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Survey on the Employment and Institutional Outcomes of the Theology Program Among the Alumni of a Faith-Based Higher Education Institution in the Philippines

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Abstract

This research aimed to survey the employment status of the alumni of the College of Theology (COT) program of a faith-based higher education institution in the Philippines. It also assessed how adequately they were trained in developing graduate attributes or institutional outcomes as well as the extent such attributes are practiced in their lives. Anchored on the five institutional outcomes namely: professional competence, active faith, social responsibility, selfless service, and balanced lifestyle, this descriptive study utilized 35 purposively sampled COT alumni who graduated from 2015 to 2019. Through Google forms, a 64-item Likert-type survey questionnaire using a 4-point response scale was answered. The results showed that 57.1% secured their first job within six months after graduation. Currently, there are 77.2% employed, 11.4 volunteers, 8.6 students, 2.9 unemployed. Majority (80%) were employed in denominational institutions. The alumni's overall mean for the perceived adequacy of education received in developing professional competence, active faith, social responsibility, selfless service, and balanced lifestyle is 3.17 interpreted as *adequate*. Also, the overall mean of the extent of which such attributes are practiced is 3.34 interpreted as *very high*. The results are essential data to for the review and enhancement of the COT program. Future studies may include professional competence in the assessment and a more detailed COT program outcomes as indicators. A study may also be conducted to explore the work experiences of the alumni relative to their academic preparation from the COT.

Keywords: *tracer study, theology program, professional competence, active faith, social responsibility, selfless service*

Higher education institutions, in consideration of quality assurance requirements, are spurred to tracing, not only how the graduates access the labor market, but also how they perform and exemplify the attributes the university has aimed for. If the HEIs are to remain relevant to the students and industries or job market, they have to learn from their graduates through graduate surveys. Results of tracer studies are used both in improving study conditions and program designs as well as to meet the real-life situations prescribed by the needs and expectation of industries or job markets (Egesah et al., 2014).

Data on unemployment from 2010 to 2020 shows a decrease from 5.9% to 5.42% globally (Plecher, 2020). However, due to the pandemic, there has been an uptrend of unemployment in the Philippines from 7.075 % in 2013 to 10.35% in 2020 (Ventura, 2020). Employment of graduates has always been an issue in governments. In the Philippines, among the unemployed in January 2019, 20.9 percent were college graduates (Rada, 2019). This has become an issue in every educational institution. Thus, tracer study for the employability of graduates has been one of the concerns of researchers. Graduates' tracers' studies (GTS) conducted internationally and locally show various concerns. The study of Ambrocio and Dapetilo (2016) focus on the employability of graduates Bachelor in Secondary Education major in English of South Philippine Adventist College. It shows that from 2001 to 2010, 83% are employed, 14% are currently not employed and 2% has never been employed. Abas and Imam (2016) focus on Graduates' Competence on Employability Skills and Job Performance. The study shows that the fundamental skills, and personal management skills, had moderate relationship with employees' contextual performance, competence in thinking and problem-solving skills provides employees with more benefits, the competence in personal adaptability and learning continuously are contributory across all elements of contextual performance. Egesah et al. (2014) focused on establishing an institutionalized graduate tracer study for quality assurance among graduates in East Africa Higher Education in Africa.

It can be observed that the study of Ambrocio and Dapetilo (2016) focused on the employability of English teacher graduates. Abas and Imas (2016), on the other hand, centered on variables like fundamental skills, personal management skills, thinking and problem-solving skills, personal adaptability, and adaptability. Badiru and Wahome (2016) focused on establishing a standardized GTS for graduates in East Africa which can presumably be utilized in the general context. The current study shares some of the variables of the above research, however, from the time of its inception, there is no GTS in the College of Theology based on its specific context and purpose. Thus, there is a need to conduct this study to survey the employment status of the alumni of the College of Theology (COT) program of a faith-based higher education institution (HEI) in the Philippines. This study assessed how adequate the AUP-COT prepared the graduates in developing the outcomes of the COT program as well as of the institution. Also, the extent of which such attributes are being practiced in the alumni's life and in the workplace, was assessed.

Methodology

This study utilized a cross-sectional, descriptive design. Cross-sectional designs involve a collection of data at one point in time (Polit & Beck, 2012). The frameworks used in constructing the survey were the 12 program outcomes of the COT and the five (5) institutional outcomes namely: Professional Competencies; Active Faith; Social

Responsibility; Selfless Service; and Balanced Lifestyle. Purposive sampling was utilized to select the 35 respondents who accomplished online a 64-item survey questionnaire using a 4-point Likert-type response scale. There was difficulty in recruiting respondents due to lack of contact information among the alumni. Ethical considerations were observed to ensure confidentiality and anonymity in handling the data. Frequency, percentage, mean, standard deviation, and reliability statistics were used to analyze the data.

Results and Discussion

Presented in this section are the results of the online tracer survey conducted among the COT alumni who graduated from 2015 to 2019. It aimed to survey the employment status of the alumni and to assess how adequate the training received by the alumni in achieving the outcomes of the COT program as well as of the institution. Also, the extent such attributes are practiced in the alumni’s life was assessed. The frameworks used in this survey were the 12 program outcomes of the COT: (a) apply the principles of sound biblical interpretation in teaching and preaching biblical message; (b) demonstrate Adventist Christian values and principles in personal and professional life; (c) use evangelism principles and methodologies in proclaiming God’s messages in Rev 14: 6-12; (d) exhibit Christian leadership and administration following the servant leadership principles modelled by Jesus; (e) faithful in managing God’s resources such as the body temple, time, talent, treasure, and environment; (f) continuously search for understanding, learning, and practice of the Adventist beliefs; (g) apply Biblical principles in conducting personal and corporate worship; (h) utilize Biblical and theological principles in managing family affairs; (i) commit to sound Biblical hermeneutical principles and assumption, using appropriate tools for exegesis to enhance preaching ability; (j) commit to preach, teach, and live out the Gospel in the light of the Great Controversy as revealed from Genesis to Revelation inviting people to respond to Christ’s gift of salvation; (k) commit to submit to the Holy Spirit who empowers, imparts skills, talents, wisdom, and lead to the total development of the whole person’s life; (l) lead and equip churches in becoming healthy, growing in faith, worshipping communities, and involving in mission. and the study was also mapped with the five (5) institutional outcomes namely: Professional Competencies; Active Faith; Social Responsibility; Selfless Service; and Balanced Lifestyle.

Employment Profile of the COT Alumni

Table 1 shows the period when the alumni got their first job such that 57.1% got employed within six months after graduation, 11.4% after seven to 12 months, and 14.3% after more than a year. The 17.1% unemployed was explained in Table 2 where some were upgrading, volunteer work, and one is unemployed.

Table 1. *Period of Time Employed After Graduation*

	Frequency	Percent
6 months or less after grad	20	57.1
7 to 12 months after grad	4	11.4
More than 1 year after grad	5	14.3
Unemployed yet	6	17.1
Total	35	100.0

Table 2 shows the current employment status of the alumni such that 77.2% were employed, 11.4% were volunteers, 8.6% were upgrading, and only 2.9% was unemployed. On the other hand, Table 3 shows that the majority (80%) were employed at SDA institutions. It should be noted that employment means they receive stipend for doing the pastoral work in a church or a district assignment, or a salary from any of the SDA institutions (Mission/Conference/Hospital/Publishing House/College/University) as intern pastor under the direct supervision of a senior pastor for two years. A regular employment in the denomination will take place after passing the two-year internship program.

Table 2. *Present Employment Status*

	Frequency	Percent
Regular	5	14.3
Contractual/Probationary	22	62.9
Unemployed	1	2.9
Volunteer	4	11.4
Student	3	8.6
Total	35	100.0

Table 3. *Type of Current Employer*

	Frequency	Percent
Government	2	5.7
SDA Institution	28	80.0
Private Non-SDA institution	1	2.9
Not applicable (Volunteer)	4	11.4
Total	35	100.0

The Perceived Adequacy of Training Received at AUP in Developing the Institutional Outcome: Professional competence

This section presents the perceived level of adequacy of training in developing professional competence among the COT alumni. Table 4 presents that the overall mean score of all the items that assessed the perceived adequacy of training received in developing professional competence among the alumni is 3.18 which was interpreted as *adequate*. The three items with the highest mean scores are: Understanding of truth about the Godhead and the Bible as the word of God ($M = 3.71 \pm 0.67$); Understanding of distinctive Adventist beliefs, identity, and mission ($M = 3.69 \pm 0.47$); and Understanding of Biblical hermeneutical principles using appropriate tools for exegesis ($M = 3.57 \pm 0.70$). The three items with the lowest mean scores are: Information technology skills ($M = 2.31 \pm 0.90$); Collaborative skills and teamwork ($M = 2.89 \pm 0.72$); and Nurturing and pastoral care of members ($M = 2.91 \pm 0.78$). Professional competence is defined as the “demonstration of expertise and leadership in academic or professional discipline, continually improving professionally through lifelong learning” (AUP Institutional Outcomes Mapping, 2017, p. 1).

Basic computing can be included as an elective in Vocational courses. The current program included one basic requirement which is Home Skills. Generally, the students were taking the driving course since it was deemed a more relevant skill in the field. However, additional courses can be considered to address the issue on information technology skills.

Collaborative skills and teamwork competencies are achieved not within the organized and supervised activities in the College. Nevertheless, collaborative skills and teamwork competencies were made available in co-curricular activities such as the Voice of Youth and Week of Prayer revival meetings. Perhaps, there must be an exerted effort and integrated program within the College to enhance teamwork. The nurturing and pastoral care of members while in the College may not be satisfactorily achieved. Students were taught of the concepts and principles in nurturing and pastoral care of a church, but field exposure that will achieve these competencies was limited. Although, some competencies can be integrated in small group activities. The lack of experience in nurturing and pastoral care during college life might be affected by the SDA pastoral culture because the context of doing the nurturing of members is already a job of a full-time church/district pastor.

Table 4. The Perceived Level of Adequacy of Training Received in Developing Professional Competence at AUP

	Mean	SD	Interpretation
Understanding of truth about the Godhead and the Bible as the word of God	3.71	.67	Very Adequate
Understanding of distinctive Adventist beliefs, identity, and mission	3.69	.47	Very Adequate
Understanding of Biblical hermeneutical principles using appropriate tools for exegesis	3.57	.70	Very Adequate
Teaching the Word of God	3.54	.66	Very Adequate
Articulation of a sound view of the relationship of EGW writings and the Bible	3.49	.89	Very Adequate
Preaching the Word of God	3.29	.75	Very Adequate
Lifelong learning	3.23	.81	Adequate
Effective oral communication skills	3.11	.72	Adequate
Leadership and management skills	3.09	.89	Adequate
Critical thinking and problem solving	3.09	.85	Adequate
Evangelism and mission	3.03	.89	Adequate
Effective written communication skills	3.00	.94	Adequate
Research skills	3.00	.94	Adequate
Nurturing and pastoral care of members	2.91	.78	Adequate
Collaborative skills and team work	2.89	.72	Adequate
Information technology skills	2.31	.90	Inadequate
Overall Mean	3.18	.55	Adequate

Legend: 1.00-1.74 - Very Inadequate; 1.75-2.50 – Inadequate; 2.51-3.25 – Adequate; 3.26-4.0 - Very Adequate

The Perceived Adequacy of Training Received at AUP in Developing the Institutional Outcomes: Active Faith, Social Responsibility, Selfless Service, and Balanced Lifestyle

This section presents the summary of results of assessment of the alumni’s perceived adequacy of training received on developing institutional outcomes: Active Faith, Social Responsibility, Selfless Service, and Balanced Lifestyle. It is composed of 24 survey questions which were rated with a 4-point Likert scale: *1 = Not at All, 2 = A Little, 3*

= *Much*, and 4 = *Very Much*. Findings in Table 5 showed that the overall mean score is 3.16 which was interpreted as *adequate*. The items with the highest mean scores are: exemplifying commitment and faithfulness to Jesus ($M = 3.57 \pm 0.61$) and attending church services and worship meetings ($M = 3.57 \pm 0.66$). The items with the lowest mean scores are: practicing plant-based balanced diet ($M = 2.66 \pm 1.06$), exercising at least three times a week with sunlight exposure ($M = 2.66 \pm 0.97$), eating breakfast regularly ($M = 2.74 \pm 1.12$); and drinking at least 10 glasses of water per day ($M = 2.77 \pm 0.97$).

Findings suggest that the alumni perceived that they have received enough training or support in establishing a strong relationship with Jesus which is very essential in their ministry as they also lead the church to a saving relationship with Jesus. However, the lowest rated items indicated that they have not received enough help in developing essential balanced lifestyle indicators. Assumptions could be made that the economic and financial status of many theology students is the basic reason for low results. It could be observed that a great number of theology graduates were work scholars. Many prepared their food just for subsistence. As working students, they have no time for desired regular exercise. To address the issue, there should be a collaborative effort with the dormitory deans and work supervisors to address the issue of balanced lifestyle while still studying here in the University.

Table 5. *The Perceived Level of Adequacy of Training Received in Developing Active Faith, Social Responsibility, Selfless Service, and Balanced Lifestyle at AUP*

	Mean	SD	Interpretation
Exemplifying commitment and faithfulness to Jesus	3.57	.61	Very Adequate
Attending church services and worship meetings	3.57	.66	Very Adequate
Practice of life-affirming values (modesty, purity, chastity, and fidelity)	3.49	.66	Very Adequate
Management of time for work, family, and personal development	3.49	.70	Very Adequate
Upholding biblical worldview/principles in the practice of profession	3.43	.78	Very Adequate
Rendering willing service in my workplace or in the community	3.43	.70	Very Adequate
Practice of personal prayer	3.40	.65	Very Adequate
Spending meaningful reading of the Bible or spirit of prophecy	3.40	.65	Very Adequate
Having positive outlook in life even in the midst of adversity	3.40	.77	Very Adequate
Participation in outreach/missionary activities	3.40	.85	Very Adequate
Practice of biblical perspectives in dealing with others	3.29	.75	Very Adequate
Having healthy relationships in my family and in the workplace	3.29	.79	Very Adequate
Respect for diversity in the workplace/community	3.20	.87	Adequate
Avoiding caffeinated drinks such as coffee, cola, etc.	3.09	.98	Adequate
Not patronizing worldly entertainment (e.g., worldly music, movies, e-games)	3.06	.97	Adequate

{table continues on the next page}

Working comfortably with people from different ethnic/racial backgrounds	3.03	1.07	Adequate
Participation in protecting/caring for the environment	2.91	1.04	Adequate
Engagement in addressing community development issues and needs	2.83	.95	Adequate
Sleeping at least 7 hours per night	2.83	.98	Adequate
Using gadgets appropriately	2.83	1.01	Adequate
Drinking at least 10 glasses of water per day	2.77	.97	Adequate
Eating breakfast regularly	2.74	1.12	Adequate
Practicing plant-based balanced diet	2.66	1.06	Adequate
Exercising at least three times a week with sunlight exposure	2.66	.97	Adequate
Overall Mean	3.16	.66	Adequate

Legend: 1.00-1.74- Very Inadequate; 1.75-2.50 – Inadequate; 2.51-3.25 – Adequate; 3.26-4.0 - Very Adequate

The Extent the Attributes or Institutional Outcomes of an AUP Graduate are Practiced

This section presents the summary of results of assessing the alumni’s perceived extent of practicing the attributes of an AUP graduate: Active Faith, Social Responsibility, Selfless Service, and Balanced Lifestyle. The 24 survey questions were rated with a 4-point Likert scale: *1 = Never, 2 = Sometimes, 3 = Often, and 4 = Always*. Findings in Table 6 showed that the overall mean score is 3.34 which was interpreted as very high. The items with the highest mean scores are: attending church services and worship meetings ($M = 3.63 \pm 0.69$), rendering willing service in my workplace or in the community ($M = 3.57 \pm 0.65$), upholding biblical worldview/principles in the practice of profession ($M = 3.54 \pm 0.66$), and practice of personal prayer ($M = 3.54 \pm 0.70$). The items with the lowest mean scores are: exercising at least three times a week ($M = 2.94 \pm 0.91$), using gadgets appropriately ($M = 3.00 \pm 0.94$), practicing plant-based balanced diet ($M = 3.03 \pm 1.01$), not patronizing worldly entertainment like worldly music, movies, e-games ($M = 3.09 \pm 0.98$), and eating breakfast regularly ($M = 3.09 \pm 0.95$).

Table 6. *The Extent the Institutional Outcomes Active Faith, Social Responsibility, Selfless Service, and Balanced Lifestyle are Practiced by COT Alumni*

	Mean	SD	Interpretation
Attending church services and worship meetings	3.63	.69	Very High
Rendering willing service in my workplace or in the community	3.57	.65	Very High
Upholding biblical principles in the practice of profession	3.54	.66	Very High
Practice of personal prayer	3.54	.70	Very High
Exemplifying commitment and faithfulness to Jesus	3.51	.66	Very High
Practice of life-affirming values (modesty, purity, chastity, and fidelity)	3.51	.66	Very High
Having positive outlook in life even in the midst of adversity	3.51	.82	Very High
Participation in outreach/missionary activities	3.51	.70	Very High
Practice of biblical perspectives in dealing with others	3.51	.82	Very High

{table continues on the next page}

Spending meaningful reading of the Bible or spirit of prophecy	3.49	.70	Very High
Respect for diversity in the workplace/community	3.49	.82	Very High
Working comfortably with people from different ethnic/racial backgrounds	3.43	.92	Very High
Having healthy relationships in my family and in the workplace	3.37	.91	Very High
Avoiding caffeinated drinks such as coffee, cola, etc.	3.34	.94	Very High
Management of time for work, family, and personal development	3.31	.87	Very High
Participation in protecting/caring for the environment	3.20	.87	High
Drinking at least 10 glasses of water per day	3.20	.87	High
Sleeping at least 7 hours per night	3.20	.87	High
Engagement in addressing community development issues/needs	3.14	.81	High
Not patronizing worldly entertainment (e.g., worldly music, movies, e-games)	3.09	.98	High
Eating breakfast regularly	3.09	.95	High
Practicing plant-based balanced diet	3.03	1.01	High
Using gadgets appropriately	3.00	.94	High
Exercising at least three times a week with sunlight exposure	2.94	.91	High
Overall Mean	3.34	.66	Very High

Legend: 1.00-1.74 – Low; 1.75-2.50 – Moderate; 2.51-3.25 – High; 3.26-4.0 – Very High

The Extent the Attribute or Institutional Outcome Active Faith is Practiced

Table 7 shows the perceived extent Active Faith is practiced among the COT alumni. The overall mean score is 3.47 which was interpreted as very high. Majority of the indicators of having an active faith were rated very high; only two rated high. These findings suggest that the students have developed a strong faith foundation throughout their training under Theology program of the university. According to the University Institutional Outcomes Mapping (2017), active faith means “developing a growing, transforming relationship with God and application of the biblical truths expressed in the Seventh-day Adventist beliefs and spirituality to a variety of real-world issues”. Perhaps the issue of patronizing worldly movies, and e-games can be addressed in courses like Religion and Ethics and Pastoral Ministry. This particular result of the study can be used as an enlightenment and challenge to future students.

