom Incorporates real life situation and cases when planning activities
Instructional Materials	<ul style="list-style-type: none"> Create and use interactive charts Lesson plans Use alternative forms of assessments Educational games

Teacher attitude is the measure of their confidence and comfort level. Confidence is one's ability to make learning accessible to learners. As teachers gain confidence, they challenge themselves to develop and apply new skills. They become less concerned about potential problems and more convinced that they can handle problems that may arise. Teachers who are comfortable using different teaching techniques put students at ease about learning difficult concepts. They see problems and mistakes as learning opportunities, for themselves and for students. With confidence and security, teachers involve learners in finding and creating new ways to learn using their creativity.

Teachers' knowledge and skills are the relevant competences that teachers acquire to perform their teaching duties. In the different education program (English Ed., Biology Ed., Math Ed. and Business Ed.) teachers learned how the theory of integrating various teaching methodologies including creating interactive games to make learning fun for the students. They would also have had developed skills in evaluating and selecting appropriate activities for concepts taught. The ratings gauged the understanding of basic concepts and their capability to make it accessible to learners and ability to select appropriate teaching techniques. On the questionnaire, teachers would rate their competences in terms of specific indicators for attitudes, skills and practices. In the area of attitudes, teachers rated their confidence using new teaching methods. They also rated their classroom practices in their creativity in using different instructional materials, including lesson plans, and educational games.

Teacher practices are the teachers' ability to create instructional materials. Effective implementation of classroom practices is one of the education program goals. Teachers were introduced to a variety of instructional methods to engage students while learning such as preparing classroom materials and using available resources that can lead to create a range of instructional materials including educational games. As a result, teachers are expected to implement new teaching practices in their respective classrooms. During internship, teachers described their classroom experiences, sharing what they had learned and gain further insights through feedback from supervisors and peers. But what happens after internship is not known especially those teachers who had been teaching prior to entrance into the teacher education program. However, through implementing new practices, teachers consolidate their skills and adapt what they learn to fit a specific classroom environment.

Sample

Twenty high schools were randomly selected among the forty-five high schools in Belize. At least twenty-five teachers filled out the questionnaire in each school selected. But there are schools that have less than twenty-five staff member so in this case the number of respondents from such school was low than twenty-five. These teachers are teaching English, Mathematics, Biology, Business Subjects, Chemistry and Social Studies and other subject areas.

The first step taken was to contact the principals of the selected schools via e-mail to request their staff members' participation in the survey. However, when a follow-up call was made, majority of the principals stated that they had not received any e-mail regarding the researcher's request. When the researcher made the phone calls, an appointment was arranged to administer the survey. There were at least four principals and vice principals who volunteered to distribute the questionnaire to the staff members. Overall, there were 307 respondents, 3 questionnaires were not fully completed and were discarded, which gave a total of 304 questionnaires to analyze.

Hypotheses

Hypothesis 1

H₀: The effectiveness of the courses taken showed no significant differences between teachers who took 1-3 instructional techniques courses and teachers who took more than 4 courses.

H_A: The effectiveness of the courses taken showed significant differences between teachers who took 1-3 instructional techniques courses and teachers who took more than 4 courses.

Hypothesis 2

H₀: Teachers who have more than 15 years of teaching experience do not have more knowledge, skills and confidence in their teaching practices than teachers who have less than 5 years teaching.

H_A: Teachers who have more than 15 years of teaching experience have more knowledge, skills and confidence in their teaching practices than teachers who have less than 5 years teaching.

Hypothesis 3

H₀: There is no difference between trained and untrained teachers' teaching practices.

H_A: There is a difference between trained and untrained teachers' teaching practice.

Hypothesis 4

H₀: Female teachers teaching practices are the same as the male teachers.

H_A: Female teachers' teaching practices are not the same as the male teachers.

H₄₋₁. H₀: Female teachers have the same Instructional Method Practice as the male teachers.

H_A: Female teachers do not have the same Instructional Method Practice as the male teachers.

H₄₋₂. H₀: Female teachers' Instructional Material Practice is the same as the male teachers.

H_A: Female teachers' Instructional Material Practice is not the same as the male teachers.

Hypothesis 5

H₀: The school environment does not affect teachers' teaching practices in the classroom.

H_A: The school environment has an effect on teachers' teaching practices in the classroom.

H₅₋₁. H₀: Availabilities of facilities do not affect teachers' teaching practices.

H_A: Availability of Facilities do affect teachers' teaching practices in the classroom.

H₅₋₂. H₀: Additional Facilities do not affect teachers' teaching practices in the classroom.

H_A: Additional Facilities do affect teachers' teaching practices in the classroom.

H₅₋₃. H₀: Team working does not affect teachers' teaching practices in the classroom.

H_A: Team working does affect teachers' teaching practices in the classroom.

H₅₋₄. H₀: Overcrowded classrooms do not affect the teaching of teachers.

H_A: Overcrowded classrooms do affect the teaching of teachers.

H₅₋₅. H₀: Lack of Facilities does not affect teaching practices of teachers.

H_A: Lack of Facilities does affect teaching practices of teachers.

H₅₋₆. H₀: Support from colleagues and administration do not affect teaching practices.

H_A: Support from colleagues and administration do affect teaching practices.

H₅₋₇. H₀: University teacher preparation does not help teachers in their teaching practices

H_A: University teacher preparation does help teachers in their teaching practices.

Hypothesis 6

H₀: There is no relationship between teachers' knowledge and skills and teaching practices.

H_A: There is a relationship between teachers' knowledge and skills and teaching practices.

Hypothesis 7

H₀: There is no relationship between teachers' attitude and teaching practices.

H_A: There is a relationship between teachers' attitude and teaching practices.

Data Collection

In this study, the researcher sought to find out the relationship of teacher education on teachers' teaching practices. The framework of the study demonstrates the different components that are possible factors in the process of teachers becoming competent. The sample was studied using quantitative method. The high school teachers were asked to fill out self-evaluation questionnaire that measured three important areas such as the skills/knowledge, attitudes and teaching practices. These are teachers teaching different disciplines at the high schools, therefore, the area was perceived as in-service competence.

Instrumentation

The questionnaire was a self-evaluation instrument. It took the participants fifteen minutes to complete. This questionnaire was divided into eight sections. The first section collected background information while the other two sections that followed measured teachers' satisfaction on the courses, the effectiveness of the courses and the acquisition of new teaching techniques they received in the teacher education program. These two sections were for trained teachers only.

The other sections measured Instructional Method Practice, Instructional Material Practice, Attitudes, Knowledge and Skills and Factors that may affect the teaching practices. Completed questionnaires were submitted anonymously. The questionnaire was adapted from Landerholm (1995) and modified based on the objectives of this study which is to find out the relationship of teacher education and teachers' teaching practices. The original questionnaire measured teachers' knowledge, skills, attitude, teaching practices towards development technology proficiency. For this study, the researcher modified the questionnaire items towards the development of teaching practices, development of knowledge, skills and attitudes in teacher education program. The contextual factors variables were added to the already existing questionnaire. Six sections of the questionnaire have 5-point Likert Scale format (5=Strongly Agree ... 1=Strongly Disagree).

Reliability and Validity

Landerholm (1995) has developed the self-evaluation questionnaire to assess teachers' attitude, knowledge and practice in integrating technology into their teaching for primary school teachers. Years later, Chen & Chang (2007) adapted the same questionnaire to conduct a survey where they were testing the impact of whole teacher approach training program used in professional development of teachers in integrating technology in their teaching practices. This instrument had brought results that demonstrated factors that affect teachers in their teaching practice. Nevertheless, the self-evaluation questionnaire had been used and adapted by other researcher, the validity and reliability was not illustrated. As a result, the researcher had other expert professors to review the questionnaire for validity and was peer reviewed as well.

Since the questionnaire was modified and tested for reliability, SPSS software was used to test for reliability of each item on the questionnaire. The overall result indicated that the Cronbach's Alpha was 0.832 which was at an acceptable level.

Data Analysis

First, to determine the purpose of the education program and courses offered, researcher analyzed the available program documents such as the mission statement and course syllabi (program sequence for each education program). The curriculum of the education program was requested but was not accessed. Using the course syllabi, the courses offered were grouped into three units – Professional Studies, Curricular Studies and Practical Training (Figure2.1.). Then distribution and collection of the modified questionnaire was done. The questionnaire used had closed items with discrete categories as well as interval scales.

Data relating to background information were calculated using descriptive statistics. This section included percentages by gender, teaching experiences, education background and teaching load. The data was analyzed for the subgroups: trained and untrained teachers. T-test was used for this analysis. Section 2 & 3 was completed by trained teachers only. This determined the numbers of trained teachers in this study and indicated the percentage of teachers who are trained as professional teachers presently teaching in the selected schools.

Correlation and regression analysis were used for testing of Hypothesis 6. To determine whether knowledge and skills have a relationship with teaching practices, the

analysis involved Pearson correlations where knowledge and skills served as the independent variable and the teaching practices served as the dependent variables was conducted. To test the factors that may affect teaching practices, ANOVA was used to obtain the results. Each item under this section is the independent variable whilst the teaching practices i.e. Instructional Methods and Instructional Materials Practice are the dependent variables. To further examine where the differences exist, Post Hoc was used for comparison. For hypothesis 7, correlation was run to examine the relationship of the other dependent variables with attitude.

Research Procedure

The researcher contacted principals of at least 20 high schools in Belize. The principal was informed that the researcher would be administering a survey among the staff members. In addition, available documents in the form of mission statement and program sequence were acquired for analysis. This gave an insight of what the teacher education program offers.

