does not happen at the same rate. It develops asynchronously at various stages; thus, it proves the multi-dimensionality of Schommer's epistemological beliefs. In this context, an understanding of pre-service teachers' epistemological beliefs vis-à-vis academic performance and teaching competence helps the teacher education institutions design effective teaching and learning framework. This is in line with the idea of increasing awareness and insights on how prospective teachers can become active participants in creating epistemologically conducive learning atmosphere. Essentially, a program framework was formulated for adoption by Teacher Education Institutions with the end in view of producing quality teachers.

Keywords: epistemological beliefs, academic performance, teaching competence, pre-service teachers, Teacher Education Institutions

#### INTRODUCTION

# **Background of the Study**

All efforts to improve the quality of education in the Philippines are dependent on the service of teachers who are fully equipped to undertake the many-sided functions of educating the citizens. Subsequently, the Teacher Education Institutions (TEIs) in the Philippines are mandated to provide quality and relevant experience to prospective teachers. The Commission on Higher Education (CHED) accentuates, "Quality pre-service teacher education is the key factor in Philippine education" (CHED Memorandum 30, Series of 2004). Teacher education programs are expected to ensure that the training tailors to the pressing needs of the Filipino learners and the demands of society in general; hence, proper preparation of pre-service teachers is a defining component of quality Philippine education (Diaz, 2015).

In this context, the delineation of a well-designed and high-quality teacher education program is evident through the lens of the pre-service teachers who greatly manifest strong indications of the yearning to learn and making others learn. The desire to learn in various ways is best understood under the concept of epistemological beliefs, which focus on the nature of knowledge and learning (e.g., Brownlee, 2001; Hofer & Pintrich, 2002; Schommer, 2004; So, et.al, 2010). Epistemological beliefs significantly frame learners' performance. Furthermore, individual's beliefs on knowledge, learning and teaching are highly interdependent and they are connected to actions in the classroom (Fang, 1996; Stuart & Sturlow, 2000; Bay et.al, 2015). Studies also reported that beliefs could interact and affect teachers' practice and learning (Chai, 2010; Abdelraheem, 2004; Yilmaz & Sahin, 2011) and pedagogical decision making (Nailon, 2015). Besides, going directly

through the process of learning is clearly understood through the analysis of academic performance because students' learning goals are regularly a result of academic progress (March, 2010) and making others learn is the true test of teaching competence as teachers make connections to the knowledge of students that contribute to a more holistic view of teaching (Luft & Roehrig, 2007). In essence, uncovering those characteristics associated with epistemological beliefs, academic performance and teaching competence may help teacher education faculty proactively address instructional issues and create sound pedagogical decisions to define and characterize a proficient, effective, and efficient pre-service teacher.

The three highlighted concepts, which refer to epistemological beliefs, academic performance and teaching competence, are believed to be the discrete points that need to be intelligibly investigated to come up with a clear understanding vis-a-vis pre-service teachers' education. A number of studies revealed the interplay among them. There have been findings that affirm the existence of positive relationship between epistemological beliefs and academic performance (Garcia, 2005; Arslantaş, 2015 & Schommer-Aikins & Easter, 2006); however, March (2010) claims that there is insignificant relationship between epistemological beliefs and the grade point average, which is an index in describing academic progress. On one hand, studies on epistemological beliefs and teaching competence disclosed opposing views; a study found that there was a favorable relationship between them (Chai et. al. 2009), but others declared there was none (So et.al. 2010: Manu. 2014). Between academic performance and teaching competence variables, it was found out that there is significant correlation between grade point average and teaching performance (Pagaduan, 2009 & Hall, 2011) but Zumwalt & Craig (2005) cite that there is no correlation between mean grade and teacher effectiveness and grades are not reliable indicators of performance. Based on these assertions, it can be noted that there is no existing research involving a blend of all these three variables: thus, there is a conclusive need for one to determine the areas that are not yet scrutinized and are neglected.

To further analyze and exhaustively discuss the epistemological beliefs, academic performance and teaching competence, it is considered imperative to explore certain profile variables such as sex, program, specialization and ethnicity where there are identified conflicting findings. Along sex, some studies show that it is a significant factor in epistemological beliefs (Schommer, 2003 & Er, 2013), academic performance (Isiksal, 2005) and teaching competence (Isiksal & Cakiroglu, 2005); nonetheless, there are researches that point to the contrary: Chan (2007) & Tümkaya (2012) on epistemological beliefs; Ali (2013) on academic

performance and Oluwatayo & Adebule (2012) on teaching competence of preservice teachers. As regards ethnicity, studies show that epistemological beliefs (Ismail et.al, 2013) and academic performance (McCoy, 2005) differ on it respectively but in the research of Camargo, (2011), he argued that no significant differences between ethnicities were found for the relationships examined such as in academic success. In terms of program, it is seen as a significant influence on epistemological beliefs (Arslantaş, 2015 & Tümkaya, 2012) and teaching competence (Pagaduan, 2009 & Oluwatayo & Adebule, 2012) but it is not a significant factor in academic performance among teacher education students (Pascua et.al, 2009). Consequently, the present study serves as an avenue to clarify the contradictions considering the context of Filipino pre-service teachers.

In sum, the results of the previously conducted studies bare the affirmation of existing relationships, contradictions, as well as gray areas; hence there is a need to undertake an in-depth research to explore further the variables by putting together epistemological beliefs, academic performance and teaching competence. Moreover, in the Philippine context, there are only few researches on epistemological beliefs among pre-service teachers (e.g. Bernardo, 2008; Magno, 2010) and only few studies considered the National Competency-Based Teacher Standards as framework in determining Filipino pre-service teachers' competence. Also, there is no identified study yet that explores the relationship between epistemological beliefs and teaching competence, which uses the domains of the National Competency-Based Teacher Standards. Predominantly, the researcher being a teacher, is intrinsically motivated to deliberately explore these concepts to assist in the identification of appropriate strategies congruent with the beliefs of pre-service teachers to gradually give rise to a transformed teacher education framework anchored on the interests, needs and exigencies of all concerned in the educative community; thus, this study came into conception.

# Statement of the Problem and Research Questions

The study investigated the relationship among epistemological beliefs, academic performance and teaching competence of pre-service teachers. Specifically, it answered the following questions:

- 1. What is the profile of the pre-service teacher-respondents in terms of sex, program, specialization and ethnicity?
- 2. What are the epistemological beliefs of the pre-service teachers as revealed by Schommer-Aikins' instrument?
- 3. What is the level of academic performance of the pre-service teachers in their general education, professional education and content areas and/or major subjects?
- 4. What is the level of teaching competence of the pre-service teachers along the seven domains of the National Competency-Based Teacher Standards (NCBTS) as assessed by their cooperating teachers?
- 5. Is there a significant difference in the epistemological beliefs, academic performance and teaching competence of the pre-service teachers when grouped according to their profile variables?
- 6. Is there a significant relationship between and among epistemological beliefs, academic performance and teaching competence of the preservice teachers?
- 7. Which factors of epistemological beliefs will predict better academic performance and teaching competence of the pre-service teachers?

# **Hypotheses**

- 1. There is no significant difference in the epistemological beliefs, academic performance and teaching competence of pre-service teachers when grouped according to profile variables.
- 2. There is no significant relationship between and among epistemological beliefs, academic performance and teaching competence.
- 3. There are no factors of epistemological beliefs that can predict better academic performance and teaching competence of pre-service teachers.

## Significance of the Study

The present research is hoped to be a significant endeavor in response to the indispensable appeal for reappraisal, understanding, and enhancement of teacher education, particularly in the area of pre-service teaching, through specific highlight on the interplay of pre-service teachers' epistemological beliefs, academic performance and teaching competence anchored along the domains of the National Competency-Based Teacher Standards. Moreover, the study will address issues recently identified as research gaps in need of further investigation that will give empirical evidence on which aspects necessitate improvement and intervention in order to familiarize the teacher training faculty with this study's

highlighted concepts in response to instructional practices and to support desirable changes in teacher education. In essence, the results of this study will be used to develop a program framework that may specifically guide the Teacher Education Institutions in their curriculum development and policy-making that gear toward quality instruction.

# **Underpinning Theory**

The study is anchored on the theory of System of Independent Beliefs developed by Schommer. The appeal of this perspective is that it places epistemological beliefs into a multi-dimensional view, which means that such beliefs have several different dimensions that develop independently of each other and may not build up in synchrony and in uniform or precision over time. The system includes beliefs about the structure, certainty, source, control and speed of knowledge. Individual beliefs as well as unique combinations of beliefs may have different effects on learning and performance. According to Schommer (1990 & 1993), learners who hold naïve epistemological beliefs deal with knowledge and learning in a simplistic and passive manner whereas those who have mature or sophisticated beliefs appear to have constructive learning strategies and independent reasoning abilities that can positively influence scholastic achievement. In essence, an understanding of students' epistemological beliefs can provide the opportunity to gain insights of students' performance that can help design effective teaching-learning strategies and framework.

#### **Literature Review**

# **Understanding Studies on Epistemological Beliefs**

Indoubtably, beliefs powerfully affect teaching and learning. They can influence teaching philosophies (Aldemir, 2007), teaching perspectives (Pop, 2008), teaching performance (Charalambous, 2008), teaching methods (Xue-mei, 2007), instructional context (White & Chant, 2014), affective dispositions (Wall, 2010), learning theories (Chiang, 2010), learning styles (Dandy & Bendersky, 2014), language learning (Tercanlioglu, 2005 & Mori, 1997) and links between theories and practice (CotaGrijalva & Barajas, 2013). On a practical note, it is necessary to be aware of the learners' beliefs to facilitate better understanding of and to use them to prompt learners to challenge and to redefine their learning in a new way (Meger, 2014).

Among the beliefs on teaching and learning, epistemological beliefs have been the center of educational researches. Shaver (1992) defines epistemology as the division of philosophy that investigates the nature and origin of knowledge. More specifically, epistemology is concerned with either the development of common bodies of knowledge or the establishment of personal knowledge. Interestingly, epistemological perspectives relate to learning in various ways, create repercussions in the pedagogical context, and influence reasoning and judgment throughout people's lives (Hofer & Pintrich, 2002).

The groundwork of epistemological studies was initially established by William Perry Jr. (1968). His findings revealed that many first-year students believed that knowledge is simple, certain, and handed down by omniscient authority. He theorized that students went through nine epistemic positions that eventually led to a considerable number of fourth-year students believing that knowledge is complex, tentative, and derived through reason and empirical evidence (Schommer & Hutter, 2002).

Several studies were also undertaken to explore epistemological beliefs and other variables associated to them. Brownlee (2001; 2001 & 2003) describes changes in epistemological beliefs of teacher education graduates. She found out that the students held range of epistemological beliefs. Besides, students' beliefs about knowing ranged from a focus on knowledge as "absolute and received" to a view that knowledge was "constructed and reasoned" whereas in another context, there is an increased focus on relativistic beliefs about knowing and teaching. Wong et.al (2009) cite that students tended to believe that knowledge is constructed during the learning process as a result of effort, that knowledge is not handed down by authority figures or limited by innate ability, and that knowledge is tentative and changing. In the study of Yilmaz & Sahin (2011), they show that epistemological beliefs correlated to pre-service teachers' preference on constructivist teaching views more than traditional teaching views, Moreover, Chan (2004) reveals that there is a significant relation between epistemological beliefs and conceptions about teaching and learning. Lastly, Magno (2010) claims that both complexity and structured belief about learning significantly predicted valuing one's education and higher expectation for achievement, filial piety, and emotional restraint were also significant.

## **Epistemological Beliefs: A Schommer's Perspective**

Schommer (1990) synthesized various epistemological researches from 1968 to 1988 and after almost two decades, she came up with another epistemic direction

beyond Perry's work. She proposed the idea of a multidimensional epistemological belief system, which means that beliefs do not necessarily mature at the same rate. An individual could believe knowledge is highly complex. At the same time, the person could hold the belief that either knowledge is certain or knowledge is uncertain. A set of different beliefs could capture the intricacy of epistemological beliefs. These include stability of knowledge, structure of knowledge, speed of learning, and ability to learn (Schommer-Aikins et.al, 2003). Subsequently, researchers continue to seek for significant relationships between epistemological beliefs and different aspects of learning.