Table 7. *The Extent the Institutional Outcome Active Faith is Practiced*

	Mean	SD	Interpretation
Attending church services and worship meetings	3.63	.69	Very High
Practice of personal prayer	3.54	.70	Very High
Upholding biblical worldview/principles in the practice of profession	3.54	.66	Very High
Practice of life-affirming values (modesty, purity, chastity, and fidelity)	3.51	.66	Very High

{table continues on the next page}

Exemplifying commitment and faithfulness to Jesus	3.51	.66	Very High
Spending meaningful reading of the Bible or spirit of prophecy	3.49	.70	Very High
Not patronizing worldly entertainment (e.g., worldly music, movies, e-games)	3.09	.98	High
Overall Mean	3.47	.63	Very High

Legend: 1.00-1.74 – Low; 1.75-2.50 – Moderate; 2.51-3.25 – High; 3.26-4.0 – Very High

The Extent the Attribute or Institutional Outcome Social Responsibility is Practiced

Table 8 presents the perceived extent social responsibility is practiced among the COT alumni. The overall mean score is 3.35 which was interpreted as *very high*. The items rated with *very high* are practice of Biblical perspectives in dealing with others ($M = 3.51 \pm 0.82$), respect for diversity in the workplace/community ($M = 3.49 \pm 0.82$), and working comfortably with people from different ethnic/racial backgrounds ($M = 3.43 \pm 0.92$). These findings suggest that the alumni have developed a strong cultural sensitivity and ability to deal and work with people of diverse backgrounds which is a good attribute of a pastor. According to Sana (2010), graduates are expected to work in diverse contexts because of changing needs, societal expectations, and socio-economic, political, and cultural factors. In a tracer study in Kenya among the graduates in one university, personality and interpersonal skills were important aspects considered by the employers in recruitment (Egesah et al., 2014). Meanwhile, the item rated lowest is engagement in addressing community development issues and needs ($M = 3.14 \pm .81$) which was interpreted as *high*. This result, although high, showed that there is still a room for improvement for the university in this aspect to help the students develop this indicator so that the alumni will be more engaged in addressing community development issues and needs. According to the University Institutional Outcomes Mapping (2017), social responsibility means to demonstrate commitment and engagement to improve the quality of life of all people, and to care for the environment.

Table 8. *The Extent the Institutional Outcome Social Responsibility is Practiced*

	Mean	SD	Interpretation
Practice of biblical perspectives in dealing with others	3.51	.82	Very High
Respect for diversity in the workplace/community	3.49	.82	Very High
Working comfortably with people from different ethnic/racial backgrounds	3.43	.92	Very High
Participation in protecting/caring for the environment	3.20	.87	High
Engagement in addressing community development issues and needs	3.14	.81	High
Overall Mean	3.35	.76	Very High

Legend: 1.00-1.74 – Low; 1.75-2.50 – Moderate; 2.51-3.25 – High; 3.26-4.0 – Very High

The Extent the Attribute or Institutional Outcome Selfless Service is Practiced

Table 9 presents the perceived extent selfless service is practiced among the COT alumni. The overall mean score is 3.54 which was interpreted as very high. Result suggests that the COT students were service oriented and have a heart to fulfill God’s mission. They

have a clear understanding of Christ's commission in Matthew 28:19-20 which is to go and make disciples of all nations, and one way to achieve is to come out of their comfort zone to do an unselfish ministry to all people. Besides, they are also aware of Christ's injunction, "Truly I tell you, whatever you did for one of the least of these brothers and sisters of mine, you did for me. (Matt. 25:40 NIV). According to the University Institutional Outcomes Mapping (2017), selfless service means to apply knowledge to real-world challenges in the spirit of unselfish service, fulfilling God's calling in their lifework.

Table 9. *The Extent the Institutional Outcome Selfless Service is Practiced*

	Mean	SD	Interpretation
Rendering willing service in my workplace or in the community	3.57	.65	Very High
Participation in outreach/missionary activities	3.51	.70	Very High
Overall Mean	3.54	.64	Very High

Legend: 1.00-1.74 – Low; 1.75-2.50 – Moderate; 2.51-3.25 – High; 3.26-4.0 – Very High

The Extent the Attribute or Institutional Outcome Balanced Lifestyle is Practiced

Table 10 presents the perceived extent of balanced lifestyle practice among the COT alumni. The overall mean score was 3.20 interpreted as high. The highest mean score was on the item having positive outlook in life even in the midst of adversity ($M = 3.51 \pm 0.82$) while the lowest is exercising at least three times a week with sunlight exposure ($M = 2.94 \pm 0.91$). Findings suggest that the alumni have developed a balanced lifestyle. However, there is still a room for improvement in the aspects of exercise, use of gadgets, and plant-based diet. In the Bible, it says that "Jesus increased in wisdom and stature, and in favor with God and man" (Luke 2:52, KJV). This indicates that Jesus himself was an advocate of balanced lifestyle and holistic development. The philosophy of Adventist education states that the "work of education and the work of redemption are one: to restore in humanity the lost image of God through the harmonious development of mental, physical, social, and spiritual faculties" (AUP Strategic Plan, 2017, p.7). According to the University Institutional Outcomes Mapping (2017), balanced lifestyle means to pursue wholeness by maintaining a balanced healthy lifestyle – spiritually, mentally, physically, and socially.

Table 10. *The Extent the Institutional Outcome Balanced Lifestyle is Practiced*

	Mean	SD	Interpretation
Having positive outlook in life even in the midst of adversity	3.51	.82	Very High
Having healthy relationships in my family and in the workplace	3.37	.910	Very High
Avoiding caffeinated drinks such as coffee, cola, etc.	3.34	.94	Very High
Management of time for work, family, and personal development	3.31	.87	Very High
Sleeping at least 7 hours per night	3.20	.87	High
Drinking at least 10 glasses of water per day	3.20	.87	High
Eating breakfast regularly	3.09	.95	High

{table continues on the next page}

Practicing plant-based balanced diet	3.03	1.01	High
Using gadgets appropriately	3.00	.94	High
Exercising at least three times a week with sunlight exposure	2.94	.91	High
Overall Mean	3.20	.75	High

Legend: 1.00-1.74 – Low; 1.75-2.50 – Moderate; 2.51-3.25 – High; 3.26-4.0 – Very High

This tracer study was aimed to survey the employment status of the alumni of the College of Theology. It also assessed how adequately they were trained in developing the institutional outcomes or graduate attributes and the extent of which such attributes are practiced in life and in the workplace. The results showed that among the participants, 57.1% secured their first job within six months after graduation. Currently, there are 77.2% employed, 11.4 volunteers, 8.6 students, 2.9 unemployed. Majority (80%) are employed in Adventist institutions. The alumni's perceived adequacy of education received in developing Professional Competence, Active Faith, Social Responsibility, Selfless Service, and Balanced Lifestyle is 3.17 which is interpreted as adequate. Also, the overall mean score of the extent of which Institutional Outcomes Active Faith, Social Responsibility, Selfless Service, and Balanced Lifestyle are Practiced by COT Alumni is 3.34 which is interpreted as high. The results are essential data to inform the review and possible enhancement of the Theology curriculum program. The limitation of this study is that the extent of which professional competence indicators are practiced were not included in the assessment. Future studies may include professional competence in the assessment and the more detailed Theology program outcomes will be used as indicators.

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Alumni's Perceived Strengths and Areas of Improvement of the Theology Program of a Faith-Based University in the Philippines

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Abstract

This study explored the alumni's perception of the effectiveness of the College of Theology (COT) program of the Adventist University of the Philippines (AUP). Using a descriptive qualitative design, the study specifically answered the questions: (a) What are the strengths of the COT program as perceived by the alumni?; and (b) What are the areas of improvement and recommendations to improve them? The data were gathered from February to March 2019. Through purposive sampling, 35 COT alumni who graduated from 2015 to 2019 were selected to participate in this online study. Ethical considerations were observed to ensure confidentiality and anonymity in handling the data. To analyze the data, thematic analysis was used to arrive at themes and categories. On the question as to what the strengths of the COT program are as perceived by the participants, three themes emerged namely: (1) *teaching excellence with two categories competence of the COT faculty and good quality of mentoring culture*; (2) *academic and spiritual excellence with three categories Bible-based training, relevant curricular program, and theoretical excellence*; and (3) *employment assurance*. On the areas of improvement and recommendations to improve, the five themes are (1) *curriculum and instruction management with three subthemes program and course outcomes setting, enhancing program design and instruction, and upgrading missiological methodology*; (2) *theoretical application*, (3) *career guidance with two subthemes guidance on fitness for the program and job placement assistance*, (4) *faculty competency evaluation*, and (5) *Christ-like mentoring with two sub-themes faculty's hands-on discipling of students and mentoring beyond academics*. The results are relevant empirical data to evidence the status of the effectiveness of the Theology program to serve as inputs for curricular review and enhancement. This study also provides vital information on the areas of resource management that may inform institutional planning and decision-making. For future research, a comprehensive curricular evaluation of the Theology program may be conducted to gather more detailed information about the program.

Keywords: *alumni feedbacks, strengths and weaknesses of Theology program*

The Adventist education in the Philippines was originally planned and established for training converted young people as missionaries and gospel workers. Lewis V. Finster pioneered such ministerial training and the establishment of the Adventist academy in Pasay, Philippines in 1917. Such innovations began when the first Seventh-day Adventist Church was established in Santa Ana, Manila on March 11, 1911. Afterward, he made a Bible institute at his home in Manila that only lasted until June 1911 (Conopio, 1990; Reyes, 1981). Nevertheless, his missionary purpose and aggressiveness to train Bible workers did not stop there. The College of Theology (COT) of the Adventist of the Philippines (AUP, formerly Philippine Union College), which was originally placed in the basement of the Finster Chapel, was the product of Finster's effort. The COT has produced numerous pastors, church leaders, and missionaries in different parts of the world.

Some studies among the faith-based colleges and universities revealed the importance of religion in life and the influence of religious education in society (Davignon, 2014; Kuh & Gonyea, 2006). Consequently, this study explored the alumni's perception of the effectiveness of the Theology Program of the AUP for there is no study on this matter. It also assessed whether the COT is still fulfilling its mission or needs redirection: "The AUP COT is committed to provide quality Bible-based ministerial education in training and equipping students to serve the Church and society" (AUP, 2016). Specifically, this study answered the questions:

1. What are the strengths of the COT program as perceived by the alumni?;
2. What are the areas of improvement and recommendations to improve them?

Methodology

This study used a descriptive qualitative design as described by Polit and Beck (2012). Through purposive sampling, 35 COT alumni who graduated from 2015 to 2019 were selected to participate in this online study. The data were gathered from February to March 2019. The verbatim answers to the research questions were analyzed using thematic analysis to arrive at relevant themes and categories. Ethical considerations were observed to ensure the confidentiality and anonymity of data.

Results and Discussion

Strengths of the College of Theology Program as Perceived by the Alumni

Table 1 shows the results of the thematic analysis of the qualitative responses of the alumni as to the strengths of the College of Theology Program. The three themes that emerged are the following: (1) *teaching excellence with two subthemes competence of the COT faculty and good quality mentoring culture*; (2) *academic and spiritual excellence with subthemes Bible-based training, relevant curricular program, and theoretical excellence*; and (3) *employment assurance*. Each of these themes is categorically discussed below.

Teaching Excellence

One of the strengths of the AUP theology program, as perceived by the college's alumni was teaching excellence with competence of the COT faculty and good quality of mentoring culture as subthemes. Teaching is an integral part of the gospel-commission, particularly in making disciples of Jesus (Matt 28:20). As gospel workers, the teachers of

the COT are mandated to train future pastors to be Christ's disciples and disciple-makers. In that sense, the faculty of theology is expected to be competent to foster high quality of education and have a good ambiance of mentoring culture among the students.

Table 1. *The Strengths of the Theology Program as Perceived by the COT Alumni*

Categories	
<ul style="list-style-type: none"> • It trains young pastor with academic and scholarly competency • Knowledge and theories • Discipline on interpreting things • Majority of the professors are well equipped in the fields they are teaching • Teaching • Language • Pastor Javien and Pastor Fernando. The Pillars of COT 	Competence of the COT Faculty
<ul style="list-style-type: none"> • Effective in training the students to have the interest and routine in reading books, related to our craft. • Patience and encouragement • Patience and encouragement • It molds student to become spiritually mature while dealing with different people in the non-SDA environment • Professors pushed us to read and study more. The program has opened my mind to the vast knowledge waiting to be explored. • Strengthening God's calling as a theologian • Leadership skills, good motivator to serve, magnitude of sacrifice, selfless service, • Able to help me understand more deeply the Adventist teachings and doctrines. 	Theme 1 TEACHING EXCELLENCE Good Quality Mentoring Culture
<ul style="list-style-type: none"> • Students are trained to be diligent and faithful students of the Word • Biblical knowledge • Doctrine 	Bible-based Training
<ul style="list-style-type: none"> • Necessary courses almost complete. • Biblical Studies and Systematic Theology • Systematic Theology areas • Strong in teaching the following: 1. Fundamentals of Biblical SDA Doctrines; 2. Surveys in OT and NT; 3. Biblical Languages; 4. Church Management and Leadership • Theological studies and field theories. • Field school • Course outline 	Relevant Curricular Program Theme 2 ACADEMIC AND SPIRITUAL EXCELLENCE
<ul style="list-style-type: none"> • Academics/Theories • Academics/Theories • Theological learnings and theories • Biblical Studies and Theories • Theoretical Theological • Theology • It has the necessary foundations needed to train a pastor/theologian • Academics • Academic • Academic • Academic 	Theoretical Excellence of the Theology Program

{table continues on the next page}

- We have work after graduation waiting for us

Employability

Theme 3
EMPLOYMENT
ASSURANCE

Competence of the COT Faculty. According to Participant 1, “majority of the professors are well equipped in the fields they are teaching.” Participants 4, 7, 8, 14, 17, and 32 stated that the COT “trains young pastors with academic and scholarly competence,” “knowledge and theories,” “discipline in interpreting things,” “teaching,” and “[biblical] language[s].” Participant 25 mentioned Pastors Javien and Fernando as “the pillars of COT.” In short, they perceived that the teachers of the COT are competent in training young pastors.

The result of this study agreed with the findings of Rahmatullah (2016) which revealed that teacher competence and teacher performance are correlated. If the teachers are competent, they perform better. This relationship leads to learning effectiveness among students. The COT alumni perceived that part of their effective learning was due to the competence of their teachers.

Good Quality of Mentoring Culture. The COT has established a good quality mentoring culture. Participant 7 expressed the effectiveness of training students “to have the interest and routine in reading books, related to our [their] craft.” Participant 11 testified, “Professors pushed us to read and study more. The program has opened my mind to the vast knowledge waiting to be explored.” Another participant (22) stated that the theology program is able to help him “understand more deeply the Adventist teachings and doctrines.” Participant 31 mentioned that the program “molds students to become spiritually mature while dealing with different people in the non-SDA environment.” Participants 1 and 15 concurred that the program is “strengthening God’s calling as a theologian” and fosters “leadership skills, a good motivator to serve, the magnitude of sacrifice, [and] selfless service.” Finally, it teaches them to be patient and courageous.

This result was congruent with the result of another study which revealed that good quality mentoring brings gain to both the mentor and the mentee. Furthermore, mentoring is one concept that shows the quality of education offered by an institution (Aviana et al., 2020). The COT alumni experienced the effectiveness of mentoring in the college. Because of the good quality of mentoring culture, the alumni appreciated the Adventist doctrine more and this appreciation manifested in their lives even after they graduated.

Academic and Spiritual Excellence

Academic and spirituality are two distinct and separate entities. Yet, these two are complementary to each other in relation to the COT program as perceived by the alumni. The academic and spiritual excellence deals with the strengths of the theology program when it comes to *Bible-based training, appropriate curriculum, and theoretical excellence of the theology program.*

Bible-Based Training. The participants affirmed that the theology program is Bible-based. Students are trained to be diligent and faithful students of the Word. The knowledge and the doctrine are based on the Scripture. In other words, the COT trains students to be the people of God’s word.

Relevant Curricular Program. Another strength of the theology program is the curriculum of the program. Participant 3 mentioned that “the necessary courses [are] almost complete.” The adequacy of the curriculum is on the “biblical studies and systematic

theology” (P-2), “theological studies and field theories” (P-10), “field school” (P-18), and “course outline” (P-34). Also, Participant 7 outlined the strengths of the program in teaching “fundamentals of biblical SDA doctrines,” “surveys in OT and NT,” “biblical languages,” and “church management and leadership.”

Theoretical Excellence. Another big leap for the COT program deals with its theoretical aspect. The participants expressed that the theology program in its theoretical aspect seems excellent. They pointed out that academics, biblical studies, theological learnings, and theories are the areas of its strengths. These theoretical aspects are fundamentals for training a pastor/theologian.

Employment Assurance

Despite the challenges of employment in the denomination, an alumni participant stated that “we have work after graduation waiting for us.” One of the indicators of an effective academic program is the employability of its graduates (Celis et al., 2013). This means that the alumni should have developed employability skills or attributes like academic skills, high order thinking skills, and personal qualities to be considered as an asset in an organization (Robinson as cited by Abas & Imam, 2016).

Areas of Improvement of the College of Theology Program and Its Recommendations as Perceived by the Alumni

Table 2 shows the results of the thematic analysis of the qualitative responses of the alumni as to the areas of improvement and recommendations for the College of Theology Program. Five themes emerged namely: (1) *curriculum and instruction management with three subthemes: program and course outcomes setting, enhancing program design and instruction, and upgrading missiological methodology*, (2) *theoretical application*, (3) *career guidance with two subthemes guidance on fitness for the program and job placement*, (4) *faculty competency evaluation*, and (5) *Christ-like mentoring with subthemes faculty's hands-on discipling of students and mentoring beyond academics*. Each of these themes on the areas for improvement and recommendations of the alumni is discussed in detail below.

Curriculum and Instruction Management

Managing program curriculum and instruction management from design, implementation, and evaluation is also needed to be improved. The alumni extensively expressed their concerns and recommendations regarding the COT program curriculum management for the equipping of the young pastors. One participant explained, “The pastors and professors should have a clear and unified goal as to what they want the students to become. This is important because pastors seem to have different ideas as to what a pastor to be. So, they base on their own personal strengths. Now, this is dangerous because to the students, it seems like that the only criteria that the professors are unified in is that the students would finish all the requirements (baptism, field, and academe) and march for graduation. Thus, COT students from AUP have no clear-cut identity, or even if such does not exist, AUP COT cannot define what their average student or graduate should be.”

Davignon’s doctoral dissertation on “faith-based higher education and the religiosity of Christian college students” (2014) in the United States of America found out that the religious identity of the students’ institutions is vital:

The results from this dissertation suggest that the religious identity of these colleges and universities is very important to students, and that students who base their choice of college on its Christian identity are more likely to be satisfied with their experiences. Another key finding is that denominational affiliation is relatively unimportant to these students when choosing both their college and their college congregation. (Abstract, pp. i-ii)

Hence, the result of this study supports the recommendation to have a clear and unified goal among the COT faculty so that the graduates from AUP have a clear-cut identity.

