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Content Analysis of Licensure Examination for Teachers: Traditional vs Non-Traditional Teacher Assessment

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Non-Traditional Teacher Assessment**

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SUMMARY (For Featured Article)

With the recently released report of World Economic Forum on Global Human Capital Report (September 2017) with the subtitle “Preparing People for the Future of Work,” the need for human capital development cannot be overemphasized. The report has identified four elements of human capital. First, CAPACITY – Level of formal education of younger and older generations as a result of past education investment. Second is DEVELOPMENT – Formal education of the next generation workforce and continued upskilling and reskilling of the current workforce. Third is DEPLOYMENT – Skills application and accumulation among the adult population. Fourth is KNOW-HOW – Breadth and depth of specialized skills used at work, which can promote three important skills for the 21st century—complex problem solving, creativity, and critical thinking as part of an effective and efficient labor force. In this context, one would ask, “who should prepare the people for future work?” At the onset, the answer, in general, would be the *teacher*. But how ready are our teachers in preparing the young people for future work? Is Licensure Examination for Teachers (LET) enough to prepare the so-called “millennials” for future work?

Consequently, in the recent September 2017 LET results, the Professional Regulations Commission (PRC) announced that 21,198 elementary teachers out of 80,509 examinees (26.33%) and 49,626 secondary teachers out of 107,020 examinees (46.37%) successfully passed the LET. It is alarming that less than 30% of basic education (elementary) teachers and less than 50% of secondary teachers passed the licensure exam, and this has been the trend for the last 15 years (please see PRC report). If that is the case, how can our future students be prepared for future labor force when the majority of our BS Education graduates are not even passing the Licensure Examination which is their gateway to have a “better future’?”

With the current trend in the U.S. where teacher assessment or certification is undergoing a paradigm shift, from psychometrics to a broader model of educational assessment, from a testing and examination culture to an assessment culture, maybe it is high time that our government through the Department of Education (DepEd) and PRC to do the following: (1) a critical content analysis of the LET item sets, to check whether are they contributing to the fourth element of human capital; (2) to look into the possibility of alternative assessment for teachers other than national licensure examination or a possible tiered assessment wherein, even if non-passers, they will still have the chance to teach; and (3) implementation of a national policy or mandate that basic education teachers will be allowed to teach for two years and come up with action research before taking the national licensure examination—may further enrich their “know-how” which is the breadth and depth of specialized skills needed for the 21st century.

I. INTRODUCTION

I.1 Background of the Study

The World Economic Forum released its Global Human Capital Report (September 2017) with the subtitle “Preparing People for the Future of Work,” and identified three important skills needed for the 21st century. In this context, one would ask, “who should prepare the people for future work? At the onset, the answer in general would be the *teacher*. But how ready are our teachers in preparing the young people for future work? Is the Licensure Examination for Teachers (LET) enough to prepare the so called “millennials” for future work?

In the United States of America, Gipps (1996) mentioned in her book that teacher assessment or certification is undergoing a paradigm shift, from psychometrics to a broader model of educational assessment, from a testing and examination culture to an assessment culture.

There is a wider range of assessment in use now than there was twenty-five years ago: teacher assessment, standard tasks, coursework, records of achievement as well as practical and oral assessment, written examinations and standardized tests. There is criterion-referenced assessment, formative assessment and performance-based assessment, as well as norm-referenced testing. In addition, assessment has taken on a high profile and is required to achieve a wide range of purposes; it has to support teaching and learning, provide information about pupils, teachers and schools, act as a selection and certifying device, as an accountability procedure, and drive curriculum and teaching. These new forms and range of purposes for assessment mean that the major traditional model underpinning assessment theory, the psychometric model, is no longer adequate, hence the paradigm shift. (p. #)

Grissom et al. (2017) investigated the most commonly used exam in the U.S.A., the School Leaders Licensure Assessment (SLLA), using 10 years of data on Tennessee test takers and uncovered substantial differences in passage rates by test-takers (teachers) characteristics. The authors mentioned that many states require prospective principals to pass a licensure exam to obtain an administrative license, but they know little about the potential effects of principal licensure exams on the pool of available principals or whether scores predict later job performance.

In Philippine setting, Pinol (2000, as cited by Santos, 2016) stated that the future of our generations of Filipinos to manage their affairs depends to a great extent on teacher *who trains students in proper attitudes, values, and skills that will make them successful and happy individuals, good citizens, and productive members of society. It is necessary to have a competent teacher to produce a successful student in*

the future. To be able to be a competent teacher, one has to use variety of teaching styles. It determines the capacity of a teacher to engage his students in activities that will improve their skills and performance. (p. #)

One of the challenges of the 21st century, especially in Philippine setting, is how to educate the “millennials,” especially during the transition period of additional two years for Secondary High school which started in the school year 2016–2017 or known as K-12. As an educator, one might ask, is there a strong relationship between teachers who topped the LET and performance of students in the classroom? Do teachers contribute to the future success and life-long income of educated individuals? Moreover, based on the World Economic Forum’s article, are the teachers who passed the LET can prepare the students for the future work needed, considering ASEAN integration and globalization?

Hence, this study aims to assess the content of Licensure Examination for Teachers in the Philippines, if they are promoting the skill set required in the Fourth Industrial Revolution such as complex problem solving, critical thinking, and creativity (Schoning & Witcomb, 2017; World Economic Forum, 2017).

1.2 Statement of the Problem

This study aims to describe and assess the pedagogical approach of teachers that would contribute to the required skills of the 21st century. The study aims to answer the following questions:

- Does licensure examination of teachers contribute to the development of human capital?
- Is there an alternative assessment tool to determine that an effective teacher contribute to the student's achievement and lifelong income of an educated individual?
- What possible alternative assessment tool that educational institution or Human Resource departments can use in hiring highly effective teachers?

1.3 Objectives of the Study

For this study, specific objectives have been formulated below:

1. To assess the content or items set of the LET.
2. To come up with an alternative assessment tool that would enhance teacher's effectiveness and contribute to the lifelong income of an educated individual.
3. To recommend possible action plans to enhance licensure examination item sets and align it to the required skills of the 21st century.

1.4 Scope/Coverage of the Study

This study will be limited to the content analysis of test items and practice set of the LET for 2017. Informal interview with the former Dean and also the HR director of Ateneo de Naga University, being the Center of Excellence in Education and being the Sending Higher Education Institution (SHEI) of the proponent. Moreover, the study will base its analysis on a collection of literature both international and Philippine setting.