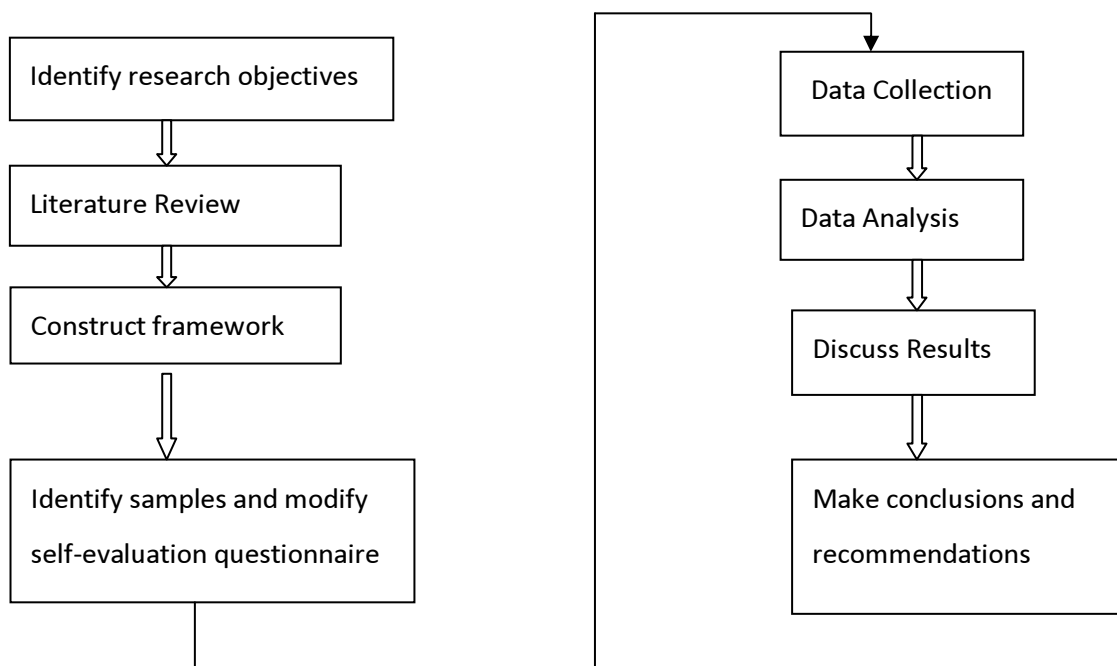


Figure 3. 2. *Research Procedures*

CHAPTER IV. FINDINGS AND DISCUSSIONS

Chapter Overview

The purpose of this study was to find out the relationship of teacher education and teachers' teaching practices. Factors such as gender, experiences, contextual factors, and teacher training, teaching practices, attitudes and knowledge and skills were included in the analysis to determine their relationships. This chapter presents the result of the quantitative analysis, and tables are presented to illustrate the findings.

Profile for Respondents

Demographic data

Descriptive statistics such as frequencies and means were calculated for demographic information solicited in section 1 of the survey. The results were used to describe the general characteristics of the participants.

Table 4. 1. *Frequency for Males and Females Respondents*

	Frequency	Percent (%)
Male	140	46.1
Female	164	53.9
Total	304	100

There were 140 (46.1 %) male teachers and 164 (53.9%) females comprising the sample size. It appeared that the proportion of male and female respondents was almost equally distributed.

The researcher grouped these teachers into three categories according to the years of teaching experience they had. The table on the next page presents the number of teachers who fit the labelled categories.

Table 4.2. shows the three categories of teachers according to their years of teaching experience.

Table 4. 2. *Frequency for Teachers' Years of Teaching*

	Frequency	Percent (%)
<5 (less experienced)	122	40.1
5-14 (somewhat experienced)	117	38.5
15 or more (experienced)	65	21.4

The majority of respondents formulated the less than 5 years grouping with 122 teachers, while 117 teachers made up the 5-15 years somewhat experience category and 65 teachers were in the last grouping of 15 and more years of teaching under the experience category. Next, the participants' level of education were analysed in Table 4.3. below.

Table 4. 3. *Frequency for Teacher Qualification*

	Frequency	Percent (%)
AA	146	48.1
B.Ed.	122	40.1
M.Ed.	36	11.8

Table 4.3. demonstrates that 146(48.1%) of the respondents have Associate Degrees, 122 (40.1%) have Bachelor's Degrees, and 36(11.8%) have Master's degrees. Teachers' academic or professional qualification were assessed and 118 (38.8%) teachers obtained their highest degree at the University of Belize and 186(61.2%) did not. The teaching load of teachers was taken into consideration. The results illustrated that 195(64.1%) respondent are teaching 15 hours per week; 96(31.6%) teachers teach between 15 to 30 hours per week and those who fall under teaching more than 30 hours per week were 13(4.3%) teachers. The data was carefully examined why there was small percentage of respondents in this category. It

revealed that teachers who are teaching Physical Education and other Vocational courses such as Woodwork had more than 30 hours teaching load.

Teacher preparation

The teacher preparation examined the level of effectiveness, satisfaction level of the courses that trained teachers had undertaken during the teacher training. The results are displayed below.

Table 4. 4. ANOVA for Effectiveness, Satisfaction and Acquired Knowledge for Trained Teachers

		Sum of Squares	df	Mean Square	F	Sig.
Effectiveness Level	Between Groups	11.956	3	3.985	4.301	.006*
	Within Groups	144.538	156	.927		
Satisfaction Level	Between Groups	10.598	3	3.533	4.243	.007*
	Within Groups	129.896	156	.833		
New Knowledge Acquired Level	Between Groups	7.251	3	2.417	3.262	.023*
	Within Groups	115.593	156	.741		

* $p < .05$

One-way ANOVA revealed that there were significant differences in the effectiveness of the course taken in helping teachers in their teaching practices, where $F(3,156) = 4.301$ ($p < .05$); therefore H1 null hypothesis is rejected. Those teachers who took more than 4 courses reported having that the courses increase effectiveness in their day-to-day teaching. The ANOVA results indicated that there is a significant difference amongst teachers who were satisfied with the courses offered in the teacher education program, where $F(3, 156) = 4.243$ ($p < .05$). Respondents were asked whether they acquired specific teaching techniques that they use in their current teaching practices. The results illustrate significance differences, where $F(3, 165) = 3.262$ ($p < .05$). These two sections of the self-evaluation questionnaire

were completed by those teachers who had graduated from the teacher education program at the University of Belize. The perception of teachers on these issues signifies that the education program played a part in the choice of teaching techniques to those teachers who went through the teacher education program at the University of Belize.

As was contended by Yuskel (2007) and Taskin (2008) integrating professional studies, curricular studies and practical training in teacher education should assist in bridging the gap between theory and practice. The teacher education tends to follow similar framework. However, the survey questionnaire solely measured the perception on the instructional techniques courses (curricular courses).

The findings showed that those teachers who took more than 4 courses reported that the courses were effective while those who took 1 or 2 showed neutrality in effectiveness. Moreover, looking at the teaching practices of the trained and untrained which was presented in Table 4.5., the results displayed no differences between the two groups. As was investigated by Jones (1997), there was no considerable difference between those entering the teaching profession through professional training programs and attainment of only subject matter knowledge. The T-test administered for analysing this issue was in agreement with Jones' findings that trained and untrained teachers do not display significant differences. But this is implying that curriculum for teacher education program is not sufficient to prepare teachers to produce the calibre of teachers as expected.

Instructional method practice

The analysis on this issue served as a check to find out differences between trained and untrained teachers in their teaching practices i.e. instructional methods and instructional materials. Instructional methods contains the dimension of the use of encouraging students, questioning technique, pairing students, working with students one-on-one, cooperative and independent learning. The instructional materials consist of the use of interactive charts, lesson planning, developing rubrics and creating educational games. Table 4.5. presents the findings.

Table 4. 5. *T-test for Instructional Methods between Trained and Untrained Teachers*

	F	Sig.	<i>t</i>	df	Sig. (2-tailed)	Mean Difference
Instructional Method Practice	.959	.328	-.785	302	.433	-.29792
Instructional Material	.025	.875	.679	302	.498	.19444
Attitude	.331	.566	-.218	302	.827	-.07569
Knowledge & Skills	.126	.723	-.524	302	.601	-.14861

* $p < .05$

The results indicated that there were no significant differences in performance between trained and untrained teachers at the ($p < .05$) significant level. In the Instructional Method, $t(302) = -.785$. The average performance score of trained ($M = 4.23$, $SD = .613$) was not significantly different from that of untrained ($M = 4.17$, $SD = .71$), in the Instructional Materials category where $t(302) = .679$. The average performance score of trained ($M = 3.16$, $SD = .493$) was not significantly different from that of untrained ($M = 3.201$, $SD = .505$), in the Attitude category where $t(302) = -.218$. Again the average score between trained and untrained did not yield a significant difference, trained ($M = 4.29$, $SD = .577$) and untrained (M

=4.27, $SD = .631$) and in the Knowledge and Skills category where $t(302) = -.524$. The average score of trained ($M = 3.23$, $SD = .503$) was not significantly different from that of untrained ($M = 3.20$, $SD = .498$). Table 4.5. above illustrates the findings between the two groups of teachers not only in their Instructional Methods but also in their Instructional Materials that are deemed as the teaching practices. Since the results indicated that there is no difference in both categories between trained and untrained teachers, the null hypothesis in H3 was retained.

In addition, the data showed that there were no significance differences between Attitudes and Knowledge & Skills. Although the results on this section did not show significant difference, the findings pertaining to academically trained and professionally trained teachers are worth reviewing. There may be hidden factors that are beyond the scope of this study that affect the teaching practices. In Lynch & Harnish's (2003) findings, academically qualified teachers employed different methods of teaching less frequently which may be the case in this study. Since the teachers filled out self-evaluation questionnaire, responses may not be completely objective. Therefore, longitudinal research is needed to go in-depth and discover the reason of no difference if there is none at all. On the other hand, Ololube's (2006) study stated that trained teachers know more teaching methods which appeared a bit inconsistent with the present study, although trained teachers reported to have acquired new knowledge in teaching techniques. Darling-Hammond (2006) argued that teacher education programs that envision the professional teacher, as one who learns from teaching and teacher education as developing the capacity to inquire are the more effective means for preparing competent teachers than programs which control teachers with simplistic teaching routines.

Instructional materials practice

This analysis served as a check to find out if there were significant differences between male and female teachers' teaching practices. The instructional materials consist of the use of interactive charts, lesson planning, developing rubrics and creating educational games. Table 4.6. shows no major significant difference between male and female except in one category.

Table 4. 6. *T-test for Instructional Materials between male and female teachers*

	F	Sig.	<i>t</i>	df	Sig.(2-tailed)
Instructional Methods	.483	.488	-.962	302	.337
Instructional Materials	.462	.497	-2.262	302	.024*

* $p < .05$

The t-test indicates that there is a significant difference in performance between male and female teachers in the instructional materials practice where $t(302) = -2.262$ ($p < .05$). Therefore, the null hypothesis the H_{4-2} is rejected. The average score of female ($M = 3.24$, $SD = .496$) was significantly different from that of male ($M = 3.11$, $SD = .494$).

The results are somewhat consistent with (Liu, D'Costa, Loadman, & Moore, 2008) whose findings indicated that male and female teachers do not differ in their teaching practice. But there is little evidence showing that there is significant difference attributable to females only in Instructional Material Practices. The null hypothesis in H_{4-1} was retained. It's noted that males and females display more similar than different preferences and when that differences do exist; behavior that deviates from gender stereotypes is more prevalent such that the female teachers showed more dedication and preparation of different activities than male teachers.

Attitudes

Table 4.5. displays that trained and untrained teachers do not have any differences in attitudes. But further analysis depicted that indeed attitudes should not be set aside, for it plays an important role in the lives of teachers in relation to their teachings. Table 4.7. presents the relationships among the other variables with attitude. Attitude category contains the comfortability and confidence that teachers has when trying new teaching methods, teaching materials, working with colleagues and discussing results of tests with students.

