



SELECTED FACTORS AFFECTING MEDICAL TECHNOLOGY LICENSURE EXAMINATION RESULTS

Batch 2015-2018

An

Action Research

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ABSTRACT

The researcher looked into the factors that affected the performance of CSU-CAHSMedical Technology licensure examinees Batch2015-2018. The medical technology board examinations determined the interventions needed to improve the university's review programs. Descriptive research design was used wherein Bachelor of Science in Medical Technology graduates who took the 2015 to 2018 board examinations were surveyed using a validated adopted researcher-made questionnaire. Documentary analysis was used for evaluating qualitative data.

Results revealed that: student factors (interest in the medical technology program, time spent for studying lessons and availing of library/internet resources in research activities) and home/family factors (family financial support, parental involvement in studies, motivation and encouragement) highly influence performance; school factors (adequacy of relevant library books and materials, adequacy of technology hardware and



software, good medical technology program and good medical technology faculty) were perceived to have average influence; and scholarships, grade weighted averages and attendance to review courses handled by prestigious review schools were found to be positive factors in passing the licensure examinations.

Based on the findings, the researcher recommended that the regular assessment through qualifying examinations be conducted and that the pre-licensure examinations in the review classes be strengthened.

The graduates of the Bachelor of Science in Medical Technology from Cagayan State University Andrews Campus covering Batch 2015 to 2018 served as respondents of this study. To reiterate, the researcher made use of a descriptive normative research adopting a questionnaire as the primary instrument in adopting the needed data in this study.

Findings of the study revealed that the graduates of Medical Technology batch 2015-2018 were dominantly females who are young and at work. Majority (more than 50.0%) of the medical technology graduate respondents were females, aged 20- 25 years, with monthly income of ₱ 10,000 or more, with academic or non—academic scholarship, medical technology board passers, with board ratings of 80 or higher, and with grade weighed averages of 1.00 to 2.00. As for Student Factors, It has shown that medical technology graduate respondents from different batches perceived the following factors to have high influence on their performance in the medical technology licensure examination: interest in the course, time spent in studying lessons in preparing assignments, doing research in the library or through Internet, active participation in review sessions conducted by the University, active participation in review sessions conducted by a review school, and number of hours spent in reading books and materials related to accountancy.

Further, Home and Family Factors showed that the medical technology graduate respondents perceived the following factors to have high influence on their performance in the licensure examination: family supports all expenses, parents help a lot in student's studies, family gives motivation and encouragement; family gives motivation and encouragement, family can be depended upon when problem arises; family provides healthy food, family supports extra-curricular activities; parents provide advice in activities or goals



the student wants to accomplish; and student's presence is acknowledge in every family activity.

Further, School Factors have indicated that the medical technology graduate respondents perceived the following factors to have average influence on their performance in the licensure examination: adequacy of technology hardware and software, adequacy laboratories and physical facilities; adequacy of laboratory equipment, supplies and materials; adequacy of audio visual resources; adequacy of sports and recreational facilities; availability of good accounting programs; and availability of good accountancy faculty and staff. Easy access to transportation showed high influence.

The Relationship between Demographic Profile and medical technology Board Performance of the Respondents attained The Pearson r values respectively in scholarship vs. board ratings and general weighted average vs. board ratings were found to be significant at .05 level. The other pairs were not significant. The results failed to reject the declarative hypothesis. The Relationship between Review Courses and medical technology Board Ratings of the Respondents obtained a Pearson r and Coefficient Determination values of r within .05 level of significance which is highly significant in College Review respectively. The results failed to reject the declarative hypothesis. The foregoing results indicate that the review classes provided in the medical technology curriculum of the University are beneficial factors that influence students' performance in the medical technology board exams. Attendance to review courses conducted by review schools also help the students pass the examination.

The findings from the qualitative research revealed that interviewees have recognized the importance of pre-board administered by the university and review school. Many interviewees considered it as a tool for preparation in the actual board examination. Some said "it is a study-habit forming as one will be trained to study harder in preparation for the pre-board examination. They also added that **"it helps boost our confidence level in taking the actual board examinations because we have been used to it."** Another interviewee commented that the pre-board practice must be continued because it is the best way of gauging capability of the students in taking the licensure examination, which was also observed by Sagarino and Corpuz, 2011 on CPA board examinations. One of the tips recommended to pass the medical technology licensure exam (MTLE) in the Philippines is to



have a thorough review. It is recommended that students must take seriously the review courses required in the curriculum and to enroll in a reputable review center to have a deeper understanding of the actual licensure exam. Review schools and the university as well have the updated materials and event regarding what is latest in the board. Both assist students for their medical technology licensure exam schedule and requirements to ensure that students are in the right tracts. Thus, the respondents furtherly, perceived student factors, teacher –related factors and school related factors affecting the licensure examination to a great extent. Home and Family Related Factors however affect the licensure examination results of the Medical Technology graduates from year 2015 to 2018 to some extent.

Keywords: Medical Technology Examination performance,
Course Interventions, Attribution theory and Documentary
Analysis

Chapter 1

INTRODUCTION

Each year thousands of candidates sit for the Medical Technologists licensure examination in the Philippines. The passing statistics is only about 80 percent of first-time candidates based on the national examination results. According to Abrugar (2009) many critics say that it is one of the most difficult professional board examinations in the country. The difficulty of passing the Medical Technology board examination is reflected in the relatively middle passing rates in national levels. In the Cagayan State University (CSU), the Medical Technology licensure results have not been consistent. In some cases, the results were higher than the national percentage. In some instances however, they were lower (CSU Annual Reports, 2019). With these trends, it is imperative that innovative and continuous intervention programs be undertaken in order to improve the CSU Medical Technology graduates' performance in the board examination. This intervention program must be research-based hence, this research.