1.5 Significance of the Study

This study is deemed significant for the following sectors:

1. Academicians and researchers who can further add imperative and empirical data to the research.
2. Administrators and human resource directors of educational institutions who can use alternative assessment tools in hiring effective teachers who can develop students with the required future skills to fit the labor market.
3. Local government agencies such as Commission on Higher Education (CHED), DepEd, and PRC, wherein they can align the curriculum for BS Education (both for basic and secondary education) and examination items for the development of required future skills of students to fit the future labor market.

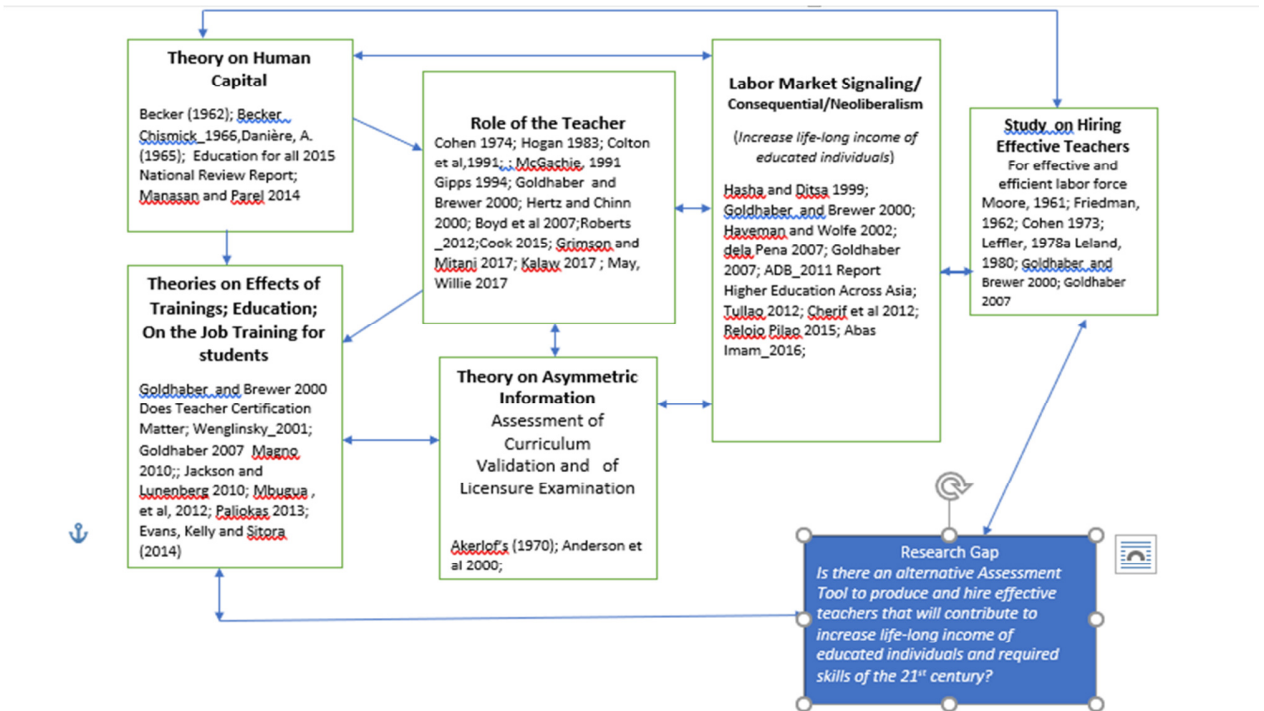
II. REVIEW OF RELATED LITERATURE

2.1 Literature Map

Below is the literature map that shows the direction of the review of literature and to identify the research gap of the study. In essence, it started with the Theory on Human Capital of Becker (1962) which highlighted the importance of trainings and education that affects future income and consumption of an individual. However, several studies corroborate that the role of the teacher is significant in building that knowledge, which can contribute to human capital. But the teacher's role does not end in just giving the learning but s/he should also be equipped as well. Hence, there is a need for licensure or certification to minimize, if not eliminate, asymmetric information for the good of the public. This literature map would like to convey that, if the teacher passed the required licensure examination or several assessments, then there is the possibility that the said teacher can contribute to the student's performance, who can contribute to the needed workforce or labor market in the future. If that is the case, then the educational institution should continuously hire effective teachers

so that it will be a cycle in developing human capital. But there is scant in recent literature especially in Philippine setting, if LET really contribute to student's performance in life, which can supply to the labor market and would eventually to life-long income of an individual.

Figure 1 Literature Map



2.2 Survey of Literature

The following review of related literature have been collected based on the literature map earlier provided. Hence, survey of literature has been divided into thematic subsections: (1) Theories on Human Capital; (2) the Role of Teachers and other factors in improving on the job training and overall educational performance of students; (3) Assessment and validation of asymmetric information thus, a need for licensure examination for teachers; and (4) Labor market signaling and major debate on what assessment tool can be used in developing as well as hiring effective teachers that will contribute back to life-long income of educated individuals. The set of literature review presented came from international and Philippine setting. In the end, a synthesis is presented to highlight research gap of this study.

2.2.1 Theories on human capital (Importance of education and training in raising income)

It is a known fact that people differ substantially in their economic well-being, both among countries and among families within a given country and there are activities that influence future real income through the imbedding of resources in people and this is called investing in human capital (Becker, 1962).

An analysis on what affects earnings and consumption through tangible materials (e.g. sailboat) and intangible (e.g. on-the-job training and college education) showed that, for a while, economists were relating these differences primarily to differences in the amount of physical capital since richer people had more physical capital than others. It has become increasingly evident, however, from studies of income growth that factors other than physical resources play a larger role than formerly believed, thus, focusing attention on less tangible resources like the knowledge possessed. A concern with investment in human capital, therefore, ties in closely with the new emphasis on intangible resources and may be useful in attempts to understand the inequality in income among people (Becker, 1962).

In Becker's (1962) investigation, it became clearer that much more than a gap in the formal economic analysis would be filled, for the analysis of human investment offered a unified explanation of a wide range of empirical phenomena which had either been given ad hoc interpretations or had baffled investigators. Among these are the following: (1) The distribution of earnings is positively skewed, especially among professional and other skilled workers; (2) Able persons receive more education and other kinds of training than others; (3) The division of labor is limited by the extent of the market; and (4) The typical investor in human capital is more impetuous and, thus, more likely to err than is the typical investor in tangible capital. Said phenomena were among the eight phenomena mentioned in his study.