Table 4. 7. *Correlation for Attitudes, Teaching Practices, Knowledge & Skills*

		Attitude.	Instructional Methods	Instructional Materials	Knowledge & Skills
Attitude	Pearson Correlation	1	.571**	.576**	.557**
	Sig. (2-tailed)		.000	.000	.000

** Correlation is significant at the 0.01 level (2-tailed).

The correlation analysis indicates that the observed relationships were very strong. The relationship between attitudes and Instructional Methods is strong where ($r = .571$), which indicates that a teacher with positive attitude would more likely improve and dedicate more time to experiment or use new approaches to teach their lessons.

Attitude and Instructional Materials where ($r = .576$) indicates the strongest relationship meaning that positive attitudes would improve teachers' ability to construct teaching materials. Attitude and Knowledge & Skills where ($r = .557$) is another area where the relationship is strong and positive meaning that a teacher is more likely to acquire new knowledge and skills to improve. Therefore, the null hypothesis in H7 is rejected. Another correlation was run between knowledge & skills and teaching practices.

The knowledge and skills contains items on coordination of lessons with colleagues, continuous learning by oneself, subject matter, pedagogical knowledge i.e. knowledge of selecting teaching methods to meet students' learning needs.

Table 4. 8. *Correlation for Knowledge and Skills and Teaching Practices*

		Instructional Methods	Instructional Materials	Knowledge & Skills
Knowledge & Skills	Pearson Correlation	.441**	.467**	1
	Sig. (2-tailed)	.000	.000	

** Correlation is significant at the 0.01 level (2-tailed).

Knowledge & Skills of the participant is associated with both instructional method, ($r=.441$) indicating that knowledge and skills play a role in the planning and using of different teaching strategies, and instructional materials where ($r=.467$), indicating that knowledge and skills has strong relationship with materials used in teaching. Therefore, the null hypothesis in H6 is rejected.

Since the findings show strong and positive relationship between these variables, this suggests that the more positive attitudes and the more knowledge and skills a teacher displays, the better the teaching practices.

Knowledge and skills

The correlation between knowledge and skills and teaching practices (Table 4.8.) was executed to find out the relationship that exists amongst these variables. The result implies that teachers' actions were guided by their knowledge of what they are teaching in an instructional setting. The analysis was carried for all teachers whether trained or untrained, male or female. The relationship amongst the variables (Knowledge & Skill and Teaching Practices) that Navarro & Verdisco (2000) and Hammond (2006) discovered in their observations and interviews with teachers after teaching a lesson was further supported by the results of this study. The next table provides the regression analysis between Knowledge & Skills and Teaching Practices.

Table 4.9. provides the direction of the relationship between Knowledge & Skills and Instructional Method Practice.

Table 4. 9. Regression for Knowledge & Skills and Instructional Methods

Model		Unstandardized Coefficients		Standardized	<i>t</i>	Sig.
		B	Std. Error	Beta		
1	(Constant)	11.483	1.125		10.208	.000
	Knowledge & Skills	.591	.069	.441	8.550	.000

a. Dependent Variable: Instructional Method Practice

The regression results indicates that with every increase of Knowledge & Skills, the Instructional Method Practice increases by 0.591 units, ($p < .05$). The regression analysis is performed to examine the impact of knowledge and skills on teaching practices. The interesting results provided the prediction that if teachers were to increase their knowledge of the content or the pedagogy, they would improve their teaching methods. Table 4.10. below presents the impact of knowledge and skill on instructional materials

Table 4. 10. Regression for Knowledge & Skills and Instructional Materials

Model		Unstandardized Coefficients		Standardized	<i>t</i>	Sig.
		B	Std. Error	Beta		
1	(Constant)	8.321	.836		9.951	.000
	Knowledge & Skills	.471	.051	.467	9.175	.000

a. Dependent Variable: Instructional Material Practice

Table 4.10. provides the direction of the relationship between Knowledge & Skills and Instructional Material Practice. With every increase of Knowledge & Skills, the Instructional Material Practice increases by 0.471 units, ($p < .05$). The regression analysis is performed to examine the impact of knowledge and skills on teaching practices. The prediction is that

when teachers increase their knowledge of the content or the pedagogy, they would improve their Instruction. Thus increasing their Knowledge & Skills means an increase of their understanding, knowing and applying instructional materials that are appropriate for their teaching.

The concern in this section is the applicability of the knowledge and skills acquired during the years in the teacher education program. Nevertheless, this thought was expanded to be tested on the trained teachers who took teaching techniques courses in the teacher education program at the University of Belize. The ANOVA result (Table 4.4.) conducted posited that teachers do learn something new that help them in their teaching. How much of what is learnt is transferred was not measured? This can be an issue for further investigation in future research.

Additionally, the data illustrated that there was no significant difference between trained and untrained teachers in their knowledge and skills. There was inconsistency here for trained teachers, this may be in alignment with Bransford and Schwartz (1999) who stated that environmental factor can be an issue. Although trained teachers may have the knowledge and skills, the environment does not give them full support for transfer. Another study observed that trained teachers quickly reverted to traditional way of teaching despite knowledge and skills acquired particularly if teachers had been in the classroom prior to training (Navarro & Verdisco, 2000).

Factors that Affect Teaching Practices

To test how the different contextual factors affect teaching practices, One-way ANOVA was administered. The following tables that follow present the finding on each contextual factors and how each affects the teaching practices.

Availability of facilities

The issue of the availability of facilities affects teaching practices. The table below provides the group results of the two categories (instructional methods and instructional materials)

Table 4. 11. ANOVA for Availability of Facilities and Teaching Practices (Group Results)

		Sum of Squares	df	Mean Square	F	Sig.
Instructional Method Practice	Between Groups	108.736	4	27.184	2.543	.040*
	Within Groups	3196.234	299	10.690		
Instructional Material Practice	Between Groups	80.040	4	20.010	3.324	.011*
	Within Groups	1800.193	299	6.021		

* $p < .05$

A One-way ANOVA was conducted to find out how the availability of facilities to fulfil instructional objectives affects teaching practices. There was a significant input of the availability of facilities on teaching practices at the ($p < .05$) level. Therefore, the null hypothesis in H_{5-1} is rejected. The result above is group results of the Instructional Methods where $F(4, 299) = 2.543$, and Instructional Materials $F(4, 299) = 3.324$. Further item analysis was conducted.

Table 4.12. provides the individual item analysis to further discover where the differences are.

Table 4. 12. ANOVA for Availability of Facilities

		Sum of Squares	df	Mean Square	F	Sig.
Encouraging Students	Between Groups	5.713	4	1.428	2.159	.074
	Within Groups	197.784	299	.661		
Pair More Competent with Less Competent Student	Between Groups	12.590	4	3.148	3.499	.008*
	Within Groups	268.936	299	.899		
Working with Student One-on-one	Between Groups	5.612	4	1.403	1.375	.242
	Within Groups	305.020	299	1.020		
Cooperative & Independent Learning	Between Groups	3.921	4	.980	1.703	.149
	Within Groups	172.066	299	.575		
Questioning Technique	Between Groups	2.930	4	.733	1.033	.390
	Within Groups	212.017	299	.709		
Use of Interactive Charts	Between Groups	4.652	4	1.163	1.585	.178
	Within Groups	219.319	299	.734		
Lesson Planning	Between Groups	9.253	4	2.313	3.785	.005*
	Within Groups	182.744	299	.611		
Developing Rubrics	Between Groups	6.534	4	1.634	2.010	.093
	Within Groups	242.992	299	.813		
Creating Educational Games	Between Groups	6.243	4	1.561	1.821	.125
	Within Groups	256.253	299	.857		

* $p < .05$

One-way ANOVA is conducted on items in each category. In the Instructional Methods Practice, the items that exerted significance difference is pairing a more competent student with a less competent one where $F(4, 299) = 3.499 (p < .05)$.

The Post Hoc (See Appendix C) analysis using the Bonferroni test compared the means of the respondents' responses. Those who strongly agree ($M = 4.39$) yielded more responses

than the ones who disagreed ($M=3.74$). More respondents strongly agreed that availability of resources affect how they pair students to work together. This indicates that grouping students is done based on availability of facilities that can help achieve the objectives of the lesson. Specifically, this result shows that when teachers have the right facilities they engage students more competent student to work with a less competent one to achieve their lessons' objectives. Mareen, Kynaslahti & Krokfors (2008), found out that teachers emphasized that supporting systems had assisted them in their teaching similar to this present study. Although the result may show that schools are equipped, the next analysis revealed that additional facilities are needed for the betterment of what was already provided.

The difference in Instructional Material Practices (lesson planning) where $F(4, 299) = 3.785$ ($p < .05$). The Post Hoc (See Appendix C) analysis using the Bonferroni test compared the means of the respondents' responses. Those who strongly agree ($M = 4.89$) yielded more responses than the ones who strongly disagreed ($M=4.26$). There are more respondents SA most that availability of resources affects how they plan their lesson.

Therefore, availability of facilities affects the lesson planning positively. This indicates that planning is done based on availability of facilities that can help achieve the objectives of the lesson. Specifically, the results suggest that when teachers have the right facilities they plan better activities to achieve their lessons' objectives.

Additional facilities

Although respondents agreed that facilities are available, additional ones can be better. The results for the additional facilities are displayed below.

Table 4. 13. *ANOVA for Additional Facilities and Teaching Practices (Group Results)*

		Sum of Squares	df	Mean Square	F	Sig.
Instructional Method Practice	Between Groups	189.397	4	47.349	4.544	.001*
	Within Groups	3115.574	299	10.420		
Instructional Material Practice	Between Groups	74.817	4	18.704	3.098	.016*
	Within Groups	1805.417	299	6.038		

$p < .05$

The One-way ANOVA conducted indicated that additional facilities to fulfil instructional objectives affect teaching practices. There were significant differences in both categories. Therefore, the null hypothesis in $H_{5.2}$ is rejected. Additional facilities on teaching practices at the $p < .05$ level for Instructional Methods tested in groups where $F(4, 299) = 4.544$, and for Instructional Materials where $F(4, 299) = 3.098$.

To highlight where the differences exist, a One-way ANOVA was executed on the individual items in each category i.e. testing items in Instructional Methods and Instructional Materials. Table 4.14. displays the result of teaching practices that can be affected.