Table 2. *The Areas for Improvement and Recommendations of COT Alumni*

	Categories	Theme
<ul style="list-style-type: none"> Another suggestion is to make clear and precise objective and goals. Especially with the syllabus and the programs. In many occasions it was very much obvious that the work done in thinking and planning such as objectives are only mediocre. Such is evident due to the repetitive nature of the subjects that leaves even the teacher who made it in confusion. Thus, I suggest that it should be clearly scrutinized and planned, or if the nature of such need to be repeated, then allow one phase of the subject to be academic and the other practical. 	Program and Course Outcomes Setting	Theme 1 CURRICULUM AND INSTRUCTION MANAGEMENT
<ul style="list-style-type: none"> Pastors and professors should have a clear and unified goal as to what they want the students to become. This is important because pastors seem to have different ideas as to what a pastor should be. Such they base on their own personal strengths. Now this is dangerous because to the students, it seems like that the only criteria that the professors are unified in is that the students would finish all the requirements (baptism, field and academe) and march for graduation. Thus, COT students from AUP have no clear-cut identity, or even if such does not exist, AUP COT cannot define what their average student or graduate should be. 		
<ul style="list-style-type: none"> A separate subject for church planting and practical training of it. Even a little exposure at least. 		
<ul style="list-style-type: none"> There should be program that would develop the ‘emotional aspect’ of the students so they would be ready to face the field emotionally. This is on top of the course ‘counseling.’ I suggest one like ‘Clinical Pastoral Education.’ This will help students be prepared emotionally and also can be a healthy minister 		
<ul style="list-style-type: none"> Include a full semester of field exposure similar to OJT of other courses. 		
<ul style="list-style-type: none"> Research should be taught in earlier years because ministers should be used to doing it even in just answering basic questions from easy or difficult Bible passages. By the time they are about to graduate, they won't be having a hard time doing their thesis because they have been properly trained. 	Enhancing program design and instruction	
<ul style="list-style-type: none"> Add more fields of studies, not only for church planters or field workers. 		
<ul style="list-style-type: none"> Offer courses to become: 1) Bible Teachers; 2) Counselor Chaplaincy 		
<ul style="list-style-type: none"> One of the skills that is really needed in the field is counselling. One course is not enough to learn this skill. 		
<ul style="list-style-type: none"> Reduce the minor subject and focus on the major subject 		
<ul style="list-style-type: none"> Masterguide training for cot students 		

{table continues on the next page}

<ul style="list-style-type: none"> 1. Cot students are expected by the mission and conferences to be Masterguide when they apply that is why it is part of the requirements for application 			
<ul style="list-style-type: none"> 2. There are struggles from the new graduates as to how they will handle the young people and having this training would be a good help. The college itself must take its part in leadership to really test and prepare the graduates in this area. 	Enhancing program design and instruction	Theme 1 CURRICULUM AND INSTRUCTION MANAGEMENT	
<ul style="list-style-type: none"> Comprehensive exam should be intentional. Academics, writing, research Resources must be updated PowerPoints, better teaching. 			
<ul style="list-style-type: none"> The way missions was taught when I was there was already outdated. I believe improvements in doing ministry should be done by pastors in the field but I think it can also be done in our university, right? We have been doing the same methods of evangelism for more than a century already, the world is so much different if we compare it a century ago. These methods are still sometimes effective but not most of the time. Contextualization should be learned and studied for us to relate more with the culture of the society we live in. 	Upgrading Missiological Methodology		
<ul style="list-style-type: none"> Urban Missiology 			
<ul style="list-style-type: none"> More practical trainings Applied areas Practical leadership training specially in the context of church leadership Practicum Practical application Chaplaincy Practical Practicum Practical Program Practical application of what the student learns 	Practicum/ Theory Application		Theme 2 THEORETICAL APPLICATION
<ul style="list-style-type: none"> More exposure of students outside the campus and missional and practical applications Practical ministry events Practical Application; Discipleship; Practical Approaches on Urban Mission, especially on reaching out the elite, seculars, millennials, and post-millennial generation Discipleship 			
<ul style="list-style-type: none"> Lack of practical knowledge. Theory and ideas are mainly based on books but not in practical life More exposure in practical pastoral work and church planting. Urban Mission More trainings 			
<ul style="list-style-type: none"> Fitness to the course Lack of Career Guidance. Single-focused career path. Help students to really find what job they really want to have 	Guidance on Fitness for the Program	Theme 3 CAREER GUIDANCE	

{table continues on the next page}

<ul style="list-style-type: none"> Follow ups after graduation, they are the one to recommend where/which conference the graduate should apply. 		
<ul style="list-style-type: none"> Nepotism. 	Job Placement Assistance	Theme 3 CAREER GUIDANCE
<ul style="list-style-type: none"> Guidance before graduation what to do next such as (a) choice of mission/conference (b) employment advice (c) if it is better to go further study or not. This will help students stocked after graduation. 		
<ul style="list-style-type: none"> I think they need to take seriously the giving of survey assessment regarding the competency of professors, aiming to make corrective and preventive actions after getting the feedback rendered by the students on such surveys. This would help to see if the actual learning experience of the student with a certain professor, is really productive. 	Faculty competency evaluation	Theme 4 FACULTY COMPETENCY EVALUATION
<ul style="list-style-type: none"> Students will be trained how to nurture and disciple someone not just give Bible study and baptize. 		
<ul style="list-style-type: none"> I think they need to consider having genuine, personal (Hands-on) discipling of students; giving actual example of Biblical concepts of shepherding that the COT is teaching 		
<ul style="list-style-type: none"> Counseling/mentoring 	Faculty's Hands-On Discipling of Students	
<ul style="list-style-type: none"> Areas like applied where students will develop their OWN spiritual gifts and skills which is INTENTIONALLY guided by their professors/adviser 		
<ul style="list-style-type: none"> May they lessen having a threatening approach in making the students' performance better. Showing concern in knowing the students' underlying problems, with the intention of giving the appropriate help is more encouraging, and indeed, more Christ-like. 		Theme 5 CHRIST-LIKE MENTORING
<ul style="list-style-type: none"> Spiritual and Practical, the standard should not be academic. It is not helping the field. Young and fresh theology graduates do not only suffer from the shock, but souls are lost due to the untaught opportunities that could never be taught in an academic institution. I recommend that the program be modified that it would touch not only the students' educational journey, but would highly supervise their practical and spiritual life. 	Mentoring Beyond Academics	
<ul style="list-style-type: none"> Pastors should take time to ask their students for prayer request, especially if it is their last subject. If time is tight, he can always divide them by groups and ask them to pray as a band, that they may be able to pray for one another and share their burdens with each other. The Pastor can rotate from one group to another per schedule, making sure that he prays for all. 		

Participant 13 expressed that the spiritual and practical aspects should be the standard, not the academic one. “It [academic] is not helping the field. Young and fresh theology graduates do not only suffer from the shock, but souls are lost due to the untaught opportunities that could never be taught in an academic institution. I recommend that the program be modified that it would touch not only the students’ educational journey but would highly supervise their practical and spiritual life.”

Regarding the programs to be modified, the participants wanted to “reduce the minor subjects and focus on the major ones” (P-5); “add more fields of studies, not only for church planters or field workers”; “offer courses to become Bible teachers and counselor chaplains” (P-23); and “a separate subject for church planting and practical training of it . . . even a little exposure at least” (P-4). Also, Participant 12 stated that “one of the skills that are really needed in the field is counseling. One course is not enough to learn this skill.” In lieu of this skill, Participant 22 suggested that “there would be a

program that would develop the 'emotional aspect' of the students so they would be ready to face the field emotionally. This is on top of the course of 'counseling' . . . like 'Clinical Pastoral Education.' This will help students be prepared emotionally and can be healthy ministers."

Pastoral counseling must be an integral part of the curriculum and that clergy must also be trained to be a counselor. The reason behind this is because, clergy play a vital role as counselors and are frequently the professional of the first choice for relational and mental health concerns such as death and bereavement, marital and premarital counseling, moral guidance, domestic violence, and suicide (Mutter, 2012). White (1977) emphasized "the importance of the work of the Pastor-Counselor" (p. 763). In the Gospel Worker (1915), she also explained that:

As the physician deals with physical disease, so does the pastor minister to the sick soul. And his work is as much more important than that of the physician as eternal life is more valuable than temporal existence. The pastor meets with an endless variety of temperaments, and it is his duty to become acquainted with the members of the families that listen to his teachings in order to determine what means will best influence them in the right direction. (p. 338)

Participant 11 suggested "a full semester field exposure like OJT or other courses. Research should be taught in earlier years because ministers should be used to doing it even in just answering basic questions from easy or difficult Bible passages. By the time they are about to graduate, they won't be having a hard time doing their thesis because they have been properly trained."

Finally, instructional management of the COT is also needed to be improved. Under this theme, three things emerged such as *program and course outcomes setting*, *enhancing program instruction*, and *upgrading missiological methodology*. These three sub-themes have some concise comments and suggestions.

Program and Course Outcomes Setting. Participant 11 suggested that the COT programs and course syllabi should have "clear and precise objectives and goals." He explained that "on many occasions, it was very much obvious that the work done in thinking and planning such as objectives are only mediocre. Such is evident due to the repetitive nature of the subjects that leaves even the teacher who made it in confusion. Thus, I suggest that it should be clearly scrutinized and planned, or if nature needs to be repeated, then allow one phase of the subject to be academic and the other practical." In other words, the college programs/syllabi should have clear and precise objectives and goals yet attainable.

Enhancing Program Design and Instruction. To enhance program instruction, the COT should improve four things. First, the faculty should intentionally guide their students in developing their own spiritual gifts and skills. Second, they should intentionally give comprehensive exams. Third, the academics, writing, research, PowerPoint presentations (for better teaching), and resources must be updated and enhanced. Finally, Participant 4 suggested to require the COT students to undergo Master Guide training course: (a) "COT students are expected by the mission and conferences to be Master Guide when they apply that is why it is part of the requirements for application); and (b) "there are struggles from the new graduates as to how they will handle the young people and having this training would be a good help." Hence, "the college itself must take its part in leadership to really test and prepare the graduates in this area."

Upgrading Missiological Methodology. The missiological methodology of the COT needs to be upgraded. Participant 12 testified, “The way mission was taught when I was there was already outdated. I believe improvements in doing ministry should be done by pastors in the field, but I think it can also be done in our university, right?” He added, “We have been doing the same methods of evangelism for more than a century already, the world is so much different if we compare it a century ago. These methods are still sometimes effective but not most of the time. Contextualization should be learned and studied for us to relate more with the culture of the society we live in.” Revisiting and upgrading the missiological methodology of the college is urgently needed, especially as various societies are rapidly becoming complex (Engelbrecht, 2016). Thus, the missiological methodology should also be modified based on the culture of the society as one of the studies suggests (Fensham, 2019).

In sum, the main concerns and recommendations among the alumni participants deal with the program curriculum and instruction management that needs to be improved, modified, and managed properly. The following recommendations are summarized into ten: (a) have a clear and unified goal among the COT faculty to produce clear-cut COT students’ identity, (b) modify the program that focuses on the spiritual and practical standards, (c) reduce minor subjects and add more major ones, (d) add more field studies, (e) add chaplaincy and pastoral counseling courses, (f) have a full semester field exposure, (g) let students take research course/s in earlier years (before taking thesis in the final year), (h) programs and syllabi should have clear and precise objectives and goals, (i) enhance program design instruction, and (j) upgrading missiological methodology.

Theoretical Application

The next area of improvement of the COT program deals with the theoretical application, namely, the praxis. While the alumni participants acknowledged the theoretical excellence, they observed that the theology graduates are inadequate in the practical application of knowledge gained for the field ministry. Some of their serious suggestions are focused on “more practical training” (P-3) and “practical ministry events” (P-26) such as “more exposure of students outside the campus and missional and practical applications” (P-25); “more exposure in pastoral work and church planting” (P-33); “practical leadership training, especially in the context of the church” (P-4); “urban missiology” (P-2 & 34) or “practical approaches on an urban mission, especially on reaching out the elite, seculars, millennials, and post-millennial generation” (P-26); “chaplaincy” (P-14); and “discipleship” (P-26 & 28). Therefore, the COT should improve and give more time for the ministerial training of the students in relation to off-campus pastoral and missiological training (like church planting), discipleship and leadership training, chaplaincy, and urban missiology.

This perceived area of improvement for more practical application of knowledge gained in the classroom is supported by other studies. Chiroma (2017) argued that:

Seminary students’ acquisition of certain practical ministerial skills is essential to their preparation for both current and future ministry. The place of mentoring for ministerial formation is therefore crucial for the future of the church. All seminaries need to prepare their students for practical ministry. (p. 52)

This was also what Vandeman (1948) discussed a long time ago that Bible teaching in our colleges had certainly been sound and that our faithful Bible department teachers had been guardians of the truth we hold dear. After that time, however, there had “been growing a deep conviction that there ought to be a rethinking of the plans for orientating a ministerial student into many of the actual practical needs of the field” (p. 13). This concern was exactly the reflection of what COT alumni desire to improve. Though there should be no place to relax the efforts to inspire the best possible presentation of our message but should not be neglected the vast area of practical ministry which lies outside the pulpit such as mentioned by the alumni. Additionally, equal attention must be given to the practical needs in the field, such as evangelism, pastoral work, church organization, counseling, et cetera. In relation to this, White (1913) stated:

Students who have gained book knowledge without gaining a knowledge of practical work cannot lay claim to a symmetrical education. The energies that should have been devoted to business of various lines have been neglected. Education does not consist in using the brain alone. Physical employment is a part of the training essential for every youth. An important phase of education is lacking if the student is not taught how to engage in useful labor. (pp. 307-308)

Academic knowledge and theoretical application may lead to spiritual excellence. Spiritual excellence would be not graded or computed by classroom activities and requirements. Through an intentional Christian discipleship influence would enhance what is already growing within the student's experience and relationship with Christ from the time of their conversion. This is crucial. The endorsement of the church is necessary to refer to the COT the student who had previously been under the local church's care and had observed the lifestyle as well as the gifts necessary to enter the training for full-time ministry which is the ecclesiastical confirmation (Opoku-Boateng, 2017).

Career Guidance

Career guidance is another important area to be improved in the COT program. It deals with the *guidance on fitness for the program* and *job placement assistance*. Alumni expressed their sentiments on these two specific areas below.

Guidance on Fitness for the Program. Career guidance for the theology graduates is also lacking. Participants 1 and 9 stated as to the areas that need improvement are “lack of career guidance,” “single-focused career path,” and “fitness to the course.” So, the recommendation for the COT is to guide the students whether they are fit for the course or not. It is important that students are guided for their fitness for the Theology program at the early part of their studies so that they have a chance to reconsider their career path where their God-given skills and interests are rightly placed. The importance for the students' fitness for the program cannot be underestimated. It would surely impact the performance of the future pastor in the mission field if this is not corrected.

Job Placement Assistance. Participant 22 pointed out, “Guidance before graduation what to do next such as choice of mission/conference, employment advice and if it is better to go further study or not.” Participant 16 emphasized that the college should be “the one to recommend where/which conference the graduate should apply” as well as to do “follow-ups after graduation.”

Interestingly in relation to this concern, the life of Napoleon Bonaparte implies great lessons about the importance of career guidance. Though it obviously must begin at a young age, nevertheless it can be reinforced, or changed and redirected during college years if necessary. White (1956) commented:

The character of Napoleon Bonaparte was greatly influenced by his training in childhood. Unwise instructors inspired him with a love for conquest, forming mimic armies and placing him at their head as commander. Here was laid the foundation for his career of strife and bloodshed. Had the same care and effort been directed to making him a good man, imbuing his young heart with the spirit of the Gospel, how widely different might have been his history. (p. 196)

The Bible is full of stories of how a well-experienced man mentored and guided a neophyte to a more effective and satisfying ministry. Good examples of these mentor-mentee relationships were Moses and Joshua, Elijah and Elisha, and Paul and Timothy. Kumar (2013) states, "I often think of the blessings I have enjoyed from several good mentors in my life and ministry" (p. 26). He furtherly states that, "by precept and example, by patience and gentle prodding" (ibid.) experienced pastors must help young ministers to understand and follow the great mysteries of pastoring.

Because these young ministers are the next generation of leaders they must be guided in their career. In concluding his article, Kumar concludes that:

The importance and necessity of effective mentorship cannot be overstressed. Without training in a second rung of leadership in ministry, the work of the church will suffer. A Joshua must follow a Moses. An Elisha must succeed an Elijah. No one can remain a leader forever, and no organization can succeed in its mission without adequate provision for the next round of leaders, and that is where mentoring counts. (p. 27)

Faculty Competency Evaluation

Although the alumni perceived the teaching excellence of the COT in a general sense, the competency of the professors is being questioned. This concern seems to be more specific in nature in relation to the competency of the COT faculty in producing competent theology students in their area of specialization or the course that they are teaching with. Participant 7 thought that the COT "needs to take seriously the giving of survey assessment regarding the competency of professors, aiming to make corrective and preventive actions after getting the feedback rendered by the students on such surveys. This would help to see if the actual learning experience of the student with a certain professor is really productive." To evaluate and assess the faculty or professors in various colleges/universities to measure their competency has been their practice (Zubairi et al., 2008). Hence, it is a mandate for the COT to evaluate its faculty's competency to address the learners' perceived gaps that consequently produce competent graduates.

Coincidentally, N. F. Pease (1961) also discussed this concern by emphasizing that adequate training in the 1860s when few people finished high school, is different from adequate training in the 1960s when many people finished college. But how much more nowadays when most church members are highly educated. With this, a minister's education should be comparable to the education of other people in the church, and this can be done by competent faculties. White (1892) also stressed that principle by saying:

‘Those who engage in the business of school teaching prepare for the work. They qualify themselves by attending school and interesting their minds in study. They are not allowed to teach children and youth in the sciences unless they are capable of instructing them. Upon applying for a situation as a teacher, they have to pass an examination before competent persons. It is an important work to deal with young minds and instruct them correctly in the sciences.’ *But of how much greater importance is the work of the ministry!* (p. 122; Emphasis supplied)

For the department to determine how much training a young minister should have, the level of education in contemporary society must be considered and look upon. In the United States, an elementary teacher is expected to be a college graduate with at least one year of graduate work with only current teacher shortage as an exception. A secondary teacher is generally expected to have the equivalent of a master’s degree. Nearly half of the country’s college teachers have a Doctor’s degree, and most of the others are somewhere between a master’s level and doctor’s level in their educational attainments. So, if this is the contemporary society’s educational trend, to fit with the parishioner’s thinking, COT training needs to equal the demands of the church (Pease, 1961).

The Seventh-day Adventist minister, of all ministers, needs thorough training because of the unique nature of his work and because of the problems he must meet. The times demand an intelligent, educated ministry, not novices. Again, White (1948) stated:

Ministers who are spreading unpopular truth for these last days, who have to meet men of learning, men of strong minds, and opposers of every type, should know what they are about. They should not take upon themselves the responsibility of teaching the truth unless they are qualified for the work. Before engaging in, or devoting themselves to, the work they should become Bible students. (p. 558).