In this 21st century, many educational institutions see the importance of on-the-job training or internship. This was already mentioned in the study of Becker more than 50 years ago. Becker said that many workers increase their productivity by learning new skills and perfecting old ones while on the job. Therefore, on-the-job training is a process that raises future productivity and differs from school training in that an investment is made on the job rather than in an institution that specializes in teaching. He further mentioned that presumably, future productivity can be improved only at a cost, for otherwise there would be an unlimited demand for training. Included in the cost are the value placed on the time and effort of trainees, the "teaching" provided by others, and the equipment and materials used. These are costs in the sense that they could have been used in producing current output if they were not used in raising future output.

Accordingly, Becker (1962) emphasized that there are two types of on-the-job training—the general and the specific. General training is useful in many firms in addition to the firm providing it (e.g. as a machinist trained in the army finds his skills of value in steel and aircraft firms, or a doctor trained (interned) at one hospital finds his skills useful at other hospitals). Most on-the-job training presumably increases the future marginal product of workers in the firm providing it, but general training would also increase their marginal product in many other firms as well. Since in a competitive

labor market the wage rates paid by any firm are determined by marginal productivities in other firms, future wage rates. as well as marginal products. would increase to firms providing general training. On the other hand, training that increases productivity more in firms providing it will be called specific training. Completely specific training can be defined as training that has no effect on the productivity of trainees that would be useful in other firms. Much on-the-job training is neither completely specific not completely general but increases productivity more in firms providing it and falls within the definition of specific training. The rest increases productivity by at least as much in other firms and falls within a definition of general training.

Consequently, Becker (1962, p. #) asked “why, then, do rational firms in competitive labor markets provide general training, for why provide training that brings no return?” The answer is that firms would provide general training only if they did not have to pay any of the costs. Persons receiving general training would be willing to pay these costs since training raises their future wages. Hence, the cost as well as the return from general training would be borne by trainees, not by the firms.

Training has an important effect on the relation between earnings and age. Trained persons would receive lower earnings during the training period because training is paid for them, and higher earnings at later ages because the return is collected then (Becker, 1962). In line with training, consequently, many observers believe that field experience is a crucial component of teacher preparation, especially when teachers are being prepared to teach in an environment with which they are not familiar (Boyd, Goldhaber, Lankford, & Wyckoff, 2007).

Moreover, 50 years have passed but the theory of Becker and Chiswick (1966) is still true today. They posited in their article “Economics of Education” that education affects the distribution of income. They proposed that the total earnings of any person after he has finished investing in human capital can be said to equal the sum of the returns on his investments and the earnings from his "original" human capital. This will be the framework of this study.

Schwab (2017), founder of the World Economic Forum (WEF), believed that the “world is endowed with a vast wealth of human talent, but the full human potential is not realized.” In the WEF report, they further added that it is the role of a nation (government) to develop their human capital, which is an important determinant of their long-term success than virtually any other factor. By “human capital” we mean the knowledge and skills people possess that enable them to create value in the global economic system. Human capital is not defined solely through formal education and skilling, but it can be enhanced over people’s life time.” (WEF, year, p. 7)

Consistent with Becker’s theory on human and knowledge capital investment, the Philippines, through the *Education for All 2015 National Review* presented under the social contract of Pres.

Benigno Simeon C. Aquino III, education became a central strategy towards poverty reduction and strengthened national competitiveness through its Education for All (EFA) program. Thus, the government, as part of the Philippine Development Plan 2011-2016, is investing in education, specifically in enhancing the knowledge and skills of Filipinos.

The Aquino administration has initiated major reforms, namely the K-12 education reform, Alternative Learning System (ALS), and increased TechVoc training that aim to holistically develop the Filipinos with 21st century skills.

With K-12 program, secondary education curriculum has been revised to offer a wide range of tracks that students can choose from at the secondary level. The changes in the curriculum are expected to make students better prepared for the path they would prefer, whether higher education.

Although there are still gaps to fill in, the EFA 2015 National Plan of Action calls for inter-agency collaboration among government agencies and between government and non-government organizations. The Plan gave birth to the Grand Alliance whereby the provision of the basic learning needs for all Filipinos is no longer the sole responsibility of the DepEd but requires the contribution of all.

2.2.2 Importance of licensure vis-a-vis teacher's role (On student's performance)

In the United States of America, to improve the quality of the teacher workforce, some states have tightened teacher preparation and certification requirements while others have eased requirements and introduced "alternative" ways of being certified to attract more people to teaching. Boyd et al. (2007) evaluated these seemingly contradictory strategies by examining how preparation and certification requirements affect student achievement.

If strong requirements improve student outcomes and deter relatively few potential teachers, (Boyd et al., 2007), then they may well be good policy. But if they have little effect on student achievement, if they seriously deter potential teachers, or if the schools are able to identify applicants who will produce good student outcomes, then easing requirements becomes a more attractive policy.

Again, Boyd et al. (2007) did find that highly selective alternative route programs can produce effective teachers who perform about the same as teachers from traditional routes after two years on the job. And they found that teachers who score well on certification exams can improve student outcomes somewhat. Limited evidence suggests that certification requirements can diminish the pool of applicants, but there is no evidence on how they affect student outcomes. And the authors found that schools have a limited ability to identify attributes in prospective teachers that allow them to improve student achievement. Boyd et al., (2007) concluded that the research evidence is simply too thin to have serious implications for policy. Given the enormous investment in teacher preparation and

certification and given the possibility that these requirements may worsen student outcomes, the lack of convincing evidence is disturbing. The authors urge researchers and policymakers to work together to move to a more informed position where good resource decisions can be made.

In the U.S. there are two kinds of preparation—traditional preparation and the alternative route (Boyd et al 2007). Traditional teacher preparation programs are the primary source of teacher supply in most states. These programs are shaped by a combination of state regulations, the criteria of accreditation groups, and the choices made by individual programs and institutions. States approve teacher education programs, enabling them to offer degrees. Would-be teachers who successfully complete approved programs need only pass any required certification exams to become licensed. States assume that by completing the state-approved preparation program, teachers have met the preparation component of certification including required course content and field experiences. Required course content falls into three broad areas: foundational courses (for example, learning and development, philosophy or history of education, multicultural education); pedagogical courses (for example, methods of teaching or classroom management); and content or subject-matter knowledge. Programs also require candidates to complete field experiences, where they link their education to teaching experiences. Many preparation programs supplement these three areas with additional coursework or present existing courses within a framework that addresses a specific orientation or mission, such as urban education, though information about such aspects of the programs is largely anecdotal.