Table 4. 14. ANOVA for Additional Facilities

		Sum of Squares	df	Mean Square	F	Sig.
Encouraging Students	Between Groups	12.187	4	3.047	4.762	.001*
	Within Groups	191.310	299	.640		
Pair More Competent with Less Competent Student	Between Groups	8.421	4	2.105	2.305	.058
	Within Groups	273.106	299	.913		
Working with Student One-on-one	Between Groups	20.951	4	5.238	5.406	.000*
	Within Groups	289.681	299	.969		
Cooperative & Independent Learning	Between Groups	3.496	4	.874	1.515	.198
	Within Groups	172.491	299	.577		
Questioning Technique	Between Groups	3.506	4	.877	1.240	.294
	Within Groups	211.441	299	.707		
Use of Interactive Charts	Between Groups	10.146	4	2.536	3.547	.008*
	Within Groups	213.824	299	.715		
Lesson Planning	Between Groups	7.340	4	1.835	2.971	.020*
	Within Groups	184.656	299	.618		
Developing Rubrics	Between Groups	8.426	4	2.106	2.612	.036*
	Within Groups	241.101	299	.806		
Creating Educational Games	Between Groups	5.948	4	1.487	1.733	.143
	Within Groups	256.548	299	.858		

* $p < .05$

In the Instructional Method Practice the items that exerted significant difference is encouraging students to interpret ideas from diverse perspectives where $F(4, 299) = 4.762$ ($p < .05$); teacher working with students one-on-one where $F(2, 299) = 5.406$ ($p < .05$). The Post Hoc (Appendix D) analysis using the Bonferroni test further revealed that respondents strongly agree ($M=4.55$) than those who disagreed ($M=3.82$) that additional facilities are needed to broaden student's perspectives on diverse views. On the other item where teachers were asked if they work with students one-on-one, the responses for those who strongly agree ($M= 4.12$) is higher than those who disagree ($M= 3.12$). Moreover, the means for those who chose to be neutral ($M= 3.93$) is higher than those who disagree.

In the Instructional Material, there are three items that yielded significant differences at the $p < .05$ level. The use of interactive charts when teaching is where $F(4, 299) = 3.547$. Here the mean for Strongly Disagree ($M=4.00$) was higher than those who Strongly Agree ($M=3.78$) which translate that more participants perceive that additional facilities would not necessarily help them better to create interactive charts for their lessons; the lesson planning where $F(4, 299) = 2.971$, the mean for those who Agree ($M = 4.59$) is higher than those who Disagree ($M=4.00$). This means that respondents' perception on additional facilities would do more in assisting in lesson planning. Looking at developing rubric for alternative assessment yields $F(4, 299) = 2.612$, which indicates that facilities affects how rubrics are generated positively.

Working with colleagues

Furthermore, planning and working together with colleagues was included in this study. Table 4.15. displays the findings.

Table 4. 15. ANOVA for Team Working and Teaching Practices (Group Results)

		Sum of Squares	df	Mean Square	F	Sig.
Instructional	Between Groups	314.701	4	78.675	7.867	.000*
Methods	Within Groups	2990.269	299	10.001		
Instructional	Between Groups	260.199	4	65.050	12.006	.000*
Materials	Within Groups	1620.035	299	5.418		

* $p < .05$

The One-way ANOVA conducted to find out how planning and working with colleagues affect teaching practices. Team working on teaching practices at the $p < .05$ level for both categories tested as groups provided significant differences. Therefore, the null hypothesis in $H_{5.3}$ was rejected. The Instructional Methods yields $F(4, 299) = 7.867$ and Instructional Materials $F(4,299) = 12.006$.

To highlight where the differences exist, a One-way ANOVA was executed on the individual items in each category i.e. testing items in Instructional Methods and Instructional Materials. Table 4.16. presents the result.

Table 4. 16. ANOVA for Team Working

		Sum of Squares	df	Mean Square	F	Sig.
Encouraging Students	Between Groups	11.417	4	2.854	4.443	.002*
	Within Groups	192.080	299	.642		
Pair More Competent with Less Competent Student	Between Groups	19.703	4	4.926	5.625	.000*
	Within Groups	261.824	299	.876		
Working with Student One-on-one	Between Groups	21.553	4	5.388	5.573	.000*
	Within Groups	289.079	299	.967		
Cooperative & Independent Learning	Between Groups	11.105	4	2.776	5.035	.001*
	Within Groups	164.882	299	.551		
Questioning Technique	Between Groups	10.653	4	2.663	3.898	.004*
	Within Groups	204.295	299	.683		
Use of Interactive Charts	Between Groups	16.643	4	4.161	6.000	.000*
	Within Groups	207.328	299	.693		
Lesson Planning	Between Groups	28.457	4	7.114	13.007	.000*
	Within Groups	163.540	299	.547		
Developing Rubrics	Between Groups	26.928	4	6.732	9.043	.000*
	Within Groups	222.598	299	.744		
Creating Educational Games	Between Groups	6.862	4	1.716	2.007	.094
	Within Groups	255.635	299	.855		

* $p < .05$

One-way ANOVA was conducted on items in both Instructional Methods and Instructional Material and yielded significant difference ($p < .05$) level. In the Instructional Method Practice the items that exerted significant difference are: encouraging students to interpret ideas from diverse perspectives where $F(4, 299) = 4.443$; having students work together with less competent ones where $F(4, 299) = 5.625$; teacher working with students one-on-one where $F(2, 299) = 5.573$; engaging students in cooperating work and independent learning where $F(4, 299) = 2.776$; the use of questioning techniques where $F(4, 299) = 3.898$.

The Post Hoc (Appendix E) analysis using the Bonferroni test further revealed that respondents SA that team-working affects the way teachers encourage students to interpret ideas. The mean for those who Strongly Agree ($M=4.52$) is higher than those who Strongly Disagree ($M=3.25$). This means that when teachers perceive that discussing topics together would affect teaching positively, they have recognized that students were not be able to relate concepts being taught if there is a lack of collaborative working.

When teachers were asked if they pair competent student with less competent ones, those who Strongly Agree ($M=4.13$) was higher than those who Strongly Disagree ($M=2.75$). On the issue of working one-on-one, respondents Strongly Agree ($M=4.18$) was higher than those who Disagree ($M=3.13$). Engaging students in cooperative learning and independent learning gave an indication that the significant difference was between those participants who Strongly Agree ($M=4.71$) than those who Strongly Disagree ($M=3.75$). Using the questioning techniques, those who Strongly Agree ($M=4.47$) was higher than those who Strongly Disagree ($M=3.50$). Overall, respondents perceived that team-working do affect teaching practices positively. It is important then that teachers plan and work together to do cohesive teaching and assist one another. Not only would they develop themselves but the clients would be with the flow of teaching that can occur in the classroom whether the teacher teaches English, Social Studies or Mathematics. The concepts need to tie in with what the Social Studies teacher teaches in the other subject area. Thus the reason for working together as teachers becomes vital.

In the Instructional Material Practice three of the items show significant differences. The One-way ANOVA for individual items gave the following results at the significance difference ($p < .05$) level. The use of interactive charts where $F(4, 299) = 6.00$; lesson planning where $F(4, 299) = 13.007$; and developing rubrics for alternative assessment where $F(4, 299) = 9.043$ are where the differences are. The results posit that team working has an

effect on how overall using of teaching aids, lesson planning and creating rubrics takes place. This claims that learning aids could improve methodology and could reduce their talk and chalk method. Therefore, more collaborative working should be practiced to achieve these perceived practices.

Overcrowded classrooms

The issue of overcrowded classroom was analyzed in Table 4.17.

Table 4. 17. ANOVA for Overcrowded Classrooms

		Sum of Squares	df	Mean Square	F	Sig.
Encouraging Students	Between Groups	1.784	4	.446	.661	.620
	Within Groups	201.713	299	.675		
Pair More Competent with Less Competent Student	Between Groups	.267	4	.067	.071	.991
	Within Groups	281.260	299	.941		
Working with Student One-on-one	Between Groups	1.066	4	.267	.257	.905
	Within Groups	309.565	299	1.035		
Cooperative & Independent Learning	Between Groups	.785	4	.196	.335	.854
	Within Groups	175.202	299	.586		
Questioning Technique	Between Groups	1.703	4	.426	.597	.665
	Within Groups	213.244	299	.713		
Use of Interactive Charts	Between Groups	3.317	4	.829	1.124	.345
	Within Groups	220.653	299	.738		
Lesson Planning	Between Groups	3.977	4	.994	1.581	.179
	Within Groups	188.020	299	.629		
Developing Rubrics	Between Groups	1.911	4	.478	.577	.680
	Within Groups	247.615	299	.828		
Creating Educational Games	Between Groups	11.477	4	2.869	3.418	.009*
	Within Groups	251.020	299	.840		

* $p < .05$

The One-way ANOVA result showed no significant differences. The null hypothesis in H_{5-4} was retained. There is only one item in the Instructional Material Category that depicted a significant difference. Although the overall results showed no significant differences, the issue of overcrowded classroom should be further investigated. In this study, the researcher defined this construct by stating that when there are more than 40 students into a classroom, then it can be labelled as overcrowded. Even though the cut-off points of the description of overcrowded classrooms is more than 40, many classrooms have more than 30 students which still make a classroom overcrowded especially when the classroom is small. This may tell the story that the respondents accept that having these numbers of students is the norm so they are able to work with that. Creating educational games points out the difference where $F(4, 299) = 3.418$ ($p < .05$). The mean for those who strongly agree ($M=4.26$) is higher than those who strongly disagree ($M=3.81$). This is conveying that overcrowded classrooms affect planning and creating games to teach complex concepts which lowered the learning that occurs in a classroom. Additionally, use of interactive charts is also affected by overcrowded classrooms because the two teaching materials cannot be divorced. There may be other hidden factors that can contribute to this difference as well which were not taken into this scope of the study.

Lack of facilities

The results presented in table 4.18. examines how the lack of facilities affects teaching practices.

Table 4.18. ANOVA for Lack of Facilities

		Sum of Squares	df	Mean Square	F	Sig.
Encouraging Students	Between Groups	1.069	4	.267	.395	.812
	Within Groups	202.427	299	.677		
Pair More Competent with Less Competent Student	Between Groups	5.456	4	1.364	1.477	.209
	Within Groups	276.071	299	.923		
Working with Student One-on-one	Between Groups	2.804	4	.701	.681	.606
	Within Groups	307.828	299	1.030		
Cooperative & Independent Learning	Between Groups	3.425	4	.856	1.484	.207
	Within Groups	172.562	299	.577		
Questioning Technique	Between Groups	1.943	4	.486	.682	.605
	Within Groups	213.004	299	.712		
Use of Interactive Charts	Between Groups	3.924	4	.981	1.333	.258
	Within Groups	220.046	299	.736		
Lesson Planning	Between Groups	.815	4	.204	.319	.866
	Within Groups	191.182	299	.639		
Developing Rubrics	Between Groups	1.195	4	.299	.360	.837
	Within Groups	248.332	299	.831		
Creating Educational Games	Between Groups	1.453	4	.363	.416	.797
	Within Groups	261.043	299	.873		

* $p < .05$

The One-way ANOVA findings present that lack of facilities do not have any significant differences when tested against teaching practices. Therefore, the null hypothesis in H_{5.5} was retained. Although there was no significant difference, the means score varied, there were four items where the mean score for strongly agree are higher than strongly disagree - pair more competent with less competent student, cooperative & independent learning, lesson planning, and developing rubrics are affected negatively. This means that respondents agree that there is a lack of facilities, there is not enough to work with in their respective schools. Whereas the other five items, the perception was that teaching is not affected negatively.