In addition, Schommer developed the Epistemological Beliefs Questionnaire (SEQ) that is composed of 63 short statements. The statements express beliefs with the use of 5-point Likert scale. Bernardo (2008) shares that Schommer categorized the 63 items into 12 subsets and these were reduced to the four factors using factor analytic procedures. The four factors are as follow: (a) "Certain Knowledge" ranges from the belief that knowledge is absolute and never changing to the belief that knowledge is tentative and evolving or changing; (b) "Simple Knowledge" ranges from the belief that knowledge comprises isolated, unambiguous bits of information to the belief that knowledge is composed of highly interrelated concepts. The subsets are Avoid Ambiguity, Seek Single Answers, and Avoid Integration; (c) "Quick Learning" ranges from the belief that learning is quick and all-or-none to the belief that learning is gradual; and (d) "Fixed Ability" ranges from the belief that the ability to learn is fixed at birth to the belief that learning improves over time with experience. Can't Learn How to Learn, Success is Unrelated to Hard Work, Learn the First Time, and Ability to Learn is Innate are the subsets.

# Pre-service Teachers' Epistemological Beliefs in Schommer's Lens

In a European setting, Braten and Stromso (2005) studied the epistemological beliefs of Norwegian business administration and teacher education students using the SEQ. Their principal components analysis yielded four factors related to (a) Speed of Knowledge Acquisition, (b) Knowledge Construction and Modification, (c) Certainty of Knowledge, and (d) Control of Knowledge Acquisition.

Moreover, Tanriverdi (2012) surveyed Turkish pre-service teachers and concluded that students who believe that learning depends on innate ability were likely to be surface motivated and may utilize a surface strategy in their studying while students who believe that learning is dependent on effort were deep-motivated and may adopt a deep study strategy. Another Turkish study conducted by Er (2013)

concluded that prospective teachers believed that learning is more dependent on ability rather than effort and epistemological beliefs of teacher candidates were moderately developed.

A study in Hong Kong showed significant relations between pre-service teachers' epistemological beliefs and conceptions about teaching and learning (Chan, 2004). Furthermore, Cheng et.al, (2009) found out that most of the student-teachers strongly believed that learning effort was more important than innate ability, knowledge changes, and authority of knowledge is questionable.

In the Philippine context, Bernardo (2008) studied the structure of the Filipino prospective teachers' epistemological beliefs using a confirmatory factor analysis (CFA). The results revealed Simple Learning and Structured Learning. The same factors were found using the Filipino and English versions of the questionnaire.

## **Pre-service Teachers' Academic Performance**

Academic performance is a highlighted variable in the study of pre-service teachers. It is seen to be affected by and is related to a number of factors such as intrinsic motivation (Eymur, 2011); critical disposition (Demirham, 2011); regulation learning construct (Anane, 2014) and classroom climate (Falsario et.al, 2014). Furthermore, it is basically explored and described through grades. Falsario et.al (2014) cite that pre-service teachers have very good academic performance based on their grades in The Teaching Profession subject while in the study of Pagaduan (2009), the pre-service teachers have average academic performance in terms of their grades in Field Study courses. Nonetheless, the challenge remains among scholars wherein there are claims that grades are not valid indicators of academic performance (Allen, 2005).

# **Academic Performance and Epistemological Beliefs**

Findings of several studies disclosed the positive significant relationship between epistemological beliefs and academic performance. Belief in quick learning predicted oversimplified conclusions, poor performance on the mastery test, and overconfidence in test performance; belief in certain knowledge predicted inappropriately absolute conclusions; and belief in the speed of learning mediated the effects of ways of knowing on academic performance (Schommer, 1990;

Schommer-Aikins& Easter, 2006). Moreover, Garcia (2005) reveals that beliefs on Fixed Ability and Certain Knowledge affected the reading and mathematics performance and Arslantaş (2015) asserts that there is a statistically significant relationship between the belief of learning depending on talent and academic achievement and the less students believed in quick learning, the higher the grade point average they earned (Schommer, 1993). On the contrary, a study shows that there is insignificant relationship between epistemological beliefs and grade point average, one of the indicators of measuring academic progress (March, 2010).

# **Teaching Competence in the Philippine Setting: The NCBTS Framework**

Suciu and Mata (2011) define pedagogical or teaching competence as the "minimum professional standard, often specified by law, which should raise a person in fulfilling a particular role of the teaching profession". This implies that the competence is attributed to the ability of the teachers to demonstrate the specific performance indicators set for the practice of teaching. Furthermore, it should be "understood in its sense as integrated qualities that delineate the capacity to find answers to arising pedagogical issues by creatively using one's knowledge, personal and professional experiences, values and talents that lead to proper and desirable outcomes".

In the Philippines, essentially, the National Competency-Based Teacher Standards (NCBTS) is the heart of the Teacher Education and Development Program (TEDP) that is mandated by CHED Memo 52, series of 2007. Borabo (2009) shares that NCBTS is a framework that defines the diverse dimensions of teaching, which is defined in terms of actual competencies associated with features of teaching in high learning classrooms. It reflects the blueprint of the synergized efforts of various government agencies that seek to improve the training of future teachers and to intensify a teachers' career path that begins from pre-service and ends in retirement (Teacher Education Council (TEC) -Department of Education (DepEd), 2009). It is composed of seven domains namely: (a) Social Regard for Learning, (b) Learning Environment, (c) Diversity of Learners, (d) Curriculum, (e) Planning, Assessing and Reporting, (f) Community Linkages, and (g) Personal Growth and Professional Development. Del Corro-Tiangco (2014) points out that NCBTS serves as a "quide for teachers in their commitment and their accountability to provide classroom instruction resulting to good student learning outcomes". The Department of Education Order Number 32, series of 2009 laid the legal foundation for the "National Adoption and Implementation of NCBTS-TSNA in the Overall Program for Continuing Teacher Capacity Building".

A number of studies utilized the NCBTS as their framework to expound and to explore on the teaching competence of teachers and pre-service teachers. In the study of Alderite et.al (2008), they reveal that the teachers considered their strengths to be along curriculum, diversity of learning, and learning environment. On the contrary, their weaknesses revolve around the four domains referring to planning, assessing and reporting; community linkages; personal growth and professional development; and social regard for learning. Among pre-service teachers, Somblingo (2014) found out that they developed high level of competencies along the seven domains of the NCBTS after taking their field study courses as assessed by themselves and their Field Study teachers; however, on the side of their cooperating teachers, prospective teachers' competencies were assessed as average level. In addition, Biong (2014) compared the NCBTS level of competence between the graduating students and graduates of the College of Education in a university in Mindanao. Results showed that the graduating and graduates had acquired high level of competence as assessed by the student respondents themselves, teachers and administrators. In detail, the graduates demonstrated better performance than the graduating students probably because they had been hired already as teachers and have applied the theories they have learned in their pre-service education.

# **Teaching Competence and Epistemological Beliefs**

Indirectly, the results of the study of Chai et.al (2009) indicate that somehow, preservice teachers' relativistic epistemological beliefs have impact on their teaching performance. The findings revealed that pre-service teachers were inclined to believe in constructivism. These further suggest that pre-service teachers hold beliefs that are congruent to the educational reform effort from their respective countries. In addition, Manu (2014) found out that source of knowledge, justification for knowing and attainment of truth of in-service teachers had insignificant negative correlation with instructional practice. This meant that where these three dimensions of epistemological beliefs of the in-service teachers did not develop; they were still likely to use more constructivist instructional practice. Nevertheless, So, et.al (2010) cite that teaching-related factors are not statistically significant to the epistemological beliefs.

#### **Teaching Competence and Academic Performance**

Conflicting researches exist regarding the predictive validity of undergraduate grade point average and teacher effectiveness (Davy et.al, 2007). There are

studies asserting that grades are biased and unreliable indicators of performance but there are findings that show favorable correlation between grade point average and teaching performance.

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In the study of Pagaduan (2009), using grades as index of academic performance, the researcher found out that there is a significant correlation between academic performance and off-campus teaching competence. Hall & West (2011)affirm this by citing that grade point average correlated significantly and positively with final student teaching performance. Pre-service teachers with a greater sense of teaching efficacy in fact reported a high academic sense of intrinsic interest, task value, and control of time and study environment (Bembenutty, 2007).

In contrast, Kunter et.al (2013) uphold that teachers' general academic ability does not affect their instruction. In the research of Diaz (2015), the results indicate that there is a negligible link between the teaching performance and academic achievement. This is supported by Zumwalt & Craig (2005) showing that there is no correlation between grade point average and teacher effectiveness.

Epistemological Beliefs, Academic Performance and Teaching Competence: Sex, Program, Specialization and Ethnicity in Focus

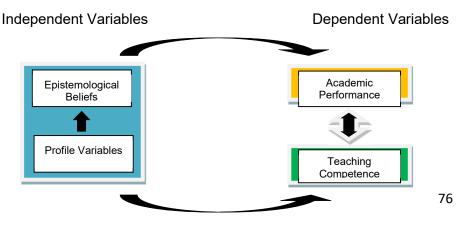
As regards epistemological beliefs, there are divergent results of the studies. So et.al (2010) state that relationships among beliefs and other examined variables, sex appears to be a significant factor. Schommer (1993) claims that girls were less likely to believe in quick learning and fixed ability whereas male students, more than females, believed that learning is more dependent on effort rather than ability (Er, 2013). However, Chan (2004, 2007) and Tümkaya (2012) reveal that sex is not a significant factor of differences in epistemological beliefs. Conflicting findings also appear in terms of academic performance. Sex is a significant factor to academic performance according to Isiksal (2005) and Pascua et.al (2009) but according to Ali (2013) and Eren (2015), it is not in any way significantly related. Concerning teaching competence, Isiksal & Cakiroglu (2005) and Ekrem (2014) confirm that females were better than males. Oluwatayo (2012) and Eren et.al (2015) on the other hand, argues that there is no significant influence of sex on teaching performance.

According to Ismail et.al (2013), based on the ethnic variable, there is a significant difference among students' epistemological beliefs. Additionally, McCoy (2005) maintains that ethnicity is significantly contributory to student achievement,

although Camargo (2011) asserts that there is no significant difference between ethnicities with regard to academic performance. Arslantaş (2015) reveals that the teacher candidates' epistemological beliefs differed based on specialization. This is supported by Tümkaya (2012) citing that the students from the field of science-techniques were more developed or mature in the sub-dimension of the belief concerning "There is one unchanging truth". On one hand, correlations indicated that students' epistemological beliefs were similar for mathematics and social sciences, as well as for mathematics and business (Schommer-Aikins et.al, 2003).

In terms of teaching competence, Pagaduan (2009) bares that the BSED preservice teachers majoring in English, Social Studies, Physical Education and General Science were more competent than BEED group on the aspect of questioning skills. Varank (2009) shows that students' competency levels in the elementary teaching programs were significantly higher than those in the other teaching programs, except the preschool teaching programs but Eren et.al (2015) claim that there are no significant differences observed in the competency levels of pre-service teachers depending on department. With respect to academic performance, Pascua et.al (2014) claim that program is not a significant factor.

# **Research Paradigm**



# Figure 1. Research Paradigm

Figure 1 shows the research paradigm of the study. The pre-service teachers' epistemological beliefs (beliefs about the nature of knowledge and learning using Schommer's perspective) and their profile in terms of sex, program, specialization and ethnicity serve as independent variables. On the other hand, the academic performance and teaching competence of pre-service teachers are the dependent variables. The paradigm depicts that the epistemological beliefs of the pre-service teachers may influence and predict their academic performance and teaching competence, which may also be associated to each other. Also, the profile of the pre-service teachers may reveal any significant variations among the major variables under study.

#### **METHODS**

#### Research Design

The study used descriptive-correlational design since it determined primarily the relations among epistemological beliefs, academic performance and teaching competence of the pre-service teachers. It identified possible patterns of relationships that exist among variables and it measured the strength of such association.

# Respondents of the Study

Progra m	Speciali zation	Preservice Teache rs' Populat ion in CSU (N)	Percent age Distribu tion (%)	Preservice Teache rs' Sample Size in CSU (n)	Preservice Teache rs' Populat ion in USL (N)	Percent age Distribu tion (%)	Preservice Teache rs' Sample Size in USL (n)	Total Pre- service Teache rs' Sample Size (n)	Cooper ating Teache rs' Sample Size (n)
BEED	Genera list	186	25.16	53	13	15.85	4	57	57
DEED	Presch ool	59	7.98	17	0	0	0	17	17

	Educati on								
	Biologi cal Scienc e	50	6.76	14	10	12.19	3	17	17
	Physic al Scienc e	35	4.73	10	0	0	0	10	10
	Mathe matics	85	11.50	24	6	7.32	2	26	26
	English	113	15.29	32	19	23.17	5	37	37
BSED	Filipino	43	5.82	12	15	18.29	4	16	16
BOLD	Social Scienc e	116	15.69	32	5	6.09	1	33	33
	Techno logy and Livelih ood Educati on	52	7.03	15	0	0	0	15	15
	MAPE H	0	0	0	14	17.07	4	4	4
Total		739	100	209	82	100	23	232	232

The first group of respondents of the study was the pre-service teachers of Cagayan State University (Andrews Campus) and University of Saint Louis Tuguegarao with a total sample of 232 respondents. The Bachelor of Elementary Education (BEED) and Bachelor of Secondary Education (BSED) pre-service teachers were enrolled in their Practice Teaching for the second semester of the School Year 2015-2016 and were deployed in the Divisions of Cagayan and Tuguegarao. They were identified through stratified random sampling.