This study was anchored on the attribution theories advanced by Heider as cited by Hunt (2009), Jones and Davis (2005), and Kelly's (2007) covariance model. Heider's theory is the assertion that man perceives events of critical importance for the interpretation of human work. Such causes could be traced to factors located within the person and those that are drawn from the environment of the person.

The two main ideas put forward by Heider became influential: "1) When we explain the behavior of others we look for enduring internal attributions, such as personality traits. For example, we attribute the behavior of a person to their naivety or reliability or jealousy; and 2) When we try our own behavior we tend to make external

attributions, such as situational or environment" .International Letters of Social and Humanistic Sciences Online: 2015-11-30 ISSN: 2300-2697, Vol. 64, pp 87-93doi:10.18052/www.scipress.com/ILSHS.64.87© 2015 SciPress Ltd., Switzerland Sci Press applies the CC-BY 4.0 license to works we publish: <https://creativecommons.org/licenses/by/4.0/>Jones and Davis Correspondent Inference Theory helps in the understanding process of making an internal attribution. They say that a person tends to do things when they see a correspondence between motive and behavior. Dispositional (i.e. internal) attributions provide information from which a prediction could be made about a person's behavior. The Theory describes the conditions under which people make dispositional attributes to behavior they perceive as intentional. Jones and Davis used term correspondent inference to refer to an occasion when an observer infers that a person's behavior matches or corresponds with their personality.

The theory says that a people draw from five sources of information: 1) Choice: If a behavior is freely chosen it is believed to be due to internal (dispositional) factors; 2) Accidental vs. Intentional Behavior: Behavior that is intentional is likely to be attributed to the person's personality and behavior which is accidental is likely to be attributed to situation/external causes; 3) Social Desirability: Behaviors low in social



desirability (not conforming) lead a person to make (internal) dispositional inferences more than socially undesirable behaviors; 4) Non-Common Effects: if the other person's behavior has important consequences 5) Hedonistic Relevance: If the other person's behavior appears to be directly intended to benefit or harm others, it is assumed that it is "personal," and not just by-product of the situation both are in.

In Kelly's (2007) covariance model, it is advocated that a particular activity should be attributed to some characteristics (internal) of the person or the environment (external). The term covariance simply means that a person has information from multiple observations, of different times and situations, and can perceive the covariance of an observed effect and its causes. Kelly argues that in trying to discover the causes of behavior people act like scientists. More specifically, they take into account three kinds of evidence. He believes that are three types of causal information which influence one's judgments. Law factors = dispositional (internal attributions): 1) Consensus: the extent to which other people behave in the same way in a similar situation; 2) Distinctiveness: the extent to which the person behaves in the same way in similar situations; and 3) Consistency: the extent to which the person behaves like this every time the situation occurs.

Statement of the Problem

This study was conducted to determine the factors associated with success in the Medical Technology Licensure Examination of the CSU-CAHS graduates of the Cagayan State University, covering school year 2017-2020 MEDTECH Licensure Examinations. Specifically, the study sought to find answers to the following research questions:

1. What is the demographic profile of the medical technology graduate-respondents by the following Characteristics?

1.1 Gender

1.2 Age Group



1.3 Monthly Income

1.4 Scholarship

1.5 Medical Technology Board Rating

1.6 Medical Technology Board Passer/Non-Board Passer

1.7 Grade Weighted Average (GWA)

2. To what extent do the following factors influence the MEDTEC Hexamination Performance as perceived by the MEDTECH graduate respondents?

2.1 Student Factor

2.2 Home and Family Factor

2.3 School Factor

3. What is the relationship between the MEDTECH graduates' demographic profile and their Medical Technology licensure examination performance?

4. What is the relationship between attendance to review courses and the performance of the Medical Technology graduate respondents in their licensure examination?

5. How may the Medical Technology licensure examination performance be improved as viewed by the medical technology graduate respondents?

The Objective of this Study

The purpose of this study is to investigate the factors influencing the licensure examination performance of Medical Technology (MT) graduates of Cagayan State University Tuguegarao City Cagayan Valley, Philippines. A retrospective study was conducted in which the academic records of MT graduates who took the licensure examination during the 2015-2018 period, were analyzed. The academic and non-academic factors were examined, and their impact on the licensure examination performance was tested using simple and multiple linear regression analyses.



During the past several years a number of valuable studies have been added to existing body of knowledge developing various models to assess the student performance however most of the studies relied on the advanced developed societies as their setting. No doubt there are slight variations in terms of their database methodological approach and sample selection.

The contribution of this paper to the university is twofold. First, the model tested is a new integration of different variables in developing University's setting like Cagayan State University, i.e. student age, student education, family income and study hours. The second contribution is to demonstrate the impact of these variables on student performance in the medical technology licensure examinations and the selected factors affecting the examination results.

Chapter 2

Review of Related Literature and Studies

A professionally qualified medical technologist studies and analyzes blood, other bodily fluids, and tissue samples. These professionals in the field of medicine are responsible for the use and maintenance of instruments used to examine specimens and for the proper and opportune execution of experiments.

The Professional Regulation Commission (PRC) announces that 4,743 out of 6,453 passed the Medical Technologist Licensure Examination given by the Board of Medical Technology in the cities of Manila, Baguio, Cagayan De Oro, Cebu, Davao, Iloilo, Legazpi, Lucena and Tuguegarao this September 2019.