Lack of support from colleagues and administration

This particular issue seeks to find whether teachers perceive collaboration with colleagues affects teaching. With the presence of collaboration, teachers benefit from a supportive environment, and allows for development of new teaching approaches, and increases the likelihood of sounder solutions regarding the discipline of problematic students. The results were presented in Table 4.19.

Table 4. 19. ANOVA for Lack of Support from Colleagues and Administration

		Sum of Squares	df	Mean Square	F	Sig.
Encouraging Students	Between Groups	.971	4	.243	.358	.838
	Within Groups	202.526	299	.677		
Pair More Competent with Less Competent Student	Between Groups	5.170	4	1.293	1.398	.234
	Within Groups	276.356	299	.924		
Working with Student One-on-one	Between Groups	2.876	4	.719	.698	.594
	Within Groups	307.756	299	1.029		
Cooperative & Independent Learning	Between Groups	2.183	4	.546	.939	.442
	Within Groups	173.804	299	.581		
Questioning Technique	Between Groups	3.791	4	.948	1.342	.254
	Within Groups	211.156	299	.706		
Use of Interactive Charts	Between Groups	4.233	4	1.058	1.440	.221
	Within Groups	219.738	299	.735		
Lesson Planning	Between Groups	3.250	4	.813	1.287	.275
	Within Groups	188.747	299	.631		
Developing Rubrics	Between Groups	4.577	4	1.144	1.397	.235
	Within Groups	244.949	299	.819		
Creating Educational Games	Between Groups	10.398	4	2.599	3.083	.016*
	Within Groups	252.099	299	.843		

* $p < .05$

One-way ANOVA results illustrate that there are no significant differences among the means of all 5 items in the Instruction Methods and 3 of the items in the Instructional Materials. When tested as group, there was no significant difference. Therefore, the null hypothesis in $H_{5,6}$ was retained. But creating educational games in Instructional Material category illustrates a significant difference where $F(4, 299) = 3.083$ ($p < .05$). The issue may have been sensitive because most respondents remain to be neutral. The mean for neutral ($M=3.92$) is higher. Examining the data, the respondents were very indecisive. Other confounding factors may be the cause. The findings here contradicts the finding of Maaranen, Kynaslahti & Krokfors, (2008) where the interviewees put emphasis on the support from principals and colleagues are very helpful and it affects their teaching practices positively. Discussion with colleagues is vital in that it creates opportunity to integrate similar topics or concepts into teaching so that students are able to make connections. However, here, the perception of respondents indicated conservativeness in their responses. Their neutrality on the issue can only be interpreted as indecisive on support that is provided.

University teacher preparation

One of main interests is to find how university preparation had exposed teachers to be in the classroom which is an ever changing environment to be. Table 4.20. presents the findings.

Table 4. 20. ANOVA for Teacher Preparation

		Sum of Squares	df	Mean Square	F	Sig.
Encouraging Students	Between Groups	4.899	4	1.225	1.844	.120
	Within Groups	198.598	299	.664		
Pair More Competent with Less Competent Student	Between Groups	1.849	4	.462	.494	.740
	Within Groups	279.677	299	.935		
Working with Student One-on-one	Between Groups	9.920	4	2.480	2.466	.045*
	Within Groups	300.711	299	1.006		
Cooperative & Independent Learning	Between Groups	1.318	4	.329	.564	.689
	Within Groups	174.669	299	.584		
Questioning Technique	Between Groups	6.172	4	1.543	2.210	.068
	Within Groups	208.775	299	.698		
Use of Interactive Charts	Between Groups	2.581	4	.645	.872	.481
	Within Groups	221.389	299	.740		
Lesson Planning	Between Groups	.508	4	.127	.198	.939
	Within Groups	191.489	299	.640		
	Total	191.997	303			
Developing Rubrics	Between Groups	5.951	4	1.488	1.826	.124
	Within Groups	243.575	299	.815		
Creating Educational Games	Between Groups	3.227	4	.807	.930	.446
	Within Groups	259.269	299	.867		

* $p < .05$

The One-Way ANOVA depicted that there is no significant differences in the means of the individual items. Therefore, the null hypothesis in H_{5.7} was retained. Participants were in agreement that university preparation has contributed to their teaching practices. The only item in the Instructional Methods projecting a significant difference is the teacher working one-on-one with students where the $F(4, 299) = 2.466$ ($p < .05$). This implies that university teacher preparation program does not necessarily affect teachers' perception of working on one-on-one with students. Moreover, this cannot wholly be attributable to the input of university preparation because this extra mile has to come from within the individual teacher and it depends on the teachers' time and beliefs about commitment and dedication to the teaching/learning process. So this factor is internal and intrinsic (Ertmer, 1999 & Linad, 1999).

The findings on the issue of contextual factors varied on individual factors as they were tested against the dependent variables. Overall, the result shows that there are three contextual factors that affect teachers' teaching practices in the classroom - availability of facilities, additional facilities and working and planning with colleagues. From the data, teachers who are just entering the teaching environment stated that the facilities are available, although the senior teachers disagreed that facilities are available for them to fulfil their instructional objectives. When it comes to additional facilities provided, majority of teachers agreed that more should be in place to carry out their everyday teaching. Respondents perceived that planning and working with colleagues is not practiced well at their respective schools. Then much comes from the individual teachers to go day in and day out from the classroom without much support from their colleagues. This reflected that teachers have conceived the idea that they are agents of change regardless of the roadblocks encountered.

Relationship between experience and knowledge & skills

Years of teaching experience was a variable used to measure the development of knowledge and skills. The results presented in Table 4.21. indicates that there is no relationship.

Table 4. 21. ANOVA for Experience, Attitude and Knowledge & Skills

		Sum of Squares	df	Mean Square	F	Sig.
Attitude	Between Groups	4.320	1	4.320	.476	.491
	Within Groups	2743.101	302	9.083		
Knowledge & Skills	Between Groups	.021	1	.021	.003	.953
	Within Groups	1845.400	302	6.111		

* $p < .05$

The One-way ANOVA results illustrates that there are no significant differences at the ($p < .05$) level. Therefore, the null hypothesis in H2 was retained. This suggests that experience does not play a major role in building knowledge and skills in teaching. There may be flaw here because understanding knowledge and skills is a complex process and moving from novice to expert includes a mixture of social factors including the support activities and collegial encouragement.

The data also pointed out that the Attitude section showed the $M=4.25$ and $SD=.542$ for less experienced (less than 5 yrs. teaching). Teachers who are teaching between 5 to 14 yrs., their mean score is $M=4.23$, $SD=.695$ and those teachers who have been teaching for more than 15 yrs. which were termed as experienced teachers scored ($M=4.42$, $SD=.51$).

In addition, from the data, years of teaching experience and teaching practices yielded similar results indicating that there were no differences of less experienced, somewhat experienced and the experienced teachers. These findings are in agreement with Gatbonton's (2008) that even the less experienced teachers were similar as the experienced ones. The findings regarding the influences of the school context on the teaching practices were in line with the evidence produced in most research on the occupational socialization of teachers. The teacher education program appeared to have influence in terms of increasing

knowledge and skills that teachers need. These findings show that the development of teachers' teaching was not only exclusively affected by the school context and experience but also they are affected positively by acquiring knowledge and skills. On the other hand, the findings contradicts Hammond's (2006) findings where it was discovered that teachers who had experienced teaching before they went into the teacher education program indicated that the program had helped them become aware of assisting struggling students, lesson planning and greater appreciation of collaborative teaching all of which showed no significant difference in the present study.

The summary of the 7 hypotheses in this study is shown in Table 4.22. Hypothesis 4 has two sub-hypothesis where 1 was rejected and 1 was retained. Hypothesis 5 also is divided into 7 sub-hypotheses where 3 were rejected and 4 were retained.

The following table is a summary of the hypotheses tested in this study.

Table 4. 22. *Summary of the Hypotheses*

Hypotheses	Confidence Level		Linkage to Previous Findings
H1: The effectiveness of the courses taken showed no significant differences between teachers who took 1-3 instructional techniques courses and teachers who took >4 courses	$\alpha < .05$	Rejected	Consistent with Yuskel (2007) and Taskin's (2008) contention that teacher education's integration of professional and curricular studies help teachers.
H2: Teachers who have >15 years of teaching experience do not have more knowledge, skills and confidence in their teaching practices than teachers who have <5 teaching.	$\alpha < .05$	Retained	In disagreement with Hammond's (2006) that experienced teachers become aware of assisting students, improve lesson planning ...
H3: There is no difference between trained and untrained teachers' teaching practices.	$\alpha < .05$	Retained	Supports Jones (1997) that there was no considerable difference between teachers entering teaching with professional training and academic training.
H4.1: Female teachers have the same instructional method practice as the male teachers	$\alpha < .05$	Retained	Somewhat consistent with Liu, D'Costa, Loadman, & Moore (2008) male and
H4.2: Female teachers' instructional material practice is the same as the male teachers.		Rejected	female doesn't differ a lot in their teaching practices. In this study, female teachers differ in their teaching materials.
H5.1: Availabilities of facilities do	$\alpha < .05$	Rejected	Consistent with Mareen,

Table 4.22. *Continued*

not affect teachers' teaching practices in the classroom.			Kynaslahti & Krokfors (2008) who found out that teachers emphasized that supporting systems had helped them in their teaching. However, inconsistency occurred with support from colleagues and administration.
H_{5.2}: Additional facilities do not affect teachers' teaching practices in the classroom.	$\alpha < .05$	Rejected	
H_{5.3}: Team working does not affect teachers' teaching practices in the classroom.		Rejected	
H_{5.4}: Overcrowded classrooms do not affect the teaching of teachers.		Retained	
H_{5.5}: Lack of facilities does not affect teaching practices of teachers.		Retained	Ertmer (1999) and Linad (1999) looked at internal factors as well which may play a role here esp. in dedicating time with students' learning.
H_{5.6}: Support from colleagues and administration do not affect teaching practices.		Retained	
H_{5.7}: University teacher preparation does not help teachers in their teaching practices.			
H₆: There is no relationship between teachers' knowledge and skills and teaching practice.	$\alpha < .05$	Rejected	Consistent with Navarro & Verdisco (2000) and Hammond (2006) who found out that teachers teach according to what they know
H₇: There is no relationship between teachers' attitude and teaching practices.	$\alpha < .05$	Rejected	This perception is in agreement with Wood 's (2003) discovery that teachers' positive attitude can promote questioning and reflecting on teaching practice, seeing themselves as an agent of change leads to effective teaching.