The second group of the respondents was the 232 cooperating teachers of the pre-service teachers. They were selected though purposive sampling. They gave their assessment as regards the teaching competence of the pre-service teachers assigned them along the seven domains of the NCBTS.

In totality, there were 464 respondents coming from the first and second groups. The sample size is broken down as follows:

#### **Research Instruments**

The researcher utilized two sets of questionnaire. The first questionnaire included the profile of the pre-service teacher respondents and the 63-item Epistemological Beliefs Scale that was developed by Dr. Marlene Schommer-Aikins (with written permission). The Epistemological Beliefs Scale consisted of short statements covering various beliefs about knowledge and learning, which are further categorized into 12 subsets loaded into four factors, namely Factor 1 (Simple Knowledge), Factor 2(Fixed Ability), Factor 3(Quick Learning) and Factor 4 (Certain Knowledge). The pre-service teacher respondents were asked to answer on a Five-point Likert Type Scale (Strongly Agree-5, Agree-4, Neutral-3, Disagree-2, Strongly Disagree-1). The items were written in the naïve direction, which means that if the mean score is greater than the median, the less mature are the beliefs. The second questionnaire elicited the assessment of the cooperating teachers on the teaching competence of the pre-service teachers assigned to them. It was composed of performance indicators along the seven domains of NCBTS, which was developed by the TEC. DepEd and CHED. The cooperating teachers had to answer on a Four- Point Rating Scale (Very Competent- 4, Competent- 3, Incompetent- 2, and Very Incompetent- 1).

The mean grade of the pre-service teachers along their general education, professional education, and major subjects or content areas gauged their academic performance. This was obtained from their permanent record in the Registrar's Office of Cagayan State University and University of Saint Louis respectively. It was interpreted using the following scale: Excellent (95-100), Very Satisfactory (90-94.99), Satisfactory (85-89.99), Fair (80-84.99), and Poor (75-79.99).

#### **Research Procedure**

Foremost, the researcher sought approval from the Cagayan State University, University of Saint Louis and Department of Education authorities for the conduct of the study. Prior and informed consent were accomplished by the respondents to ensure compliance to ethical standards. After which, the researcher personally floated the first set of questionnaire to the pre-service teachers to determine their profile and epistemological beliefs. Two weeks before the end of practice teaching, the researcher floated the second set of questionnaire to the cooperating teachers of the pre-service teachers to ascertain the latter's teaching competence. Moreover, the academic performance of the pre-service teachers along general

education, professional education and content areas or major subjects was taken from the official data of the registrars of Cagayan State University and University of Saint Louis. Due permission was sought from the concerned offices.

# **Data Analysis**

Descriptive statistics such as frequency counts and percent were used to treat the profile variables. Mean score and median were used to describe the epistemological beliefs of the respondents. If the mean is less than the median, the data are interpreted to be 'less likely to believe'; hence, the beliefs are mature. On one hand, if the mean is more than the median, the data are interpreted to be 'more likely to believe'; hence, the beliefs are naïve. Frequency counts, percent and mean were utilized to describe academic performance whereas weighted mean was used to determine the level of pre-service teachers' teaching competence. Inferential statistics such as t- test was employed to find out if there is significant difference among epistemological beliefs, academic performance and teaching competence when grouped according to sex and program whereas oneway ANOVA was utilized to compare the variables in terms of specialization and ethnicity. Pearson Product Moment of Correlation Coefficient or Pearson- r was used to ascertain if there is a significant relationship between and among the preservice teachers' epistemological beliefs, academic performance and teaching competence. Multiple Regression Analysis was used to identify which among the different factors of the epistemological beliefs can predict better academic performance and teaching competence of the pre-service teachers.

#### RESULTS

In this section, the salient findings of the study on the epistemological beliefs, academic performance and teaching competence of pre-service teachers are presented and interpreted in tabular and textual forms as take off point for comprehensive discussion.

## **Profile of the Pre-service Teachers**

**Table 1. Profile of Pre-Service Teachers** 

	Variable	Frequency	Percent
Sex			
Male		44	18.97
Female		188	81.03

Program		
Bachelor of Elementary Education (BEEd)	74	31.9
Bachelor of Secondary Education (BSEd)	158	68.1
Specialization		
Generalist	57	24.6
Pre-school Education	17	7.3
Biological Science	17	7.3
Physical Science	10	4.3
English	37	15.9
Mathematics	26	11.2
Technology and Livelihood Education	15	6.5
Music, Arts, Physical Education and Health	4	1.7
Social Science	33	14.2
Filipino	16	6.9
Ethnicity		
Ilokano	123	53.0
Ibanag	10	4.3
Kalinga	4	1.7
Itawes	83	35.8
Malaueg	2	.9
Tagalog	10	4.3

It is shown in Table 1 that pre-service teachers are generally female and majority are Bachelor of Secondary Education (BSEd) students. This suggests that in terms of enrollment, teacher education institutions are female-dominated (Higher Education Statistical Bulletin Academic Year 2012-2013) and BSEd is the preferred program. As regards specialization, majority are English majors in the BSEd program whereas in the BEEd program, most of the respondents are Generalist.

The data further show that most of the pre-service teachers are Ilocanos. This is in congruence with the existing status of the Ilocanos as the mainstream cultural group in Northern Luzon and the third largest ethnolinguistic group in the Philippines (National Statistics Office, 2014).

## **Epistemological Beliefs of the Pre-service Teachers**

Table 2. Summary of Epistemological Beliefs of Pre-Service Teachers

	Statement	Mean Score	Median	Descriptive Value
1.	Simple Knowledge			
	Avoid Ambiguity	16.70	15	More likely to believe
	Seek Single Answers	35.95	33	More likely to believe
	Avoid Integration	22.80	24	Less likely to believe
	Depend on Authority	12.84	12	More likely to believe
	Overall	88.29	84	More likely to believe
2.	Fixed Ability			•
	Can't Learn How to Learn	10.09	15	Less likely to believe
	Success Unrelated to Hard Work	8.47	12	Less likely to believe
	Learn the First Time	8.05	9	Less likely to believe
	Innate Ability	12.71	12	More likely to believe
	Concentrated Effort is a Waste of	4.97	6	Less likely to believe
Tin	ne			•
	Overall	44.30	54	Less Likely to believe
3.	Quick Learning			-
	Quick Learning	14.61	15	Less likely to believe
	Don't Criticize Authority	15.89	18	Less likely to believe
	Overall	30.50	33	Less likely to believe
4.	Certain Knowledge			-
	Certain Knowledge	18.62	18	More likely to believe
	Overall Epistemological Belief	181.72	189	Less likely to believe

<sup>\*</sup>Note: If Mean < Median = Less likely to believe; hence, mature
If Mean > Median = More likely to believe; hence, naive

Table 2 reveals that overall, the pre-service teachers less likely to believe in the statements on epistemological beliefs. The data plainly imply that the pre-service teachers have mature beliefs on the nature of knowledge and learning.

Specifically, they less likely to believe in Fixed Ability and Quick Learning but they more likely to believe in Simple Knowledge and Certain Knowledge. This indicates that the pre-service teachers hold beliefs that knowledge is acquired and the rate of learning is gradual. Furthermore, they believe that knowledge is simple and unchanging.

# **Academic Performance of the Pre-service Teachers**

Table 3. Academic Performance of Pre-Service Teachers

Grade	Descriptive		neral cation		sional ation	Мај	or
Grade	Value	Freque	Percent	Frequency	Percent	Frequenc	Percent
		ncy				у	
75.00 –99.99	Poor	2	.9	1	.4	2	.9

80.00 – 84.99	Fair	83	35.8	60	25.9	71	30.6
85.00 – 89.99	Satisfactory	125	53.9	140	60.3	135	58.2
90.00 – 94.99	Very Satisfactory	20	8.6	31	13.4	24	10.3
≥95.00	Excellent	2	.9				
Mean Grade		86.20 86.73 86.42					
Overall N	86.45						

It can be gleaned from Table 3 that majority of the pre-service teachers have satisfactory academic performance along general education, professional education and major subjects. It is interesting to note that it is in professional education that they earned the highest mean grade. On the contrary, they obtained the lowest mean grade in general education.

# **Teaching Competence of the Pre-service Teachers**

From the data shown in Table 4, the overall mean basically suggests that the preservice teachers are competent along the seven (7) domains of the National Competency-Based Teacher Standards based on the assessment of their cooperating teachers during the practice teaching experience. The finding further illustrates that the pre-service teaching competence meets the required set of national standards observed in the Department of Education and as indicated in CHED Memo No. 52, Series of 2007.

Table 4. Summary of the Level of Teaching Competence of Pre-Service Teachers along the Seven Domains of National Competency-Based Teacher Standards

Domain	Mean	Descriptive Value
Social Regard for Learning	3.56	Very Competent
Learning Environment	3.34	Competent
Diversity of Learners	3.24	Competent
Curriculum	3.36	Competent
Planning, Assessing, and Reporting	3.28	Competent
Community Linkages	3.22	Competent
Personal Growth and Professional Development	3.45	Competent
Overall Level of Competence	3.35	Competent

Legend: 3.50 - 4.00 - Very Competent

2.50 - 3.49 - Competent 1.50 - 2.49 - Incompetent 1.00 - 1.49 - Very Incompetent

Interestingly, in particular, the pre-service teachers obtained the highest rating along the Social Regard for Learning. This can be directly linked to the idea that they are "very competent" in serving as positive and powerful role models of the value in the pursuit of different efforts to learn, that are demonstrated through actions, statements, and social interactions with learners (Teacher Education Council-DepEd, 2009).

# <u>Difference in the Epistemological Beliefs, Academic Performance and Teaching Competence of the Pre-service Teachers When Grouped According to Profile Variables</u>

Table 5 discloses that there is no statistically significant difference in the epistemological beliefs, academic performance, and teaching competence of preservice teachers when grouped by sex. In other words, responses to these variables do not significantly vary whether the pre-service teachers are males or females.

Table 5. Difference in the Epistemological Beliefs, Academic Performance, and Teaching Competence of Pre-Service Teachers When Grouped by Sex

Variables	Sex	N	Mean	t- value	p- value	Interpretation	
Epistemological	Male	44	179.39	_	0.156	Not Significant	
Beliefs	Female	188	182.26	1.422	0.130	Not Significant	
Academic	Male	44	86.9020	1.331	0.185	Not Cianificant	
Performance	Female	188	86.3462	1.331	0.165	Not Significant	
Teaching	Male	44	248.02	620	0.526	Not Cignificant	
Competence	Female	188	251.44	020	0.536	Not Significant	

Table 6. Difference in the Epistemological Beliefs, Academic Performance, and Teaching Competence of Pre-Service Teachers When Grouped by Program

Variables	Course	N	Mean	t- value	p- value	Interpretatio n	
Epistemologic	BEED	74	181.23	-0.418	0.676	Not	
al Beliefs	BSED	158	181.94	-0.410	0.070	Significant	
Academic	BEED	74	85.8169	-2.684	0.008*	Significant	
Performance	BSED	158	86.7489	-2.004	*	Olgrillicarit	
Teaching	BEED	74	248.54	-0.713	0.477	Not Significant	
Competence	BSED	158	251.85	-0.713	0.411		

<sup>\*\*</sup>Significant at the 0.01 level

As indicated in Table 6, there is a statistically significant difference in the academic performance of pre-service teachers when grouped by program. The BSEd preservice teachers performed better academically than their BEEd counterparts. The data confirm that the variations in the academic performance may be attributed to the nature of the program.