Christ-like Mentoring

Christ-like mentoring, one of the themes that emerged, is a more intentional and caring type of discipling of students and is beyond academic teaching. There were two categories under this theme that needed improvement as verbalized by the alumni: *Faculty’s Hands-On Discipling of Students* and *Mentoring Beyond Academics*.

Faculty’s Hands-On Discipling of Students. Participants 7 and 22 expressed their sentiments that the COT faculty should (a) have “genuine, personal (hands-on) discipling of students” (P-7); (b) “actual example of the biblical concepts of shepherding”; (c) should “intentionally guide their students develop their own spiritual gifts and skills”, and lastly, (d) “lessen a threatening approach in making the students’ performance better; to show concern in knowing the students’ underlying problems, with the intention of giving the appropriate help is more encouraging, and indeed, more Christ-like.” These findings suggest that the alumni see the importance of a more intentional personal and caring type of mentoring or discipling of students by the COT faculty.

Mentoring Beyond Academics. Participant 13 expressed two areas of concern such as (a) “the program [should] be modified that it would touch not only the students’ educational journey but would highly supervise their practical and spiritual life” and (b) “Pastors should take time to ask their students for prayer requests, especially if it is their last subject. If time is tight, he can always divide them by groups and ask them to pray as a band, that they may be able to pray for one another and share their burdens with each

other.” In this last suggestion, the participant stated that “the pastor can rotate from one group to another per schedule, making sure that he prays for all.”

Christ-like mentoring is a must and should be practiced by the COT faculty. The respondents have the point. In fact, Chiroma and Cleote (2015) argued that mentoring is a supportive pedagogy and an essential element in theological education. They contended “that theological training supported by effective mentoring can contribute to the shaping of theology students in terms of their spiritual growth, character development and ministry formation” (p. 1).

Moreover, there is a difference between spiritual mentoring and academic mentoring. The former helps the student achieve an in-depth understanding of his personal identity and individuality under God. Here comes the role of the faculty-mentor to take time to help the student realize the pleasure of serving God and others. This then is possible if the COT can follow the NT pattern of the discipleship wherein the students can join a variety of schools being led by a rabbi. Students could choose their mentors; teachers could accept or reject students’ application (Hull, 2006). On the other hand, academic mentoring would primarily be formal mentoring where there is a structured, organized mentoring program. However, informal mentoring is accurate and real mentoring because it gears towards an in-depth, natural interaction and revelation experience between the mentee and the mentor (Smith, 2013). Hence, the college needs mentoring guidelines to poster spiritual growth, character development, and ministry formation of the students so that those recommendations or high expectations can be attained, as well.

This study aimed to explore the perceptions of the alumni on the strengths and areas of improvement of the Theology Program. The strengths of the program such as excellence in teaching, academic program, spiritual dimension of education, as well as assurance in employment speak of the quality of the theological education program offered by the University. However, the results also reveal areas of improvement that warrant closer attention and quality improvement initiatives such as curriculum and instruction management, theoretical application, career guidance, faculty competency evaluation, and Christ-like mentoring. The results are relevant empirical data to evidence the status of the effectiveness of the Theology program to serve as inputs to curricular review and possible re-designing. This study also provides vital information on the areas of resource management that may inform institutional planning and decision-making. For future research, a comprehensive curricular evaluation of the Theology program may be conducted to gather more detailed information about the program.

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Employment and Graduate Attributes Survey Among the Alumni of Bachelor of Medical Laboratory Science of a Faith-Based HEI in the Philippines

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Abstract

This online tracer study surveyed the employment status and assessed the perceptions related to graduate attributes among the Bachelor of Medical Laboratory Science (BMLS) alumni who graduated from 2014 to 2020. The frameworks used in this survey are the program outcomes of the BMLS which are imbedded in the five graduate attributes with acronym of PASSB: 1) Professional Competence (P); Active Faith (A); Social Responsibility (S); Selfless Service (S); and Balanced Lifestyle (B). Utilizing a cross-sectional descriptive quantitative design, 101 purposively sampled alumni answered an online Likert-type survey questionnaire using a 4-point response scale. Results showed that 47.5% secure their first job within six months after passing the board exam. Currently, 40.7% are employed, 43.6% are enrolled in medical schools, and 15.8% are unemployed. The mean of the alumni's perceived adequacy of education received to develop the graduate attributes were all *very adequate*: P = 3.51, A = 3.73, S = 3.52, S = 3.64, and B = 3.47. The mean of the extent such attributes are practiced are *very high*: P = 3.53, A = 3.57, S = 3.52, S = 3.47, and B = 3.44. Also, the perceived help received, and the extent of their practice are *positively correlated*. Results suggest a successful achievement of the program and institutional outcomes of the university among its graduates. However, the attributes with lowest mean scores, *service* and *balanced lifestyle*, imply what student development programs to strengthen. For future studies, the perception of the employers on the performance of the alumni in the workplace may be explored using the program and graduate attributes as the framework.

Keywords: *tracer study, medical laboratory science program, graduate attributes, institutional outcomes*

The importance of education in promoting equality, improving lives, enabling socio-economic growth, and accelerating progress has been recognized by the United Nations, placing education as one of the seventeen sustainable goals for 2030. In response to this, the Philippines' Commission on Higher Education (CHED), through CMO No. 8 s. 2020 created guidelines to support the development of discipline-based higher education roadmaps by mobilizing the technical panels for various disciplines. One way to assess the quality of the training and curriculum provided by an educational institution is to perform tracer studies.

Tracer studies or graduate surveys provide information on the professional success and the relevance of knowledge and skills. In the Handbook for Graduate Tracer Studies, Schomburg (2003, p. 11) mentioned that tracer studies "constitute one form of empirical study which can provide valuable information for evaluating the results of the education and training of a specific institution of higher education". Reasons why higher educational institutions initiate tracer studies include the need to strengthen the employability of graduates by responding to the changing needs in the market (Celis et al., 2013), improve the level of competence and skills of graduates to facilitate progress in the world of work (National Commission for Further and Higher Education Malta, 2016), and identify deficits in programs that would serve as basis for restructuring and improving the program curriculum (Schomburg, 2003).

Adventist University of the Philippines (AUP) has always emphasized the importance of Bible-based quality education through the development of programs, curricula, and activities that would help graduates exemplify professional competence, active faith, social responsibility, selfless service, and a balanced lifestyle. These desired outcomes, which is in line with the precept of education that can empower individuals to transform lives and systems, also recognize the need for programs that would promote the "harmonious development of mental, physical, social and spiritual faculties – a full and adequate preparation for this life and the future eternal life" (White, 1903, p. 13).

Based on the study done by Ng and Feldman (2009), workplace performance correlates with the worker's level of education. If education is the wholistic development of an individual, then AUP's desired core outcomes for which each student is trained to uphold should increase the graduate's level of performance in the workplace. Having professional competence is manifested through expertise and leadership in the respective academic or professional discipline, continually improving professionally through lifelong learning. The study by Bamberg et al. (2008) on the factors that impact clinical laboratory scientists' commitment to their work organization identified the need for continuous training and education in the retention of a medical laboratory scientists in the workplace. Having active faith means having a growing, transforming relationship with God and the application of the biblical truths expressed in the Seventh-day Adventist beliefs and spirituality to a variety of real-world issues. Commitment and engagement to improve the quality of life of all people, and to care for the environment constitutes social responsibility while the application of knowledge to real-world challenges in the spirit of unselfish service, fulfilling God's calling in their lifework indicates selfless service. Balanced lifestyle is the maintenance of the spiritual, mental, physical and social aspects of life. While job performance is commonly associated with a person's ability and knowledge in the workplace, it also includes work values. Self-confidence, self-motivation, discipline, and integrity which are deemed necessary for good job performance are developed in curricular, co-curricular, and extra-curricular activities students are exposed to in educational institutions.

The Medical Laboratory Science program which started in 1953, is known as one of the top performing schools of Medical Technology in the Philippines. It strives to continuously raise educational standards by providing learning facilities, materials, and training to develop competencies needed in the workplace, face practical realities, and embody the University’s institutional outcomes. Through these efforts, AUP has consistently produced graduates who were able to pass the board exam in the last 8 years. This tracer study was performed to gather the demographics and employment information of graduates from 2014-2020, determine the perceived adequacy of the MLS program in developing graduate attributes and the extent to which these attributes are practiced.

Methodology

This study utilized a cross-sectional, descriptive quantitative design. Cross-sectional designs involve a collection of data at one point in time (Polit & Beck, 2012). The frameworks used in this survey are the program outcomes of the BMLS which are imbedded in the five graduate attributes or institutional outcomes with the acronym of PASSB: Professional Competence (P), Active Faith (A), Social Responsibility (S), Selfless Service (S), and Balanced Lifestyle (B). Utilizing a cross-sectional descriptive quantitative design, 101 purposively sampled BMLS alumni who graduated from 2014 to 2020 answered an online Likert-type survey questionnaire using a 4-point response scale. The internal consistency reliability tests of the scales used to measure the perceived adequacy of help in developing and the extent of practicing the five attributes were within the acceptable range ($\alpha = .81-.95$) of Cronbach’s alpha and inter-item correlations as presented in Tables 1 and 2. Using the IBM SPSS Statistics version 23, frequency, percentage, mean, standard deviation, and Pearson’s r were performed to analyze the data. Ethical considerations were observed to ensure confidentiality and anonymity in handling the data.

Table 1 shows the reliability statistics for the scales used to measure the alumni’s perceived adequacy of help in developing the graduate attributes, Professional Competence, Active Faith, Social Responsibility, Selfless Service and Balanced Lifestyle has a Cronbach’s alpha of 0.95, 0.93, 0.83, 0.90, and 0.91, respectively. Social responsibility and selfless service showed an acceptable Cronbach’s alpha of 0.83 and 0.90 respectively though the number of items is less than 10. This result showed that the graduate attributes or institutional outcomes have high alpha coefficient and share covariance within items. Professional competence showed a strong correlation of every item with an inter-item correlation of 0.57 whereas balanced lifestyle shows a weak correlation of every item with an inter-item correlation of 0.40.

Table 1. Reliability Statistics for the Scales Used to Measure the Alumni’s Perceived Adequacy of Help in Developing the Graduate Attributes

Graduate Attributes or Institutional Outcomes	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
1. Professional Competence	.95	.95	15
2. Active Faith	.93	.93	12
3. Social Responsibility	.83	.84	5
4. Selfless Service	.90	.90	5
5. Balanced Lifestyle	.91	.91	16

Table 2 shows that the reliability statistics for the scales used to measure the alumni's perceived extent of practice of the graduate attributes, Professional Competence, Active Faith, Social Responsibility, Selfless Service, and Balanced Lifestyle has a Cronbach's alpha of 0.95, 0.93, 0.81, 0.82, and 0.86, respectively. Social responsibility and selfless service shows an acceptable Cronbach's alpha of 0.81 and 0.82 respectively though the number of items is less than 10. It shows that the graduate attributes or institutional outcomes has high alpha coefficient and shares covariance within items. Professional competence shows a strong correlation of every item with an inter-item correlation of 0.57 whereas balanced lifestyle shows a weak correlation of every item with an inter-item correlation of 0.29.

Table 2. *Reliability Statistics for the Scales Used to Measure the Alumni's Perceived Extent of Practice of the Graduate Attributes*

Graduate Attributes or Institutional Outcomes	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
1. Professional Competence	.95	.95	15
2. Active Faith	.93	.93	12
3. Social Responsibility	.81	.81	5
4. Selfless Service	.82	.82	5
5. Balanced Lifestyle	.86	.87	16

Results and Discussion

Presented in this section are the results of the online tracer survey conducted among the BMLS alumni such as respondents' profile and employment status, the alumni's perceived adequacy of help received in developing the graduate attributes or institutional outcomes, the extent such attributes are practiced, and the relationship between the help received and the extent of practice.

Respondents' Profile of the BMLS Alumni

Table 3 shows the respondents' profile in terms of age, sex, marital status, religion, and year they graduated. Majority of the respondents are between 20-24 years old (84.2%), female (74.3%), single (99%), Seventh-day Adventists (85.1%) and graduated between 2018-2020 (57.4%).

Table 3. *Respondents' Profile*

Profile (<i>N</i> = 101)	Frequency	Percentage
Age	20-24 years old	81
	25 and above	20
Sex	Male	26
	Female	75
Marital Status	Single	100
	Married	1
Religion	SDA	86
	Non-SDA	15
Year-Graduated	2014-2017	43
	2018-2020	58

Employment Profile of the BMLS Alumni

Table 4 shows the distribution of graduates based on the time it took them to find their first job and other information regarding their current employment. Although less than half (47.5%) of the graduates were employed within six months of passing the licensure exams, this may still be considered very high when the equally high percentage of those who proceed to medical school is factored in. Of those who did not proceed to medical school, 84% were able to find employment within 6 months after passing the licensure exams.

Employability of a graduate is often seen as a measure of professional success. The lag time between graduation and finding employment shows how difficult or easy it is for the graduate to find a job with shorter lag times being desirable (Aclan et al., 2018). For the learning institution, this may be evidence of the quality of the graduates, or the relevance of a given bachelor’s degree program to the job market. The more relevant job vacancies are available, the more employable the graduates of a particular program become (Schomburg & Teichler, 2011). However, there may be other factors that contribute to the employability of new graduates.

Employers may choose graduates based on the reputation of the schools, based on skills, related training and internship, and even on the applicant’s personality (Jackson, 2013). Differentiating and identifying the specific factors that contribute to the early employment of AUP BMLS graduates may be difficult. Nonetheless, the results are positive.

Table 4. *Employment Profile of the Respondents*

Profile (N = 101)	Frequency	Percentage
Time Period to Find First Job After Board Exam		
6 months or less	48	47.5
More than 6 months	9	8.9
Has not been employed yet	44	43.6
Present Status		
Regular	23	22.8
Self-employed	4	4.0
Unemployed	16	15.8
Student (MD)	44	43.6
Contractual/Probationary	14	13.9
Type of Current Employer		
Government	11	10.9
Private SDA	9	8.9
Private Non-SDA	22	21.8
Not applicable	59	58.4
Primary Method of Finding First Job		
Online Job vacancy	8	7.9
Previous internship	3	3.0
Walk-in Application	15	14.9
Referral	23	22.8
Contacted by employer	6	5.9
NA	46	45.5

Respondents’ Employment Profile

The Adequacy of AUP's Program in Developing the Graduate Attributes or Institutional Outcomes as Perceived by the BMLS Alumni

Professional Competence

Table 5 shows that the overall mean score of the perceived adequacy of help in developing professional competence among the alumni is 3.51 which is interpreted as very adequate. The highest mean score when it comes to “adherence to ethical and sound principles/values based on Biblical worldview in the practice of my profession” may account to the Biblical foundation of graduates during their stay in AUP. The subjects included in the curriculum are God and Human Life, Personal Spirituality and Faith, Religion and Ethics in Modern Society, and Personal Witnessing. The lowest mean score when it comes to “social-emotional skills” may account less involvement in social and team building activities during their stay in AUP.

Table 5. *The Level of Perceived Adequacy of Preparation in Developing Professional Competence at AUP*

	Mean	SD
15. Adherence to ethical and sound principles/values based on Biblical worldview in the practice of my profession	3.73	.47
11. Competence in my profession	3.66	.52
3. Critical, analytical, and creative thinking	3.65	.50
13. Skills in collection, analysis, and projection of health information to improve the health care management system	3.60	.51
14. Engage in lifelong learning activities (professional organizations or professional development activities)	3.58	.53
7. Working effectively in a group	3.50	.61
10. Problem solving (including real-world problems)	3.50	.58
9. Ability to manage responsibly the use of technology for personal, professional, social, and spiritual advancement.	3.50	.64
4. Application of research skills in relevant areas of BMLS practice	3.49	.63
12. Leadership and management skills	3.47	.59
5. Ability to view the world from both national & global perspectives	3.42	.71
2. Effective written communication	3.40	.62
8. Application of computing and information technology in research	3.40	.72
1. Effective oral communication	3.39	.60
6. Social-Emotional skills	3.36	.63
Overall Mean	3.51	.46

Legend: Interpretation. 1.00-1.74- Very Inadequate; 1.75-2.50 – Inadequate; 2.51-3.25 – Adequate; 3.26-4.0 - Very Adequate

Active Faith

Table 6 presents 3.73 as the overall mean score of the perceived adequacy of help in developing active faith among the alumni; this value is interpreted as very adequate. The data shows that “commitment to practice my profession with accountability to God” has a high level of perceived adequacy in developing active faith at AUP. This accounts in

1 Thessalonians 5:11 that people can practice accountability to God, wherein Paul encouraged each one to comfort and edify one another. In James 5:16 tells us that we should confess our sins to one another and pray for one another. The data shows that “spending time with God by reading the Bible” has a low level of perceived adequacy in developing active faith at AUP. Regular changes in schedule and occupational stress particularly burnouts may account for this. According to De Hert (2020), burnout syndrome is most common among people whose work involves intensive interactions. The second stage of burnout syndrome is marked by neglect of personal needs among others. This may include daily personal devotion with God.

Table 6. *The Level of Perceived Adequacy of Preparation in Developing Active Faith at AUP*

	Mean	SD
6. Commitment to practice my profession with accountability to God	3.84	.39
7. Commitment to serve God through my profession with integrity	3.83	.40
12. Loving God with all my heart, with all my mind, and strength	3.81	.42
9. Living without vices such as smoking, drinking, prohibited drugs	3.75	.56
1. Communing with God through prayers	3.75	.46
10. Understanding life and its purpose with a Christian perspective	3.73	.49
8. Living with sound moral values (purity, modesty, chastity, & fidelity)	3.73	.53
3. Practicing worships (home, dormitory, or in my residence) my residence)	3.70	.48
4. Attending church worship services	3.68	.51
11. Practice healthy relationships grounded in spiritual values	3.67	.53
5. Attending church week of prayer meetings	3.64	.54
2. Spending time with God by reading the Bible	3.59	.51
Overall Mean	3.73	.36

Legend: Interpretation. 1.00-1.74- Very Inadequate; 1.75-2.50 – Inadequate; 2.51-3.25 – Adequate; 3.26-4.0 - Very Adequate

Social Responsibility

Table 7 displays the perceived adequacy of help in developing social responsibility among the alumni which yielded an overall mean score of 3.52 which has an interpretation of *very adequate*. The data showed that “being considerate to others’ welfare” has a *high level* of perceived adequacy of preparation in developing social responsibility at AUP. This could account to the subjects involved in community service such as National Service Training Program 1 and 2 and Community and Public Health included in the curriculum. Moreover, it shows that “participation in activities/programs that protect and care for the environment such as proper waste disposal, clean-up drives, etc.” has a *low level* of perceived adequacy of preparation in developing social responsibility at AUP. This could account to graduates wherein during their stay in AUP have limited participation in activities/programs conducted by the Community Extension Services and *Bayanihan* clean-up drives.