On the other hand, Boyd et al. (2007) mentioned that there can be alternative routes to certification, which typically allow teachers to enter the classroom by postponing or bypassing many of the criteria required by traditional teacher preparation programs. It only requires teachers to hold a bachelor's degree; 80% require teachers to demonstrate subject matter knowledge by completing coursework or passing an exam, or both.

Since then, many alternative certification programs have both utilized pre-service and in-service requirements (Boyd et al., 2007). Some require as little as two weeks of pre-service preparation, while others effectively require an academic year. More typically, pre-service ranges from four to twelve weeks during the summer before the new teacher enters the classroom and often includes pedagogy, methods of teaching, and field experiences. Fewer than half the states require practice teaching or fieldwork. In-service preparation typically involves coursework or mentoring, or both. Requirements for courses in education are common but the nature and quantity of those courses vary widely.

The extent to which teacher preparation and certification improve the quality of teaching is an empirical question. Answering it requires focusing on questions in four key areas: teacher preparation,

certification exams, teacher supply, and hiring. First, to what extent do the knowledge and skills provided in teacher preparation programs improve teachers' ability to raise achievement for students? Some aspects of preparation, such as content knowledge, may be more important for student outcomes than others. What is the evidence for each of the components of preparation? Second, how effective are certification exams in distinguishing between teachers who are adequate and those who are inadequate at improving student outcomes? Are the knowledge and skills tested on certification exams the same as those that raise student achievement? If so, to what extent do the exams reliably test that information and distinguish among candidates? Third, does the requirement that teachers be certified, with all that entails, deter some people from becoming teachers who could have improved student outcomes? If so, to what extent? And finally, how effective are local hiring authorities in recognizing the attributes that will make applicants effective teachers (Boyd et al., 2007)?

Boyd et al. (2007) further suggested, although research suggests that knowledge and skills regarding how to teach can influence student achievement, that no study identifies either which of these skills are important or the best way for aspiring teachers to develop them. One reliable way to identify the effects of certification and teacher preparation on students' educational gains is through experiments in which teachers are randomly assigned to students.

Once again, however, there is only limited research documenting any relationship between field experiences and student achievement, and none sorts out what particular content and duration of field experiences are most influential. But what is most remarkable today is the lack of evidence on the effect of almost any aspect of teacher preparation on the performance of students (Boyd et al., 2007).

Goldhaber and Brewer (2000), empirically tested how 12th-grade students of teachers with probationary certification, emergency certification, private school certification, or no certification in their subject area compare relative to students of teachers who have standard certification in their subject area. They also determined whether specific state-by-state differences in teacher licensure requirements systematically affect student achievement. In mathematics, they found that teachers who have a standard certification have a statistically significant positive impact on student test scores relative to teachers who either hold private school certification or are not certified in their subject area. Contrary to conventional wisdom, mathematics and science students who have teachers with emergency credentials do no worse than students whose teachers have standard teaching credentials.

The study of Goldhaber and Brewer (2000) does not definitively answer the important policy question of whether imposing more rigorous standards in teacher licensure will lead to better student achievement. Such policies may lead to an improved quality of teachers; however, it is also possible that these standards restrict the supply of qualified individuals by discouraging them from trying to

become teachers. It is certainly an open question as to whether enough highly qualified individuals can be attracted into teaching at current salary levels.

Wenglinsky (2001) argued on some quantitative studies of school effects have generally supported the notion that the problems of U.S. education lie outside of the school. Yet such studies neglect the primary venue through which students learn, the classroom. His study found that the effects of classroom practices, when added to those of other teacher characteristics, are comparable in size to those of student background, suggesting that teachers can contribute as much to student learning as the students themselves.

Wenglinsky's study uncovers important interrelationships among the aspects of teaching. For one, professional development seems to influence teachers' classroom practices strongly. The more professional development teachers received in hands-on learning, and indeed the more professional development they received regardless of topic, the more likely they are to engage in hands-on learning activities. And the more professional development teachers received in working with special student populations, the less likely they are to engage in lower-order activities. Another important interrelationship involves the trade-off between teacher quality and teacher quantity. Smaller class sizes are negatively associated with teachers receiving substantial amounts of professional development, whereas teacher major and time in professional development are positively associated with one another. These relationships suggest that schools tend to choose between hiring more teachers or investing in improved teacher quality by recruiting teachers with better pre-service training and providing teachers with more and better in-service training. In sum, his study found that schools matter because they provide a platform for active, as opposed to passive, teachers.

Goldhaber (2007) explored the relationship between teacher testing and teacher effectiveness using a unique data set that links teachers to their individual students. The findings show a positive relationship between some teacher licensure tests and student achievement. However, the study also suggests that states face significant tradeoffs when they require particular performance levels as a precondition to becoming a teacher. Some teachers whom they might wish were not in the teacher workforce based on their contribution toward student achievement are eligible to teach based on their performance on the tests; other individuals who would be individuals who would be effective teachers are ineligible.

Further to Goldhaber's (2007) study, the value of licensure test performance for teachers in the work force is an important policy issue, as local school districts might wish to use this in making hiring decisions. In his data analysis, the results presented in the study generally support the hypothesis that licensure tests are predictive of teacher effectiveness, particularly in teaching mathematics, and the finding is robust to alternative specifications of the model, including

specifications that account for nonrandom sorting of teachers across students. If states are seeking criteria to ensure a basic level of quality, then licensure tests appear to have some student achievement validity.

Magno (2010) presented the history of educational assessment which is described by the different pillars that contributed to its development. These factors include timelines of government mandates, studies done at the national level, universities that shape experts in the field, professional association, and pioneered researches.

Magno suggested that the future direction in the field of educational assessment, measurement, and evaluation is shaped by numerous forces due to its range of applications. The article presented that the production of research and studies make way in the development of national policies and the creation of associations. He concluded that in terms of the practice of educational assessment in the Philippines, the role of assessment specialists is increasing widely due to the demand for quality assurance in schools that especially specialize in teaching and implementation of programs. In this aspect, more collaboration is expected between teachers and psychometricians to improve and understand better the learners.