As seen from Table 7, there is a statistically significant difference in the epistemological beliefs as well as academic performance of pre-service teachers when grouped by specialization. Further analysis using post hoc test bares that English group more likely to believe in the factors of epistemological as compared to Generalist, Physical Science, Mathematics, and Technology Livelihood Education groups. For the academic performance, Mathematics majors had higher mean grade as compared to the Generalist and Technology and Livelihood Education groups

Table 7. Difference in the Epistemological Beliefs, Academic Performance, and Teaching Competence of Pre-Service Teachers When Grouped by Specialization

Variables	Specializatio n	N	Mean	F- value	p- value	Interpretat ion
	Generalist	57	180.75			Cignificant
	Psed	17	182.82			
	Biosci	17	183.47			
Epistemological	Physci	10	171.00	4 024	0.000**	
Beliefs	English	37	189.78	- 4.021   0.000** -		Significant
	Math	26	179.04			
	Tle	15	184.93			
	Mapeh	4	177.75			

	Socsci	33	177.27			
	Filipino	16	181.63			
	Generalist	57	85.7472			
	Psed	17	86.0506			
	Biosci	17	85.4041			
	Physci	10	86.0590		0.000**	
Academic	English	37	87.2589	3.761		Significant
Performance	Math	26	87.6638	3.701	0.000	Significant
	Tle	15	84.9920			
	Mapeh	4	84.4850			
	Socsci	33	87.3364			
	Filipino	16	86.9444			
	Generalist	57	245.53			
	Psed	17	258.65			
	Biosci	17	252.82			
	Physci	10	235.20			
Teaching	English	37	263.32	4 007	0.404	Not
Competencies	Math	26	244.42	1.397	0.191	Significant
·	Tle	15	254.40			
	Mapeh	4	244.00	1		
	Socsci	33	246.91	1		
	Filipino	16	256.50			

<sup>\*\*</sup> Significant at the 0.01 level

Table 8. Difference in the Epistemological Beliefs, Academic Performance, and Teaching Competence of Pre-Service Teachers When Grouped by Ethnicity

Interpretati Fp-**Variables Ethnicity** Ν Mean value value on 123 llokano 181.67 Ibanag 10 177.40 Epistemological 4 171.75 Kalinga Not 0.372 1.080 Beliefs Itawis 83 182.87 significant 175.00 Malaueg 2 10 182.40 Tagalog 123 Academic llokano 86.3998 Not Performance 86.5390 0.932 Ibanag 10 0.265 Significant 86.2050 Kalinga 4

	Itawis	83	86.5424			
	Malaueg	2	84.6600			
	Tagalog	10	86.7050			
Teaching Competence	Ilokano	123	247.75			
	Ibanag	10	257.50	0.783 0.563		
	Kalinga	4	252.00		Not Significant	
	Itawis	83	252.55			
	Malaueg	2	251.50	]		
	Tagalog	10	266.30			

As observed from the data in Table 8, there is no statistically significant difference in the epistemological beliefs, academic performance, and teaching competence of pre-service teachers when grouped by ethnicity. This means that cultural orientation of pre-service teachers does not show considerable variations in the three major variables of the study.

# Relationship among Epistemological Beliefs, Academic Performance and Teaching Competence of the Pre-service Teachers

Table 9 unveils a significant negative relationship between epistemological beliefs and academic performance. The data connote that the less likely the preservice teachers believe in the factors of epistemological beliefs, the higher are their grades. In other words, pre-service teachers who hold more mature epistemological beliefs have better academic performance.

It is noteworthy to mention that in a detailed analysis (see **Appendix I**), among the factors of epistemological beliefs, it is the Certainty of Knowledge that shows a negative significant correlation to their grades particularly in general education, professional education, major subjects including the general grade point average. This denotes that the more the pre-service teachers are inclined to believe that knowledge is tentative, the better is their academic performance.

Table 9. Relationship Between and Among Epistemological Beliefs, Academic Performance, and Teaching Competence of Pre-Service Teachers

Variables	Epistemological Beliefs	Academic Performance	Teaching Competence	
Epistemological Belief	1	166 <sup>*</sup>	.050	
Academic Performance	166 <sup>*</sup>	1	.043	

<sup>\*</sup> Correlation is significant at the 0.05 level (2-tailed).

Moreover, the pre-service teachers who believe more likely in Simple Knowledge (avoidance of integration and ambiguity, seeking of single answers and reliance on authority) have lower academic performance. However, they have better teaching competence particularly along Learning Environment, and Personal Growth and Professional Development.

On one hand, the pre-service teachers who more likely to believe in Fixed Knowledge have lower grade in professional education and major subjects including the grade point average. This mainly indicates that the more the preservice teachers believe that knowledge is acquired, the better is their academic performance. Noticeably, only the belief on Quick Learning is not significantly correlated to any components of academic performance and domains of teaching competence.

# <u>Factors of Epistemological Beliefs that Can Predict Better Academic</u> Performance and Teaching Competence of the Pre-service Teachers

As disclosed in Table 10, Fixed Ability and Certain Knowledge can predict academic performance which account for 1.6% and 2.7% respectively on the total variance, while Simple Knowledge can predict teaching competence which accounts 1.9% of the total variance. The finding asserts that epistemological beliefs factors, except for Quick Learning, can predict, at a minimum level, the academic performance and teaching competence of pre-service teachers. This implies that other factors or variables, aside from the beliefs on the nature of knowledge and learning, can notably account for the academic performance and teaching competence of the pre-service teachers.

Table 10. Factors of Epistemological Beliefs that Can Predict Better Academic Performance and Teaching Competence of the Pre-service Teachers

Epistemological	Academic Performance			Teaching Competencies		
Beliefs	R <sup>2</sup>	Adjusted R <sup>2</sup>	p- value	R <sup>2</sup>   '		p- value
Simple Knowledge	0.011	0.007	0.112	0.023	0.019	0.019
Fixed Ability	0.020	0.016	0.032	0.004	0.000	0.342

Quick Learning	0.002	-0.002	0.490	0.002	-0.003	0.528
Certain Knowledge	0.031	0.027	0.007	0.005	0.001	0.276

#### DISCUSSION

The significant findings of this study are discussed with existing literature on epistemological beliefs, academic performance and teaching competence of pre-service teachers as basis in the formulation of the conclusion of this study.

# **Epistemological Beliefs of the Pre-service Teachers**

Results of the study show that the pre-service teachers have mature epistemological beliefs in as much as they less likely to believe in Schommer's epistemological beliefs factors. This means that generally, the pre-service teachers have sophisticated beliefs that appear to make it possible for them to have positive learning approaches and independent reasoning abilities that are indispensable for their academic success (Schommer, 1990). This further implies that pre-service teachers who have mature epistemological beliefs are capable of performing well on the level of constructivist approach of teaching and learning (Brownlee, 2001) and they have the ability to discern and to critically apply a variety of processes (Hofer, 2002), which in the long run tailor to the tenets of contemporary education advocating the use of prior knowledge, student-centered pedagogy and curriculum, facilitating learning approaches, and authentic assessment.

It is interesting to point out that in a research conducted in Singapore by Chai, et.al. (2006), it revealed that pre-service teachers were fairly homogenous as they are likely to be naïve in their epistemological beliefs; hence, it suggested that it may be necessary for Singapore teacher educators to foster more mature epistemological outlooks among their pre-service teachers. On one hand, this study undertaken in the Philippine setting, shows that the pre-service teachers are inclined to manifest mature epistemological beliefs. This simply reinforces the idea that epistemological beliefs vary across individuals and contexts (Hofer 2001; Green & Hood, 2013).

In an elaborate discussion, the mature epistemological beliefs of the preservice teachers reveal that knowledge is acquired. This can be manifested by the pre-service teachers' positive beliefs on metacognition, hard work and

concentrated effort. They believe that knowledge acquisition is attributed to hard work and active participation in the learning process in order to carry out effectively the academic tasks. This substantiates the findings of Wong, et.al (2009) citing that pre-service teachers tend to believe that knowledge is constructed during the learning process as a result of effort. Students who believe that learning is dependent on effort are deep-motivated and may adopt a deep study strategy while those who believe that learning depends on innate ability are likely to be surface-motivated and may utilize a surface strategy in studying (Tanriverdi, 2012).

Moreover, the mature epistemological beliefs of the pre-service teachers convey a gradual and deliberate acquisition of knowledge and the openness to challenge authority of knowledge. In other words, the pre-service teachers prefer to learn in a step-by-step scheme. They subscribe to the principle that "learning is an evolutionary process that requires time and patience" (Corpuz & Slandanan, 2007). Besides, the pre-service teachers are not just teacher-directed in attaining knowledge. In the Asian context, this is supported by the findings of Cheng, et.al. (2009) that among the teacher education students, most of them believe that authority of knowledge is questionable. To put it simply, knowledge is not merely handed down by authority but must be deliberately analyzed and criticized. This is basically consistent with the K to 12 pedagogical framework stressing less teacher's talk and more on students' activities.

On the contrary, the likelihood of the pre-service teachers to believe in Simple Knowledge conveys their epistemological naivety as they deal with knowledge to be separate and isolated pieces of information rather than a network of interrelated concepts. This is congruent with the findings of Bernardo (2008) about the structure of the Filipino prospective teachers' epistemological beliefs. He found out that Filipino pre-service teachers believe in Simple Learning, indicating that learning is bare, basic and uncomplicated process. This further supports the recommendation of Mohamed & El-Habbal (2013) that calls for an emphasis on integrative education combining skills, information and values rather than focusing on compartmentalized information.

Furthermore, the naïve beliefs of pre-service teachers on the certainty of knowledge imply that "Truth is unchanging". In other words, they primarily consider that knowledge is inflexible, absolute and never-changing. The data contradict the findings of Chai, et.al (2006) and Cheng, et.al, (2009) asserting that pre-service teachers in the Asian setting, specifically in Singapore and Hongkong, are inclined to believe that knowledge is evolving.

On the whole, this study done in Philippine setting affirms Schommer's theory of System of Independent Beliefs highlighting the multi-dimensionality of beliefs about the nature of knowledge and learning. Schommer-Aikins (2004) asserts that people may not be necessarily mature or naive in all beliefs and in this study, the pre-service teachers showed epistemological naivety on Simple Knowledge and Certainty of Knowledge but they manifest epistemological maturity on Fixed Ability and Quick Learning. A variety of beliefs may influence learning and people may hold several epistemological beliefs, but some will be more central than others. It is further explicated that beliefs do not develop in synchrony and that the synchrony or asynchrony of beliefs is dependent on the developmental level of the individual (Schommer-Aikins, 2002).

# **Academic Performance of the Pre-service Teachers**

The BEEd and BSEd pre-service teachers performed satisfactorily in their academics. The finding gives a clear picture that at least, the kind of teacher education students today is not necessarily weak or poor. In the past, according to Acedo (1999), intakes into teacher education had low quality because students with impressive scholastic ratings chose other career paths. Nonetheless, the apparent change in the academic performance of pre-service teachers may be attributed to the Revised Policies and Standards for Teacher Education (CMO 52, Series of 2007) set by the Commission on Higher Education as regards the adoption and implementation of a system of selective admission and minimum retention requirements to select academically fit students.

Among the components of academic performance, the pre-service teachers had the highest mean grade in professional education subjects. This finding confirms that the pre-service teachers satisfactorily possess the range of knowledge and skills needed in the practice of the teaching profession. Such is supported by Pagaduan (2009) citing that the pre-service teachers had good grades in their Field Study courses. Similarly, in the research of Falsario, et.al (2014), they found out that pre-service teachers have good academic standing in The Teaching Profession subject.

Despite the fact that the pre-service teachers have satisfactorily performed in their academics, the present study implies that there is a need to improve the level of performance in their general education, professional education and major subjects. This is to bolster their competitiveness and to increase their chances of passing the board examination. Previous studies reveal that teacher education graduates who had higher grades in their college academic subjects had higher

overall rating in the Licensure Examination for Teachers (Junio – Pachejo & Allaga, 2013; Esmeralda & Perez-Espinosa; 2015).

# **Teaching Competence of the Pre-service Teachers**

The BEEd and BSEd pre-service teachers are competent in teaching along the seven domains of the NCBTS as framework of evaluation. This finding is akin to the results of previous studies (Somblingo, 2014; Biong, 2014) implying that preservice teachers have adequately achieved the expected performance level set by the Department of Education. Corroboratively, according to Abao (2013), the intensive training of the pre-service teachers during their practicum provides an avenue for the interplay of theories and practice that facilitated the pre-service teachers to acquire the fundamental aspects of teaching and to be immersed to the realities of the teaching profession.

Moreover, the competent teaching performance of the pre-service teachers reflects the quality of training that they have attained from their TEIs. This fulfills the standard policy formulated by CHED and practiced in the TEIs, which helped in establishing commitment and desirable attitude among pre-service teachers for an effective and competent teaching performance (Conejar, 2014). Significantly, the teacher education programs of the respondent TEIs are compliant to CHED policies and standards. In essence, this goes with the notion of Savellano (1999) that the main concern of TEIs should not be just having the students meet the required units in education but equipping them with the necessary competencies to teach.