Table 7. *The Level of Perceived Adequacy of Preparation in Developing Social Responsibility at AUP*

	Mean	SD
3. Being considerate of others' welfare	3.70	.52
5. Working effectively in a multidisciplinary and multi-cultural team	3.57	.62
1. Volunteerism through community-oriented activities	3.50	.61
4. Generosity by donating money for the needy	3.43	.64
2. Participation in activities/programs that protect and care for the environment such as proper waste disposal, clean-up drives, etc	3.41	.67
Overall Mean	3.52	.48

Legend: Interpretation. 1.00-1.74- *Very Inadequate*; 1.75-2.50 – *Inadequate*; 2.51-3.25 – *Adequate*; 3.26-4.0 - *Very Adequate*

Selfless Service

Table 8 shows that the overall mean score of the perceived adequacy of help in developing selfless service among the alumni is 3.64 and is interpreted as *very adequate*. The data showed based on the mean that “helping others without seeking recognition” has a *high level* of perceived adequacy in developing selfless service at AUP. This could account to the Biblical foundation and teachings learned by the graduates wherein extending our help to others does not need recognition or gain any reward in return. The data also showed that there is a high level of perceived adequacy of preparation in developing selfless service at AUP among graduates.

Table 8. *The Level of Perceived Adequacy of Preparation in Developing Selfless Service at AUP*

	Mean	SD
5. Helping others without seeking recognition	3.72	.53
3. Serving the community to be a blessing to others through my profession	3.66	.52
4. Commitment to put others' needs before mine	3.64	.56
2. Serving the church to fulfill God's plan and purposes through my profession	3.61	.55
1. Engagement in missionary activities and committed service to others	3.55	.54
Overall Mean	3.64	.46

Legend: Interpretation. 1.00-1.74- *Very Inadequate*; 1.75-2.50 – *Inadequate*; 2.51-3.25 – *Adequate*; 3.26-4.0 - *Very Adequate*

Balanced Lifestyle

Table 9 presents 3.47 as the overall mean score of the perceived adequacy of help in developing balanced lifestyle among the alumni; this value is interpreted as *very adequate*. The data showed based on the mean that “temperance by not taking any prohibited drugs” has a *high level* of perceived adequacy of preparation in developing balanced lifestyle at AUP. This could account to the values that the graduates learned during their stay at AUP. Moreover, the data showed based on the mean that “sleeping at least 7 hours per night” has a low level of perceived adequacy of preparation in developing balanced lifestyle at AUP. This could account to the lack of sleep and sleeping habits that the graduates develop during their stay at AUP, and this needs further study to assess the sleeping habits of the graduates.

Table 9. *The Level of Perceived Adequacy of Preparation in Developing Balanced Lifestyle at AUP*

	Mean	SD
8. Temperance by not taking any prohibited drugs	3.82	.518
6. Temperance by not smoking cigarettes	3.81	.504
7. Temperance by not drinking alcoholic beverages	3.80	.510
12. Having a positive outlook in life even during challenging times	3.68	.509
16. Understanding the emotional needs/concerns of others	3.61	.583
10. Having healthy relationships in my family	3.60	.618
14. Adapting well to changes in life	3.57	.554
13. Managing responsibly the use of technology for professional, personal, social and spiritual life advancement	3.50	.687
15. Managing emotions in healthy ways	3.48	.672
11. Balancing time for study, exercise, rest, spiritual development, and relationships (family and others)	3.43	.712
4. Drinking at least 10 glasses of water per day	3.36	.729
2. Practicing balanced plant-based diet	3.29	.779
5. Temperance by not drinking soft drinks or caffeinated drinks	3.28	.850
1. Eating breakfast regularly	3.24	.764
3. Exercising for 30 minutes at least three times a week	3.15	.767
9. Sleeping at least 7 hours per night	2.82	.792
Overall Mean	3.47	.44

Legend: Interpretation. 1.00-1.74- Very Inadequate; 1.75-2.50 – Inadequate; 2.51-3.25 – Adequate; 3.26-4.0 - Very Adequate

Table 10 shows the summary of mean scores of alumni’s perception on adequacy of help received in developing graduate attributes. The adequacy of help for professional competence has a mean of 3.51 ± 0.46 and is interpreted as *very adequate*. The adequacy of help for active faith has a mean of 3.73 ± 0.36 and is interpreted as *very adequate*. The adequacy of help for social responsibility has a mean of 3.52 ± 0.48 and is interpreted as *very adequate*. The adequacy of help for selfless service is 3.64 ± 0.46 and is interpreted as *very adequate*. The adequacy of help for balanced lifestyle has a mean of 3.47 ± 0.44 and is interpreted as *very adequate*. The overall graduate attributes have a mean of 3.57 ± 0.36 and is interpreted as *very adequate*. Overall, the data showed that the adequacy of help among graduates are *very adequate* in the alumni’s perception.

Table 10. *Summary of Mean Scores of Alumni’s Perception on Adequacy of Help Received in Developing PASSB*

	Mean	SD	Interpretation
Professional Competence - Adequacy of Help	3.51	.46	Very Adequate
Active Faith - Adequacy of Help	3.73	.36	Very Adequate
Social Responsibility - Adequacy of Help	3.52	.48	Very Adequate
Selfless Service - Adequacy of Help	3.64	.46	Very Adequate
Balanced Lifestyle - Adequacy of Help	3.47	.44	Very Adequate
Overall PASSB - Adequacy of Help	3.57	.36	Very Adequate

Legend: Interpretation. 1.00-1.74- Very Inadequate; 1.75-2.50 – Inadequate; 2.51-3.25 – Adequate; 3.26-4.0 - Very Adequate

The Extent the Graduate Attributes or Institutional Outcomes Practiced by BMLS Alumni

Professional Competence

Table 11 presents 3.53 as the overall mean score of the extent the professional competence is practiced among the alumni; this value is interpreted as *very high*. “Competence in my profession” and adherence to ethical and sound principles/values based on Biblical worldview in the practice of the profession both got the highest mean score of 3.67. According to the respondents, competence in the profession and adherence to the Biblical worldview in the practice of their profession are the most relevant for them. According to study of Ramirez et al. (2014), the reason that enables the employed graduates to perform well in their jobs is the belief that the school-acquired skills and competencies during college years are a big help and relevant to the students’ chosen occupations. Moreover, since the University is a Bible-based institution and Bible subjects are part of BMLS curriculum, graduates also found it as the second most relevant. Such result is a way of retaining Biblical principles in the practice their profession. This goes with the University’s two missions such Academic Excellence in the practice of profession and adherence to Christ teachings and character. However, “application of research skills in relevant areas of BMLS practice” ranked the lowest with the mean score ($M = 3.35 \pm 0.64$). As compared to competence in the profession and adherence to ethical and sound principles/values based on Biblical worldview in the practice of the profession being the highest, there is still a need to strengthen the involvement in an in-depth application of research skills among the BMLS graduates.

Table 11. *The Extent the Professional Competence is Practiced Among the BMLS Alumni*

	Mean	SD	Interpretation
11. Competence in my profession	3.67	.47	Very Adequate
15. Adherence to ethical and sound principles/values based on Biblical worldview in the practice of my profession	3.67	.53	Very Adequate
3. Critical, analytical, and creative thinking	3.60	.49	Very Adequate
7. Working effectively in a group	3.60	.55	
5. Ability to view the world from both national & global perspectives	3.57	.52	
14. Engage in lifelong learning activities (professional organizations or professional development activities)	3.57	.52	
10. Problem solving (including real-world problems)	3.55	.50	
9. Ability to manage responsibly the use of technology for personal, professional, social, and spiritual advancement.	3.52	.59	
2. Effective written communication	3.52	.56	
13. Skills in collection, analysis, and projection of health information to improve the health care management system	3.50	.61	
12. Leadership and management skills	3.49	.56	
8. Application of computing and information technology in research	3.46	.61	

{table continues on the next page}

6. Social-Emotional skills	3.46	.59
1. Effective oral communication	3.42	.57
4. Application of research skills in relevant areas of BMLS practice	3.35	.64
Overall Mean	3.53	.40

Legend: Interpretation. 1.00-1.74- Very Inadequate; 1.75-2.50 – Inadequate; 2.51-3.25 – Adequate; 3.26-4.0 - Very Adequate

Active Faith

Table 12 reveals the extent the active faith is practiced among the alumni which yielded an overall mean score of 3.57. Interestingly, all except one item is interpreted as very high. It is therefore significant to note that most of the alumni express their faith through caring for their physical body. “Living without vices such as smoking, drinking, prohibited drugs” obtained the highest mean of (M = 3.79 ± 0.50). However, it appeared that “Spending time with God by reading the Bible” was less practiced by the BMLS alumni which has the lowest mean score of (M = 3.20 ± 0.57) and the only one interpreted as high.

Table 12. The Extent the Active Faith is Practiced Among the BMLS Alumni

	Mean	SD	Interpretation
9. Living without vices such as smoking, drinking, prohibited drugs	3.79	.50	Very Adequate
12. Loving God with all my heart, with all my mind, and strength	3.78	.44	Very Adequate
7. Commitment to serve God through my profession with integrity	3.74	.52	Very Adequate
6. Commitment to practice my profession with accountability to God	3.68	.55	
10. Understanding life and its purpose with a Christian perspective	3.67	.57	
8. Living with sound moral values (purity, modesty, chastity, & fidelity)	3.63	.56	
11. Practice healthy relationships grounded in spiritual values]	3.62	.56	
1. Communing with God through prayers	3.58	.55	
4. Attending church worship services	3.51	.59	
3. Practicing worships (home, dormitory, or in my residence) my residence)	3.35	.64	
5. Attending church week of prayer meetings	3.26	.66	
2. Spending time with God by reading the Bible	3.20	.57	
Overall Mean	3.57	.41	

Legend: Interpretation. 1.00-1.74- Very Inadequate; 1.75-2.50 – Inadequate; 2.51-3.25 – Adequate; 3.26-4.0 - Very Adequate

Social Responsibility

Table 13 displays the extent the social responsibility is practiced among the alumni having an overall mean score of 3.52 which has an interpretation of *very high*. With the attribute of “being considerate of others’ welfare” yielded the highest mean score of ($M = 3.81 \pm 0.39$). Being considerate of others was the attribute they value the most. On the other hand, the item with the lowest mean score was “participation in activities/programs that protect and care for the environment such as proper waste disposal, clean-up drives, etc.” ($M = 3.38 \pm 0.67$). Participation in activities/programs that protect and care for the environment is an attribute that should further be practiced as a social responsibility.

Table 13. *The Extent the Social Responsibility is Practiced Among the BMLS Alumni*

	Mean	SD	Interpretation
3. Being considerate of others’ welfare	3.81	.39	Very Adequate
5. Working effectively in a multidisciplinary and multi-cultural team	3.56	.59	Very Adequate
1. Volunteerism through community-oriented activities	3.45	.62	Very Adequate
4. Generosity by donating money for the needy	3.43	.64	
2. Participation in activities/programs that protect and care for the environment such as proper waste disposal, clean-up drives, etc	3.38	.67	
Overall Mean	3.52	.45	

Legend: Interpretation. 1.00-1.74- *Very Inadequate*; 1.75-2.50 – *Inadequate*; 2.51-3.25 – *Adequate*; 3.26-4.0 - *Very Adequate*

Selfless Service

Table 14 illustrates that the overall mean score of the extent the selfless service is practiced among alumni is 3.47 which was rated as *very high* by the respondents. “Helping others without seeking recognition” is noted highest with a mean of ($M = 3.73 \pm 0.47$). Conversely, “engagement in missionary activities and committed service to others” gained the lowest mean of ($M = 3.20 \pm 0.80$). Consequently, this study has proven that AUP MLS Department has developed the selfless service attribute of the BMLS graduates as very high.

Table 14. *The Extent the Selfless Service is Practiced Among the BMLS Alumni*

	Mean	SD	Interpretation
SSE5. Helping others without seeking recognition	3.73	.47	Very Adequate
SSE4. Commitment to put others’ needs before mine	3.58	.52	Very Adequate
SSE3. Serving the community to be a blessing to others through my profession	3.47	.59	Very Adequate
SSE2. Serving the church to fulfill God’s plan and purposes through my profession	3.35	.75	
SSE1. Engagement in missionary activities and committed service to others	3.20	.80	
Overall Mean	3.47	.49	

Legend: Interpretation. 1.00-1.74- *Very Inadequate*; 1.75-2.50 – *Inadequate*; 2.51-3.25 – *Adequate*; 3.26-4.0 - *Very Adequate*

Balanced Lifestyle

As to the extent the balanced lifestyle is practiced among the alumni, Table 15 shows that most of the items are rated with *very high*. Notably, the “temperance by not taking any prohibited drugs” gained the highest mean of ($M = 3.90 \pm 0.46$). Only three items were rated *high*. These are “practicing balanced plant-based diet” ($M = 3.12 \pm 0.68$), “exercising for 30 minutes at least three times a week” ($M = 2.80 \pm 0.80$) and “sleeping at least 7 hours per night” ($M = 2.79 \pm 0.74$) which garnered the lowest mean scores. Apparently, the study revealed that the respondents have a *good temperance* to all vices such as temperance by not taking any prohibited drugs, temperance by not smoking cigarettes, and temperance by not drinking alcoholic beverages which got the three highest mean scores. While the respondents are good-tempered, exercise and sleep must also be practiced to have a balanced lifestyle.

Table 15. *The Extent the Balanced Lifestyle is Practiced Among the BMLS Alumni*

	Mean	SD	Interpretation
8. Temperance by not taking any prohibited drugs	3.90	.46	Very Adequate
6. Temperance by not smoking cigarettes	3.88	.45	Very Adequate
7. Temperance by not drinking alcoholic beverages	3.79	.50	Very Adequate
10. Having healthy relationships in my family	3.70	.46	
16. Understanding the emotional needs/concerns of others	3.64	.48	
14. Adapting well to changes in life	3.63	.48	
12. Having a positive outlook in life even during challenging times	3.63	.48	
13. Managing responsibly the use of technology for professional, personal, social and spiritual life advancement	3.53	.61	
15. Managing emotions in healthy ways	3.48	.63	
1. Eating breakfast regularly	3.31	.64	
4. Drinking at least 10 glasses of water per day	3.30	.67	
11. Balancing time for study, exercise, rest, spiritual development, and relationships (family and others)	3.30	.63	
5. Temperance by not drinking soft drinks or caffeinated drinks	3.27	.84	
2. Practicing balanced plant-based diet	3.12	.68	
3. Exercising for 30 minutes at least three times a week	2.80	.80	
9. Sleeping at least 7 hours per night	2.79	.74	
Overall Mean	3.44	.35	

Legend: Interpretation. 1.00-1.74- Very Inadequate; 1.75-2.50 – Inadequate; 2.51-3.25 – Adequate; 3.26-4.0 - Very Adequate

Table 16 shows the summary of mean scores of alumni’s perception on the extent the graduate attributes are practiced. The extent of practice for professional competence has a mean of 3.53 ± 0.40 and is interpreted as *very high*. The extent of practice for active faith has a mean of 3.57 ± 0.42 and is interpreted as *very high*. The extent of practice for social responsibility has a mean of 3.52 ± 0.45 and is interpreted as *very high*. The extent

of practice for selfless service has a mean of 3.47 ± 0.49 and is interpreted as *very high*. The extent of practice for balanced lifestyle has a mean of 3.544 ± 0.35 and is interpreted as *very high*. Finally, the overall extent of practice for the graduate attributes has a mean of 3.51 ± 0.32 and is interpreted as *very high*. The data shows that the extent of practice for the graduate attributes are highly observed among the alumni's perception.

Table 16. *Summary of Mean Scores of Alumni's Perception on the Extent the Graduate Attributes are Practiced*

	Mean	SD	Interpretation
Professional Competence – Extent of Practice	3.53	.40	Very High
Active Faith - Extent of Practice	3.57	.42	Very High
Social Responsibility - Extent of Practice	3.52	.45	Very High
Selfless Service - Extent of Practice	3.47	.49	Very High
Balanced Lifestyle - Extent of Practice	3.44	.35	Very High
Overall PASSB - Extent of Practice	3.51	.32	Very High

Legend: Interpretation. 1.00-1.74- Very Inadequate; 1.75-2.50 – Inadequate; 2.51-3.25 – Adequate; 3.26-4.0 - Very Adequate

The Correlation Between the Help Received in Developing the Graduate Attributes and the Extent of Practice

Table 17 shows that there was a *statistically significant positive moderate relationships* between the alumni's perceived help in the development of Professional Competence ($r = .572, p < .001$), Active Faith ($r = .420, p < .001$), Social Responsibility ($r = .477, p < .001$), Selfless Service ($r = .458, p < .001$), and Balanced Lifestyle ($r = .483, p < .001$) with the extent of their practice. This means that the higher the perceived help in developing the graduate attributes, the higher the extent such attributes are practiced by the alumni.

Table 17. *The Correlation Between the Perceived Help Received and the Extent of Practice of the Graduate Attributes Among the BMLS Alumni*

		AF Help	SR Help	SS Help	BL Help	PC Help	AF Practice	SR Practice	SS Practice	BL Practice	PC Practice
AF Help Received	Pearson Correlation	1	.480**	.633**	.600**	.573**	.420**	.480**	.451**	.343**	.288**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.003
	N	101	101	101	101	101	101	101	101	101	101
SR Help Received	Pearson Correlation	.480**	1	.593**	.550**	.584**	.183	.477**	.347**	.209*	.271**
	Sig. (2-tailed)	.000		.000	.000	.000	.067	.000	.000	.036	.006
	N	101	101	101	101	101	101	101	101	101	101

{table continues on the next page}

SS Help Received	Pearson Correlation	.633**	.593**	1	.655**	.605**	.336**	.401**	.458**	.317**	.277**
	Sig. (2-tailed)	.000	.000		.000	.000	.001	.000	.000	.001	.005
	N	101	101	101	101	101	101	101	101	101	101
BL Help Received	Pearson Correlation	.600**	.550**	.655**	1	.653**	.295**	.461**	.352**	.483**	.234*
	Sig. (2-tailed)	.000	.000	.000		.000	.003	.000	.000	.000	.018
	N	101	101	101	101	101	101	101	101	101	101
PC Help Received	Pearson Correlation	.573**	.584**	.605**	.653**	1	.311**	.464**	.463**	.316**	.572**
	Sig. (2-tailed)	.000	.000	.000	.000		.002	.000	.000	.001	.000
	N	101	101	101	101	101	101	101	101	101	101

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

* Correlation is significant at the 0.05 level (2-tailed).

+1 Perfect Relationship, +0.91-+0.99 Very High Relationship, +0.71-+0.90 High Relationship,

+0.41-+0.70 Moderate Relationship, +0.21-+0.40 Low Relationship,

+0.01-+0.20 Negligible Relationship, 0 No Relationship

The study has shown that nearly half of the graduates of the AUP BMLS program proceeded to medical school instead of practicing the profession. This is not surprising as many of them reported choosing the program as a pre-medical course. Those who chose to work has shown high employability as exemplified by the high rate of employment within the first 6 months of passing the licensure examinations. Overall, the graduates feel that the training they received from the university was very adequate for the exercise of their profession and that AUP's goal to provide training for the harmonious development of mental, physical, social, and spiritual faculties were met. The graduates also report that because of their training, they can demonstrate professional competence, active faith, social responsibility, selfless service, and balanced lifestyles to a very high degree.

