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THE PERFORMANCE OF MATHEMATICS MAJORS IN THE LICENSURE EXAMINATION FOR TEACHERS OF BAGUIO CENTRAL UNIVERSITY

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ABSTRACT:
The main purpose of this study was to determine the level of effectiveness of the interventions or strategies used in enhancing the performance of Mathematics majors in the Licensure Examination for Teachers of Baguio Central University graduates. This study was experimental in design with a five (5) – year duration that covers three (3) successive Licensure Examination, in which the respondents involved six (6) Mathematics Major BCU Graduates divided into three (3) batches of LET takers: one (1) for the first batch during the 2014 LET examination; one (1) for the second batch during the 2015 LET examination; and four (4) for the third batch during the 2016 LET examination. Based from the LET passing rate, it was found out that the interventions or strategies used to enhance the performance of Mathematics majors in the Licensure Examination for Teachers of Baguio Central University were very much effective; thus, leads to a decision to accept the stated assumption of the study. Hence, based from the finding of the study, it was concluded that the interventions or strategies employed by the researcher were very much effective that the respondents were able to successfully pass their Licensure Examination; thus, enabling them to be "professionals". Thus, by exposing these respondents to an intensive Mathematical problems and activities, on the emphasis of 'experiential learning' and 'reflection', the researcher's interventions or strategies were able to maximize the learning growth of these respondents.

Keywords: Licensure Examination for Teachers, interventions, strategies, effectiveness, Mathematics Majors, experiential learning, reflection

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INTRODUCTION

Mathematics is used throughout man's lives – everyday. The National Mathematics Advisory Panel (2008) reported that Mathematics is the invisible culture of human age and emphasizes that Mathematics is embedded in man's lives in many ways: practical, civic, professional, recreational, and cultural. This is especially evident in the technology – rich society. Number sense and problem – solving skills have increasing importance, as technology (e. g., calculators, computers, software programs, etc.) enhances both the opportunities for, as well as the demands of, advanced levels of proficiency in Mathematics.

It has been a fact that all who seek to pursue teaching as a career need to take the Licensure Examination for Teachers or the LET, but very few really know what the LET is, its purpose and significance in the education reform of the Philippines.

The LET was implemented in the Philippines through the enactment of Republic Act 7836 or otherwise known as the "Philippine Teachers Professionalization Act of 1994" on December 16, 1994. The enactment of the law didn't mean that the teachers in the Philippines were not "professional". Rather it is a means to strengthen and improve not just the teachers, but also the quality of education and the whole education system in general. By improving the teachers, the students will naturally follow the embitterment of those who lead them.

Before R.A. 7836 was implemented, education in the Philippines was mostly regulated and supervised by the National Board for Teachers (NBT). Even though R.A. 7836 was signed as law in 1994, the first LET exam was held two years later. On August 1996, a total of 97, 560

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examinees took the first LET exam administered by both the Board of Professional Teachers (BPT) and the Professional Regulation Commission (PRC).

The examination for teachers at the elementary level consists of only two parts: the general education and the professional education; while the examination for the secondary level consists of three parts: the general education, professional education, and field of specialization. General education refers to core subjects like Filipino, English, Math, Science, and Social Science/Studies. Professional education refers to those related to the teaching profession like Facilitating Learning, Early Childhood and Adolescent Development and Education, Principles of Teaching, Methods and Strategies, Curriculum Development, and the Teaching Profession as a whole. Lastly the field of specialization refers to the specific discipline the secondary teachers have to teach academics such as English, Biology, Chemistry, Math, Filipino, Social Studies, Music, Art, Physical Education and Health or MAPEH. Nowadays, there are usually 150 items for general education, 150 for professional education and 150 test items for the field of specialization which are taken for more or less 3 hours for each part.

Because of this law, aspiring teachers must now get a license first before being able to teach in the public schools. Although the law requires a teacher to have a license, some private schools still accept fresh graduates who have yet to take the Licensure Exam. This is in part due to the lack of qualified teachers in teaching specialization subjects or vocational skills.

Since the implementation of the law, there has been a significant change in the method of teaching in the Philippines. Teachers who used to rely on textbooks have now begun to innovate their own teaching methods and strategies. The emphasis on continuing professional education

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(CPE), or taking the masteral and doctorate degrees, has now been more pursued by teachers who didn't want to get left behind on the educational changes happening around them. Having more confidence in their teaching skill, teachers perform better and so do their students.

Hence, as this study aimed to evaluate the level of performance of the mathematics major graduates of Baguio Central University on the licensure examination for teachers, the researcher based the study through the strategies and/or interventions that was personally used in cultivating the educational progress of the respondents during their stay at the university.