In addition, the highest rating on the Social Regard for Learning of the preservice teachers connotes that they are seen to be very competent in "acting as role models, through actions and statements, for the learners to appreciate the importance of learning and exerting effort to learn" (Teacher Education Council-DepEd, 2009). As models, teachers must consistently show good behavior, inculcate right attitudes and exemplify honesty, trust, fairness, respect and responsibility (Corpuz & Salandanan, 2007; Acero, et.al. 2007; Lumpkin, 2008).

In general, the findings disclose that the pre-service teachers, though assessed to be competent, have not yet reached the highest level of teaching competence along all the domains of NCBTS. With the pressing and continuous demand for educational excellence and competitiveness both locally and globally, this scenario highlights the need to strengthen further the teaching performance of the pre-service teachers so that they could attain the required "very competent"

level. In this way, they certainly fit in the teaching profession in preparation for and in conformity with the ASEAN integration.

# Significant Difference in the Epistemological Beliefs, Academic Performance and Teaching Competence of the Pre-service Teachers When Grouped According to Sex, Program, Specialization and Ethnicity

Literature has conflicting views as to whether epistemological beliefs, academic performance and teaching competence of pre-service teachers significantly differ according to sex. The result of this study reveals that despite the dominance of females in teacher education, the epistemological beliefs, academic performance and teaching competence of pre-service teachers do not significantly vary for males and females. This concurs with the findings of previous studies (Chan, 2004 & 2007; Tümkaya, 2012; Ali, 2013; Oluwatayo & Adebule, 2012; Eren, 2015) highlighting the lack of variations in these variables for both sexes.

Furthermore, the study reveals that there exists a significant difference in the academic performance of pre-service teachers when grouped by course, which basically contradicts the findings of Pascua, et.al (2014) who claimed otherwise. Specifically, the study unveils that the BSEd pre-service teachers performed better than their BEEd counterparts. According to Acedo (1999), students consider BEEd an easier and cheaper option than BSEd, so students with lower preparation and motivation tend to be attracted to the BEEd program. On one hand, Aquino & Balilla (2015) attribute this to the general perception that the courses in BSEd program are more difficult than those of the BEEd programs hence BSEd students might have put more effort in studying. They further posit the reason that because the BEEd curriculum is a combination of many general education courses, it is difficult for the BEEd students to have mastery of all these courses and their grades are affected.

Another important finding of this study is the significant difference in the epistemological beliefs of pre-service teachers in terms of specialization. This is parallel to the results of the studies of Arslantaş (2015), Tumyaka (2012) and Paulsen & Wells (1998) concluding that "students' beliefs about the nature of knowledge and learning are related to the disciplinary contexts in which students select and experience their specialized coursework". In line with this, Conole (2004) and Hofer (2000) assert that every discipline has its own epistemological beliefs and associated cultures and this may greatly influence learners' perspective on how knowledge is subsequently gained (Chai et.al, 2006).

Aside from epistemological beliefs, there is also significant difference in academic performance of pre-service teachers when grouped by specialization. It was found out that the Mathematics group obtained the highest mean grade. One likely explanation is that BSEd pre-service teachers who specialized in Mathematics have established better study habits than their counterparts. Marpa's (2013) study revealed that Mathematics major students have an average level of time management and good study habits that positively influence their academic achievement.

Finally, the present study highlights that the epistemological beliefs, academic performance and teaching competence of pre-service teachers do not significantly differ in terms of ethnicity. This is consistent with the findings of Camargo (2011) asserting that academic achievement of the learners did not suggest significant variation with regard to cultural orientation. On the other hand, this contradicts the findings of previous studies that epistemological beliefs (Ismail et.al, 2013) and academic performance of students (McCoy, 2005) show significant difference when grouped by ethnicity.

# Relationship between and among Epistemological Beliefs, Academic Performance and Teaching Competence of Pre-service Teachers

Several studies of leading researchers displayed that epistemological beliefs are significantly related to various aspects of academic performance (Schommer, 1990 & 1993; Garcia, 2005; Schommer-Aikins & Easter, 2006; Arslantaş; 2015). An individual's belief system has a bearing on how a person learns and the associated learning outcomes (Chai, et.al, 2006). The current study concurs with these aforementioned studies at it reveals that pre-service teachers who have mature epistemological beliefs have better academic performance. This confirms Schommer's theory that mature or sophisticated beliefs appear to facilitate positive learning strategies and foster students' independent reasoning abilities and thus significantly impact academic performance (Schommer, 1990; 1993).

Corollarily, Muis & Franco (2009) found out that more sophisticated epistemological beliefs were associated with higher course grade and this relationship was mediated by both achievement goals and learning strategies. In the study of Cano (2005), it was shown that epistemological beliefs influenced academic achievement directly and also indirectly via students' learning approaches.

Among the factors of epistemological beliefs, the study underscores that Certainty of Knowledge was negatively correlated to all components of academic performance as well as the grade point average. In short, the pre-service teachers perform better academically as they more likely to believe in the tentativeness of knowledge. This is affirmed by Hofer (2000) in her study done with 326 first year college students that learners with lower certainty scores had higher academic standing. Likewise, Trautwein and Lüdtke (2007) found out that higher Certainty of Knowledge beliefs in fourth year secondary students were associated with lower grades. However, in the study of Schommer (1993), Certain Knowledge as a factor did not significantly correlate to students' grade point average.

It can be highlighted from the given assertions that epistemological beliefs of pre-service teachers are significantly associated to their academic performance. Pre-service teachers who have more sophisticated beliefs on the nature of knowledge and learning tend to have higher academic achievement. As Chai, et.al (2006) posit, having an understanding of this relationship calls for educators to help students to move towards and to sustain more mature epistemological perspectives that may eventually redound to positive learning performance.

# <u>Epistemological Beliefs Predict Better Academic Performance and Teaching Competence of the Pre-service Teachers</u>

Result of this present study discloses that epistemological beliefs predict, though at a minimum level, the academic performance and teaching competence of pre-service teachers. Various researches likewise support this finding. Phan (2008) and Kadivar, et.al. (2011) both investigated the effect of epistemological beliefs, learning approach, and reflective thinking on academic achievement of tertiary students. They found out that epistemological beliefs predicted learning approach and academic performance. Additionally, using path analysis, it was suggested that both general and domain-specific epistemological beliefs predicted academic performance as measured by overall grade point average (Schommer-Aikins et. al., 2005). Besides, Lodewyk, (2007) affirmed that epistemological beliefs, particularly the belief on simple knowledge, significantly predicted overall performance and reflective judgment scores on the ill-structured tasks of the students.

Clearly, epistemological beliefs are viewed as a vital construct to predict students' academic achievement (Hofer & Pintrich, 1997; Hofer, 2000; Cano, 2005). In this line, Chai, et.al (2006) state that understanding epistemological

beliefs held by the pre-service teachers could give a framework on how teacher educators view students' learning context. Eventually, this may have significant impact on the pre-service teachers' overall academic success and teaching competence.

#### CONCLUSION

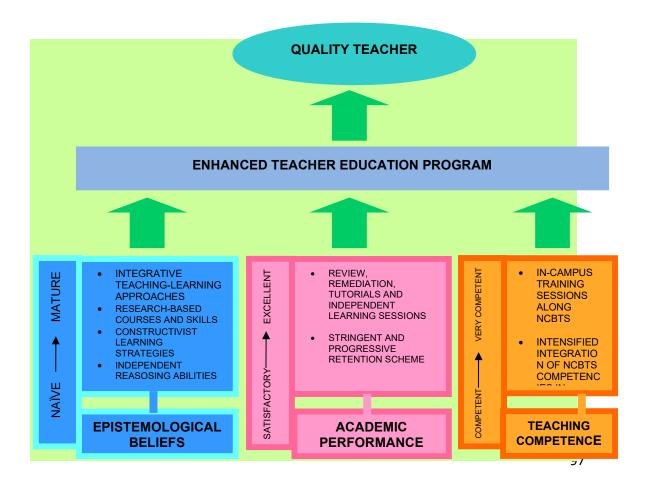
Individual's belief system on the nature of knowledge and learning significantly influence learning performance. Pre-service teachers who hold mature epistemological beliefs have better academic performance and these developed beliefs predict their teaching competence at minimum level. Congruently, they possess the necessary mental construct, attributes and competencies that are essential in the teaching profession. Moreover, the epistemological maturity of pre-service teachers does not happen at the same rate. It develops asynchronously at various stages; thus, it proves the multi-dimensionality of Schommer's epistemological beliefs. In this context, an understanding of pre-service teachers' epistemological beliefs vis-à-vis academic performance and teaching competence helps the teacher education institutions design effective teaching and learning framework. This is with the end view of increasing awareness and insights on how prospective teachers can become active participants in creating epistemologically conducive learning atmosphere.

On the basis of the findings and conclusions of the study, the following program framework is proposed for adoption of private and public Teacher Education Institutions. In order for pre-service teachers to transcend from naïve epistemological beliefs along Simple Knowledge and Certainty of Knowledge, it is necessary to create sustained and viable avenues for the pre-service teachers to be exposed to and to internalize the integrative teaching-learning framework (i.e. multidisciplinary, interdisciplinary and team teaching approaches) constructivist learning strategies, independent reasoning abilities, and research-based courses and skills that can facilitate in the development of epistemologically mature beliefs.

To elevate the satisfactory academic performance of pre-service teachers, instructional programs such as reviews, remediation, tutorials and independent learning sessions may be consistently undertaken to empower the pre-service teachers in improving their learning styles, developing good study habits and possessing the right attitude towards their studies. On the policy level, setting of high standards through stringent and progressive retention scheme may increase the chances of TEIs to retain academically fit students.

Furthermore, to reinforce teaching competence that is focused on NCBTS, the TEIs may conduct sustainable in-campus training sessions along NCBTS and intensive integration of NCBTS competencies on the various professional education courses. These interventions may strengthen the training of the preservice teachers geared toward a very competent level of teaching performance.

In essence, the mature epistemological beliefs, improved academic performance and strengthened teaching competence focused on NCBTS are deemed indispensable in enhancing the teacher education program. The interplay of these in the curriculum, instruction and assessment in TEIs may eventually produce quality teachers who are fit to teach in the K to 12 program and who are prepared to face the challenges and pressing demands of ASEAN integration.



#### Figure 2. Program Framework for Teacher Education Institutions

#### RECOMMENDATION

A proposed program framework is recommended for adoption of Teacher Education Institutions to enhance further the teacher education programs aimed at producing quality teachers. In addition, a further analysis of pre-service teaching competence may be done by future researchers using Confirmatory Factor Analysis to determine the factors along NCBTS performance indicators that are appropriate to the context of pre-service teachers. A parallel study may also be conducted with the inclusion of religious worldview and familial background as profile variables and educational philosophies as dependent variable.

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#### THE INFLUENCE OF FACEBOOK IN ENGLISH PROFICIENCY

# DR. RUEL M. BAYUCAN Doctor of Education 2016

#### **ABSTRACT**

**Objectives**: The study provides a clearer understanding of the influences of Facebook to the development of the English language proficiency of students. The study advances a framework or model that serves as guide in the use of Facebook in the development and/or enhancement of their language skills/competencies.

**Methods:** This study made use of descriptive research design since it acquired information through description that is useful for identifying variables and hypothetical constructs which can be further investigated through other means like exploratory studies. T-test was utilized to determine the significant difference on the influence of the use of Facebook in the English language proficiency of students. Two-way Anova was used to determine the interaction effect of the different variables on the English language proficiency using Facebook.

Results: The users of Facebook are still learning in using appropriate vocabulary while the non-users are developing in the said area. Both the users of Facebook and non-users of Facebook are competent in spelling proficiency. However, in terms of grammar proficiency, the non-users of Facebook are considered competent while the users of Facebook are developing in the said area. In terms of correct sentence structure the non-users of Facebook got a higher mean score. However, both the users and non-users of Facebook are developing in the said area. On the other hand, both users of Facebook and non-users of Facebook are developing in using the correct and appropriate punctuation marks. The study reveals that in giving or expressing ideas, the non-users of Facebook are competent while the users of Facebook are developing. In the over-all language proficiency of students, both users of Facebook and non-users of Facebook are said to be developing.

**Conclusion:** This study revealed that Facebook is not effective in attaining proficiency in the English language despite the fact that students are highly motivated to use Facebook and their teachers are highly competent in using Facebook as educational material. Students are inquisitive in utilizing Facebook and enthusiast to explore the different features of Facebook especially on gaming

and chatting however, they are being sidetracked and lose their focus on the given academic activities.