The members of the Board of Medical Technology who gave the licensure examination are Dr. Marilyn A. Cabal-Barza, Chairman; Ms. Marilyn R. Atienza and Ms. Marian M. Tangingco, Members.



Many researchers has been discussed the different factors that affects the medical technology student performance in licensure examinations revealed in the different researches conducted . There are two types of factors that affect the students' board examination performance. These are internal and external classroom factors and these factors strongly affect the students' performance. Internal classroom factors includes students competence in English, class schedules, class size, English text books, class test results, learning facilities, homework, environment of the class, complexity of the course material, teachers role in the class, technology used in the class and exams systems. External classroom factors include extracurricular activities, family problems, work and financial, social and other problems. Research studies shows that students' performance depends on many factors such as learning facilities, gender and age differences, etc. that can affect student performance (Hansen, Joe B., 2000). Harb and El-Shaarawi (2006) found that the most important factor with positive effect on students' performance is student's competence in English. If the students have strong communication skills and have strong grip on English, it increases the performance of the students. The performance of the student is affected by communication skills; it is possible to see communication as a variable which may be positively related to performance of the student in open learning. A major distinction of this study from previous studies is that it focuses on open learning (Abdullah AL-Mutairi, 2011).

Factors Affecting Licensure Examination Performance

A. Student Factor

Several studies have been conducted to find out students' academic performance (Applegate and Daly, 2006; Cho and Chung, 2012; Krashen, 2005; Malik and Singh, 2016; Ali and Haider, 2013). The findings of the research studies focused that student performances are affected by different factors such as peer pressure, the family background and home environment, and the student's preferred learning style.



Most academics observed that a child's associate could impact his or her performance. Social influence looks at how individual thoughts, actions and feelings are influenced by social groups (Aronson, 2010). The desire to be wanted and acknowledged by everyone .It is believed that learning styles play a small role on academic performance. Although the effect is small, it is accepted that learning preferences can help students enhance their own learning and so encourage self-directed learning. As stated by Rebecca Ezekiel, an accomplished English adviser and learning professional, learning styles have scholarly and personal impacts on the student. In academics, learning styles could lessen the anxiety and disappointment of the struggles in learning. It also expands the student's existing learning and studying strategies. These could also help improve the child's well-being. Having a learning preference could increase their self-confidence, improve their self-image, and give them insights strengths, weaknesses and habits. Knowing the students' learning style is not meant to limit them, but to expand them – by helping them to work, learn and live more.

According to Live Oak High School, honors' classes are "demanding, advanced high school level classes". This simply states that students of the stated class will be given additional lessons and tasks such as requirements and assessments. Students will truly have to be hard working if they want to achieve good grades and at the same time fully understand the lessons their teachers taught them. This clarifies that students outside of the honors' class will experience lesser struggles with their academic performances. In short, honors' class will make students to truly do their best because they will be given more work to be done than those of the regular classes.

(<http://www.assessmentpsychology.com/intelligence.htm>)

2. Home and Family Factor

Family involvement refers to activities families engage in to support their children's education (Drake, 2000). When families become involved in their children's education, students, schools, and communities all benefit because strong home-school partnerships help all stakeholders focus on the real issue of high student achievement (Caplan, 2000). This report examines the benefits of family involvement, the different ways families can



become involved, the barriers to involvement, and strategies that schools can implement to involve all families and increase student achievement. Benefits of Family Involvement Meaningful family involvement is a powerful predictor of high student achievement. Students attain more educational success when schools and families work together to motivate, socialize, and educate students (Caplan, 2000). Students whose families are involved in their education typically receive higher grades and test scores, complete more homework, have better attendance, and exhibit more positive attitudes and behaviors. Children of involved families also graduate at higher rates and are more likely to enroll in postsecondary education programs (Riggins-Newby, 2004; Norton, 2003; Caplan, 2000; Binkley et al., 1998; Funk house and Gonzalez, 1997). Henderson (1987) found that the academic benefits gained from family involvement with elementary school students continued through the middle and senior high school levels. Furthermore, studies have observed these positive outcomes regardless of students' ethnic or racial background or socioeconomic status, noting that students at risk of failure have the most to gain when schools involve families (Caplan, 2000; Funkhouse and Gonzalez, 1997; Henderson, 1987). When families become involved in their children's education, they have a better understanding of what is being taught in school and of teaching and learning in general. They gain more information about children's knowledge and abilities, as well as the programs and services offered by the school (Moorman, 2002; Caplan, 2000; Drake, 2000). Research has found that when parents are involved, their confidence in their ability to help their children with classroom assignments increases (Nistler and Maiers, 2000) and they rate teachers higher in overall teaching ability (Caplan, 2000). Educators benefit when family involvement is strong, as school staff gain an awareness of the ways they can build on family strengths to support students' success (Caplan, 2000). As teachers understand more about students' lives, they are able to connect learning outside of the school to classroom learning in real and meaningful ways (Ferguson, 2004). Types of Family Involvement Research shows that all types of family involvement are effective in raising students' levels of achievement. Some studies have found that parents' involvement in different roles over time has the greatest impact on students' academic success (Caplan, 2000). Family participation in well-designed at-home activities has also been found to have an especially strong positive effect on student achievement (Epstein and Jansorn, 2004).