Jackson and Lunenberg (2010) suggested that the school performance indicators are meaningful and significantly related to student achievement and school accountability ratings. The results of the study indicate that teacher behaviors, as well as specific teaching principles and methods, make a difference with regard to student achievement (Ayers, in press; Bulach & Lunenburg, 2008; Emmer & Evertson, 2009; Gage, 2010; Good & Brophy, 2008; Greene, 2008; Nieto, 2009, 2010, in press; Tuckman, 2008).

Moreover, Jackson and Lunenber (year) briefly considered strategies for enhancing:

- a) *academic excellence*—with focus on student learning and enhancement of organizational capacity through three strategies: setting standards for learning of high intellectual quality; providing sustained schoolwide professional development; and using deregulation to increase school autonomy (Blankstein, 2010);
- b) *developmental responsiveness*— achieved through instructional strategies that can help teachers increase student learning. They cited Institute & Marzano (2010) who identified classroom practices that generally increase student achievement;
- c) *social equity*—(as cited Fullan, 2010) with focus on instructional strategies that can improve learning, all schools need an intervention and support system for students who lag behind in learning the curriculum, in addition to providing professional development to teachers. Jackson and Lunenberg (2010) further added that school leaders need to supply the financial resources to fulfill this mandate. This involves acquiring materials, information, or

technology; manipulating schedules or release time to create opportunities for teachers to learn; facilitating professional networks; or creating an environment that supports school improvement efforts (as cited in Smylie, 2010); and

- d) *organizational structures*—school leaders must stimulate an environment in which new information and practices are eagerly incorporated into the system. Teachers are more likely to pursue their group and individual learning when there are supportive conditions in the school and school district, such as particularly effective leadership (English, 2008; Northouse, 2010). Schools, where teachers collaborate in discussing issues related to their school improvement efforts, are more likely to be able to take advantage of internally and externally generated information (Senge, 2011).

Mbugua et al. (2012) posited factors contributing to poor performance include understaffing, inadequate teaching/ learning materials, lack of motivation and poor attitudes by both teachers and students, and retrogressive practices. Improving on these factors and sensitization of the local community to discard practices, which prohibit student's effective participation in learning mathematics, could improve performance in Mathematics.

Paliokas (2013) proposed that tiered licensure can connect educator effectiveness policies. She concluded that licensure should support and promote state goals of educator development and improved student learning. The licensure system should include a continuum of performance-based expectations and licensing assessments from novice to veteran teachers. Moreover, a plan for alignment is important. This is to ensure that certification and licensure policies align with the State's strategic vision for improving educator effectiveness. Identify key areas for alignment across related policy areas, such as compensation, career ladders, performance evaluation, and ongoing professional learning policies.

Evans, Kelly, and Sitora (2014) found that a key aspect of scholarly culture—the number of books in the family home—exerts a strong influence on academic performance in ways consistent with the cognitive skill hypothesis, regardless of the nation's ideology, political history, or level of development.

2.2.3 Link of asymmetric information, assessment, and licensure certification examination

Boyd et al. (2007) mentioned in their study that certification exams are typically developed by a panel of experts who determine the passing level, or cut score, by relating minimum levels of content and teaching knowledge for beginning teachers to what is measured on the various exams. Two issues must be kept in mind in using such exams to assess the quality of teachers. First, the tests are not directly linked to student outcomes and, thus, may not be a good measure of how well a teacher

will perform in the classroom. Second, the tests are designed to distinguish knowledge around the cut score and probably perform less well as a proxy for skills and knowledge as scores move away from that point. Because cut points for certification exams differ from state to state, it is possible to assess how scores, especially around the cut point, might affect student achievement. Moreover, in many states, teachers who fail certification exams are allowed to teach as uncertified teachers, offering another opportunity to examine how the knowledge skills measured by the exam affect student achievement.

The argument that licensure is quality-enhancing started with Akerlof's (1970) analysis of markets with asymmetric information. He posited that each unit of a good or service is composed of various attributes that are valued by the consumer. In the presence of asymmetric information, however, the relative per-unit amount of at least one of these attributes cannot readily be ascertained by the consumer and is therefore not reflected in the price, even though the seller may know the amount being provided. Anderson et al. (2000), citing Krashinsky (1983), pointed out that this problem is compounded by the production of spurious quality signals by low-quality providers. Moreover, there is a tendency for the market to shrink as low-quality providers are adversely selected. Such adverse selection will occur as long as the marginal cost of quality provision is increasing (Leland, 1979).

Cohen (1973) analyzed the close nexus between professional associations and the process of state licensure. Generally, licensure is viewed as an extension of the concern for self-regulation that characterizes professionalism. Notwithstanding the important mission of protecting the health and safety of the public, in many cases, licensure has provided a means of according status and recognition to a body of specialized knowledge, resulting in a "state-protected environment" wherein the profession is virtually autonomous.

In the study by Hogan (1983), he mentioned that state licensing has become the major means of regulating the multitude of occupations and professions providing services to the consumer. The *raison d'être* of licensing is to ensure that the public is not harmed by incompetent or unethical practitioners but such laws obviously have a significant economic impact as well. In fact, estimates are that licensing now directly affects one-third to one-fifth of the workforce (Behavior Today, 1976).

He said that the proliferation of licensing laws is in part responsible for the rise in power of the professional class. The professions are assuming a central and critical role in society, a role far more important than hitherto imagined. In large part this is due to technological innovations, which are making the possession and communication of knowledge a more valuable asset than the control of capital. Since the professions have historically been the repositories of knowledge vital to the well being of society, the control of access to that knowledge provides the professions with considerable power.

Colton et al. (1991) believed that licensure examinations (e.g., teacher certification) involve high stakes decisions about new graduates seeking to enter the professions. Such examinations can, therefore, have a strong impact on the institutions that prepare these graduates as well as on the settings in which they subsequently work. Empirical job analyses support claims for the validity of score interpretations for licensure and certification examinations by linking the content domain of the test directly to what is done in practice.

As mentioned in the introduction of this study, in the book of Gipps (1996), she mentioned that there is a paradigm shift in teacher assessment, from a testing and examination culture to an assessment culture. Said book is written as part of the attempt to reconceptualize assessment in education in the 1990s. There has been over the last decade an explosion of developments in assessment and a number of key actors have been reconceptualizing the issues. The aim of the book is to bring together much of this work to discuss and synthesize it in an attempt to further our understandings and practice in educational assessment: to develop the theory of educational assessment (Gipps, 1994a).