Future studies must compare the actual performance of the alumni in their respective workplaces as perceived by their employers or coworkers. This will help verify the results of the study and reduce the effects of potential bias when conducting self-report studies. Follow-up studies on the nature of the graduates' employment may also be made, particularly as to whether they remain in fields related to medical laboratory science and the motivating factors for their choice.

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Perceptions on the Flexible Learning Webinar Conducted by a Faith-Based Institution in the Philippines

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Abstract

Webinars have boomed during the pandemic to educate and reinforce advancement in teaching and learning; however, every webinar has its strengths and weaknesses. On July 28-30, 2020, the Commission on Higher Education Region IV, through a faith-based HEI in Cavite, conducted a 3-day webinar on flexible learning. The host university conducted a survey to know the perception of the participants regarding the strengths and weaknesses of the webinar. Hence, this qualitative research explored the perceptions of the webinar participants for the improvement of future educational programs in the university. Utilizing content analysis, the perceptions of the 225 conveniently sampled participants were encoded, tabulated, and themed. Triangulation through literature was employed to validate the results. The results revealed that the perceived strengths of the webinar are (a) timely webinar content, (b) interactive virtual icebreaker, (c) educational question-and-answer portion, (d) comprehensible delivery, (e) competent speaker, and (f) embedded IFVL. However, the perceived weakness that should be improved and/or addressed are (a) technical issues (power interruption, inaudible audio, and intermittent internet connection on the participants' end and (b) poor time management. The results imply that the webinar have been helpful to the participants, however, technical issues should be minimized, and schedules should be followed. It is recommended that these issues be addressed to improve linkages with other institutions and networks.

Keywords: *webinar, perceived strengths, perceived weaknesses, flexible learning, new normal*

Due to the long quarantine period where both teachers and students are at home, many institutions and organizations provide various webinars for educators to ensure that they can adapt to the “new normal” in education. New normal, in the context of 2020, is an era of challenges and instability due to COVID-19 (Buheji, 2020). Since 2020 is a year of adjustment, webinars were done to help educators become more adept in their teaching during the pandemic where flexible, distance, and remote learning were deemed situation appropriate.

Conducting webinars is not a new discovery during the pandemic. This has been happening for years. However, conducting webinars during the COVID-19 pandemic opens ways to keep the educators socially distanced while keeping their professional engagements active (TNW Deals, 2020). Face-to-face learning is the typical setting in education; however, learning is compromised when there are calamities. In China, just like in most parts of the world, the government decided to ban face-to-face teaching and provided flexible options such as open educational resources and open educational practices to prevent learning disruption (Huang et al., 2020). Another study in Finland mentioned that in the coming years, open universities, a means of flexible learning, will be a more significant admissions pathway to learning (Moitus et al., 2020).

In a study conducted by Francisco and Barcelona (2020), it was argued that the use of online classroom during calamities is an effective way to not compromise learning; much more during a long-term no face-to-face interaction between teachers and students which is the current situation worldwide due to COVID-19. Another study argued that during a pandemic “efforts should be paid to improve teachers’ online teaching ability as both the synchronous and asynchronous online teaching tools are unfamiliar with most of the teachers” (Huang et al., 2020, p. 32). Huang et al. (2020) added that learning support for students can promote their effective learning and personality development even amidst a pandemic where there is no or very limited face-to-face interaction with their peers, classmates, and teachers.

Educators need assistance to help them improve their teaching tailor fit to the new normal; hence, mentorship through webinars is important (Patel et al., 2020). Webinars are done by different educational institutions worldwide to offer new ways of providing quality education to students. This results in teachers undergoing webinar training to address the challenges in the new normal while preventing the spread of the virus (Toquero & Talidong, 2020).

Last July 29-31, 2020, the Adventist University of the Philippines, as sponsored by the Commission on Higher Education (CHED) – Region IV, conducted a webinar intended for higher education institution (HEI) faculty and administrators. Its aim was to help HEI educators to improve their design and delivery of instruction during the pandemic through flexible means of learning. On the last day, the participants were asked to evaluate the webinar through Google Forms. This study analyzed the open-ended questions included in the evaluation to determine the strengths and weaknesses of the webinar for improvement of future activities to be hosted by the University.

Methodology

This qualitative research employed content analysis of the 225 responses on two open-ended questions from the participants of the CHED webinar on flexible learning conducted by the AUP, in cooperation with the CHED on July 29-31, 2020. The responses were encoded, tabulated, categorized, and themed to answer the objectives of this study.

The data gathered were limited to the participants' responses to the two open-ended questions of the online survey after the webinar. Since there was no follow up interview conducted, the richness and depth of information may be insufficient.

Results and Discussion

Perceived Strengths of the CHED Webinar on Flexible Learning

The participants perceived that the strengths of the webinar held on July 29-31, 2020 are the following: (a) *timely webinar content*, (b) *interactive virtual icebreaker*, (c) *educational question-and-answer portion*, (d) *comprehensible delivery*, (e) *competent speaker*, and (f) *embedded IFVL*.

Timely Webinar Content. Among the 225 webinar participants, 120 saw the relevance of the webinar content in the current situation of the educational system, hence, liked the presentations for the three-day webinar. According to Participant 6, “the content is very timely and appropriate”. Some of them liked the topic on teaching strategies (Participants 24, 30, 63, 66, and 92 among others); there are also participants who appreciated the topic on assessment (Participants 67, 69, 81, 164, and 219 among others); while others acknowledged the discussion about making syllabi (Participants 83, 149, 167, 215, and 220 among others) and the utilization of online platforms and the technology (Participants 117, 125, 153, 158, and 188). Overall, the participants found the timeliness of the topic in the challenges brought about by the new normal.

According to UNESCO (2020), governments worldwide are “stepping up” their efforts in providing training and resources to support educators in adapting to the new normal; hence, webinars have been conducted since the onset of community quarantine. In the Philippines, both the Department of Education (DepEd) and CHED are implementing flexible/alternative delivery mechanisms for their programs (Ogena et al., 2020). This is their way of adapting to the new normal.

Interactive Virtual Icebreaker. Besides the different topics discussed in three days, the participants appreciated the interactive virtual icebreaker which served as a review of the previous topics. Participant 219 stated, “I also like the educational games that were incorporated for learning” while Participant 44 affirmed that “the games that were included in between sections of each day’s session of the webinar” was one of the webinar’s strengths. The virtual icebreaker was done through Kahoot.it where multiple choice questions were shown, and each participant will choose an answer. An immediate feedback was flashed on the screen for the participants to see how many of them got the answers correctly.

In the context of the webinar being studied, icebreaker was utilized to introduce the purpose of the webinar. The participants were asked to join the icebreaker to solve problems related to the objective (Heathfield, 2020) of the webinar. Since its purpose is to add knowledge and improve teaching during the pandemic, the interactive virtual quiz does not only catch the attention of the participants but improve their critical thinking and knowledge about the subject as well.

Educational Question-and-Answer Portion. The question-and-answer portion at the end of every session was also one of the anticipated parts of the webinar. Twenty-three participants commented that the question-and-answer portion was what they liked best about the webinar. Participant 76 confirmed that “the Q and A portion is very eye opening, and questions were well-entertained and addressed” [sic].

The question-and-answer part of a webinar is an opportunity to communicate with the participants by paying attention to their questions, clarifications, and other concerns. This part of the webinar also showcases the depth of the speaker's knowledge and mastery of the topics being discussed (O'Rourke, 2019). The participants gained learning and in-depth understanding of the different issues in flexible learning not only because of the presentations but also because of the educational question-and-answer portion of the webinar.

Comprehensible Delivery. No matter how competent a speaker is or how good the topics are, if the presentation is not understood by the audience, there will be no learning gained. According to the participants, one of the most liked part of the webinar is the delivery of the topics. "The way the speaker discusses the different types of assessment" (Participant 129) is simple and easy to understand (Participant 44). Affirmingly, Participant 180 stated that "the professionalism of the speaker and of the moderators and their promptness to answer and discuss relevant questions" are the strengths of the webinar. Moreover, each point of discussion is well-explained (Participant 143) and the explanation is clear (Participant 137).

According to Spencer (2020), knowing what the presentation is about and practicing how it should be presented, help a speaker to professionally present a topic. This way, the delivery of the presentation is more likely to be comprehensible for the participants.

Competent Speaker. The resource speaker is the main source of information in a webinar and to ensure that the knowledge is translated to the audience, the speaker must be ready, knowledgeable, and effective, hence, competent. Participant 12 stated that "the speaker is really great" and very competent (Participant 13). The participants also perceived that the speaker has the mastery of what is being discussed (Participants 196 and 206). Moreover, they also appreciate that the speaker accommodates questions (Participant 202) and takes time to answer them one by one (Participant 217). These perceptions of the participants imply that the resource speaker knows what is being talked about.

Being accurate in stating facts, providing support and explanation to the different ideas and issues in the presentation, dressing and acting professionally, using appropriate and professional-looking visual aids, mastery of the material, and using of audience-appropriate language are some characteristics a credible and competent speaker must acquire (Penn State University, 2017).

Embedded IFVL. Although not too many have noticed the importance of the integration of faith and values in the webinar, some still mentioned that they liked this "spiritual stuff" (Participant 5). Understanding that there are participants from non-Seventh Day Adventist institutions who attended, the integration of faith, values, and learning (Participants 1, 5, 141, and 176) is perceived to impact (Participant 221) the teaching and/or learning of the participants in a way.

Savarirajan and Fong (2019) stated in their study that IFVL is an integral part of Christian higher education. They found out in their study that IFVL has a positive impact on the personal faith of individuals experiencing it. IFVL during the webinar provided a subtle yet impactful revelation of God's character.

Perceived Weaknesses of the CHED Webinar on Flexible Learning

Although 170 participants found no weakness in the webinar, the remaining 55 participants perceived that the (a) *technical issues (power interruption, inaudible audio, and*

intermittent internet connection on the participants' end) and (b) *poor time management* should be improved should the University conduct other webinars and trainings in the future.

Technical Issues. One of the downsides of online seminars and trainings is the unanticipated technical issues. According to the participants, (a) *power interruption*, (b) *inaudible audio*, and (c) *intermittent internet connection on the participants' end* were the technical issues experienced during the webinar. However, some of the participants clarified that these are minor technical issues (Participants 138 and 160) that were properly addressed by the host institution (Participant 173) except the intermittent internet connection on the participants' end.

Power interruption. Power interruption is an issue that is beyond the control of an institution which can be solved with the use of generators. However, power interruption is sudden, and it takes a few minutes to prepare the generator. During the webinar, two participants affirmed that “the brownout in AUP” (Participants 1 and 5) is a technical issue that interrupts webinars and trainings being conducted.

Inaudible audio. Another technical issue that is commonly experienced in online seminars and trainings is the problem with the audio. If the sound received is too loud (high) or too soft (low), it becomes inaudible. Participants 78, 190, and 202 have the same complaints of not clearly hearing the speaker because of inaudible audio. Therefore, Participant 118 suggested that “the audio volume needs to be balanced since some are using headphones others are using earphones, sometimes too loud or minimal sound especially when 2 or more speakers are talking” [sic] to improve the audio.

Intermittent internet connection on the participants' end. One of the primary issues of the participants is the intermittent internet connection on their end. Eight of the participants admitted that they had experienced poor internet connection during the webinar. Participant 143 explained that there was no problem about the event, however “the connectivity of my data [is the problem]. I wasn't able to join the quiz using kahoot.it because it logged. In summary, there is nothing that I dislike about the event”. Participants 105, 137, 146, 196, 201, and 223 experienced the same internet problem on their end. Affirmingly, Participant 93 mentioned “the program is well executed but the major problem is the internet connection but this seminar help[ed] me a lot to define and understand the proper way to handle this kind of situation in education industries”. This proved that although the participants experienced intermittent internet connection on their end, they still finished the webinar knowing that this will help them improve their craft as educators.

Technical issues are common during webinars that even experienced hosts encounter; hence, it should be anticipated and a contingency plan must be initiated. To handle such difficulty, the webinar hosts must provide technical assistants to address the problems the moment they occur (Garan, 2019). In the context of the CHED webinar on flexible learning, power interruption and inaudible audio are concerns they can address but not the intermittent internet connection in the participants' ends. This implies that technical issues can be experienced by both hosts and participants.

Poor Time Management. Some of the participants have noticed the inconsistencies in time during the webinar. Participants 129, 148, and 197 stated that the webinar did not “start as proposed” therefore it went beyond the expected time that it should finish (Participant 85). Others also complained that the event was too long for a webinar (Participants 9, 65, and 131) and suggested that the number of days be shortened (Participant 187). However,

there are some who thought the time spent for the webinar was limited (Participants 83 and 91) while Participant 187 commented that “it would be very nice if it was held on a regular day not on holidays”.

Dierdorff (2020) highlighted that time management in webinars involves awareness of the resources and time an activity must be done; planning the goals, schedules and tasks using the allotted time for the activity; and monitoring the time including the needed adjustments for interruptions.

Based on the results, it is concluded that conducting webinars on flexible learning helps teachers in being abreast to the actual needs and realities they must face in the new normal. Also, although conducting webinars has advantages and disadvantages, it is deemed doable and essential to help educators during pandemic. It is recommended that the perceived areas for improvement be addressed to improve linkages with other institutions and networks. Moreover, future research may do follow up investigation on the effects of the knowledge gained in webinars as manifested in flexible classes.

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Laboratory and Internship Performances Among the Bachelor of Medical Laboratory Science Students of Higher Education Institution

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Abstract

This study investigated the relationship between the laboratory and internship performances of the Bachelor of Medical Laboratory Science (BMLS) senior students of class 2019-2020. This is the first correlational study on laboratory and internship performances conducted for the program. Using quantitative design and purposive sampling technique, 85 students were included in this study, of which 22 were male and 63 were female. Using the IBM SPSS version 23, frequency, mean, standard deviation, t-test, and Pearson's r were performed to analyze the data. Ethical considerations were observed to ensure confidentiality and anonymity in handling the data. The results showed that there is a higher mean score for laboratory performance ($M = 88.17 \pm 2.32$) than internship performance ($M = 84.34 \pm 3.69$) and that there is a *positive, moderate, and statistically significant relationship* between them ($r = .547, p < .001$). To add, students' performances in all the laboratory courses are *significantly correlated* with their internship performance, with Chemistry and Urinalysis/Parasitology having the highest correlation. Further, there is *no significant difference* on the laboratory performance and internship performances of the students according to sex. Results suggest that the higher the laboratory performance, the higher the internship grade. Results are relevant to the faculty of the BMLS program in ensuring that the laboratory trainings of the students before they are deployed for internship are effective.

Keywords: *laboratory performance, internship, medical laboratory science program*

Medical laboratory science has a vital role in detecting, diagnosis, and treatment of diseases. It can be done by utilizing innovative technologies in various areas of the medical laboratory for different laboratory testing and procedures. Quality should be maintained for proper diagnostics and demands for competence and excellence in every area of the clinical laboratory practices. This may be achieved when education and training provided by the institution will address the academic competencies and skills on relation to the profession. It is important to lessen the close gap between the skills taught in the classroom with the expectation of the affiliated training hospitals where students are deployed (Buted et al., 2014).

Medical Laboratory Science education encompasses academic, clinical courses in the curriculum and one year of clinical training in a tertiary hospital. The hospital training consists of rotational duties in different sections in the laboratory. These sections include Histopathology, Hematology, Clinical Microscopy & Parasitology, Immunology and Serology, Microbiology, Clinical Chemistry and Blood Banking. The program was created to assure required knowledge, attitude and skills expected to medical laboratory science profession. To attain the objective, students should be able to apply, analyze, evaluate, and demonstrate content and skills that can be learn in classroom and laboratory in clinical settings (Quinto, 2019). According to Carvalho et al. (2015), supervised clinical internship will develop skills of the Nursing interns and their patient care management. Therefore, evaluation of laboratory interns and staff has its role in the improvement of laboratory management services.

The study was conducted to determine the effectiveness of curriculum and the teaching strategies, methods and procedures using existing laboratory tools and equipment by the faculty and instructors as the preparation for the internship program for Medical Laboratory Science. It focused on how the performance indicators including practicum and laboratory skills affect the internship performance.

Methodology

Research Design

This study used the descriptive quantitative design to correlate the laboratory and the internship grades of the Medical Laboratory Science senior students in Adventist University of the Philippines as described by Polit & Beck (2012).

Population and Sampling Technique

This study utilized the purposive sampling technique among the Medical Laboratory Science senior students. Respondents are the fourth-year Medical Laboratory Science students of academic year 2019-2020 in Adventist University of the Philippines. There were 85 fourth-year Medical Laboratory Science students who were included in this study, of which 22 were male and 63 were female.

Instrumentation

The study was done by getting the grades of the laboratory performances in 11 major laboratory courses and practicum performances. For the laboratory performance, final grades for 11 laboratory courses were included and grouped into Chemistry, Histopathology, Hematology, Urinalysis/Parasitology, and Serology/Blood Bank. For practicum performance, the final grade for internship program was included.

Analysis of Data

The results of the study were analyzed using the IBM SPSS Statistics version 23. Frequency, mean, and standard deviation were used to describe the laboratory and internship grades; t-test was used to compare the means between male and female to test significant difference, and Pearson's r were performed to analyze the correlation between the laboratory and internship grades.

Ethical Considerations

The researchers observed the ethical considerations to ensure confidentiality and anonymity in handling the data such that the students' identity were not associated with any of the data.

Results and Discussion

Presented in this section are the results of the analysis of data between the laboratory performance and practicum performance among the senior students of BMLS of AUP.

Table 1 shows that there is a higher mean score for laboratory performance ($M = 88.17 \pm 2.32$) than practicum performance ($M = 84.34 \pm 3.69$). Based on a study (Contreras, 2019), laboratory performance fills in as a real competency of the students to exhibit their learnings behind the principles and students could ask certain assistance on the procedures and directions from their laboratory instructors. Nevertheless, practicum performance expects students to create proficient utilization of information in real circumstances. Consequently, assessment instrument for clinical performance allows evaluation of student's ability based on standards of practice since they relied upon to work as equipped clinicians.

Table 1. Mean and Standard Deviation of Laboratory and Internship Grades of BMLS Students

	SEX	N	MEAN	SD
Overall Lab Grade	male	22	88.44	2.24
	female	63	88.07	2.35
	Total	85	88.17	2.32
Overall CHEM Grade	male	22	88.00	2.91
	female	63	87.58	3.08
	Total	85	87.69	3.03
Overall HistoPath Grade	male	22	88.38	4.49
	female	63	89.23	4.19
	Total	85	89.01	4.26
Overall HEMA Grade	male	22	87.62	2.41
	female	63	87.15	3.02
	Total	85	87.27	2.86
Overall UAPARA Grade	male	22	88.60	4.05
	female	63	88.67	3.46
	Total	85	88.65	3.60

{table continues on the next page}

Overall SERODK Grade	male	22	89.68	2.40
	female	63	88.63	2.92
	Total	85	88.91	2.82
Overall Internship Grade	male	22	85.19	3.15
	female	63	84.05	3.85
	Total	85	84.34	3.69

Table 2 shows that there is no significant difference on the laboratory performance and practicum performances of the BMLS students according to sex. According to research (Libres, 2017), both men and women cautiously measure data, recover the pertinent choice-related information from their recollection, arrange the information based on diversity, ponder different options, foresee results, assess the outcomes, take care of issues presented by circumstances and monitor changes. Somewhat, the study showed that the sex contrast is nearer to conduct styles or to the requests of both sexes' social parts than to the scholarly abilities or to limits.