There are numerous ways families can become involved in children's education. The following types of family involvement have been published by the National PTA as National Standards for Parent/Family Involvement Programs (Epstein and Jansorn, 2004). Family involvement programs should include activities from all six areas of involvement. 2 • Parent education. Parenting skills should be promoted and supported so families can build positive home environments that support learning. Schools should provide families with information about topics such as adolescent health and safety, nutrition, and discipline so students arrive at school well rested, well fed, and clothed (Ferguson, 2004; Caplan, 2000; Drake, 2000; Epstein, 1987). • Communication between schools and families. When schools establish regular and meaningful communication between the home and school, families are informed about school programs and children's progress and are better able to help children select courses and activities (Drake, 2000; Epstein, 1987). • Volunteer opportunities. Family members should be encouraged to participate in and support school events, meetings, and activities. Family members should also volunteer in the classroom and help with field trips (Ferguson, 2004; Caplan, 2000; Drake, 2000; Epstein, 1987). • At-home learning activities. Family

members should play a central role in assisting student progress by providing children with home-based learning activities, supervising homework, and helping with classroom assignments (Ferguson, 2004; Caplan, 2000; Epstein, 1987). • Decision-making opportunities. Families should be partners in decisions affecting their children by holding participatory roles in parent-teacher-student organizations, school advisory councils, and school committees (Caplan, 2000; Drake, 2000; Epstein, 1987). • Collaborating with the community. Schools, families, and students should establish connections with local agencies, businesses, cultural groups, and community organizations that share responsibility for students' future success. Families should be advocates for the school by supporting efforts to increase school funding and encouraging local businesses to contribute to school programs (Caplan, 2000; Drake, 2000; Epstein, 1987). The American Association of School Administrators (1998) has identified six roles parents like to play and suggests that educators consider the possible activities suited to each role, then customize the involvement of each parent by fitting his or her strengths and interests with the needs of



the school.

- **Change Agent.** This parent is viewed as an advocate for students' needs and likes to help make decisions, create policies, and influence others to support positive change in targeted areas. Activities for this type of parent include membership on policy boards, tasks forces, and advisory councils.
- **Communicator.** This parent is a networker who lets other parents know what's going on in the school. Activities suited to this type of parent include coordinating telephone trees, writing and distributing newsletters, and organizing parent groups.
- **Tutor.** This parent is a semi-professional teacher who likes to help with the actual education of students. Activities for this parent include tutoring individuals or small groups of students at school or home, providing enrichment programs, and teaching family literacy.
- **Program Coordinator.** This parent has the marketing and coordination skills to organize 3 programs that benefit the entire school or district. Activities for this type of parent include organizing fund raisers, school carnivals, holiday programs, appreciation luncheons, and social events.
- **Front-line Assistant.** This parent is a "Guy/Girl Friday" who enjoys performing hands-on tasks in the classroom or school office. Activities suited to this type of parent include serving as a classroom aide or field trip chaperone, grading papers, making copies, and doing whatever needs to be done.
- **Community Liaison.** This parent has a talent for finding outside resources that meet school and student needs. Activities for this parent include maintaining contact and developing relationships with community organizations, such as the chamber of commerce and local businesses.

Barriers to Family Involvement

Barriers to involvement exist for both schools and families. Some barriers are created by limited resources, while others originate from the beliefs, perceptions, and attitudes of families and school staff (Liontos, 1992). The most common barriers to family involvement include:

- **Lack of teacher time.** Teachers often see working on family involvement as a task added to an already long list of responsibilities (Caplan, 2000).
- **Teachers' misperceptions of parents' abilities.** Some teachers believe parents can't help their children because they have limited educational backgrounds themselves; however, many poorly educated families support learning by talking with their children about school, monitoring homework, and making it clear that education is important and that they expect their children to do well in school (Caplan, 2000).
- **Lack of understanding of parents' communication styles.** Some efforts at increasing involvement fail because there is a mismatch in the communication styles of families and teachers, often due to cultural and



language differences (Caplan, 2000; Lontos, 1992). • Limited family resources. Lack of time is the major reason given by family members for why they don't get more involved. Lack of transportation and child care also keep families from participating (Caplan, 2000). • Parents' lack of comfort. Some parents feel intimidated and unwelcome at school. Many parents had negative school experiences themselves or are so unfamiliar with the American culture that they do not want to get involved or feel unsure about the value of their contributions. Barriers are also created by parents who have feelings of inadequacy or are suspicious of or angry at the school (Jones, 2001; Caplan, 2000; Lontos, 1992). • Tension in relationships between parents and teachers. Parent and teacher focus groups, conducted around the country as part of the Parents As School Partners research project, identified common areas of conflict between parents and teachers (Baker, 2000). • Parents felt that teachers waited too long before telling them about a problem and that they only heard from teachers when there was bad news. Most parents felt they didn't have easy or ongoing access to their children's teachers and that teachers blamed parents when children had problems in school. Some parents felt unwelcome at the school, believed schools didn't really want their input, and thought communication was a one-way system, with schools sending out information and parents having few, if any, opportunities to share ideas with the school. • Teachers believed parents didn't respect them, challenged their authority, and questioned their decisions. They believed parents encouraged students to disrespect them. Teachers resented that not all parents sent their children to school ready to learn and wanted parents to follow through more with the academic and disciplinary suggestions they made. • Mobility. Some urban areas have low rates of home ownership. Families that rent tend to move around a lot more, which makes it harder to build relationships between families and school staff (Metropolitan St. Louis, 2004). • Lack of vested interest. Many families don't see the value in participating and don't believe their involvement will result in any meaningful change (American Association of School Administrators, 1998). • Difficulties of involvement in the upper grades. There is typically less parent involvement at the middle and senior high school levels, as adolescents strive for greater autonomy and separation from their parents. Families often live further from the school their child attends and are less able to spend time there (Caplan, 2000). Although the benefits of family involvement are numerous and have been well documented, a review of the literature found that family involvement programs



were often not fully implemented for the following reasons (Drake, 2000):

- School staff had not been trained to work with families.
- Administrators and teachers worried that increased family involvement would add to their already busy schedules.
- Educators were concerned that closer relationships with families would mean giving up power and decision-making.
- Families were not sure how far they could go making suggestions or asking questions; they worried that children would be punished for their parents' actions by a teacher or principal who was annoyed or threatened by the parent.