Angell and Kassirer (1998, as cited by Anderson et al., 2000) posited that like any other regulatory entry barrier, licensure has the effect of cartelizing the industry, generating rents for incumbent practitioners. However, the usual rationale for licensure in markets with asymmetric information is that consumers benefit from enhanced quality assurance. Svorny (1987, as cited by Anderson et al., 2000) mentioned that the usual rationale for licensure in markets with asymmetric information is that the consumers benefit from enhanced quality assurance. According to this argument, the producer of (medical) services knows more than the consumer about the quality of the services provided, which, in the absence of licensure, creates an incentive for fraud, quality-chiseling, and other forms of malfeasance.

Goldhaber and Brewer (2000) mentioned in their study that an elaborate system of training and licensure is geared toward the preparation of those entering teaching. However, this system has developed piecemeal over many years, and most teachers completing a state-approved program in a school of education receive a license to teach. Although efforts to develop professional certification have some headway (e.g., through the National Board for Professional Teaching Standards), the basic state licensure system remains in place. But, there is no guarantee that the requirements for entering teaching are linked to student performance. Surprisingly, very little research evidence exists on the effectiveness of the teacher licensure system in terms of how well teachers subsequently teach and what works to promote positive student outcomes. Much of the educational establishment takes for granted that licensure is an important and effective screen on the quality of teachers.

Using certification exams, states began testing teachers as a condition of employment during the 1960s. Since then, they have increasingly used exams to assess whether teachers have the minimum skills needed to enter teaching. States give four different types of tests: basic skills, liberal arts general knowledge, subject-matter knowledge, and pedagogic skills; some tests cover combinations of these topic areas (Boyd et al., 2007).

2.2.4 Labor market signaling

In the 2012 report of Asia Pacific Economies' report entitled "Effective Labor Market Signaling: A strategy addressing Unemployment and Talent Mismatch," it acknowledged the fact that the economies in the Asia-Pacific region have been experiencing a pattern of increased national income and standards of living ascribed to an increasing investment in education, skills development, and technology adoption (Shamounki & Orme, 2003; Pande, 2003). However, such growth pattern may not be realized in the future by the economies in the region if there are bottlenecks in the process of human resource development as well as imbalances in the labor market. One such bottleneck is the problem of the unemployment and talent mismatch. The report cited information gaps or asymmetry of information—the major culprit in the labor disconnect—hence the role of government is crucial particularly in the provision of right information. Moreover, it was cited that under normal circumstances there are no incentives for firms and educational institution to provide the optimal information that will minimize the asymmetric information between suppliers and consumers of labor services.

The World Economic Forum (2017) recently released its "Global Human Capital Report," stating that today's education systems are already disconnected from the skills needed to function in today's labor markets. They mentioned how schools tend to focus primarily on developing children's cognitive skills within more traditional subjects rather than fostering skills like complex problem solving, creativity, or collaboration, and critical thinking. In this light, are the said skills being taught by teachers of the 21st century? Are these part of the licensure examination items?

2.3 Frameworks

2.3.1 Theoretical framework

This study uses the framework proposed by Becker and Chiswick (1966) on Economics of Education. They posited that the total earnings of any person after he has finished investing in human capital can be said to equal the sum of the returns on his investments and the earnings from his

"original" human capital. If returns could be treated as constants for essentially an indefinitely long period, this relation could be expressed as

$$E_i = X_i + \sum_{j=1}^n r_{ij}C_{ij},$$

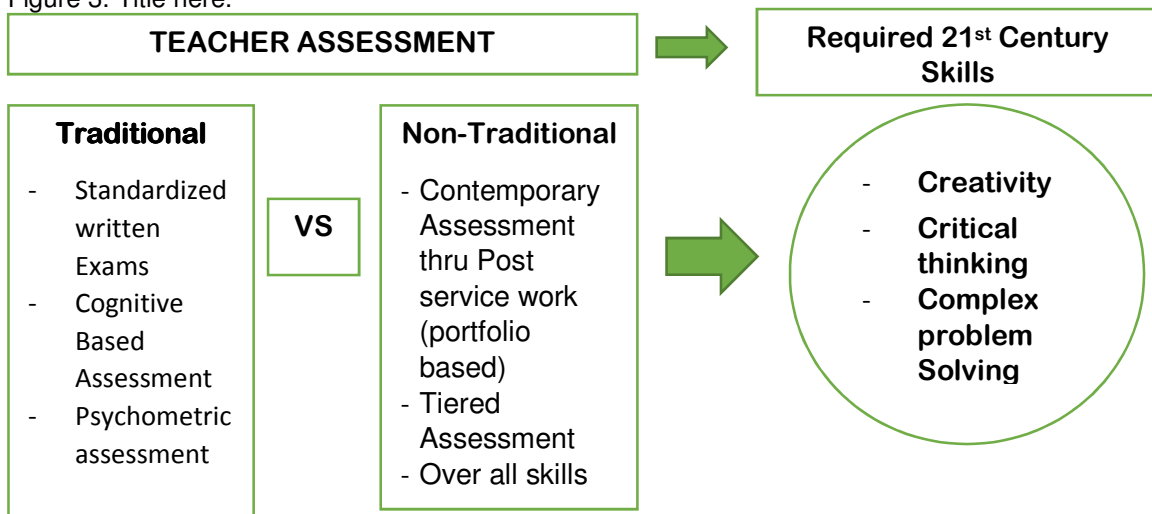
Where: C_{ij} is the amount spent by the i th person on the j th investment, r_{ij} is his rate of return on this investment, and X_i are the effects of the original capital.

There is an assumption that the amount invested in human capital results from optimizing behavior: each person is supposed, in effect, to invest an amount that maximizes his economic welfare (Becker & Chiswick, 1966), which can be in the form of on-the-job training or further education or other forms of training, which in the long run can contribute to the individual's lifelong income.

2.3.2 Conceptual framework

Based on the Theoretical framework presented earlier, wherein continuous learning can contribute to the life-long income of an individual, this study aims to present its framework of analysis as presented in Figure 3.

Figure 3. Title here.



The framework of analysis (Figure 3) wishes to analyze the literature gathered on the "paradigm shift" from national certification to tiered assessment and align it to the article presented by the World Economic Forum wherein they identified the three required 21st Century Skills, that is, creativity, critical thinking, and complex problem solving. In this conceptual framework, the proponent aims to validate that aside from the collection of literature stating that training can contribute to lifelong

income, the present exam item sets in LET help teachers contribute to the students' performance and future required skills in the light of ASEAN integration and globalization.