CHAPTER V. CONCLUSION AND RECOMMENDATIONS

Chapter Overview

This chapter provides the concluding remarks on each issue that was studied. Further comments were given why certain variables were not significant. Then implications of the research for scholars and practitioners, and recommendation for future research had been identified.

Conclusion

Teacher performance was operationalized as the process and actual activity that teachers display on a day-to-day basis in the classroom. In order to have a comprehensive view of teaching practices, other non-curricular factors were taken into considerations such as the contextual factors, teaching experience and gender. The data showed mixed results in that some findings were consistent with other findings, many of the findings did not support results of previous studies.

H1: The effectiveness of the courses taken showed no significant differences between teachers who took 1-3 instructional courses and teachers who took more than 4 courses.

Teachers were satisfied with the courses and said that they (courses) were effective, and the satisfaction received from the content and instructions of the courses were at an acceptable level. There is little substantial evidence that teachers have learnt specific teaching techniques that they use in their teachings.

The goal of teacher education programs is to prepare teachers to be effective. Based on the result of the study, the 160 trained teachers who had undertaken studies in the education program at the University of Belize found that courses offered help them in their day-to-day teaching.

Although trained teachers acquired new teaching techniques, their teaching practices did not differ from untrained ones. Since the instrument is a self-evaluation questionnaire, it is prone to subjectivity. A longitudinal study can provide in-depth insight. There may be other

factors that assist untrained teachers practice such as imitation or learning from the practice of experienced teachers. On the other hand, trained teachers easily fall to adopt traditional way. This is where the question of transferability is raised. How much is acquired is transferred? Effective teachers are life-long learners. They learn through their own reading, by participating in a variety of professional development activities, by listening to their students, by sharing ideas with their colleagues, and by reflecting on classroom interaction and students' achievements.

H2: Teachers who have more than 15 years of teaching experience do not have more knowledge, skills and confidence in their teaching practices than teachers who have less than 5 years of teaching.

Experience did not show any association with knowledge, skills

In relation to teacher's teaching experience and the development of knowledge and skills, the results did not show that much if any can be acquired. One of the setbacks that can contribute to this result is the variable (number of years of teaching) used to measure experience, for it fails to investigate an in-depth understanding of teaching experience. Despite this limitation, one conclusion made from the result of this study is that teachers are inclined to enforce a degree of normality in rough and tough situation in their classrooms, which leads to challenges in supporting the development of teacher knowledge. Because they do not seek reasons and solutions especially for unusual phenomena, proactive learning from experience may not occur.

Since this study relied on teacher self-evaluation as a data source, teachers learn quickly to 'talk the talk'. Learning to embed the messages from the 'talk' into the repertoire of teaching and learning strategies, which they use on a day-to-day basis, is much harder. The complex demands on teachers in classrooms result in a strong tendency to return to the status quo. In this context, talk may be very different from practice and perception based research may not pick up the difference.

How then can a teacher move from a less experienced to experienced, there are a number of factors come into play. These stem from reasoning (self-image of teacher), the teacher's concept of themselves as learners, support or scaffolding activities made available by others and social or collegial support. However, immersing first time teachers in appropriate settings would not necessarily lead to good practice. The needs of teacher

learning would require that there is a necessity to learn, opportunities to learn and feedback relating to performance. Teachers must be proactive in assimilating and acting on all the available learning resource and putting them to effective use to promote students' progress. They must see themselves as agents of change.

H3: There is no difference between trained and untrained teachers' teaching practices.

Trained and untrained teachers project similarity in their teaching methods.

According to the results, teachers perceive teaching (instructional) methods similarly. Teachers somehow are the only ones who know why they employ certain methodology in teaching. The importance of a variety of methods is based on the fact that a teacher may reach the students' multiple intelligences and to develop their (students) knowledge and understanding to the maximum. In general sense all instructional methods are used to implant and develop ideas and conceptual skills in the students. The questioning technique, for example, is an important tool that is misused quite often. It can serve two purposes: can be used to test the previous knowledge, in which direct factual questions are asked; may be asked to stimulate thought. The success of this technique then depends on the knowledge and skill with which the teacher asks the questions.

H4: Female teachers' teaching practices are the same as the male teachers.

Female teachers displayed more effort in the teaching material category for there is a dissimilarity with their male counterparts. Again trained teachers did not show any difference here.

Female teachers tend to put effort in developing and creating teaching activities in their lessons. It can also be concluded that teachers who are trained and untrained, claim to use some form of materials to teach their lessons. The perception on the use of instructional materials is positive. However, the relevance of the choice and the quality of the instructional material types that teachers use are not investigated. It is with the perception that with the adoption of different learning aids in the teaching/learning process, students would get more stimulated because the learning aids would help them (students) to become more attentive. In addition, students generate positive attitude and more interest for the lesson teachers could teach. As a result, students participate better in class activity. It should be noted that the use

of interactive charts and educational games improve methodology used. In order to attain the objectives, instructional materials are perceived as very important in the teaching process.

Evaluation is one of the most sensitive and important areas that teachers should create. In this view, the working together with colleague comes into play. This practice enables the teachers to develop a framework for examining students' learning progress and behaviours; also for the development of professional skills, and for identifying areas needing improvement. With the creation of rubrics to evaluate student's progress is also another step forward to move from traditional assessment to alternative ones. Gradually, teachers perceived this move as positive.

H5: The school environment does not affect teachers' teaching practices in the classroom.

- 1. Availability of facilities, additional facilities and working with colleagues is vital to supplement teaching practices.*
- 2. Overcrowded classrooms and lack of facilities appeared not to have a greater negative affect on teaching practices; however, lack of support from colleagues and administration affect teaching practices negatively.*
- 3. University teacher preparation is an uncertain issue to have contributed to teaching practices due to the neutrality of the responses.*

The last variables examined were some of the contextual factors that may affect teaching practices. The study finds that lack of support from colleagues and administration do affect teaching. The respondents reported support was not there. This notion here is a setback in the development of an environment where one's knowledge is nurtured. This is a message that collaborativeness is a missing dimension in the schools, which tends to isolate one subject area from another. It is important that teachers discuss and plan together especially those whose content areas are related. Support system in this context allow for team-working and for sharing of experiences and sharing of methodology to execute lessons or even sharing of instructional materials. Teachers must not only possess the content area knowledge which they are expected to impart to their students, they must also have the knowledge and skills to determine how best to provide learning experiences that will enable all students to learn. In addition, they must have the attitudes, values, and dispositions needed to use the knowledge and skills most efficiently and effectively so that students learn through the process. The role

of the support from colleagues and administration are critical in this process for it adds value to the teaching experience.

A collegial and egalitarian relationship among participants is necessary to build a truly effective alliance amongst themselves. However, building a collegial relationship is a developmental process requiring interaction and reflection to ensure that the resulting partnership is collaborative and that the relationship is beneficial for all. Roles and responsibilities must be examined, clarified, and restructured to accommodate the needs of all participants in the teaching/learning process. University teacher preparation remains unknown. The neutrality of the responses showed uncertainty of the majority of the teachers.

H6: There is no relationship between teachers' knowledge and skills and teaching practices.

- 1. Knowledge and skills is highly associated with teaching practices.*
- 2. Attitude is related to teaching practices and knowledge & skills.*

There are problems in understanding and measuring the knowledge and skills of teachers. According to the findings, the increase of knowledge predicts an improvement in teaching practices. Teachers' perception is moderately high indicating that knowledge and skills showed their understanding of teaching, and would develop competence to teach.

Knowledge of subject matter has a key role to play in the teaching of each discipline. Theoretical knowledge of the concepts and pedagogies is vital for it tends to develop teachers' confidence and comfortability in their teaching in the classroom. According to the results, the participants perceived that there is a strong association of positive attitude in regards to knowing 'how to do'. Nevertheless, delving in the importance of 'what they are doing' and 'why they are doing it' was not captured by the present study.

Knowledge is the cognitive outcome of teacher education; however, attitudes represent the affective outcome. The findings point out that the cognitive goals of teacher education, namely the acquisition of knowledge, is addressed relatively directly as the content of instructional and learning experiences. However, the affective goals, namely the development of beliefs and attitudes, cannot be treated in this way as the content of instruction, to any significant extent meaning that attitudes is developed through practical knowledge i.e. contextual factors, social factors.

H7: There is no relationship between teachers' attitude and teaching practices.

Having a positive attitude, belief and high confidence in teaching (education) can lead to improvement in teaching practice.

From the findings of this study, it can be concluded that respondents held positive attitudes towards the use of different teaching methods and teaching materials. This aspect is internal; therefore, teachers who develop positive attitudes would eventually become the self-reflective teacher.

By increasing awareness of different learning styles, backgrounds, experiences and learning needs, teaching becomes a more reflective practice. Reflective practice means that the teacher observes his or her own teaching, what is happening in the learning process and makes a critical assessment as to what is working and what is not.

Recommendations

Teacher education program

- 1. Student-teacher supervisors should focus on how knowledge transfer takes place.*
- 2. Continuous support should be in place to develop on-going learning for teachers.*
- 3. Teacher education should promote a balanced curriculum that narrows the gap between teachers' perceptions of theory and practice.*
- 4. Emphasis should be placed on the development of the affective domain in the curriculum.*

Since the findings indicated that an increase in knowledge and skills is an increase in improving teaching practices, this is significant to those supervising student-teachers because they need to focus on the concrete stages of the transferring of knowledge and skills acquired while on internship. Many times student-teachers find placement in schools where their expectations about teaching were shattered. The conditions were far from what is taught in the program, for example, lack of socialization i.e. sharing of knowledge and skills with those already in the teaching profession is a challenge for new teachers. Since knowledge transfer, it's about being open to learning from others as well as sharing your ideas and experiences. One of the most effective form of knowledge transfer is achieved through human interaction and conversation. Both teachers on training and those in the field should be sensitized on the need to update their knowledge on effective teaching, should have a forum for meeting periodically to assess the effectiveness of their teaching.

In particular, teacher education programs need to be informed by a strong theoretical understanding of the process of change. This would bring a reform in the curriculum in that it should be structured to reflect the context of the schools. Moreover, one conclusion made from the study is that attitude has a strong and positive relationship between the teaching practices, more activities that instill and enhance this affective domain should be integrated within the curriculum.