3.School Factor

Related literature consulted on this study revealed that there are some teacher related factors that affect pupil performance. The literature was reviewed under the following themes: inadequate teaching and learning aids, teacher-pupil ratio, lack of teacher competency, inadequate teacher prepare and teacher motivation.

a) Inadequate Teaching and Learning Aid: On the lack of enough textbooks, Mbozi (2008) in his study of quality of education in selected schools in Livingstone and Kazungula Districts in Zambia found that limited textbooks is a factor affecting academic performance of learners. According to his study, four classes of about sixty learners each shared only four textbooks amongst them, making it difficult for teachers to effectively use them during class lessons. Mbozi (2008:127) found limited textbooks as a factor affecting the performance of the learners. Researches done in Uganda and Ghana found significant effects leading the researchers to conclude that improving the availability of textbooks is of the most cost effective methods for enhancing learning achievement. While these findings cannot be disputed, the findings in Zambia slightly differ. In Zambia, it was discovered that simply raising the number of books does not automatically improve learning outcomes and that teacher training must be improved in order to ensure effective teaching and use of textbooks (Kelly and Kanyika, 2000). In addition, the findings at Middle basic level revealed that performance improves when books are made available and that improvement only occurs when they are shared. According to the study, the highest achievement was observed when one book was shared between two learners. However, while this was the case in other subjects, achievement in Mathematics was found to be at its best when there were no textbooks for use at all. It was



suggested, in the study, that it could be so because the teacher was the only resource available for the learners making him or her to actively endeavor to instill the necessary comprehension and elicit the desired procedures. This was said not be the case when books were available in that the teacher no longer sensed the need for vigorous teaching and simply allowed learners to make their way through texts, exercises and examples provided in books. b) Teacher-Pupil Interaction: Mbozi (2008) allude to teacher-pupil interaction as a factor that affects academic performance of learners. By this he referred to situations where the teacher would use abusive language, threatens learners or shouts at them for various reasons. This resulted in the Teacher Based Factors Influencing Academic Performance among Learners in Open Learning Classes at Twin Palm Secondary School, Lusaka, Zambia International Journal of Humanities Social Sciences and Education (IJHSSE) Page | 98 learners feeling out of place and inattentive in class due to fear or resentment for the teacher. Eventually such learners tended to abscond from school and perform poorly in the end .According to Molopo (2010),the proponent of the humanistic paradigm states that an individual has freedom and ability to attain self –development or self-learning and is capable of directing his or her own learning as long as the environment is enabling. Therefore, teachers are the custodians of the teaching and learning hence, they should take time to make their learners learn best and take keen interest in them, thereby achieving quality education delivery provided the teacher places the learner at the center of their teaching plan. In the researcher’s view, this implies that the teacher must plan adequately every time, report for work on time, be resourceful and innovative as well as avoiding absconding classes. It can be argued that this high teacher-ratio could be experienced by teachers at Twin Palm Secondary school. c) Lack of Teacher Competency: Globally, poor pupil academic performance is caused by so many factors as alluded above. Jazmawi (2008) suggested that the problem of poor academic is a global problem that any community is hardly devoid of it, that twenty pupils of every hundred have weakness in the academic achievement. Poor examination performance is caused chiefly by substandard quality of education background. The lack of teacher competence and not giving tests or examinations to the learners on a regular basis contributes to poor performance in academic work. It can be argued that this lack of competency could be portrayed by some teachers at Twin Palm Secondary school. d) Inadequate Teacher Preparation: Some schools performed poorly because of teacher



related factors such as, inadequate teacher preparation and teacher's lack of dedication to duty. Secondary school teachers were expected to prepare what they taught in schools. These preparations could be in form of schemes of work, records of work, and lesson plans to guide the teaching process (MOE, 2001). But it can be argued that teachers at Twin palm secondary school hardly prepared for their lessons hence affecting the academic performance of pupils in open learning centres e) Motivation: Another factor is motivation. A highly motivated person puts in the maximum effort in his or her job. Several factors produce motivation and job satisfaction. Young (1988) examined the job satisfaction of Californian public school teachers in the USA and found that one of the overall job predictors was the salary one earned from it. Studies by Lockheed et al. (1991) indicated that lack of motivation and professional commitment produce poor attendance and unprofessional attitudes towards students which in turn affect the performance of students academically. This lack of motivation in teacher to perform their duties diligently could be manifested in teachers at the school in questionnaires.

Chapter 3

METHODOLOGY

This study utilized the descriptive research method because of its appropriateness to the problem. This method involves collecting data in order to answer questions concerning the current status or trend about the phenomenon (Gay, 2012). In this study, the method looked into status or trends about factors associated with success in the Medical Technology board examination. The survey and the correlational designs of descriptive research were used. Survey design was used to examine current conditions or status of the population with respect to demographic profile; perceptions on student, home and family, and student factors that may influence performance in the licensure examination, and enhancement of licensure examination performance. The correlational design, on the other hand, delved into the relationships of demographic profile and attendance in review courses with the licensure examination performance of the medical technology graduates of the Cagayan State University. Documentary analysis technique was



also used to establish the month and year the examinees took the Board exam and to look into their board examination ratings.