Table 2. *Comparison of Means of Laboratory and Internship Grades Between Males and Females*

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	T	df	Sig. (2-tailed)	Mean Difference	SD	95% Confidence Interval of the Difference	
									Lower	Upper
OVERALL LAB GRADE	Equal variances assumed	.258	.613	.649	83	.518	.37	.58	-.7711	1.51749
	Equal variances not assumed			.664	38.357	.511	.37	.56	-.76380	1.51014
Overall CHEM Grade	Equal variances assumed	.038	.847	.561	83	.577	.42	.75	-1.07532	1.91947
	Equal variances not assumed			.577	38.672	.568	.42	.73	-1.05891	1.90306
Overall HistoPath Grade	Equal variances assumed	.056	.814	-.803	83	.424	-.85	1.06	-2.94965	1.25340
	Equal variances not assumed			-.776	34.606	.443	-.85	1.09	-3.06853	1.37228
Overall HEMA Grade	Equal variances assumed	1.937	.168	.666	83	.507	.47	.71	-.94137	1.88940
	Equal variances not assumed			.743	45.716	.461	.47	.64	-.81090	1.75893

{table continues on the next page}

Overall UAPARA Grade	Equal variances assumed	.436	.511	-.077	83	.939	-.069	.90	-1.85169	1.71390
	Equal variances not assumed			-.071	32.379	.944	-.069	.97	-2.03796	1.90017
Overall SERODK Grade	Equal variances assumed	1.335	.251	1.514	83	.134	1.05	.69	-.32936	2.43074
	Equal variances not assumed			1.665	44.333	.103	1.05	.63	-.22078	2.32216
OVERALL INTERNSHIP GRADE	Equal variances assumed	1.693	.197	1.247	83	.216	1.13807	.91	-.67736	2.95350
	Equal variances not assumed			1.373	44.440	.177	1.13807	.83	-.53256	2.80870

The Correlation Between the Laboratory and Internship Performances

Table 3 shows that there is statistically significant positive moderate relationship between the BMLS overall laboratory grade and their internship performance ($r = .547$, $p < .001$). Results also show that all the laboratory courses were significantly correlated individually with the internship performance. The findings suggest that as the laboratory performance increases, the practicum performance also increases. The result paralleled to the study of Contreras et al. (2016) stated that students' clinical performance improves when their training experience increases. Moreover, the performance in laboratory could be an assessment for the internship grades (Quinto, 2019).

Table 3. *Pearson Correlation of Laboratory and Internship Performances*

		HISTOPATH	OA CHEM	OA HEMA	OA UAPARA	OA SERODK	OA LAB	INTERNSHIP
Overall Histopath Grade	Pearson Correlation	1	.132	.196	.211	.134	.356**	-.031
	Sig. (2-tailed)		.230	.072	.053	.222	.001	.779
	N	85	85	85	85	85	85	85
Overall CHEM Grade	Pearson Correlation	.132	1	.452**	.553**	.462**	.822**	.498**
	Sig. (2-tailed)	.230		.000	.000	.000	.000	.000
	N	85	85	85	85	85	85	85
Overall HEMA Grade	Pearson Correlation	.196	.452**	1	.427**	.473**	.708**	.283**
	Sig. (2-tailed)	.072	.000		.000	.000	.000	.009
	N	85	85	85	85	85	85	85

{table continues on the next page}

Overall UAPARA Grade	Pearson Correlation	.211	.553**	.427**	1	.455**	.793**	.478**
	Sig. (2-tailed)	.053	.000	.000		.000	.000	.000
	N	85	85	85	85	85	85	85
Overall SERODK Grade	Pearson Correlation	.134	.462**	.473**	.455**	1	.707**	.436**
	Sig. (2-tailed)	.222	.000	.000	.000		.000	.000
	N	85	85	85	85	85	85	85
OVERALL LAB GRADE	Pearson Correlation	.356**	.822**	.708**	.793**	.707**	1	.547**
	Sig. (2-tailed)	.001	.000	.000	.000	.000		.000
	N	85	85	85	85	85	85	85
INTERNSHIP	Pearson Correlation	-.031	.498**	.283**	.478**	.436**	.547**	1
	Sig. (2-tailed)	.779	.000	.009	.000	.000	.000	
	N	85	85	85	85	85	85	85

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

* Correlation is significant at the 0.05 level (2-tailed).

+1 Perfect Relationship, +0.91-+0.99 Very High Relationship, +0.71-+0.90 High Relationship,

+0.41-+0.70 Moderate Relationship, +0.21-+0.40 Low Relationship,

+0.01-+0.20 Negligible Relationship, 0 No Relationship

This study showed a significant relationship between the laboratory and internship performances of the BMLS students. Also, the students' performances in all of the laboratory courses were *significantly correlated* with their internship performance, with Chemistry and Urinalysis/Parasitology having the highest correlation. Results suggest that the higher the laboratory performance, the higher the internship grade. It also indicates the contribution of individual grades from each of the laboratory courses to the overall internship performance. Findings are relevant to the faculty of the BMLS program in ensuring that the laboratory trainings of the students in all courses before they are deployed for internship are effective. It is recommended that this study be replicated to other group of students for comparison. Also, a qualitative study maybe conducted to explore the other factors that facilitate learning and performance both in laboratory and internship settings.

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Academic Performance as a Predictor of Success in Licensure Examinations Among Bachelor in Medical Laboratory Science Graduates

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Abstract

This study investigated the association between academic performance and licensure examination performance of the graduates of Bachelor in Medical Laboratory Science (BMLS). Using quantitative research design and purposive sampling technique, 335 BMLS graduates from school year 2016-2017 up to 2019-2020 were included in this study, of which 102 were male and 233 were female. For the academic performance, the GPA (Grade Point Average) was used. Using the IBM SPSS Statistics version 23, data were analyzed. The results revealed that the GPA was constant at 3.5 while the board rating was highest on AY 2016-2017 ($M = 83.68 \pm 2.75$) and was lowest on AY 2019-2020 ($M = 81.94 \pm 3.07$). In the most recent board exam, the subjects with the lowest rating were subjects 2 (Bacteriology, Parasitology, Mycology-Virology), 3 (Clinical Microscopy) and 6 (Histopathologic and Cytologic Techniques, MedTech laws and Bioethics, Lab Management). Overall, the lowest mean rating among the 6 subjects was subject 2 ($M = 80.23 \pm 4.59$) with posted lowest rating in AY 2018-2019 (76.53) among all of the subjects. Moreover, there was a *statistically significant positive moderate relationship* between the academic performance and licensure performance among the graduates of BMLS ($r = .613, p < .001$). Results also showed that all the six subjects in the board examination were *significantly correlated* individually with academic performance. Using regression analysis, the Academic Performance *significantly predicts* Licensure Performance (r^2 change = .376 or 37.6%, $p = <.001$). This direct relationship implies that when Academic Performance is increased, board rating also increases. In this study, the GPA predicts board rating by 37.6% therefore 62.4% predictors remain unknown. Findings are useful in planning for the enhancement of the program and for preparation for the board licensure exam focusing on the subjects with the lowest ratings. For future research, other variables may be included to determine the other predictors of successful licensure examination performance.

Keywords: *Academic performance, licensure examination, Medical Laboratory Science*

Medical technologists play a vital role in the healthcare system together with other healthcare professionals. They perform the examination of tissues, secretions, and excretions of the human body and body fluids through various electronic, chemical, microscopic, bacteriologic, hematologic, serologic, immunologic, nuclear, and other laboratory procedures and techniques. Moreover, medical technologists guarantee the accuracy of test outcomes, develop and modify techniques, and establish and monitor programs. Although, they do not frequently interact directly with patients, the work accomplished by medical technologists directly influences the lives of the patients. Besides, physicians determine the diagnosis and treatment of their patients on the information provided by the medical technologists. The difficulty of tests, degree of judgment required, and the measure of responsibility that medical technologists undertake depend on the quality of education and experience they have. In addition, the capability to perform their responsibilities proficiently and conducting guaranteed laboratory results are essential for high-quality healthcare. Therefore, it is of major importance that every laboratory personnel demonstrates competence (Cabanba, 2017).

As mandated in section 15 of the Medical Technology Act of 1969 or Republic Act 5527, to practice the Medical Technology profession in the Philippines, a new practitioner must pass the Medical Technology Licensure Exam (MTLE). The licensure examination aims to ensure that examinees attain the technical competence that the profession requires. Technical competence requires technical expertise, ability to use their knowledge proficiently with good judgment, and understand professional duty. Moreover, the performance of schools in the licensure examination measures the quality each school's program. Hence, graduates are challenged to perform in the MTLE at par or above the national passing rate. Those who graduated from the institutions with a high passing rate are regarded as highly competent because of the kind of education received from their respective institution (Pasia et al., 2012).

The Medical Laboratory Science Program of the Adventist University of the Philippines is currently recognized as one of the top-performing schools in the Philippines because of its consistent high passing rate along with its top-notch ranking. It consistently focuses on improving the percentage of its graduates passing the national licensing test.

Perceiving the worth attributed to success in the licensure exam, it is therefore necessary for university administrators, deans, and faculty members to continuously be involved in various studies that correlate with board examination performances. It is in this context that the study was conceptualized. The study investigated the association between academic performance and licensure examination performance of the graduates of Bachelor of Medical Laboratory Science (BMLS) in Adventist University of the Philippines.

The findings of this study will be used to develop an efficient program that will train the graduates theoretically in taking the MTLE. In like manner, faculty members will gain insights into how graduates have performed in each of the subtests of the licensure examination for the past four years. Thus, this study could help in the formulation of corrective actions that may improve both academic performance and licensure examination ratings.

Methodology

This study utilized a quantitative research design. Using purposive sampling technique, 335 BMLS graduates from school year 2016-2017 up to 2019-2020 were

included in this study, of which 102 were male and 233 were female. For the academic performance, the GPA was used. Using the IBM SPSS Statistics version 23, data were analyzed by means of frequency, mean, standard deviation, t-test, Pearson correlation, and linear regression. Ethical considerations were observed to ensure confidentiality and anonymity in handling the data.

Results and Discussion

Table 1 shows the comparison of GPA and board exam rating of the graduates according to batch and the overall and detailed breakdown of the board exam results. The mean GPA was constant at 3.5 whereas in board rating, the highest mean score was on AY 2016-2017 ($M = 83.68 \pm 2.75$) and the lowest on AY 2019-2020 ($M = 81.94 \pm 3.07$). In the most recent board exam, the subjects with the lowest rating were subject 2, 3, and 6. Overall, the lowest mean rating among the 6 subjects for the past four years was the subject 2 (Bacteriology, Parasitology, Mycology-Virology) ($M = 80.23 \pm 4.59$) with posted lowest rating in AY 2018-2019 (76.53) and the highest is subject 1 (85.73 ± 3.64) among all the subjects.

A previous study showed that admission and retention policy predict the nursing graduate's performance in the Nursing Licensure Exam. Admission and retention policy helped in the academic preparation of the graduates to take the licensure examination with successful results (Soriano, 2016). Within the university, the Medical Laboratory Science department is one of the departments that have high-grade requirements and a retention policy where a general average of 3.2 is required for a student to remain in the program. The policy is implemented beginning from freshmen years wherein a student in the pre-clinical division must have grades not lower than C in all their major courses. Moreover, clinical division students should not have more than 3 Cs in all their professional courses. However, these policies have been changed quite a few times over the years because of the different grading criteria implemented by the university which could explain the difference in the board rating result in AY 2017-2017 and AY 2019-2020. Results were further supported by a previous study conducted with Medical Technology graduates from selected universities. According to the study of Cabanban (2017), graduates under AY 2006-2007 performed better compared to graduates belonging to AY 2002-2003 and AY 2006-2007. Accordingly, the department's licensure examination performance also improved during curriculum year AY 2005-2006. The improvement in the performance was attributed to the policy of the colleges to strictly screen graduates before allowing them to take the licensure examination

Results showed that subject 1 namely, Clinical Chemistry, ranked the highest whereas subject 5, which is Clinical Chemistry presented the lowest rating. The findings were again similar to the study of Cabanban (2017), in which Clinical Chemistry is the predictor for the licensure examination of graduates in curriculum AY 2006-2007 who took the licensure exam in September 2010. According to their study, the outcome may be attributed to the revision of the curriculum during AY 2006-2007 wherein Clinical Chemistry subject was divided into three (3) instead of the original two (2) semester subjects. Thus, for successful learning to develop, right sequence of content in all areas of learning must happen in a suitable place in terms of scoping and learning. This could also be the probable cause for the results of this study.

Table 1. Comparison of GPA and Board Rating Per Batch and Per Subject

BATCH		GPA	BOARD RATING	SUBJ 1	SUBJ 2	SUBJ 3	SUBJ 4	SUBJ 5	SUBJ 6
2016-2017	Mean	3.56	83.68	86.65	82.83	84.20	81.54	84.84	81.38
	N	98	98	98	98	98	98	98	98
	SD	.22	2.75	3.36	3.05	3.53	3.62	3.64	2.74
	Minimum	3.03	75.9	76.0	75.0	72.0	65.0	76.0	76.0
	Maximum	3.95	90.0	95.0	90.0	93.0	91.0	93.0	89.0
2017-2018	Mean	3.48	81.97	83.99	79.61	84.63	80.25	82.64	80.08
	N	80	80	80	80	80	80	80	80
	SD	.219	2.91	3.27	3.67	3.33	3.77	4.69	3.40
	Minimum	2.99	75.0	76.0	65.0	78.0	69.0	65.0	65.0
	Maximum	3.85	87.1	91.0	85.0	92.0	88.0	93.0	88.0
2018-2019	Mean	3.53	82.60	87.13	76.53	80.70	83.85	86.19	83.29
	N	85	85	85	85	85	85	85	85
	SD	.17	3.23	3.83	5.02	4.10	3.55	3.47	3.11
	Minimum	3.20	75.6	79.0	62.0	66.0	75.0	78.0	75.0
	Maximum	3.87	90.1	95.0	86.0	90.0	94.0	93.0	91.0
2019-2020	Mean	3.518	81.94	84.74	81.75	78.18	81.88	84.51	81.22
	N	72	72	72	72	72	72	72	72
	SD	.17	3.07	3.10	3.62	5.30	3.58	3.77	3.13
	Minimum	3.15	75.0	75.0	72.0	62.0	70.0	77.0	66.0
	Maximum	3.93	89.8	91.0	93.0	88.0	92.0	93.0	87.0
OVERALL	Mean	3.53	82.62	85.73	80.23	82.12	81.89	84.59	81.52
	Median	3.53	82.70	86.00	81.00	82.00	82.00	85.00	82.00
	Mode	3.69	85.5	85.0	82.0	82.0	81.0	86.0	82.0

The Correlation Between the Academic Performance and Licensure Performance

Table 2 shows that there is a statistically significant positive moderate relationship between the academic performance and licensure performance among the graduates of BMLS ($r = .613, p < .001$). Results also showed that all the six subjects in the board examination were *significantly correlated* individually with the academic performance. The findings suggest that as the academic performance increases, the likelihood of success in licensure examination also increases.

Table 2. Correlation of GPA and Board Rating with the Six Subjects

BATCH		GPA	BOARD RATING	SUBJ 1	SUBJ 2	SUBJ 3	SUBJ 4	SUBJ 5	SUBJ 6
2016-2017	Mean	3.56	83.68	86.65	82.83	84.20	81.54	84.84	81.38
	N	98	98	98	98	98	98	98	98
	SD	.22	2.75	3.36	3.05	3.53	3.62	3.64	2.74
	Minimum	3.03	75.9	76.0	75.0	72.0	65.0	76.0	76.0
	Maximum	3.95	90.0	95.0	90.0	93.0	91.0	93.0	89.0

2017-2018	Mean	3.48	81.97	83.99	79.61	84.63	80.25	82.64	80.08
	N	80	80	80	80	80	80	80	80
	SD	.219	2.91	3.27	3.67	3.33	3.77	4.69	3.40
	Minimum	2.99	75.0	76.0	65.0	78.0	69.0	65.0	65.0
	Maximum	3.85	87.1	91.0	85.0	92.0	88.0	93.0	88.0
2018-2019	Mean	3.53	82.60	87.13	76.53	80.70	83.85	86.19	83.29
	N	85	85	85	85	85	85	85	85
	SD	.17	3.23	3.83	5.02	4.10	3.55	3.47	3.11
	Minimum	3.20	75.6	79.0	62.0	66.0	75.0	78.0	75.0
	Maximum	3.87	90.1	95.0	86.0	90.0	94.0	93.0	91.0
2019-2020	Mean	3.518	81.94	84.74	81.75	78.18	81.88	84.51	81.22
	N	72	72	72	72	72	72	72	72
	SD	.17	3.07	3.10	3.62	5.30	3.58	3.77	3.13
	Minimum	3.15	75.0	75.0	72.0	62.0	70.0	77.0	66.0
	Maximum	3.93	89.8	91.0	93.0	88.0	92.0	93.0	87.0
OVERALL	Mean	3.53	82.62	85.73	80.23	82.12	81.89	84.59	81.52
	Median	3.53	82.70	86.00	81.00	82.00	82.00	85.00	82.00
	Mode	3.69	85.5	85.0	82.0	82.0	81.0	86.0	82.0
	N	335	335	335	335	335	335	335	335
	SD	.20	3.06	3.64	4.59	4.80	3.84	4.08	3.27
	Minimum	2.99	75.0	75.0	62.0	62.0	65.0	65.0	65.0
	Maximum	3.95	90.1	95.0	93.0	93.0	94.0	93.0	91.0

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

* Correlation is significant at the 0.05 level (2-tailed).

+1 Perfect Relationship, +0.91-+0.99 Very High Relationship, +0.71-+0.90 High Relationship,

+0.41-+0.70 Moderate Relationship, +0.21-+0.40 Low Relationship,

+0.01-+0.20 Negligible Relationship, 0 No Relationship

The Comparing Means of the Academic Performance and Licensure Performance When Sex is Considered

Tables 3 and 4 show that there was no significant difference on the academic performance and licensure performance when sex is considered. Findings imply that the academic performance and board exam results are not associated with being a male or a female.

Despite that according to some studies, each individual has their own unique learning style and personality and different ability to experience learning processes. Thus, academic attainment and gender are individual differences that may affect student's learning and strategies (Hyland, 1993). Moreover, studies have also shown that females have improved memory in general than males including all types of memory: episodic, spatial, short-term, visual, and specific memories as these reasons may verify why females achieve better than males (Halpern, 2000). However, this study shows that gender is not significantly related with their academic and licensure performance as supported by the study of Oducando and Penuela (2014). It was stated that the performance of Nursing students upon entering in their third-year assessment of Nursing and Midwifery School is not related to student

demographics such as age or gender. In addition, that academic outcomes, such as gender, were not found to be associated with academic achievement or performance. Likewise, gender was not also a predictor of academic success in the Licensed Practical Nurse program at a two-year public technical college.