# Keywords: facebook, learning motivation, teaching skills, secondary students

## INTRODUCTION

Social networking sites (SNS) like Facebook have been used for a variety of educational purposes and help students in educational settings (Akvıldız & Argan. 2012; Arquero &Romero-Frías, 2013) The "social spaces" available to students can enable a more individualized experience for learning in an online environment and can supply what is taught in a traditional classroom setting (Griffith & Livenage. 2008). Most of the students use social networking sites like Facebook in conducting group projects and assignments and have been found to be very useful in having group work (Zanamwe, et al., 2013) Students' language skills are also enhanced by the amount of information disclosed on a teachers' or academics' SNS. Sharing of information amongst groups can have a positive effect on students (Griffith & Liyenage, 2008). Social networking sites improve technology excellency, enhance social skills and motivate students to communicate in new ways with new people (Zanamwe, Rupere, Kufandirimbwa, 2013), Facebook improves one's personal development; increases students' successes; assists both teachers and students when used as a supportive material in lessons; allows to share information between colleagues; makes learning more enjoyable; helps teachers and students to know each other better via the profile pages; increases students' motivation by allowing them to communicate with each other: encourages colleagues to learn more: increases students' will to learn by sharing extra resources about their homework; helps students to find out what goes on in the world through daily news; and enables them to share information about scientific studies.

Facebook can be a new learning strategy to motivate students to learn the English language since young people today live media saturated lives, spending an average of 6.5 hour a day using media, and are exposed to media more than 8.5 hour a day (Roberts, et.al,2005). Media literacy refers to the understanding of media and the use of it as a source of information, entertainment, enrichment, growth, empowerment, and communication (Wan, 2006).

Social networking sites like Facebook have the potential to facilitate interaction, communication, and collaboration, and as an upshot have been outstandingly featured in discussions centering on the use of technology to support and intensify educational endeavors (Morgan, 2014). Empirical research on their role in online education is limited, even though researchers have acknowledged an accelerating use of social software in formal learning contexts (Morgan, 2014). The growth of Facebook and similar sites has influenced many institutions. Many employers, for example, currently value digital literacy and look to hire employees who are skilled in social media. Since corporations increasingly value this type of literacy, researchers such as Greenhow and Gleason (2012) argue that educators need to respond by helping students develop best practices when using social networking and micro blogging services in a particular subject matter. Although studies on educational microblogging are few, some researchers are confident that this form of communication has strong potential to enhance learning (Gao et al., 2012). Some instructors have already witnessed the positive outcomes from using social networks like Facebook in school, such as improvement in reading, writing, digital literacy, information gathering, and communication with students and parents.

This paper came into realization to answer various questions related to the implications of Facebook to the English Language Proficiency of secondary public students especially that they are now living in a world known as the "Digital Age". Students feel comfortable in expressing themselves in visual form and electronic gadgets. Thus, teachers are trying to harness this energy by using visual media (TV, movies, video games, photography, internet, etc...) to help students think critically from what they see.

## Statement of the Problem

This study is an attempt to describe and analyze how secondary public students use Facebook and its impact to English language learning. It seeks to answer the following questions:

- 1. What is the profile of the students in terms of :
  - a. age
  - b. gender
  - c. weekly budget for Facebook usage
  - d. weekly frequency of Facebook usage

- 2. How does the English language proficiency of students a) using Facebook and b) not using Facebook compare in terms of the following variables:
  - a. appropriateness of vocabulary
  - b. spelling proficiency
  - c. grammar proficiency
  - d. correct sentence construction
  - e. appropriateness of punctuation marks
  - f. expressing ideas
- 3. How do students perceive the teaching skills of their English teachers in terms of the following?
  - a. efficiency in the use of Facebook
  - b. innovativeness in the use of Facebook
  - c. effectiveness in the use of Facebook
- 4. How do students assess their learning motivation in using Facebook?
- 5. Is there a significant difference in the English language proficiency of the students in terms of:
  - a. appropriateness of vocabulary
  - b. spelling proficiency
  - c. grammar proficiency
  - d. correct sentence construction
  - e. appropriateness of punctuation marks
  - f. expressing ideas
- 6. Is there a significant difference in the pre-test, post-test and mean gain scores of students using the traditional method and Facebook?
- 7. Is there a significant difference in the English language proficiency of students when grouped according to gender?
- 8. Is there a significant relationship between the English proficiency of students and the following variables?
  - a. age
  - b. weekly budget for Facebook usage
  - c. weekly frequency of Facebook usage
  - d. students perception of teacher's teaching skills in the use of Facebook

## **Hypotheses:**

- 1. The English language proficiency of students a) using Facebook and b) not using Facebook has a significant difference in terms of a.) appropriateness of vocabulary; b.) spelling proficiency; c.) grammar proficiency; d.) correct sentence construction; e.) appropriateness of punctuation marks and f.) expressing ideas.
- 2. Students' perception on the teaching competency of their English teachers has a significant difference in terms of a.) efficiency in the use of Facebook; b.) creativity in the use of Facebook; and c.) effectiveness of Facebook
- 3. The Facebook usage has a significant influence in the English language proficiency of students in terms of: appropriateness of a.) appropriateness of vocabulary; b.) spelling proficiency; c.) grammar proficiency; d.) correct sentence construction; and e.) appropriateness of punctuation marks and f.) expressing ideas.
- 4. The students' pre-test, post-test and mean score have significant difference in the traditional method and Facebook.
- 5. The English language proficiency of students has a significant difference when they are grouped according to gender.
- 6. The English language proficiency of students has a significant relationship in terms of: a.) age; b.) weekly budget for Facebook usage; c.) weekly frequency of Facebook usage; d.) students perception of teachers' teaching skills; and e.) students learning motivations.
- 7. There is a significant relationship between the English language proficiency of students and the intervening variables.

Significance of the Study

The study provides a clearer understanding of the influences of Facebook to the development of the English language proficiency of students. The study shall advance a framework or model that will serve as guide in the use of Facebook in the development and/or enhancement of their language skills/competencies.

## Literature Review

English is the universal language. It is the world's second largest native language, the official language in 70 countries. English can be at least understood almost everywhere among intellectuals, as it is the world media language, and the language of the entertainment industry, business and commerce and in the computer world. All over the planet people know many English words, their pronunciation and meaning. This is the primary reason why the rest of the world, like the Philippines keep on improving the teaching and learning processes of the said language.

The English Language is continuously changing to accommodate development in technology. Facebook or social networks play a vital role in learning English as a second language. Due to the significant role of grammar in writing improvement, there are both in-class and online teaching methods developed to enhance grammatical knowledge and subsequently to enhance writing abilities of students (Suthiwartnarueput, 2012).

The use of media directly affect the Linguistic Proficiency of the students while the teaching skills, learning motivation and the profile serve as moderators or intervening variables.

In psychology, Flow Theory helps assess human-computer interactions and addresses people's use of the internet. Flow is the holistic sensation that people feel when they act with total attachment. It implies assimilation in a task such that the person is completely engrossed by the conflict and the task being performed. Facebook is an artifact; the tasks refer to the activities performed using Facebook. These activities result in indispensable satisfaction. Combined with keen inquisitiveness and gratification that encourages repetition of the activity, but also the loss of the inability to control usage or close down the activity (Finneran, C.M. & Zhang, P. A, 2003).

## Internet and Facebook in the Philippines

The first Filipino logged in to the Internet on March 29, 1994, when the Philippine Network Foundation, a conglomerate of private and public institutions, obtained the country's first public permanent connection to the Internet (Minges, Magpantay, Firth and Kelly, 2002). Since then, the quantity of Filipino Internet users has grown, gradually at first but drastically rapid in the past few years.

The socio-demographic distinctiveness of individuals influences their actions and behaviors (Akman & Mishra, 2010). Research has shown that the patterns of admittance and use of the Internet show a incongruity with across socio-demographic groups, thus affecting how both the users and nonusers could access the improved opportunities in education, employment and civic engagement brought on by the facets of the Internet (Norris, 2001; Ono and Zavodny, 2007). It is therefore indispensable to comprehend how the socio-demographic attributes of the Internet users promote (or hinder) their access to and use of the Internet, and to use this knowledge to bridge the gap between the Internet users who have already benefited from the enlarged opportunities bought by the Internet and the non-Internet users who have not experienced these benefits.

Labucay (2011) found out those internet users who are from higher socio-economic class, who are college graduates, and have computer and Internet connection in the household tend to use the Internet more frequently than other socio-demographic groups. About three-fifths of classes ABC are frequent users, in contrast to majorities of classes D and E who use the internet less often. Two-fifths of the college graduates are frequent users, compared to about one-fourth of the less educated who are also daily users. About half of Internet users in households who own computers and 54% of those in households with Internet connection are also frequent users. Urban users are less likely than rural users to use the Internet on a daily basis. About half of those aged 35-44 and 55 and above are daily Internet users.

The youth are the key drivers of Internet use in the Philippines, such that while half of those aged 18-24 are Internet users, a small 2% of those aged 55 and above also use the Internet. This pattern clearly validates stereotype of younger individuals as bigger Internet user than the older individuals (Chinn & Fairlie, 2004;

Choi, 2008; Gardner & Oswald, 2001; Howard, Rainie & Jones, 2001; Norris, 2001; Smith et al, 2008)

Labucay (2011) explained the patterns of what Filipino Internet users do online, online social networking is largely the most popular online activity and its usage hardly diverge across socio-demographic groups. In gap, use of Twitter is still low, but its convention is more accepted among those from higher socio-economic classes and the more educated. The Philippine results are unswerving with previous research that younger Internet users tend to do more fun activities such as playing online games while older people do more information seeking/learning activities particularly getting news on current events (Howard Rainie & Jones, 2002; Madden & Rainie, 2003). Contrary to findings in the United States, however, Filipino women are more likely than the men to use the Internet as an information utility, particularly getting news on current events and health information. The more educated and those from higher socio-economic classes also tend to go online to access news and health information.

# **Facebook in Language Learning**

Despite widespread acknowledgement of the importance of the social dimensions of second language acquisition, there has been little research on second language (L2) use and learning in the social networks of foreign language learners (kurata,2010). However, media literacy education has become increasingly present in curricular initiatives around the world as media saturate our cultural environments. For second-language teachers and teacher educators whose practice centers on language, communication, and culture, the need to address media as a pedagogical site of critique is imperative (Chamberlin-Quinlisk, 2012).

## **Learning Motivation**

Motivation is an important issue in both face-to-face and computer-supported collaborative learning. There are numerous approaches for enhancing motivation, including group awareness tools that provide feedback on the group. However, this feedback was rarely uncompounded with other constructs. Additionally, it is only assumed and not investigated that the learners talk about their feedback and then remedy motivational problems which leads to the observed motivation gain. (Schoor et. al.,2014).

On the other hand, advancements in information and communication technology (ICT) allowed several tools and systems to be proposed for improving classroom experiences to both instructors and students. However, most of these tools were brand-new and stand-alone programs that require users to endow additional time and effort to become well-known with their use. This constraint could unfavorably affect the users motivation on using these particular programs. However, enhancing student learning motivation and participation is decisive for the teaching and learning of new-fangled knowledge or skills since motivation would affect how instructors and students interact with learning materials. In the era of Web 2.0, both instructors and students are heavily engrossed in various web applications such as SkyDrive, Evernote, DropBox, and Google Apps on a daily basis. These web applications were also well-received by both instructors and students in their daily lives. Therefore, the use of illustrious web applications could be a potentially novel method to engage instructors and students in meaningful teaching and learning activities (Lin, Yen-Ting; Jou, Min, 2013).

# The Teacher in the Context of Facebook Use in Teaching

The use of online social networks in educational endeavors has been supported by numerous educational technology researchers, who have highlighted the benefits of participatory technologies in formal learning contexts in K-12 (Barbour & Plough, 2009; Greenhow et al., 2009) and higher education settings (DeSchryver et al., 2009; Veletsianos, 2011; Webb, 2009). Social networking technologies have been viewed as tools that enable the use of participatory pedagogies able to address the problems that have traditionally plaqued distance education: creating a sense of presence, community-building, and learner participation in interactive discussions (Brady et al., 2010; Lee & McLoughlin, 2010; Naveh et al., 2010). The literature suggests that using online social networks as educational platforms may support learners in forming social connections with others while they collaborate to share ideas, create products, construct identities, and receive timely feedback (Dron & Anderson, 2009a; Greenhow, 2011; Wheeler et al., 2008). Additionally, research on informal learning within SNS contexts suggests that SNS participation fulfills important social learning functions (Greenhow & Robelia, 2009), though Selwyn (2009, p. 170) argues the kind of learning that occurred in a study of naturally occurring Facebook interactions among undergraduates represents the chatter of the back row of the lecture hall. On the other hand, Schroeder et al. (2010) offer a long list of potential issues that may arise when using social software in higher education. These include workload concerns for faculty and students. lack of trust in peer feedback, ownership issues with regards to public and collaborative spaces, difficulty in adapting publicly available tools, and difficulty in protecting the anonymity of students. Furthermore, Madge, Meek, Wellens, and Hooley (2009) have suggested that SNSs might be more useful for informal rather than formal learning as 91% of the undergraduates in their study never used such tools to communicate with university staff, and 43% believed that SNSs have no potential for academic work.