The respondents of the study included graduates of Bachelor of Science in Medical Technology from the College of Allied, Health Sciences of the Cagayan State University who took the Medical Technology licensure administered by the Board of the Professional Regulatory Commission in the year 2015 to 2018. The graduates were purposively selected as respondents of the study. These respondents were chosen for a particular purpose. They constituted the group believed to have firsthand and adequate knowledge about the subject of the investigation (Ormrod, 2010).

An adopted researcher-made questionnaire was used to gather the data for the study. Part I elicits information about the demographic profile characteristics of the respondents that include sex, age, monthly income, scholarship, grade weighted average, board rating, and licensure examination performance. Part II measures behaviors as to factors that contributed to passing the medical technology board examinations such as student factors, home and family factors, school factors, attendance to review courses, time spent for the exam preparation, and recommendations by the examinees to further improve the board results.

The study used the table of specifications in the preparation of the researcher-made instrument. This validation process was used to ensure that all items that were included in the questionnaire would answer the research questions posited in the study. The services of some experts were also tapped to review the instrument and forward their comments and suggestions for improvements. Their suggestions were consolidated and were used to improve the instruments. The questionnaire was then finalized for the dry-run. The questionnaire was pretested to a group of 15 medical technology passers. These respondents were not included in the final administration of the instrument. The items were then analyzed and were correspondingly improved to eliminate vague items.

The questionnaire was then finalized and, upon approval by the dean of the college, administered to the 50 subjects of the study. The CAHS enrollment data and the PRC report on the MEDICAL TECHNOLOGY licensure examination results for year 2015 to



2018 were also used in this study. The study used the following formulas to quantitatively analyze the data:

1. Frequency.

Through a frequency distribution table, the frequencies of the respondents' answers were tallied per response (i.e. gender: male, female) and thus represent the respondents on each factor (Fraenkel and Wallen, 2008).

2. Percentage. The relative percentage of each type of response per category is derived by this formula: (Fraenkel and Wallen, 2008).
$$\% = \frac{f_i}{N}$$
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Where:

f_i = frequency of responses per category/demographic

N = total number of scores/responses

Percentage is an index of relative position indicating the percentage of scores that fall at or below a given score.

3. Rank. Refers to the arrangement of data according to some criterion such as highest to lowest, biggest to smallest or best to worst. The highest item is given a rank of 1, and the second item is given a rank of 2 and so on. (Levin and Fox, 2006).

4. Weighted Mean

A weighted mean is a value that is derived by dividing the sum of a set of responses by the number of responses. The mean is used in sub problem 2-3. The mean is calculated by the following formula. (Levin and Fox, 2006):

$$\bar{X}_w = \frac{\sum N_{\text{group}} X_{\text{group}}}{N_{\text{total}}}$$

N_{total}

Where:

X_1 = mean of a particular group

N_{group} = number in particular group

N_{total} = number in all group combined

\bar{X}_w = weighted mean



5. Pearson r.

To find out the relationships of each factor towards GWA and Board Rating, a Pearson's Product – moment Correlation Coefficient (Pearson's r) is employed and is shown

on correlation matrices at the appendices. The formula for the Pearson's r is as follows (Fraenkel and Wallen, 2008).

Pearson's r:

$$r = \frac{n\sum xy - (\sum x)(\sum y)}{\sqrt{[n\sum x^2 - (\sum x)^2][n\sum y^2 - (\sum y)^2]}}$$

Where:

n = number of paired responses

$\sum y$ = sum of responses for first variable

$\sum xy$ = sum of responses for second variable

$\sum x^2$ = squared sum of the responses for the first variable

$\sum y^2$ = squared sum of the responses for the second variable

Pearson r is an index of correlation appropriate when the data represent either interval or ratio scales, it takes into account each and every score and produces a coefficient between -100 and 100.

INSTRUMENTATION USED

A. Adopted Questionnaire from the Conducted Thesis entitled "PERCEIVED FACTORS AFFECTING THE LICENSURE EXAMINATION PERFORMANCE OF MEDICAL TECHNOLOGY GRADUATE", February 2006 by Mr. Aldrich L. Balyagan and Ma. Rosalie de Guzman



Description of Questionnaire Adopted:

Factors that impact or influence performance in a testing situation include client/patient/student factors, clinician factors, environmental factors, and those involving the actual testing process itself. This brief highlights these factors for both adult clients and children/students involvement on major examinations inclusive of board examination

Chapter 4

RESULTS AND DISCUSSION

1. Demographic Profile of the Medical Technology Graduate Respondents

Majority (more than 50.0%) of the medical technology graduate respondents were females, aged 20- 22 years, with monthly income of ₱ 10,000 or more, with academic or non—academic scholarship, medical technology board passers, with board ratings of 75 or higher, and with grade weighed averages of 1.50 to 2.00.

Previous studies have shown grade GWA to be a significant factor in predicting medical technology exam success. Candidates with higher grades have greater success on the medical technology exam. Perhaps this can be attributed to grade inflation. As Dunn and Hall (2009) commented, ". . . one would expect a priori that lesser quality candidates would tend to represent a relatively larger proportion of repeat candidates", and that the medical technology exam is basically a textbook exam. Repeat candidates who have lower grades are expected as a group to do less well on subsequent exams. (Titard and Russel, 2009).



2. Extent of Influence of the Following Factors on medical technology Examination Performance as Perceived by the Respondents

2.1 Student Factors. As shown by the mean scores of 3.71 to 4.46, medical technology graduate respondents perceived the following factors to have high influence on their performance in the medical technology licensure examination: interest in the course, time spent in studying lessons in preparing assignments, doing research in the library or through Internet, active participation in review sessions conducted by the University, active participation in review sessions conducted by a review school, and number of hours spent in reading books and materials related to accountancy.