Teacher practitioners

- 1. Apply alternative ways of interactive teaching.*
- 2. Teachers should work with colleagues in designing packages/materials that can be used in teaching.*
- 3. Administrator should have make classroom environment friendly where teachers receives support for knowledge transfer to take place.*
- 4. Support needs to be in place to enhance the affective domain of teachers' so that they begin to see themselves as agent of change.*
- 5. For teacher supervisors, they need to structure specific instrument to measure and record the progress of transfer of knowledge in the classroom (applicable to student-teachers on internship).*

The results of the present study have implications for teachers who teach at the high school level in Belize, more needs to be done to apply the alternative ways of teaching and using teaching strategies that are more interactive. To further improve and support one another, teachers should design packages/materials that could be used in teaching their various subject areas. This is where collaborative working and planning come into play.

With the issue of overcrowded classrooms, majority of teachers reported that it affects their teaching practices. There is a need to have a cut-point to how many students should be placed in one classroom. Not only do teaching practices were affected but the learning environment is not conducive to students' learning. Students' acquisition of knowledge is even lowered. Therefore, administrators must take action in minimizing this issue.

Implications for Future Research

- 1. The exploration how and why teachers' experiences does not show any significant difference is an area for investigation.*
- 2. An in-depth investigation between trained and untrained teachers to discover the differences should be carried out.*

The purpose of this study was to seek the relationship of teacher education and teachers' teaching practices, as well as to add information to the existing body of literature in the Belizean context. Although the researcher took into consideration other factors that may affect teachers' teaching practices when establishing the framework of this study, there are still glitches encountered. Since the results fail to explain how knowledge is applied and acquired among less experienced, somewhat experienced and experienced teachers, these are not helpful in guiding policy for teacher training. There is a need to reconsider how new knowledge, is applied in the classroom. Seeking to understand how teachers acquire and apply knowledge, one should work out whether teaching is a cognitive skill determined by the teacher's knowledge system, or an 'improvisational experience' developed in response to different settings, needs and challenges.

This present study did not find statistical differences between trained and untrained teachers; future study can shed light why there is not any. Studying the direct effect of teacher education alone can be carried which may ask for a longitudinal study. A careful design of measuring the teaching practice (instructional material and instructional method) of trained teachers must be in place. For example using the scale of the extent to which each variables falling under the teaching practices may be examined in (never, rarely, sometime, ...). Other variable need to be included such as subject-matter preparation, preparation to teach the subjects of the curriculum, preparation to effectively teach special needs students, preparation to manage classroom instruction, preparation to assess student learning, and many other critical dimensions of effective practice.

The present study has also provided additional perspective to gender research in terms of teaching practice settings. As the results indicated, the female teachers only differed in the Instructional Materials Practice. Further investigation would provide data on the reasons of such differences. Since this present study presented an overview of teachers' teaching practices, it did not look into specifics. This can be investigated in future research with clearly defined dimensions to measure the quality of instructional materials used.

Concluding Comment

Despite the limitations, the study did provide evidence indicating that teacher education can contribute to acquisition of new knowledge and skills. Teachers who had undertaken more than 4 instructional techniques courses manifested that it's effective. However, examining experience and knowledge & skills, there is no significant difference. There may be a flaw associated with the collection of data on what teachers know since the study relied on teachers' self-evaluation. In this context, self-evaluation may be very different from practicality. As a result, this perception based research may not pick up the difference, and this made the null hypothesis in H2 to be retained. In this context, the present study has opened a large number of avenues for further inquiry that others will hopefully begin to pursue.

Contrary to expectations, H3 trained and untrained teachers did not differ in their reports of teaching practices. H₄₋₂, however, was rejected because female teachers have a significant difference in their instructional material practice than their male counterparts. In the perception of teachers, three of the contextual factors namely the availability of facilities; additional facilities and team working do affect teaching practices. Based on H6 and H7, conclusion was made that there is relationship between knowledge & skills and teaching practices, relationship between attitude and teaching practices. The results of this present study may be used as a spring board to carry more empirical study in this area. A generalization on the whole population cannot be made.

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APPENDICES

APPENDIX A: Request Letter

Agnela Makin
National Taiwan Normal University
No. 88, Sec. 4, Ting-zhou Rd.
Taipei, Taiwan 116, ROC

Dear Principals:

I am presently in Taiwan studying at National Taiwan Normal University in the International Workforce Education and Development program. As part of my degree completion, I am required to conduct a research. Therefore, I am hereby, requesting the participation of your respective school in the collection of my data for my research entitled, “The Relationship of Teacher Education and Teachers’ Teaching Practice at the Secondary Schools in Belize”. I am requesting that at least 30 of your staff members be included in the survey to be conducted in the middle of January to the end of February.

The result of this research will be important to our education system as we strive hard to improve the level of teacher training at our national university and other institutions that are looking at ways to train secondary school teachers.

The responses to the questionnaire will be confidential.

Thanks in advance for your kind cooperation for offering your school and your staff members to participate in this research project. Together we can make the education in our beloved Belize a better one.

You can email me at makinagnela@hotmail.com for further information.

Agnela Makin
Yours in Education

APPENDIX B: Questionnaire

Dear Teacher:

I am hereby, requesting your participation in the collection of my data for my research entitled, “The Relationship of Teacher Education and Teacher’s Teaching Practices in Secondary Schools in Belize”.

Your responses to the questionnaire will be confidential.

Thanks in advance for your kind cooperation in participating as a part of this study. Together we can make the education in our beloved Belize a better one.

Yours in Education

Agnela Makin

Instructions

The information that you will provide below will be held confidential. When the information is analyzed, no names or school will be identifiable in the published report. As such, please answer all questions honestly.

Background Information

Please fill in the blank space or put a check mark in the box provided.

1. Kindly state your Gender: Male Female
2. How many years have you been teaching? _____
3. What is your highest educational qualification?
 Associate Degree B. Ed. M.Ed.
4. How many years has it been since you completed your last degree program (e.g. AA, BA, MA). 1 yr. 2 yrs. 3 yrs. 4 yrs. More than 5 yrs.
5. Have you obtained your highest education at the University of Belize?
 Yes No
6. How many classes do you teach? _____
7. The number of students in the classes that I teach is more than 40.
 Yes No

Teacher Preparation

Complete this section if you have taken instructional techniques courses in any teacher training program. If not, continue on in the next section. Please check one of the choices.

10.	How many credit courses in instructional techniques (related to classroom teaching) did you take during your training?	None	1 course	2 courses	3courses	More than 4 courses
11.	How effective are the courses that you took during your teacher training in your teaching now?	Not effective	Somewhat effective	neutral	effective	Very effective

Complete this section if you have taken any courses in teacher training program. If not, continue on in the next section.

SD= Strongly Disagree(1), D=Disagree(2), N= Neutral(3), A= Agree(4), SA= Strongly Agree(5)						
		SD	D	N	A	SA
12.	I am satisfied with the contents, instructions and courses offered in the Teacher Education Program.	1	2	3	4	5

13. I have learnt specific teaching techniques that I use in my current teaching practices e.g. cooperative learning.	1	2	3	4	5
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Kindly circle ONE CATEGORY that explains your teaching methods.

SD= Strongly Disagree(1), D=Disagree(2), N= Neutral(3), A= Agree(4), SA= Strongly Agree(5)						
Instructional Methods Practice		SD	D	N	A	S A
14.	Encourage students to see, question, and interpret ideas from diverse perspectives.	1	2	3	4	5
15.	Pair a more-competent student with a less-competent one.	1	2	3	4	5
16.	Teacher works with students one-on-one.	1	2	3	4	5
17.	Engage students in cooperative work as well as independent learning.	1	2	3	4	5
18.	Use divergent and convergent questioning method to develop critical thinking.	1	2	3	4	5

Please circle ONE CATEGORY for each classroom/instructional material listed.

SD= Strongly Disagree(1), D=Disagree(2), N= Neutral(3), A= Agree(4), SA= Strongly Agree(5)						
Instructional Materials Practice		S D	D	N	A	S A
19.	I use Interactive charts when I teach.	1	2	3	4	5
20.	I make a lesson plan to guide me in my daily teaching.	1	2	3	4	5
21.	I can develop Rubrics with ease and confidence for alternative assessments.	1	2	3	4	5
22.	I create Educational games to reinforce a concept that I teach.	1	2	3	4	5

Please check one against the attitudinal measure that best describes your experience.

SD= Strongly Disagree(1), D=Disagree(2), N= Neutral(3), A= Agree(4), SA= Strongly Agree(5)						
Attitudes		SD	D	N	A	SA
23.	I feel comfortable when treating issues, problems, concepts and short elements of subject matter that are almost or completely absent from the usual textbook	1	2	3	4	5
24.	I feel comfortable trying out new teaching techniques.	1	2	3	4	5
25.	I feel comfortable making and using learning material to replace or supplement prescribed textbooks because they fit better with my lesson's objectives.	1	2	3	4	5

26. I feel comfortable doing team teaching with my colleagues.	1	2	3	4	5
27. I discuss with my students the results of various tests in order to identify the learning obstacles of students.	1	2	3	4	5
Knowledge & Skills	SD	D	N	A	SA
28. I usually coordinate my lessons with one or more colleagues.	1	2	3	4	5
29. I usually can teach myself using a new teaching technique from trial and error.	1	2	3	4	5
30. I know enough about the course that I teach.	1	2	3	4	5
31. I know a lot about the criteria for selecting teaching methods that meet the learning needs of my students.	1	2	3	4	5

SD= Strongly Disagree(1), D=Disagree(2), N= Neutral(3), A= Agree(4), SA= Strongly Agree(5)

Factors that may affect teaching practices	SD	D	N	A	SA
32. The facilities are available in order to fulfill my instructional activities and goals.	1	2	3	4	5
33. Additional facilities are necessary to achieve my instructional objectives in my school.	1	2	3	4	5
35. I plan and work together with my colleagues.	1	2	3	4	5
36. My teaching practices are affected by:	1	2	3	4	5
overcrowded classrooms					
lack of facilities	1	2	3	4	5
lack of support from colleagues and administration	1	2	3	4	5
university teacher preparation program	1	2	3	4	5

Thank you for your time!!!!