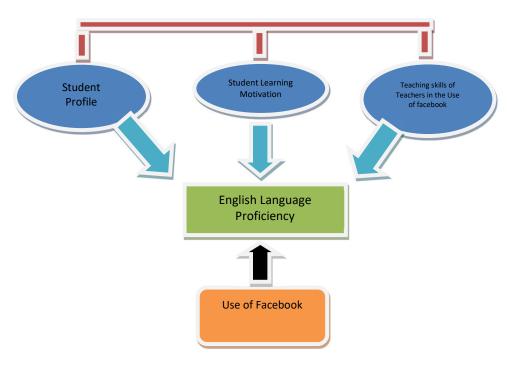
# Student Characteristics in the Context of Facebook Use in Learning

Research studies on using Facebook for teaching and learning report both positive and negative findings. Schroeder and Greenbowe (2009) used a WebCT forum and a Facebook group to get undergraduate students discussing questions. The use of WebCT was compulsory, while the use of the Facebook group was optional. The result showed that the number of posts on Facebook was nearly four times more than on WebCT, and the postings raised more complex topics and generated more detailed replies. Possible reasons included the students often visited Facebook and spent a lot of time in Facebook. Ooi and Loh (2010) created a Facebook group for a class of Secondary school students to learn the Chinese language and found the Facebook group enabled the students to share course resources and give comments. Also, the use of events allowed the teacher to conveniently organize learning activities such as lesson observations. However, in a study where undergraduate students were assigned to use Moodle or Facebook as a discussion forum, DeSchryver et al (2009) found that the students assigned to Facebook did not write longer or more frequent postings than the students assigned to Moodle. A possible reason was that the students did not like having discussions in a separate system—Facebook—as they had been using Moodle in the course. Kirschner and Karpinski (2010) compared the academic performance of Facebook users and non-users who were undergraduate and graduate students and discovered that on average the Facebook users got lower grades and spent fewer hours per week studying than the non-users.

## The Facebook

Facebook is one of the most popular social networking sites which allow users to post information, with others, and collaborate within the system (Stelter, 2008). When students use Facebook a tool for their study by spending time browsing profiles, meeting new people, and exploring relationships using the English language, they have greater opportunities to collaborate with a large number of people worldwide and learn the target language at the same time (Educause Learning Initiative, 2006). Such a Facebook's property indirectly creates a

community of practice an important component of student education in Social Constructivist theories. Students can construct knowledge after they interact with other people on Facebook. When students receive comments and suggestions, they can use the information given to improve their language skills. Apart from this, when students discuss on Facebook, they do not have to use their real names can avoid face-to-face interaction thus lowering the level of anxiety (Murphy, 2009). Such a learning style can reduce the Affective Filter and eventually enhance motivation and risk taking in language learning (Krashen, 1981, 1988). Other than the benefits given to students, Facebook can also provide many pedagogical advantages to teachers. It helps the teacher make a connection with students about assignments, upcoming events, useful links, and samples of work originating from both inside and outside of classrooms. Media literacy education has become increasingly present in curricular initiatives around the world as media saturate our cultural environments. For second-language teachers and teacher educators whose practice centers on language, communication, and culture, the need to address media as a pedagogical site of critique is imperative (Chamberlin-Quinlisk, Carla 2012). The topic of teaching and learning culture has been a matter of considerable interest to language educators and much has been written about the role of culture in foreign language instruction over the past two decades. English Second Language (ESL) students whose successes in a new environment are conditioned not only in their mastery of the new language, but also in their ability to negotiate the new culture. Media sources significantly affect students' attitudes and dispositions towards themselves, other people and society especially in English as a Second Language classes (Tanriverdi, Belgin; Apak, Ozlem.2008).



The use of Facebook greatly affects the English language proficiency of the students which is being moderated by the teaching skills of teachers in the use of Facebook as an educational material as well as the student learning motivation and the student profile.

Each moderator or intervening variable has sub-variables. The sub-variables in the teaching skills are the efficiency of the teacher in using Facebook as an educational material, their innovativeness in utilizing Facebook and the effectiveness of using Facebook as a learning aid. On the other hand, the student learning motivation internally and externally can intervene in the use of Facebook in attaining English language proficiency. It is also important to discuss the profile of the students along with their age, gender, weekly budget for the use of Facebook and weekly frequency of Facebook usage to intercede in the English language proficiency of the students.

#### METHODS

## Research Design

This study made use of descriptive research design since it acquired information through description that is useful for identifying variables and hypothetical constructs which can be further investigated through other means like exploratory studies. These descriptions can be used as an indirect test of a theory or model regarding Facebook education. During the round 1 of implementation, the researcher and the expert used the Quasi-Experimental using post test design while during the round 2 of implementation the Time Series Design was utilized.

# Participants of the Study

The participants of this study were secondary public students who were enrolled the Continuing Educational Course (CONEC) of AMA Computer College Tuguegarao. CONEC is an outreach program of AMA specialized in computer training that opens every weekend only. These high school students were from the remote barrios of Cagayan Valley and have some degree of knowledge about computer.

## **Research Instruments**

The researcher used a validated questionnaire to assess the student learning motivation and their perception on the teaching skills of their teachers in the use of Facebook as an educational material. The students'learning motivation questionnaire was validated by a licensed psychologist who also obtained masters in guidance and counseling while in the area of teaching skills in the use of Facebook as an educational material was validated by an expert in instructional materials. Also, the questionnaire includes the profile of the respondents namely: gender, year level, frequency in using Facebook, weekly budget in using Facebook, accessibility and accessing the Facebook.

A module was designed for the implementation of activities. It was patterned in the K-12 curriculum of public secondary students and was further validated by the experts.

A rubric was created for the checking of the activities of the students. The said material was validated by a group of English teachers and experts and was used by English teachers who served as the official checkers in all activities done by the students.

## **Research Procedure**

There were two rounds of implementation in this study. The first round consists of 60 public secondary students; 30 students from the experimental group and another 30 students from the control group.

The researcher floated a questionnaire to determine the profile of the students and will serve as a basis for the grouping of respondents. The said questionnaire is a standardized material designed for high school students The population consists of Out-of-School-Youth, over-aged high school students, elementary pupils, barangay officials and secondary students. Out of 133 population, the researcher determined the 30 non-users of Facebook. This was the basis of creating the group for the users of Facebook. Only high school students aged 12-15 years old were included as samples of this study. The matching of groups was determined through their age, gender and their exam score and was further checked, reviewed and validated by the experts.

Based on the profile of students (age, gender, intellectual capability), the researcher had created the matching group; the experimental group and the controlled group.

After the matching, the researcher who also served as a teacher implemented the module. The non users of Facebook were met every Saturday at 8:00-10:00am while the users of Facebook were met every Sunday at 8:00-10:00am. Activities for the non users were done in a traditional way which is the pen and paper quiz type while activities for the users were done through the use of Facebook where the researcher created page for them. The same activities were administered in the two groups; they only differ in the method. Students' answers were checked by English teachers based on the validated rubrics. The results were tabulated by a statistician.

After the activities, the questionnaire was floated to the users of Facebook to evaluate their learning motivation and the teaching skills of their teachers in using Facebook as an educational material. The results were tabulated by a statistician.

To further validate the result of the 1<sup>st</sup> round of implementation, the researcher created another group. This time, a single group was created. It was a mixture of users and non users of Facebook in just one class. The module was divided into three and was taught by 3 instructors. The respondents took the activities with pretest and post-test in both methods; traditional and Facebook. The same rubric was used and was checked by the English teachers who were also the checkers during the first round of implementation. The results were tabulated by a statistician.

# **Data Analysis**

Data collected was analyzed by the expert to show the existence of the framework of the influence of Facebook in the English language proficiency of the public secondary students. Descriptive statistics like frequency count, percentage, mean score and median score were used to describe the profile of students, English language proficiency, teaching skills in the use of Facebook as a teaching material and student learning motivations. T-test was utilized to determine the significant difference on the influence of the use of Facebook in the English language proficiency of students. Pearson-r was used to determine the significant relationship between the English language proficiency of students and the identified variables. On the other hand, T-test of correlated/ paired samples was utilized to interpret the results of the round 2 of implementation.

## RESULTS

Table 1 shows the profile of the respondents for the users and non-users of Facebook. Originally, there is an equal distribution of numbers in gender and age based on the procedures for the matching group. However, the expert and the researcher had deleted the participants in the users of facebook who did not make or participate in the activities. Also, the table presents that the students are aged from 12-15 years old. Users of facebook are averagely using Facebook twice a week with an average weekly budget of 42.00 only.

Table 1. Students' Profile

Users of Facebook					Non-users of Facebook	
Variable		Frequency	Percent	Frequ ency	Percent	
Gender	Male	13	54.2%	14	46.67%	
Gender	Female	11	45.8%	16	53.33%	
	15 years old	2	8.33%	6	20%	
٨٥٥	14 years old	12	50%	16	53.33%	
Age	13 years old	9	37.5%	6	20%	
	12 years old	1	4.17%	2	6.67%	
	P10.00	3	12.5			
Weekly	P30.00	9	37.5			
Budget	P60.00	11	45.83			
buuget	No Response	1	4.17			
	Ave. weekly but					
Modelsk	Once a week	4	16.7			
Weekly	Twice a week	14	58.3			
Frequency of Usage	Thrice a week	6	25.0			
or Usage	Ave. weekly frequency of usage = twice a week					

Table 2 shows the English language proficiency of students who used and those who did not use Facebook. Users of Facebook are still learning in the area of appropriateness of vocabulary while they are competent in the areas of spelling proficiency and expressing ideas. Furthermore, users of Facebook are still developing in the areas of grammar proficiency, appropriateness of use of punctuation marks, correct sentence structure and expressing ideas. On the other hand, non-users of Facebook are still developing in the areas of appropriateness of vocabulary, correct sentence structure, and appropriateness of use of punctuation marks. However, they are competent in the areas of spelling proficiency, grammar proficiency and in expressing ideas. Over-all, the language proficiency level of both users and non users of Facebook is still developing.

Table 2. English Language Proficiency of Facebook Users and Non-Users

Areas	Group	Mean Score	Interpretation	
Appropriateness of	Users	17.92	Learning	
vocabulary	Non-Users	19.54	Developing	
Consilier e martinina acc	Users	17.33	Competent	
Spelling proficiency	Non-Users	19.37	Competent	
Cuanana an marfiai an ar	Users	13.81	Developing	
Grammar proficiency	Non-Users	16.65	Competent	
Correct sentence	Users	9.04	Developing	
structure	Non-Users	10.38	Developing	
Appropriateness of use	Users	4.90	Developing	
of punctuation mark	Non-Users	5.24	Developing	
Francisco Ideas	Users	5.31	Developing	
Expressing Ideas	Non-Users	6.95	Competent	
Overall Language	Users	68.31	Developing	
Proficiency	Non-Users	78.13	Developing	

Table 3 presents that students perceived the teaching skills of their teachers in the use of Facebook as an educational material to be efficient, innovative and effective.

Table 3. Teaching Skills of Teachers in the Use of Facebook as an Educational Material

Teaching skills	Mean Score	Median Score	Interpretation
Efficiency in the use of Facebook	16.42	15	Efficient
Innovativeness in the use of Facebook	16.25	15	Innovative
Effectiveness of using Facebook as educational material	16.375	15	Effective

Table 3 presents that students perceived the teaching skills of their teachers in the use of Facebook as an educational material to be efficient, innovative and effective.

Table 4. Students' Learning Motivations in the Use of Facebook

Motivation	Mean	Median	Interpretation
Internal Motivation	15.5	15	Motivated
External Motivation	15.5	15	Motivated

Table 4 illustrates that students are internally and externally motivated to use Facebook as an educational material.