2.2 Home and Family Factors. The mean scores of 3.46 to 4.50 showed that the medical technology graduate respondents perceived the following factors to have high influence on their performance in the licensure examination: family supports all expenses, parents help a lot in student's studies, family gives motivation and encouragement; family gives motivation and encouragement, family can be depended upon when problem arises; family provides healthy food, family supports extra-curricular activities; parents provide advice in activities or goals the student wants to accomplish; and student's presence is acknowledge in every family activity.

2.3 School Factors. The means of 2.68 to 3.35 indicated that the medical technology graduate respondents perceived the following factors to have average influence on their performance in the licensure examination: adequacy of technology hardware and software, adequacy laboratories and physical facilities; adequacy of laboratory equipment, supplies and materials; adequacy of audio visual resources; adequacy of sports and recreational facilities; availability of good accounting programs; and availability of good



accountancy faculty and staff. Easy access to transportation showed high influence with a mean of 4.13.

3. Relationship between Demographic Profile and medical technology Board Performance of the Respondents .The Pearson r values of .592 and -.768 with corresponding Pearson chi-square values of 19.729 and 30.575 respectively in scholarship vs. board ratings and general weighted average vs. board ratings were found to be significant at Alpha .05 under the degree of freedom of 22. The other pairs were not significant. The results failed to reject the declarative hypothesis.

4. Relationship between Review Courses and medical technology Board Ratings of the Respondents The obtained Pearson r and Coefficient of Determination values of r 1.00 and r²79.0% in College Review and r .899 and r²79.0% Revision School were highly significant at .05 under df of 22 and 16 respectively. The results failed to reject the declarative hypothesis. The foregoing results indicate that the review classes provided in the medical technology curriculum of the University are beneficial factors that influence students' performance in the medical technology board exams. Attendance to review courses conducted by review schools also help the students pass the examination The findings from the qualitative research revealed that interviewees have recognized the importance of pre-board or mock board administered by the university and review school. Many interviewees considered it as a tool for preparation in the actual board examination. Some said "it is a study-habit forming as one will be trained to study harder in preparation for the pre-board or mock examination. They also added that "it helps boost our confidence level in taking the actual board examinations because we have been used to it through the pre-board or mock board exams we have International Letters of Social and Humanistic Sciences Vol. 64 91undergone since we were in first year college." Another interviewee commented that the pre-board or mock board practice must be continued because it is the best way of gauging capability of the students in taking the board examination, which was also observed by Sagarino and Corpuz, 2011. One of the tips recommended to pass the medical technology board exam in the Philippines is to have a thorough review. It is recommended that students must take seriously the review courses required in the curriculum and to enroll in a



reputable review center to have a deeper understanding of the actual board exam. Review schools have the updated materials and event regarding what is latest in the board. They assist students for their medical technology exam schedule and requirements to ensure that students are in the right tracts.

5. How the medical technology licensure Examination may be improved as viewed by the respondents. Majority of the medical technology graduate respondents perceived that the medical technology licensure examination performance can be improved through continuous improvement of the medical technology program (22 or 91.67%), enhancement of the University's review program (20 or 83.33%), improvement and strict observation of the entry requirements for accountancy program; and leveling the difficulty of pre-board/mock board examinations with that of the medical technology board examination (14 or 58.33%).

Chapter 5

CONCLUSIONS AND RECOMMENDATIONS

The following conclusions were drawn from the findings of the study

1. The accountancy graduates or examinees are predominantly female and male, young in age, coming from families with low monthly income, with scholarship, with good grade weighted average, and with review courses handled by the University and prestigious medical technology review schools.

2. The student factors and home family factors highly influence performance in the medical technology licensure examinations while the school factors are seen to have average influence.

3. Statistical data show that the medical technology graduates' profile in terms of gender, age group, and monthly income failed to



show significant relationships with their medical technology board ratings.

4. Student scholarship (academic or non-academic), grade weighted averages, and attendance to review courses handled by prestigious review schools are positive factors in passing the medical technology licensure examination.

5. As advocated by the accountancy graduates or examinees, the medical technology Licensure examination performance can be enhanced through continuous improvement of the medical technology program, strengthening the University review courses, improved and strict observation of entry requirements for medical technology program, and leveling of pre-board/mock board examinations with actual medical technology licensure examination.

RECOMMENDATIONS

The following insights are recommended based on the aforementioned conclusions:

1. There is a need for the University to consider the factors found to have influence over the performance in the medical technology licensure examination. This may help in the continuous review and enrichment of the B.S. Medical Technology curriculum to make it responsive and relevant to the needs of the time.

2. To become a successful candidate, it is not enough to know the medical technology areas of specialization. The candidate must be familiar with exam format, anticipate exam content, dealing with the unexpected, budgeting your time, and working efficiently. The



medical technology exam requires study skills test-taking skills, and attributes necessary for the medical technology examination. Successful candidates are prepared, confident, self-disciplined, and motivated.

3. The successful candidate's success is significantly related to the extent to which his review program is organized. This requires hard work and commitment. Space must be created to accommodate a successful review. In attending review courses, passing the medical technology exam must be the foremost objective fixed in the mind's eye, during the months preceding the examination. The arrangements necessary to allow for hours that must be set aside for review are usually made by forgetting all nonessential personal and social activities during the review period.

4. Regular assessment through qualifying examination is recommended to improve performance. Grades of the students should be strictly monitored for strict implementation of retention policy.