REVIEW OF RELATED LITERATURE

Article I. Sec. 2. Statement of Policy of the Philippines teacher's Professionalization Act of 1994 provides that "The State recognizes the vital role of teachers in nation – building and development through a responsible and literate citizenry. Towards this end, the State shall ensure and promote quality education by proper supervision and regulation of the licensure examination and professionalization of the practice of the teaching profession."

A key element to spur the growth of the country is the development of its human resources. This would require, among others, the provision of access to quality basic education. It is imperative for teachers – to – be to pass the Licensure Examination for Teachers or LET. However, passing the Licensure Examination for Teachers or LET is not an assurance or guarantee that they are or will become good quality teachers. The Licensure Examination for Teachers or LET simply measures the extent of the knowledge obtained by education graduates. It does not evaluate the pedagogical skills nor the creativity, initiative, resourcefulness and dedication of would – be teachers. Passing the Licensure Examination for Teachers or LET

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however, is an indicator that a would – be teacher is somehow adequately prepared in terms of content. Passing the Licensure Examination for Teachers or LET also shows that a would – be teacher has the potential to become a great teacher, that is, if he or she has the determination and interest to become one.

METHODOLOGY

This study aimed to enhance the performance of mathematics majors on the Licensure Examination for Teachers (LET) of Baguio Central University. This study was carried out by employing experimental method of study. This research design was chosen to determine the level of effectiveness of the interventions or strategies that are being employed by the researcher in his teaching methods based on the results of the Licensure Examinations for Teachers. To test the assumption of the study, the result was based from the LET passing rate.

RESULT AND DISCUSSION

This chapter presents the analysis and interpretation of the results of the study.

Level of Effectiveness of the Interventions Used in Enhancing the Performance of Mathematics Majors in the Licensure Examination for Teachers

Anchored from the proverb, "*train a child in the way he should go, and when he is old he will not turn from it*" (Proverbs 22: 6); and the Confucian principle, "*I hear and I forget, I see and I remember, I do and I understand*", the researcher trained the respondents by exposing them to intensive Mathematical problems and activities, such as the following:

- Respondents were given a topic to discuss in their enrolled subject;

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- They were also required to teach lower mathematics subjects to lower class handled by the researcher in the other department or colleges, with close supervisions;
- To make the respondents focused on their learning process, they were bombarded with several problems to solve with time pressure to keep them busy;

  In addition, to make the respondents more attentive to their responsibilities, they were required to prepare their own lesson plans for every topic they report or teach and make multiple choice types of examination; and
- To train the students on how to deliver and conduct their lessons, they were tasked to develop their own teaching methodologies.

Table 1

Level of Effectiveness of the Intervention Used in Enhancing the Performance of Mathematics Majors in the Licensure Examination for Teachers

N = 7 Mathematics Majors BCU Graduates

Mathematics Majors	Number of Respondents	Period of Doing the Interventions / Strategies	LET Result	Descriptive Equivalent
First Batch	1	2011 – 2014	100%	VME
Second Batch	1	2012 – 2015	100%	VME
Third Batch	5	2013 – 2016	80%	VME

Legend:

Numerical Value	Percentage Rate	Descriptive Equivalent	Symbol
4	75% – 100%	Very Much Effective	VME
3	50% – 74%	Moderately Effective	ME
2	25% – 49%	Least Effective	LE
1	0% – 24%	Not Effective	NE

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As it can be observed in table 1, with the different interventions or strategies induced by the researcher to the respondents by the long – run on their academic years, they were able to successfully pass the Licensure Examination for Teachers; hence, the assumption of the study stating "the interventions or strategies used to enhance the performance of mathematics majors in the Licensure Examination for Teachers were VERY MUCH EFFECTIVE" was accepted.

Generally, the concept of "professional learning community" (McLaughlin and Talbert, 2006) has become a main object of research and strategic intervention related to teacher development. Thus, a related question is that of the resources on which educators may draw in collective and individual efforts to develop their teaching (Guedet and Trouche, 2009; Winslow, 2011) – for example, teacher networks organized in technology based platforms may enable collective development of resources in institutions and even countries. These modalities of sharing and collectively develop resources appear indeed to be of increasing importance to many teachers. At the same time, we face the question about conditions that permit the sharing of didactic knowledge across and beyond individual schools, if that knowledge should really be conceived of as knowledge linked to the profession rather than to a particular group or school (Stiegler and Hiebert, 1999; Cirade and Chevallard, 2010).