Table 5. Difference in the English Language Proficiency of Facebook Users and Non-Users

Areas	Group	Mean	t-value	p-value	Interpretati on
Appropriateness	Non-Users	19.54 17.92	1.529	0.134	Not
of vocabulary Spelling	Users Non-Users	19.37	2.103	0.041	Significant Significant
proficiency Grammar	Users Non-Users	17.33 16.65		0.007	
proficiency	Users	13.81	2.825	0.007	Significant
Correct sentence structure	Non-Users Users	9.04	2.157	0.037	Significant
Appropriateness	Non-Users	5.24			NI-4
of use of punctuation marks	Users	4.90	1.074	0.289	Not Significant
Expressing Ideas	Non-Users	6.95	4.344	0.000	Significant
Expressing faces	Users	5.31	7.0-1-1	0.000	Olgrinicarit
Language	Non-Users	78.13	2.549	0.014	Significant
Proficiency	Users	68.31			

Table 5 explains the influence of the use of Facebook in the English language proficiency of students. There is no significant difference of users and non-users of Facebook in the areas of appropriateness of vocabulary and appropriateness in the use of punctuation marks. On the other hand, there is significant difference of

users and non-users of Facebook in the four areas of English language proficiency namely; spelling proficiency, grammar proficiency, correct sentence structure and expressing ideas. Moreover, there is a significant difference between the users and non-users of Facebook in the overall English language proficiency.

Table 6. Difference in the Pre-test, Post-test and Mean Scores of Students in the Traditional Method and Facebook.

## Result of Round 2

Paired Samples Statistics

		Mean	N	t-value	p- value	Interpretatio n
Dain 4	T1 81.6667 17		000	Not		
Pair 1	T2	85.8039	17	-2.021	.060	Significant
D = i= 0	F1	79.6863	17	4 000	075	Not
Pair 2	F2	84.5294	17	-1.908	.075	Significant
Dain 0	T1	81.6667	17	.450	.659	Not
Pair 3	F1	79.6863	17			Significant
Dain 4	T2	85.8039	17	204	704	Not
Pair 4	F2	84.5294	17	.391	.701	Significant
<b>D</b> . <b>L</b>	Т	4.1373	17	0.40	005	Not
Pair 5	F	4.8431	17	212	.835	Significant

T1- Traditional Pretest

T2 – Traditional Posttest

F1- Face book Pretest

F2- Face book Posttest

T-Difference between Traditional Pretest and Posttest

F-Difference between Face book Pretest and Posttest

The table shows that there is no statistically significant difference in the English Language Proficiency of students when using Facebook and the traditional way. Specifically, there is no significant difference the traditional pre-test and post test; Facebook pre-test and post test; Traditional pre-test and facebook pre-test; traditional post test and Facebook post.

As reflected in table 7, there is a significant difference in the English language proficiency of male and female students specifically on the areas of correct sentence structure, appropriateness on the use of punctuation marks, and in expressing ideas. In addition, males are more proficient in the abovementioned areas compared to females. On the other hand, there is no statistically significant difference in the English language proficiency of male and female students specifically on the areas of appropriateness of vocabulary, spelling proficiency and grammar proficiency.

Table 7. Difference in the English Language Proficiency of Facebook Users when

grouped according to Gender

	Gender	Mean	t-value	p- value	Interpretation	
Vocabulary	Male	18.9754	1.721	0.099	Not	
v ocabulal y	Female	16.6673	1.721	0.099	Significant	
Spelling	Male	18.4369	1.862	0.076	Not	
	Female	16.0300			Significant	
Grammar	Male	14.9492	2.036	0.054	Not Significant	
Oraminai	Female	12.4536	2.000			
Sentence	Male	9.7692	2.133	0.044	Significant	
Sentence	Female	8.1818	2.133	0.044	Significant	
Punctuation	Male	5.3069	2.188	0.040	Significant	
Functuation	Female	4.4245	2.100	0.040	Significant	
Idea	Male	5.8715	2.892	0.008	Significant	
luea	Female	4.6355	2.092	0.000	Significant	
Proficiency	Male	73.3092	2 227	2.227 0.037	Significant	
1 Tolloleticy	Female	62.3927	2.221		Olgriilleant	

Table 8. Correlation Between English Language Proficiency and Identified Variables

Variable	Vocabular y	Spelling	Gramma r	Structure	Punctuati on	Ideas	Proficienc y
Age	013	006	174	135	070	116	085
Weekly Budget	348	465*	354	408	421	391	431*
Weekly Frequency	.198	.114	.175	.189	.305	.281	.204
Teachers' teaching skills	117	061	113	132	.012	096	102
Learning Motivation s	.244	.238	.316	.314	.399	.322	.313

## DISCUSSION

The influence of Facebook in English language proficiency will depend on how the respondents utilized Facebook especially on the frequency of usage. The respondents of this study are using Facebook twice a week. Law of Exercise (Thorndike) states that the idea that bonds between stimulus and response are strengthened by recency, frequency and contiguity. However, other exploratory studies (Canales et al., 2009; Karpinski & Duberstein, 2009; Kalpidou, Costin, & Morris, 2011) show that an extended presence on Facebook can have harmful effects on productivity and task performance. The amount that the user will spend on Facebook will decrease the amount he spends on studying thus it distract him from productive academic work. Intellectual capabilities to manage time and process information also should affect their capacity to benefit from online activities and restrict their efficiency on any tasks performed in parallel. Facebook users usually interrupt their work to visit Facebook profiles, because of the short-term capacity needed for the working memory process. This split attention paid to multi tasks causes distraction (Rouis; Limayen & Sangari, 2011). Even though they consider the website distracting and time consuming, these students note that they cannot guit visiting it, because they like it and use it to keep contact with their friends and family, whether they encounter them everyday or not (Adan, 2011). Facebook was designed for social interaction and this is also the primary reason why students are well motivated to use the said platform. This paper discloses that the respondents are motivated internally and externally. Students had higher learning motivation and participation when using the proposed web application supported learning environment during and after class as it gave them access to adequate learning support. The proposed approach also gave effective assistance to instructors and students in administering and conducting learning activities during and after class (Lin, Min 2013). In the new digital age, Siemens (2004,2005) and Downes (2007) proposed connectivism theory, where social learning is integrated with social media technologies like Facebook. In the world of social media proliferation, learning is not an internal, individualistic activity. Rather, learners gather information from connecting to others' knowledge using Facebook and other similar platforms. One of the principles of connectivism is the capacity to learn in more critical than what is currently known (Siemens, 2004). The responsibility of a teacher is not just to define, generate, or assign content, but it is to help learners build learning paths and make connections with existing and new knowledge resources (Anderson and Dron, 2011). Social learning theories, especially connectivism provide insights on the roles of educators in this social network environment.

On the other hand, electronic media use is negatively associated with grades. (Jacobsen, & Forste, 2011). This multitasking likely increases distraction, something prior research has shown to be detrimental to student performance. As social media websites, such as Facebook, YouTube and Twitter gain popularity, they are also are becoming increasingly dangerous as they create modes to procrastinate while trying to complete homework.

The survey data of Madge, Meek, Wellens and Hooley (2009) also illustrates that once at school, Facebook was part of the 'social glue' that helped students settle into student's life. However, care must be taken not to over-privilege Facebook: it is clearly only one aspect of students' more general social networking practices and face-to-face interrelationships and interactions remain important. Students thought Facebook was used most importantly for social reasons, not for formal teaching purposes, although it was sometimes used informally for learning purposes.

Facebook users are predominantly students (Selami, 2012) and this is also the reason why the researcher conducted this study to the secondary students. On the other hand, gender plays an imperative role in who uses Facebook, whereas age is not a considerable variable. A Survey research found that females are particularly interested in learning by mobile (especially given its "any time, any place" nature) (Rahman & Panda, 2012).

Literature says Facebook plays an important role in determining how dictionaries learn about potential new words. Instead of waiting for new words to gradually make their way through traditional channels, modern dictionaries use social media to monitor new words (Brown, 2012). In the study of Root & Mckay (2014) students did not consider grammar and spelling to be important. For them, expressing their ideas and receiving instant feedback are more important than being proficient in using correct and acceptable grammar. Users of Facebook start relying on the computer grammar and spelling check features. This reduces their command over the language and their creative writing skills (MacEntee, 2012). Apparently punctuation and spelling have a bigger upshot on Facebook posts and comments. It's understandable that punctuation is important on website, blogs and articles but punctuation in particular can persuade the reactions that posts receive on Facebook (Jasilek, 2013).

A paper released by the English Spelling Society concludes that the internet has revolutionized the English language, and made misspelling the norm. Internet fosters belief that there is no need to correct typos or conform to rules. English Spelling Society finds Internet chatrooms and social networking sites as heartening to children to spell words incorrectly. As people type at speed online, there is now a "general attitude" that there is no need to correct mistakes or conform to regular spelling rules. But this means that children who have been brought up with the internet do not question wrongly spelt words. The report's author, Lucy Jones, a former student at Manchester University had mentioned that we are now witnessing the effect of these linguistic variations are having on children born into the computer age with such a high level of access in and out of schools.

The main effect of Facebook is that sentences and phrases have become much shorter. For example, the alteration of the word 'Facebook' to be both a noun and a verb can change a sentence from "I will send her a message on Facebook" to simply "I'll Facebook her". In our fast-paced society, the almost-instant ability of social media to share thoughts with the world has also affected our behavior in actual speech. Students mostly use slang words or shortened forms of words on social networking sites (MacEntee, 2012). For example, this use of terms such as 'tweet' as a verb to shorten sentences is very much reflective of the limit of 140 characters in a tweet, forcing you to become more concise and get your message across with a limited number of letters (Jasilek, 2013).

This paper divulges that students recognized their teacher as efficient in using Facebook as an educational material, innovative in the use of Facebook and

effective in using Facebook as a teaching aid.

Media literacy education has become increasingly present in curricular initiatives around the world as media saturate cultural environments. For second-language teachers and teacher educators whose practice centers on language, communication, and culture, the need to address media as a pedagogical site of critique is imperative (Chamberlin-Quinlisk, Carla, 2012).

Though the teacher is efficient, innovative and effective in introducing Facebook as an educational material the results reveal that students who are using Facebook are not proficient in all areas of English language proficiency. Furthermore, the mean score is lower compared to the mean score of the non-users of Facebook. Mazer and Simon (2009) found out in his study entitled "The effects of teacher self-disclosure via Facebook on teacher credibility. Learning, Media & Technology" that teachers who personalize their teaching through the use of humor, stories, enthusiasm, and self-disclosure are perceived by their students to be effective in explaining course content. On the other hand, Mazer, Joseph P. Murphy, Richard E. Simonds, Cheri J.(2007) emphasized possible negative associations between teacher use of Facebook and teacher credibility.

On the other hand, Fewkes and McBabe (2012) state many examples of use for educational purposes. In their study, it was found out that 73% of respondents reported having used Facebook for educational purposes. The results of this research point to a need for the better utilization of Facebook in classrooms and the need for school boards who choose to "embrace" the increasing popularity of social media to implement programs that better ensure teachers also feel comfortable enough to embrace this informal teaching tool.

Teachers only marginally integrate the disposable technology in class (Maglic, 2007). Results revealed that English language teachers do not frequently use modern instructional technologies and variety of teaching techniques in their English language lessons. It was also found that students learn under harsh environment, which is often rowdy, congested and noisy. (Aduwa-Ogiegbaen, S. E.; Iyamu, E. O. S. 2006).

#### CONCLUSION

This study revealed that Facebook is not effective in attaining proficiency in the English language despite the fact that students are highly motivated to use Facebook and their teachers are highly competent in using Facebook as educational material. It is worthy to note that socio-demographic aspect of the respondents is very important contributing factor in the result of this study. Users who are from higher socio-economic class and have computer and Internet connection in the household tend to use Facebook more frequently than other socio-demographic groups. The respondents of this study are from public secondary schools, thus they are not well exposed to social networks but this is also the reason why they are highly motivated to use Facebook. They are inquisitive in utilizing Facebook and enthusiast to explore the different features of Facebook especially on gaming and chatting however, they are being sidetracked and lose their focus on the given academic activities. The respondents of this study are aged from 12-15 years old, thus, they are vulnerable. They are still dependent in their teachers in terms of instructions and learning processes. Younger Facebook users tend to do more fun activities such as playing online games while older people do more information seeking/learning activities particularly getting news on current events. (Howard Rainie & Jones, 2002; Madden & Rainie, 2003). The more educated and those from higher socio-economic classes also tend to go online to access news and health information.

## RECOMMENDATION

The researcher believes that facebook can be an educational material since it can attract the attention of the students. Furthermore, the students are highly motivated to use Facebook in their academic activities. Facebook in its very nature caters for independent usage, thus the use of facebook must be integrated in the evaluation or in the assignment part of the lesson plan. It is for the students to develop their communication skills and be proficient in using the English language. The said integration of Facebook in the academe is strongly recommended to all college students who can perform independent cooperative learning. In addition, college students can control themselves in utilizing Facebook. More research needs to be conducted and tracked down concerning the boundless advancement of Facebook in terms of its educational implications. Thus, the researcher strongly suggests that another research will be implemented to the young generations aged 18-24 years old since the youth are the key drivers of Facebook use in the country. Also, the study must be done in a private institution catering higher socio-economic class.

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