III. METHODOLOGY

Albeit this study collected significant literature coming from the U.S., and informal interview was conducted with the Dean of the College of Education and Director of Ateneo Teacher Training Center (ATTC) in Ateneo de Naga University (ADNU), being the Center of Excellence (COE) for Education in Region 5 where the proponent hailed, this research article will discuss traditional assessment through LET in Philippine setting in general.

This study uses descriptive explanatory research design with content analysis approach, to examine the LET reviewers used, (which were authored by different faculty members/reviewers from different universities in the country), and to determine topics of interests and authors within the existing teacher assessment studies. Content analysis is a method of coding published information into various groups based on preselected area. It separates data into different patterns within the information and can provide new insights and practical understanding (Guthrie & Parker, 1990, as cited in Yousuf & Backer, 2015; Guthrie et al., 2004).

This study used Google Scholar (GS) as the search engine for data collection of all disciplines. This system has also been selected in a number of other content analysis approach (Yousuf & Backer, 2015). Moreover, other secondary data such as 2017 LET reviewers (for all disciplines) and Personnel Requirement Form (PRF) from the HR Department of ADNU were collected and analyzed.

IV. RESULTS AND DISCUSSIONS

4.1 Content Analysis of 2017 LET Reviewer

I was able to gather a collection of reviewers and practice sets for the 2017 LET. The following summarizes the test sets:

For General Education – Mathematics: Generally it was multiple choice with 60 choice items and following items were part of the exam set – 1). Operations with whole numbers, decimals, fractions and integers; 2). Least common multiple; greatest common factor; 3). Divisibility rules; 4) Ration and proportion; 5). Percentage rate and base; b) Measurement and units of measure such as a. Perimeter, b. Area, c. Volume, d. Capability e. Weight 7. Number Theory – a. Prime and composite numbers, b Prime factorization. Said item tests also provide thematic situational mathematical analysis that needs problem solving and critical thinking.

For Generation Education – Philippine History: It was a 35 items multiple choice which discussed matters from pre-colonial Philippines, Hispanization of the Philippines, political changes, economic policies, religious influence, American colonization and policy, Japanese occupation, and post-war administration from President Manuel Roxas to President Rodrigo Duterte. Test items were mostly cognitive or need memorization on the part of the test taker.

For General Education – Science: A 100-item multiple choice exam set discuss atoms and molecules; energy and the world of life; DNA structure; ocean-sea interaction and global air circulation patterns; the oceans, landforms, and climates; toxic pollutants; physical science and earth science; effects of global climate change; and conservation biology. Test items were cerebral in general wherein memorization is required from test takers.

For General Education – English: Part I is a 100-item multiple choice exam set discuss by parts functions of noun and pronouns, subject-verb agreement, adjective and adverbs, conjunctions and prepositions, idioms and phrases, and word analogy. Part II is on vocabulary and reading comprehension with 100-item multiple choice set. Said test items provide situational analysis especially for grammar construction and word analogy. Critical thinking is required in some of the question items.

For General Education – Geography: A 30-item multiple choice exam discuss nature of geography, 5 themes of geography, continental drift and plate-tectonics theory, types of maps; the continents and their areas of elevation, and Philippine geography and ethnic groups. Basically, test items were cognitive in nature, wherein memorization of facts is required.

For Social Science Education/Social Studies: A 70-item multiple choice exam set discuss trends, issues, and development in education; characteristics of education for the 21st century; major paradigm shift in education; education for global citizenship: implication to teacher education; four pillars of education – learning to know, learning to do; learning to live together, and learning to be; cultural and political dimensions of leaning; gender education; and human rights education. Under Social Science is Rizal and other heroes/heroines, politics, and governance with the 1987 Philippine Constitution. Situational analysis are also presented as item tests, hence, complex problem solving, critical thinking, and creativity is encouraged on this part of the examination.

For Professional Education – Philippine Education System: A 40-item multiple choice set is composed of two parts. Part I is on the history of Philippine educational system from education during the pre-Spanish period to improving the quality of primary education. Part II is on analyzing test Items. This set is a combination of situational analysis that needs critical thinking, creativity, complex problem solving especially in the part of analyzing test items but in general, test items were cognitive in nature.

For Professional Education – Socio-Anthro of Education: Composed of 30-item pre-test multiple choice test and post-test with 30-item multiple choice. It is based on socio-anthropological foundation, that is, definition of anthropology, characteristics of culture, elements of culture, social process and social change, cultural lag, anthropological-sociological educational implications, value system, value clarification, freedom rights and responsibility, nationalism, Eastern philosophies, Filipino thoughts/philosophy, and socio-philo implications. This part of the examination is a combination of cognitive (memorization) and critical thinking for possible best answers from the multiple items.

Other discussions and review items for Professional Education are a 50-item multiple choice test on inclusive education/special education, educational technology and values of instructional media, principles and methods of effective teaching which tackles the art of questioning, establishing and effective classroom climate, and Bloom's taxonomy and Krathwohl's affective domain. Basic concepts of assessment of learning and purposes of classroom assessment. This part of the examination is also a combination of cognitive (memorization) and critical thinking for possible best answers from the multiple items.

In general, the item sets were cognitive in nature, particularly, test items for general education except for mathematics that uses critical thinking in solving complex mathematical problems. Some of the items are a combination of cognitive and with additional situational analysis that needs critical thinking, creativity, and complex problem solving, that is, generation education for English, social science education, professional education, and socio-anthropology items. Majority of the test items are cerebral in nature, that is, general education for science, geography and have no strong evidence that said test items can contribute in building creativity, complex problem solving, and critical thinking among students but promote general knowledge which is also significant. However, other item tests for professional education may be the foundation of teachers to promote the abovementioned required skills of the 21st century, depending on the individual teacher on how to utilize and apply what s/he learned from his/her previous classroom experience.

4.2 Effect of Traditional Teacher Assessment vs Non-Traditional Teacher Assessment

Based on the survey of literature collected, following findings are summarized:

4.2.1 Relationship between teacher licensure tests and student's achievement

Many literatures convey that there is a positive relationship between teacher licensure tests and student achievement. Teachers who scored well on certification can improve student outcomes somewhat particularly in math and science (*Boyd et al., 2007; Colton, 1991; Goldhaber & Brewer, 2000; Goldhaber, 2007; Jackson & Lunenberg, 2010*).