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APPENDIX A

LETTER TO THE RESPONDENTS



Republic of the Philippines

CAGAYAN STATE UNIVERSITY

College of Medical Technology

Tuguegarao City Cagayan Valley

January 5, 2019

Dear Respondents:

Greetings in the name of Christ!

**I am currently conducting a research on the “Selected Factors Affecting Medical
Technology Licensure Examination Results from Batch 2015 to 2018”.**

**In this connection, may I ask for your full support and cooperation for the completion of
the said research.**

Thank you for your sincere participation and have a blessed day ahead of all of you!!!!

Sincerely,

ROSALIA B. CABALZA

Researcher

Noted by:

JULIUS CAPILI,RMT,MPH

Dean, College of Allied Health and Sciences



APPENDIX B

Citation Basic Literature on Questionnaire Content

Factors That Influence Assessment on Licensure Examination

PearsonAssessments.com

Accurate test scores and test score interpretation are necessary to assure appropriate placement and/or treatment, and examiners have a responsibility to ensure that test scores capture the examinee's true ability or condition by being aware of factors that may affect the examinee's test performance.

I. Instrument Survey Content Adopted

A. Physical factors

- Age level—The chronological age of a student is typically accounted for in test or assessment form selection
- Developmental level—Should be considered if a student is developmentally delayed or advanced when comparing to same-age cohorts
- Physical disabilities—Hearing loss, visual impairment, motor ability, etc.
- General health condition
 - > Had the student eaten that day?
 - > Did the student get enough sleep?
 - > Is there a history of substance abuse?
 - > What is their receptive and expressive language ability?
 - > Is the student on medication or off his/her normal medication?
 - > Is the student suffering from cold, flu, allergies, or other condition

B. Student Mental/behavioral factors

What is the student's:

- Motivation level



- School learning ability level
- Special Ed, IEP, or 504 accommodations
- Activity/attention level (e.g., impulsive, distracted, etc.)
- Cognitive level (developmentally delayed or advanced)
- Specific mental health history (including comorbid or previous diagnoses, past trauma)
- Behavior (e.g., agitated, noncompliant, aggressive, shy, withdrawn, compulsive, anxious, frustrated, insecure, rejected, etc.)

C. Home and Family factors

- Is the child homeless?
- Is the child in foster care?
- Is the child a member of a migrant family?
- Are there cultural differences?
- Does the student have a stable home life, or have they had a recent change at home?
- Do the parents support assessment? Do they have issues with assessments and tests?
- Is the student a native speaker of another language, is he/she bilingual, or is the primary home language not English?
- Do the parent(s) or caregiver take an interest in their child's education or do they have an issue with education?

D. School factors

- Does the student feel safe and/or connected at school?
- Does the student have a history of chronic absenteeism?
- Was there a fire drill or other unplanned emergency drill?
- Is the student markedly over- or under-age for the grade?
- Does the student have cultural support or disconnection?
- What is the student's level of socialization and peer support?
- How well does the student relate to teachers and other school



professionals?

- Was the child pulled from a class or school event he/she enjoys for the session?
- What is the testing environment (e.g., classroom or office lighting, noise level, temperature, amount of interruptions)?

E. Rater/teacher/clinician factors

- Cultural differences
 - > Language differences?
 - > Implicit bias?
- Rapport and management skills
- Previous experience with the student
 - > Amount and frequency
- Physical and mental state of the tester
- Fidelity to assessment qualifications and instructions
- Familiarity with the testing environment and test materials
- Interpretation experience/knowledge (e.g., discrepancy analysis, growth scale values, etc.)

APPENDIX C

ADOPTED QUESTIONNAIRE

Adopted Questionnaire from the Conducted Thesis entitled “PERCEIVEDFACTORS AFFECTINGTHE LICENSURE EXAMINATION PERFORMANCE OF MEDICAL TECHNOLOGY GRADUATE”, February 2006 by Mr. Aldrich L. Balyagan and Ma. Rosalie de Guzman.

I. PROFILE

NAME: (OPTIONAL)

SEX :

AGE:

EMPLOYMENT STATUS:



EMPLOYED ()

UNEMPLOYED ()

II. PERCEPTION OF THE RESPONDENTS ON THE FACTORS AFFECTING THE LICENSURE EXAMINATION PERFORMANCE.

Direction: Below the perceived factors affecting the licensure examination performance. To your honest opinion, to what extent do the items under each factor affect the licensure examination performance?

Please check your answers using the scales below.

5 - to a great extent

4 - to a moderate extent

3 - to some extent

2 - little extent

1 – Not at all

FACTORS	5	4	3	2	1
A.STUDENT-RELATED FACTORS					
1. Interest in the subject					
2. Attitude towards studies					
3. Compliance to subject requirements					
4. Study Habits					
5. Attendance					
6. Health Problems					
B. TEACHER-RELATED FACTORS					
1. Competence in teaching the subject					
2. Use of Teaching devices/aids					
3. Teaching Personality					
4. Knowledge on the subject matter					



5. Attitude towards students					
6. Regular checking of requirements					
7. Attendance					
8. Post and Graduate education					
C. SCHOOL RELATED FACTORS					
1. Availability and adequacy of Reference Books and materials					
2. Availability and adequacy of laboratory materials					
3. Proper Ventilation					
4. Availability of school facilities					
E. HOME AND FAMILY RELATED					
1. The Child Being Homeless					
2. The Child being under a foster care					
3. The Child having a stable home					
4. The parents supports their child's Assessment.					
5. Parents take interest on their child's education.					



CURRICULUM VITAE



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