Learning is about how we perceive and understand the world, about making meaning (Marton and Booth, 1997). But 'learning' is not a single thing; it may involve mastering abstract principles, understanding proofs, remembering information, acquiring methods, techniques and approaches, recognition, reasoning, debating ideas, or developing behaviour appropriate to specific situations; it is about change.

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Despite many years of research into learning, it is not easy to translate this knowledge into practical implications for teaching. There are no simple answers to the questions 'how do we learn?' and 'how as teachers can we bring about learning?' This is partly because education deals with specific purposes and contexts that differ from each other and with students as people, who are diverse in all respects, and ever changing. Not everyone learns in the same way, or equally readily about all types of material. The discipline and level of material to be learnt have an influence. Students bring different backgrounds and expectations to learning. Our knowledge about the relationship between teaching and learning is incomplete and the attitudes and actions of both parties affect the outcome, but we do know enough to make some firm statements about types of action that will usually be helpful in enabling learning to happen.

It is self – evident that experience gained through life, education and work should play a central role in learning. The most widespread theory of learning from experience is associated with David Kolb (1984), who developed ideas from earlier models of experiential learning. An appreciation of experiential learning is a necessary underpinning to many of the different types of teaching and learning activity, including work – based (or placement) learning, action learning, teaching laboratory work and reflective practice. The provision of vicarious experience, such as by using intensive case studies or problem – solving activities, and many types of individual or group use of experiential learning as an underlying rationale.

Experiential learning is based on the notion that understanding is not a fixed or unchangeable element of thought and that experiences can contribute to its forming and re – forming. It is a continuous process and implies that we all bring to learning situations our own

knowledge, ideas, beliefs and practices at different levels of elaboration that should in turn be amended or shaped by the experience – if we learn from it.

The experiential cycle does not simply involve having an experience, or 'doing', but also reflecting, processing, thinking and furthering understanding, and usually 'improvement' the next time something is encountered or done. By extension, this cyclical process has a part to play in even the most abstract and theoretical disciplines where the academic is concerned to help the learner acquire the 'tools of the trade' or the modes of thinking central to the discipline, such as in philosophy or literary criticism. The teacher needs to be aware that in practice learners do not cycle smoothly through the model, but may get stuck, fail to progress or 'jump about'. The way in which the learner resolves these tensions will influence the learning outcome and the development of different types of strength in the learner and, as will be seen, may pertain to personality traits and/or disciplinary differences. Reflection is a key part of experiential learning as it 'turns experience into learning' (Boud, et al., 1985). Because of misunderstanding, overuse and its passive and negative connotations, reflection has had a worse press than it deserves, but it is also true that the research evidence about how it works is lacking. To learn from experience, we need to examine and analyze the experience; this is what reflection means in this context.

With regard to higher education, they may be applied to the learning of students, and equally to the professional development of the lecturer. Schön (1987), in examining the relationship between professional knowledge and professional competence, suggests that rather than looking to another body of research knowledge, practitioners should become more adept at observing and learning through reflection on the artistry of their own particular profession.

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'Reflection on practice' (on experience) is central to learning and development of knowledge in the professions.

To have students achieve high – quality learning outcomes is one of the aims of most university teachers. Ideally they want their students to engage in deep (as opposed to surface) learning; as Prosser and Trigwell (1999) state, "deep learning is the type of learning that is sought because it is the learning that remains after lesser quality outcomes have been forgotten. This is the learning that can be drawn upon in other and new contexts".

Hence, by the researcher's implementations of intensive mathematical problems, activities, and allowing the respondents to first – hand experience in handling and portraying their duties and responsibilities as would – be teachers, the researcher was able to maximize the students' learning process, wherein, what they have learned and experienced throughout their education has been embedded on them; whereas, for these respondents to partake and pass the Licensure Examination for Teachers was made possible.

CONCLUSION AND RECOMMEDATION

Conclusion

Based on the three (3) – year successive results of the Licensure Examination for Teachers, it was found out that the interventions or strategies employed by the researcher were very much effective that the respondents were able to successfully pass their Licensure Examination; thus, enabling them to be "professionals".

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Thus, by exposing these respondents to an intensive Mathematical problems and activities, with the emphasis of 'experiential learning' and 'reflection', the researcher's interventions or strategies were able to maximize the learning growth of these respondents.

Recommendation

In relation to the above conclusion, it was recommended that these intensive interventions or strategies should be maintained and further developed for more productive results in the future. Mathematics teachers, as well as other academic teachers should develop other innovative interventions or strategies that they can apply on their teaching methods to help the learners grow.

Moreover, school administration should prod to develop and implement new programs (such as seminar and workshops, conference, conventions, and other more) that could help teachers maximize their teaching performance.

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