Accordingly, some of the authors believed that licensure examination promotes professionalism. In many cases, licensure has provided a means of according status and recognition to a body of specialized knowledge, resulting in a "state-protected environment" wherein consumers benefit from enhanced quality assurance. It ensures that the public is not harmed by incompetent or unethical practitioners (Anderson, 2001; Behavior Today, 1976; Cohen, 1973; Hogan, 1983; Svorny, 1987).

However, almost the same authors also mentioned in their studies that there is a lack of evidence on the effect of almost any aspect of teacher preparation on the performance of students (Boyd et al., 2007; Goldhaber, 2007; Grissom, 2017). Moreover, research suggests that knowledge and skills regarding how to teach can influence student achievement, but no study identified which skills are important or the best way for aspiring teachers to develop them. One reliable way to identify the effects of certification and teacher preparation on students' educational gains is through experiments in which teachers are randomly assigned to students (Boyd et al., 2007). Consequently, classroom practices, number of books read in school and at home, school policies, on the job trainings, and professional developments have important interrelationships among various aspects of teaching (Becker, 1962; Blankstein, 2010; Evans, Kelly, & Sitora, 2014; Jackson & Lunenberg, 2010; Mbugua et al., 2012; Smylie, 2010; Wengllinsky, 2001).

4.2.2 *The need for teacher's alternative assessment*

Majority of the authors believed and presented in their studies that in this present times of globalization and age of certification, it is deemed necessary to come up for alternative assessment or route programs for effective teachers (Boyd et al., 2007; Gipps, 1994; Goldhaber, 2007; Boyd, Lankford, & Wyckoff, 2007). Moreover, school policies such as easing requirements (i.e. number of hours or years of experience in teaching may already be enough to teach effectively) or on the contrary additional requirements such as pre-service and in-service and other research portfolios can prompt effective teachers in producing student achievers. A need for tiered certification is also an ongoing trend in many states of U.S.A (Boyd et al, 2007; Gipps, 1994; Goldhaber & Brewer, 2000; Goldhaber, 2007; Magno, 2010). Maybe it is high time that the Philippine government agencies such as the PRC and DepEd look on to this matter by adopting tiered certification for teachers before taking the national licensure examination. It has been a trend in the past that there has been a low rate of passers, normally less than 30%, for elementary teachers (or basic education teachers) and less than 50% for secondary teachers (PRC, 2017), but it does not mean that non-passers are not eligible to teach, since they have been equipped with bachelor's degree but just need additional exposure—as in

on-the-job training—to experience some of the situations presented in the test item questionnaire, that is, socio-anthropology.

In addition to school policies, in the local setting, I was given a sample copy of ADNU's Personnel Form - Requisition for Office and Teaching Personnel. In requesting the Human Resource Department to hire new teachers, to teach in the college of education (for Bachelor's degree in Basic and Secondary Education), the following are required: 1) preferably LET eligible; and 2) required skills—facilitating learning, academic advising, leadership, writing and speaking/communicating, and academic advising.

4.3 Labor Market Signaling

The Report of Asia Pacific Economic Cooperation on Effective Labor Market Signaling (2012) supported the earlier theories on Human Capital Theory. It generally viewed education as a form of investment where individuals compare the direct, indirect, psychic, and opportunity costs of education to the future benefits of education (Todaro & Smith, 2008). Moreover, they also acknowledged studies of Becker (1962, 1964) and Mincer (1958, 1962, & 1974), which emphasized on how the procurement of greater levels of schooling increased an individual's productivity. The returns associated with this increased level of productivity come in the form of higher compensation levels and wages. Under these assumptions, firms are said to adjust their production processes in order to fully utilize the skills possessed by the pool of laborers available to them. Thus, firms will pay its workers wages equal to their marginal productivities under competitive assumptions (Auerbach & Kotlikoff, 1987). The implications of the theory are clear: if there were to be mismatches in the labor market, it will manifest in the short-run when firms are still embroiled in the process of adjusting their production processes in order to fully utilize the human capital of their workforce. In the long-run, a state of equilibrium is achieved when the adjustment process is completed and mismatches are completely eliminated (Desjardins & Rubenson, 2011).

Accordingly, it was mentioned in the report that human capital is considered as the wealth of the nation, which supports Adam Smith when he said that that investment in education and skill formation is a significant factor in economic growth that is comparable with investments in gross fixed capital formation. This was also supported by WEF when they presented their findings that learning and working provide people with livelihoods, an opportunity to contribute to their societies, and often, meaning and identity. Workers' skills lead to productivity and innovation in companies. Equal opportunity in education and employment contribute to economic development and positive social and political outcomes.

Further, WEF mentioned the four important elements of human capital that will align with labor market signaling. Hence, the promotion of three important skills for the 21st century—complex problem solving, creativity, and critical thinking—as part of an effective and efficient labor force.

V. CONCLUSION AND RECOMMENDATIONS

After gathering a collection of literature and presenting the different findings, one might find it contradicting with regard to the need for traditional assessment (licensure examination) versus alternative assessment (tiered local assessment before full blown national licensure examination) to produce effective teachers. However, I provided the overall conclusion and recommendations, to wit:

1. I conclude that Licensure Examination for teachers is still an instrument that can contribute to the development of human capital. Item sets found in the LET reviewer and practice set summarized general knowledge, which is needed by an individual for future advancement. The situational analysis found in the LET practice sets promotes critical thinking and complex problem solving, which is considered the breadth and depth of specialized skills used at work.
2. There is still a need for national LET because it provides quality assurance of education, promotes professionalism among teachers, and somewhat improve student outcomes, particularly in Math and science, especially for those who are teaching basic and secondary education.
3. Albeit, LET is still a requirement, the Philippine government together with its local agencies (Dep Ed; CHED, and PRC) and other educational institutions should come up with tiered licensing, wherein newly graduates of Bachelor of Science in Education will not be forced to take LET right after graduation (since it is evident in the LET Results that many fresh graduates do not pass the exam), but be given the chance to enhance their teaching experience as teacher assistant for 1-2 years; produce research outputs or in-service activity writing portfolios after two years of teaching, and be given professional certification. Afterwards, they can get the national licensure examination. Accordingly, proper remuneration or salary be given according to the teacher's expertise level.
4. Licensed teachers should have continuous updating and professional development so that they may be aware and provide the current required skills of the 21st century – creativity/collaboration, complex problem solving, and creative skills, which will contribute to the life-long income of their students in the future.

The proponent also recommends further research to add imperative data and update this research in the future.

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