APPENDIX C: Post Hoc for Availability of Facilities

Multiple comparisons of the means of each item for Teaching Practices against Availability of facilities

Dependent Variable			Mean Difference		
	(I) H1	(J) H1	(I-J)	Std. Error	Sig.
Pairing More Competent with Less Competent Student	SD	D	.128	.232	1.000
		N	.042	.221	1.000
		A	-.253	.220	1.000
		SA	-.523	.267	.508
	D	SD	-.128	.232	1.000
		N	-.086	.155	1.000
		A	-.381	.154	.140
		SA	-.651*	.216	.028
	N	SD	-.042	.221	1.000
		D	.086	.155	1.000
		A	-.294	.137	.328
		SA	-.565	.204	.061
	A	SD	.253	.220	1.000
		D	.381	.154	.140
		N	.294	.137	.328
		SA	-.270	.203	1.000
SA	SD	.523	.267	.508	
	D	.651*	.216	.028	
	N	.565	.204	.061	
	A	.270	.203	1.000	
Lesson Planning	SD	D	-.029	.191	1.000
		N	-.212	.182	1.000
		A	-.331	.181	.687
		SA	-.632*	.220	.044
	D	SD	.029	.191	1.000
		N	-.183	.128	1.000

		^	200	.127	.181
Post Hoc for Availabilities of Facilities Continued				.178	.008
N	SD	.212	.182	1.000	
	D	.183	.128	1.000	
	A	-.119	.113	1.000	
	SA	-.420	.169	.133	
A	SD	.331	.181	.687	
	D	.302	.127	.181	
	N	.119	.113	1.000	
	SA	-.301	.168	.734	
SA	SD	.632*	.220	.044	
	D	.603*	.178	.008	
	N	.420	.169	.133	
	A	.301	.168	.734	

*The mean difference is significant at the 0.05 level

APPENDIX D: Post Hoc for Additional Facilities

Multiple comparison of the means of the teaching practices against additional facilities

Dependent Variable	(I) H2	(J) H2	Mean Difference		
			(I-J)	Std. Error	Sig.
Encouraging Students	SD	D	.288	.330	1.000
		N	-.041	.292	1.000
		A	-.254	.279	1.000
		SA	-.436	.275	1.000
	D	SD	-.288	.330	1.000
		N	-.329	.227	1.000
		A	-.542	.211	.107
		SA	-.723*	.206	.005
	N	SD	.041	.292	1.000
		D	.329	.227	1.000
		A	-.213	.144	1.000
		SA	-.395*	.136	.040
	A	SD	.254	.279	1.000
		D	.542	.211	.107
		N	.213	.144	1.000
		SA	-.181	.107	.919
	SA	SD	.436	.275	1.000
		D	.723*	.206	.005
		N	.395*	.136	.040
		A	.181	.107	.919
Working with Student	SD	D	.438	.406	1.000
		N	-.379	.359	1.000
One-on-one		A	-.165	.344	1.000
		SA	-.560	.339	.994
	D	SD	-.438	.406	1.000
		N	-.817*	.279	.037
		A	-.603	.260	.209

Post Hoc for Additional Facilities Continued		-.997*	.253	.001	
N	SD	.379	.359.	1.000	
	D	.817*	.279	.037	
	A	.214	.177	1.000	
	SA	-.180	.167	1.000	
A	SD	.165	.344	1.000	
	D	.603	.260	.209	
	N	-.214	.177	1.000	
	SA	-.395*	.132	.030	
SA	SD	.560	.339	.994	
	D	.997*	.253	.001	
	N	.180	.167	1.000	
	A	.395*	.132	.030	
Use of Interactive Charts	SD	D	.706	.349	.438
		N	.457	.308	1.000
		A	.570	.295	.545
		SA	.223	.291	1.000
D	SD	-.706	.349	.438	
	N	-.249	.240	1.000	
	A	-.136	.223	1.000	
	SA	-.483	.217	.270	
N	SD	-.457	.308	1.000	
	D	.249	.240	1.000	
	A	.113	.152	1.000	
	SA	-.234	.144	1.000	
A	SD	-.570	.295	.545	
	D	.136	.223	1.000	
	N	-.113	.152	1.000	
	SA	-.347*	.113	.024	
SA	SD	-.223	.291	1.000	
	D	.483	.217	.270	
	N	.234	.144	1.000	
	A	.347*	.113	.024	
Lesson Planning	SD	D	.000	.324	1.000
		N	-.522	.286	.695
		A	-.591	.274	.319

Post Hoc for Additional Facilities Continued				
			-.518	.270
				.563
Lesson Planning	D	SD	.000	.324
		N	-.522	.223
		A	-.591*	.207
		SA	-.518	.202
	N	SD	.522	.286
		D	.522	.223
		A	-.070	.142
		SA	.004	.134
	A	SD	.591	.274
		D	.591*	.207
		N	.070	.142
		SA	.073	.105
	SA	SD	.518	.270
		D	.518	.202
		N	-.004	.134
		A	-.073	.105

*The mean difference is significant at the 0.05 level

APPENDIX E: Post Hoc for Team Working

Multiple Comparisons of the Means of the Teaching Practices against Team Working

Dependent Variable	(I) H3	(J) H3	Mean Difference		Sig.
			(I-J)	Std. Error	
Encouraging Students	SD	D	-.625	.448	1.000
		N	-1.074	.412	.097
		A	-1.145	.408	.053
		SA	-1.270*	.409	.021
	D	SD	.625	.448	1.000
		N	-.449	.223	.449
		A	-.520	.214	.157
		SA	-.645*	.216	.030
	N	SD	1.074	.412	.097
		D	.449	.223	.449
		A	-.071	.123	1.000
		SA	-.196	.125	1.000
	A	SD	1.145	.408	.053
		D	.520	.214	.157
		N	.071	.123	1.000
		SA	-.125	.109	1.000
SA	SD	1.270*	.409	.021	
	D	.645*	.216	.030	
	N	.196	.125	1.000	
	A	.125	.109	1.000	
Pair More Competent with Less Competent Student	SD	D	-.625	.523	1.000
		N	-.971	.481	.447
		A	-1.329	.476	.056
		SA	-1.377*	.477	.042

Post Hoc for Team Working Continued

Pair More Competent with Less Competent Student	D	SD	.625	.523	1.000
		N	-.346	.260	1.000
		A	-.704	.250	.052
		SA	-.752*	.252	.030
	N	SD	.971	.481	.447
		D	.346	.260	1.000
		A	-.358	.143	.130
		SA	-.407	.147	.058
	A	SD	1.329	.476	.056
		D	.704	.250	.052
		N	.358	.143	.130
		SA	-.049	.128	1.000
	SA	SD	1.377*	.477	.042
		D	.752*	.252	.030
		N	.407	.147	.058
		A	.049	.128	1.000
Working with Student One-on one	SD	D	.125	.550	1.000
		N	-.676	.506	1.000
		A	-.504	.500	1.000
		SA	-.926	.501	.655
	D	SD	-.125	.550	1.000
		N	-.801*	.273	.036
		A	-.629	.263	.171
		SA	-1.051*	.264	.001
	N	SD	.676	.506	1.000
		D	.801*	.273	.036
		A	.172	.151	1.000
		SA	-.250	.154	1.000
	A	SD	.504	.500	1.000
		D	.629	.263	.171
		N	-.172	.151	1.000
		SA	-.422*	.134	.018
SA	SD	.926	.501	.655	
	D	1.051*	.264	.001	
	N	.250	.154	1.000	
	A	.422*	.134	.018	

Post Hoc for Team Working Continued

Cooperative & Independent Learning	SD	D	-.313	.415	1.000
		N	-.750	.382	.506
		A	-.636	.378	.933
		SA	-.956	.379	.121
	D	SD	.313	.415	1.000
		N	-.438	.206	.348
		A	-.323	.198	1.000
		SA	-.643*	.200	.014
	N	SD	.750	.382	.506
		D	.438	.206	.348
		A	.114	.114	1.000
		SA	-.206	.116	.776
	A	SD	.636	.378	.933
		D	.323	.198	1.000
		N	-.114	.114	1.000
		SA	-.320*	.101	.017
SA	SD	.956	.379	.121	
	D	.643*	.200	.014	
	N	.206	.116	.776	
	A	.320*	.101	.017	
Questioning Technique	SD	D	-.313	.462	1.000
		N	-.721	.425	.912
		A	-.693	.420	1.000
		SA	-.971	.421	.219
	D	SD	.313	.462	1.000
		N	-.408	.230	.766
		A	-.380	.221	.857
		SA	-.658*	.222	.033
	N	SD	.721	.425	.912
		D	.408	.230	.766
		A	.028	.127	1.000
		SA	-.250	.129	.543

Post Hoc for Team Working Continued

	A	SD	.693	.420	1.000
		D	.380	.221	.857
		N	-.028	.127	1.000
		SA	-.278	.113	.143
	SA	SD	.971	.421	.219
		D	.658*	.222	.033
		N	.250	.129	.543
		A	.278	.113	.143
Use of Interactive Chart	SD	D	-.125	.465	1.000
		N	-.721	.428	.936
		A	-.934	.424	.282
		SA	-1.034	.424	.154
	D	SD	.125	.465	1.000
		N	-.596	.231	.105
		A	-.809*	.222	.003
		SA	-.909*	.224	.001
	N	SD	.721	.428	.936
		D	.596	.231	.105
		A	-.214	.128	.951
		SA	-.314	.130	.167
	A	SD	.934	.424	.282
		D	.809*	.222	.003
		N	.214	.128	.951
		SA	-.100	.113	1.000
SA	SD	1.034	.424	.154	
	D	.909*	.224	.001	
	N	.314	.130	.167	
	A	.100	.113	1.000	
Lesson Planning	SD	D	-1.813*	.413	.000
		N	-2.176*	.381	.000
		A	-2.232*	.376	.000
		SA	-2.466*	.377	.000
	D	SD	1.813*	.413	.000
		N	-.364	.205	.775
		A	-.420	.197	.342
		SA	-.653*	.199	.011

Post Hoc for Team Working Continued

Lesson Planning	N	SD	2.176*	.381	.000
		D	.364	.205	.775
		A	-.056	.113	1.000
		SA	-.289	.116	.130
	A	SD	2.232*	.376	.000
		D	.420	.197	.342
		N	.056	.113	1.000
		SA	-.233	.101	.214
	SA	SD	2.466*	.377	.000
		D	.653*	.199	.011
		N	.289	.116	.130
		A	.233	.101	.214
Developing Rubrics	SD	D	-1.125	.482	.203
		N	-1.412*	.444	.016
		A	-1.421*	.439	.013
		SA	-1.882*	.440	.000
	D	SD	1.125	.482	.203
		N	-.287	.240	1.000
		A	-.296	.230	1.000
		SA	-.757*	.232	.012
	N	SD	1.412*	.444	.016
		D	.287	.240	1.000
		A	-.009	.132	1.000
		SA	-.471*	.135	.006
	A	SD	1.421*	.439	.013
		D	.296	.230	1.000
		N	.009	.132	1.000
		SA	-.461*	.118	.001
	SA	SD	1.882*	.440	.000
		D	.757*	.232	.012
		N	.471*	.135	.006
		A	.461*	.118	.001

*The mean difference is significant at the 0.05 level