Table 3. Mean Scores of GPA and Board Rating of the BMLS Graduates

	Gender	N	Mean	SD
OVERALL GPA	Male	102	3.50	.20
	Female	233	3.53	.20
BOARD RATING	Male	102	83.33	3.30
	Female	233	82.31	2.90

Table 4. Difference in the GPA and Board Rating According to Sex

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
OVERALL GPA	Equal variances assumed	.530	.467	-1.245	333	.214	-.02929	.02353	-.07557	.01699
	Equal variances not assumed			-1.225	185.784	.222	-.02929	.02390	-.07645	.01787
BOARD RATING	Equal variances assumed	1.130	.288	2.824	333	.005	1.0151	.3595	.3080	1.7222
	Equal variances not assumed			2.687	172.501	.008	1.0151	.3778	.2694	1.7608

Linear Regression of the Academic Performance and Licensure Performance

As shown in Table 4, regression analysis reveals that the Academic Performance significantly predicts Licensure Performance (r^2 change = .376 or 37.6%, $p < .001$). This means that when all things are constant, every time there is one unit increase in GPA, there is 9.457 unit of increase in Licensure Performance. This direct relationship implies that when Academic Performance is increased, board rating also increases. In this study, the GPA predicts board rating by 37.6% therefore 62.4% predictors remain unknown.

This finding suggests that students who had good grades in their college years lead towards passing and attaining a higher rate in the licensure exam. Their coursework prepared them for the specialization. The results also implies that closer attention as training in college leads towards the success of graduates in the Medical Technology licensure examination. Content and methods courses should be constantly supervised and gauged for quality assurance. Similar results were found in several studies. One is the

previous studies which showed that academic performance has a significant relationship with Licensure Examination for Teachers (LET) performance (Aclan et al., 2018). Another study in the CPA board examination and the academic performance of the students showed a positive relationship (Orlanda-Ventayen, 2020). Hence, similar studies strengthened that academic performance contributes positively to the licensing examination (Amanonce & Maramag, 2020; Soriano, 2016). However, academic achievement is only a portion of Medical Technology education, other factors should also be considered as predictors for the performance in a licensure examination.

Table 4. *Regression Coefficient on GPA as a Predictor of Board Rating*

Independent Variables	Unstandardized Coefficients		r ² Change	Sig.	Verbal Interpretation
	B	Std. Error			
GPA	9.457	.668	.376	.000	Significant

This study aimed to examine the correlation between the academic and licensure examination performances of the BMLS graduates in the past four years. Results showed that the respondents' academic performance has a *significant positive moderate correlation* with the overall licensure performance as well as with all the six subjects in the board examination. Using regression analysis, the academic performance or GPA *significantly predicts* licensure performance. This direct relationship implies that those with high academic performance are most likely to be successful in the licensure examination. It is notable that the lowest mean rating among the 6 subjects for the past four board examinations was subject 2 (Bacteriology, Parasitology, Mycology-Virology) and the highest was subject 1 (Clinical Chemistry). Findings are useful in planning for the enhancement of the BMLS program and for preparation for the board licensure exam focusing on the subjects with the lowest ratings. For future research, other variables may be included to determine the other predictors of successful licensure examination performance.

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Attitude and Personal Factors as Predictors of Solid Waste Management Practices Among the Employees and Students of the Adventist University of the Philippines

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Abstract

T Solid waste management has been a perennial problem that besets communities worldwide. Despite various initiatives, ordinances, and legislations, how people think or feel about these environmental issues result to certain practices. This study used quantitative approach to describe the attitude, personal factors, and solid waste management practices of the employees and students of a selected faith-based university in the Philippines. It also explored what significantly predicts solid waste management practices. There were 293 participants selected by purposive sampling, of which 122 were students and 171 were employees. Using the Ecological Solid Waste Management Act of 2000 as the framework, the 23-item survey questionnaire was created which was answered by the participants online using a 5-point Likert-type response scale. Results showed that the respondents have *high levels* of attitude ($M = 3.91 \pm 0.42$) and practices ($M = 4.11 \pm 0.57$) on solid waste management and that there is a *statistically significant positive moderate relationship* between them ($r = .530, p < .001$). Also, there is a *statistically significant difference* between students and employees' practices on solid waste management when personal factors such as age, education, and category being employed or being a student are considered. Lastly, multiple regression analysis shows that 33.4% (r^2 change = .334, $p = <.001$) of the variance in solid waste management practices can be accounted for by attitude and personal factors; 66.6% predictor remains unknown. Results may be used as bases for an institutional solid waste management program. For future studies, other variables may be included to explore further the other predictors of solid waste management practices.

Keywords: *solid waste management, attitude, and practices*

The importance of cleanliness cannot be overemphasized. Whether in residences, schools, local communities, commercial, or industrial centers, keeping and maintaining a clean environment is paramount for health and conservation of resources. Solid waste management is a critical aspect of environmental hygiene (Leblanc, 2020). However, with the continuing population growth, generation of solid wastes also increases (United States-Environmental Protection Agency, 2020). According to the World Bank, global waste could increase from 2016 to 2050 by 70% in a business-as-usual scenario. While there is an ongoing effort to improve solid waste management systems, only about half of the waste generated in cities and one-quarter of what is produced in rural areas is collected. Approximately, at least 2 billion people are in places that have poor waste collection and utilize uncontrolled dumpsites (United Nations Environment Programme & Ecological Solid Waste Management [ISWA], 2015).

In the Philippines, the ISWA or Republic Act 9003 mandated institutional participation in developing and maintaining an integrated, comprehensive, and ecological waste management program. In compliance, ordinances were enacted to cascade the program of the government. Yet, among the major drawbacks is whether people accept it, and how they practice the same. The study of Dery (2017) among university students showed a need for change in behavior and attitude for effective waste reduction, reuse, and recycling. In a survey among secondary students, Trondillo et al. (2018) found that while majority of the secondary exhibited positive attitude, a number were unwilling to comply with the solid waste management program. Unless this is considered, an effective and sustainable program on solid waste management is far to be realized.

Thus, the proponents determined how attitude and personal factors predict practices of the Adventist University of the Philippines [AUP] employees and students on solid waste management which may serve as a basis to develop a program that is economically efficient, socially acceptable, and environmentally friendly.

Methodology

Research Design

This study utilized a descriptive quantitative design. Descriptive design was deemed fit for the study because the aim is to find out and describe the characteristics of the population according to the variables. Using the survey method, data were gathered and analyzed quantitatively for frequencies, averages, and other statistical measures to determine relationships (McCombes, 2020).

Population and Sampling Technique

The population of the study was composed of employees and students at AUP. Using purposive sampling, there were 293 samples who participated in the study, of which 122 were students and 171 were employees. The inclusion criteria included those students enrolled for the Second Semester of the Academic Year 2020-2021 and workers currently employed, 18 years old and above.

Instrumentation

A self-constructed questionnaire was used to gather data. Using the Ecological Solid Waste Management Act of 2000 as the framework, the survey questionnaire was created. There were 10 items for attitude and 13 items for practices which were answered by the

participants online using a 5-point Likert-type response scale. The internal consistency reliability test for the scales used were within the acceptable range with Cronbach’s alpha of .78 for Attitude and .73 for Solid Waste Management Practices Scale as presented in Table 1. According to Polit and Beck (2012), for group level comparisons, coefficients in the vicinity of .70 is adequate and .80 or greater are highly desirable.

Table 1. *Reliability Statistics for Scales Used for Attitude and Practices on Solid Waste Management*

	Cronbach's Alpha	N of Items
Attitude on Solid Waste Management	.78	10
Practices on Solid Waste Management	.73	13

Analysis of Data

Data gathered were analyzed through IBM SPSS Statistics version 23 using frequency, mean, standard deviation, t-test, Pearson’s r, linear regression, and Independent Samples Kruskal-Wallis tests.

Ethical Considerations

Prior to the administration of the questionnaire, an application was submitted to the Ethics Board of the University and an approval was obtained. Consent was secured for voluntary participation before the respondents answered the research questions via Google form. Email was not collected, and responses were not associated with their identity. Data were handled with confidentiality.

Results and Discussion

Attitude on Solid Waste Management

Table 2 shows the attitude on solid waste management among the students and employees of AUP. The respondents *strongly agree (very high)* that segregation of solid wastes is not a waste of time ($M = 4.25 \pm 0.82$). Rather, it helps protect and conserve the environment ($M = 3.96 \pm 0.21$).

The overall mean score for attitude on solid waste management among the students and employees of AUP is *high* ($M = 3.91 \pm 0.42$). This indicates that they have a *high positive attitude* on solid waste management. The result implies that the students and employees believed that solid waste management is important, and they are willing to comply and support the program of the University.

In the study of Madrigal and Oracion (2017), the employees and students of a Catholic higher education institution in the Philippines demonstrated a very high attitude on solid waste management. Similarly, Barloa et al. (2017) surveyed undergraduate students in a Philippine University. The results revealed that majority of the respondents exhibited satisfactory attitude. College students in Nigeria came out to have positive attitude towards solid waste management (Dung et al., 2017). However, the highland residents in Northern Thailand showed a neutral attitude towards solid waste management (Laor et al., 2017).

Table 2. Mean and Standard Deviation of Attitude on Solid Waste Management

	Mean	SD	Interpretation
18.*Segregating solid wastes in residences is a waste of time	4.25	.82	Very High
20.*Is a hassle for the residents to segregate wastes at home	4.01	.88	High
24. By proper segregation of wastes, I am helping in the protection and conservation of the environment	3.96	.21	High
19.*Segregating our garbage is difficult	3.94	.95	High
25. As God's faithful steward of the environment, I practice proper solid waste management.	3.93	.27	High
16. I do proper segregation of wastes to have safe and clean community	3.91	.34	High
21. I am committed to sustainable solid waste management in my community and workplace.	3.89	.38	High
17. *I find the segregation of solid wastes burdensome	3.85	.99	High
23. I segregate wastes to help the garbage collectors and recyclers	3.84	.48	High
22. *Segregation of wastes slow down collection of garbage	3.57	1.12	High
Overall Mean	3.91	.42	High

Legend: Very Low =1.00-1.80; Low =1.81-2.60; Moderate=2.61-3.40; High =3.41-4.20; Very High =4.21-5.00

* Recoded items: 17, 18, 19, 20, 22

Practices on Solid Waste Management

Table 3 shows the practices of the respondents on solid waste management. It is notable that the use of color-coded garbage bins ($M = 4.44 \pm 0.81$) and segregation of wastes ($M = 4.41 \pm 0.80$; $M = 4.35 \pm 1.02$) are *always practiced* (very high) among employees and students of the University. The overall mean score of $M = 4.11 \pm 0.57$ indicates that solid waste management is *often practiced* (high) in the campus. This implies that students and employees responsibly follow the solid waste management practices as implemented by the University.

The result is different from the rural community residents in Lahore, Pakistan. The study revealed that solid waste practices were substantially poor (Shahzadi et al., 2018). Another survey conducted by Limon et al. (2020) among the rural households in Currimao, Ilocos Norte showed moderate practice of solid waste management. Similarly, the same is true with the article review on solid waste management conducted in developing countries covering the period 2010-2019. Debrah et al. (2020) found that secondary and tertiary students' practice of solid waste management is lower compared to their attitude and awareness. However, students in a state university in Zamboanga and in Benguet have good solid waste management practices in terms of segregation (Molina & Catan, 2021) and practiced disposal of wastes in appropriate bins (Dolipas et al., 2018) respectively.

Table 3. Mean and Standard Deviation of Solid Waste Management Practices

	Mean	SD	Interpretation
1. I conscientiously throw wastes on designated color-coded garbage bins at home	4.44	.81	Very High
2. I use the different receptacles accessible to my office or classroom to dispose of biodegradable, recyclable, and nonbiodegradable wastes.	4.41	.80	Very High
6. We have different receptacles at home to segregate biodegradable, recyclable, and nonbiodegradable wastes.	4.35	1.02	Very High
10. *I throw waste materials like wrappers/tissue papers anywhere when there is no garbage bin or waste basket nearby.	4.24	1.34	Very High
4. I dispose biodegradable wastes in our compost pit	4.17	1.09	High
15. We have different receptacles accessible to my office or classroom to dispose of biodegradable, recyclable, and nonbiodegradable wastes.	4.14	1.08	High
7. I use ecology bag for my groceries to reduce use of plastic or paper bags	4.13	.98	High
8. I intentionally think of ways to lessen use of non-biodegradables	4.01	.90	High
12. *I dispose of household garbage through burning.	4.00	1.51	High
14. I segregate bottles, plastics, cans, and other scraps for junk shop.	3.96	1.21	High
11. *I throw my trash in any garbage bin regardless of color coding	3.96	1.36	High
9. *I mix biodegradable wastes with recyclables	3.90	1.36	High
3. *I put all kinds of wastes in one garbage container	3.65	1.41	High
Overall Mean	4.11	.57	High

Legend: Very Low =1.00-1.80; Low =1.81-2.60; Moderate=2.61-3.40; High =3.41-4.20; Very High =4.21-5.00

*Recoded items: 3, 9, 10, 11, 12

The Correlation Between the Attitude and Practices on Solid Waste Management

Table 4 shows that there is a statistically significant positive moderate relationship between the attitude and practices on solid waste management ($r = .530, p < .001$). This finding suggests that as the attitude on solid waste management increases, the practice on solid waste management also increases.

In the study conducted among Tehranian women in Iran, Zand et al. (2020) concluded that a positive attitude on municipal solid waste did not necessarily lead to proper practice. Similar result was shown in the study of Omar et al. (2018). More so, there was no significant relationship between the students' attitude and practices towards solid waste management in the secondary schools in the division of Leyte (Ramos and Pecajas, 2016).

Table 4. *Pearson Correlation of Attitude and Practices on Solid Waste Management*

		Attitude	Practices
Attitude	Pearson Correlation	1	.530**
	Sig. (2-tailed)		.000
	N	293	293
Practices	Pearson Correlation	.530**	1
	Sig. (2-tailed)	.000	
	N	293	293

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

+1 Perfect Relationship, +0.80-+0.99 Very Strong Relationship, +0.60-+0.79 Strong Relationship, +0.40-+0.59 Moderate Relationship, +0.20-+0.39 Weak Relationship, +0.01-+0.19 Very Weak Relationship, 0 No Relationship

Comparison of the Solid Waste Management Practices of Students and Employees

Table 5 shows the mean scores for students ($M = 3.89 \pm 0.57$) and employees ($M = 4.26 \pm 0.52$) on solid waste management practices while Table 6 shows that there is statistically significant difference between their mean scores. Results suggest that in solid waste management practices, the employees have better practices than the students.

Presumably, employees ought to have better practices on solid waste management than students. The same result holds true in a Philippine Catholic higher education institution. Students had significantly lower solid waste management practices than the faculty (Madrigal & Oracion, 2017).

Table 5. *Mean and SD of Student or Employees on Solid Waste Management Practices*

	Category	N	Mean	Std. Deviation	Std. Error Mean
PRACTICES	Student	122	3.89	.57	.05
	Employee	171	4.26	.52	.04

Table 6. *T-Test of Practices When Category as a Student or Employee is Considered*

PRACTICES	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Equal variances assumed	2.305	.130	-5.609	291	<.001	-.361	.0643	-.48704	-.23404
Equal variances not assumed			-5.516	244	<.001	-.361	.0654	-.48928	-.23179

Predictors of Solid Waste Management Practices

Tables 7 and 8 presents the linear regression model summary and coefficients of attitude and personal factors as predictors of solid waste management practices. The study was conducted to determine if attitude and personal factors can influence the respondents' likelihood to practice solid waste management. It was hypothesized that the level of attitude

on solid waste management and personal factors *do not significantly predict* solid waste management practices. To test this hypothesis, multiple regression analysis method was used. Results showed that 33.4% (r^2 change = .334, $p < .001$) of the variance in solid waste management practices can be accounted for by the three predictors, collectively. The overall regression model was significant, $F(3, 289) = 46.20$, $p < .001$, with an R square of .334. As shown in Table 8, the unique individual contributions of the predictors reveal that attitude ($\beta = .485$, $t = 9.788$, $p < .001$) and category as employee or student ($\beta = .215$, $t = 4.270$, $p < .001$) positively predict solid waste management practices. This means that when all things are constant, every time there is one unit increase in attitude there is .485 unit of increase in solid waste management practices. The overall contribution of these three variables to solid waste management practices is 33.4% which means that 66.6% predictor remains unknown.

Findings suggest that attitude on solid waste management and category as an employee or student *positively predict* solid waste management, however being male or female has *no significant unique contribution*. Attitude was found to be a *significant predictor* of solid waste management practice among the undergraduate students at Laguna State Polytechnic University-Los Banos Campus (Barloa et al., 2016). In contrast, Ahmad et al. (2015) found that the attitude of students from 16 higher learning institutions did not necessarily lead to sustainable environmental practices.

Expectedly, the category as an employee or student positively predicts solid waste management practices because as shown in Table 5.2, the former has better practices. In the study of Adogu et al. (as cited in Uwamwezi, 2018), gender has a significant impact on waste management practice. Similarly, the survey conducted in secondary schools in Nigeria indicated that gender significantly influences practice of waste management (Adeolu & Enesi, 2014).

Table 7. Model Summary Regression of Attitude and Personal Factors as Predictors of Practice

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Durbin-Watson
1	.569a	.334	.317	.47097	.334	1.976

Table 8. Coefficients of Attitude and Personal Factors as Predictors of Practice

Model	Unstandardized Coefficients		Standardized Coefficients		t	p
	B	SE	β			
1 (Constant)	1.062	.285			3.731	<.001
Attitude	.663	.068	.485		9.788	<.001
Category (Student or Employee)	.248	.058	.215		4.270	<.001
Sex	.033	.062	.026		.532	.595

Attitude and Practices on Solid Waste Management and Age

Table 9 shows that there is a significant difference of practices ($p < .001$) and attitude ($p = .003$) at .05 level of significance on solid waste management among the students and employees of AUP when age is considered.

The same result was found by Madrigal and Oracion (2017). Age is significantly related to practices and attitude on solid waste management.

Table 9. *Comparison of Attitude and Practices According to Age Groups*

	Age Group	N	Mean Rank	Kruskal-Wallis Test (Chi-square), df=3	Significance	Interpretation
Practices	Gen Z (24 yrs old and below)	93	118.31	33.471	<.001	Significant
	Millennials (25-40 yrs old)	82	130.16			
	Gen X (41-56 yrs. old)	90	179.67			
	Baby Boomers 57-75 yrs. old	28	186.63			
	Total	93	118.31			
Attitude	Gen Z (24 yrs old and below)	93	122.64	14.094	.003	Significant
	Millennials (25-40 yrs old)	82	154.02			
	Gen X (41-56 yrs. old)	90	167.98			
	Baby Boomers 57-75 yrs. old	28	139.93			
	Total	293				

*. *The mean difference is significant at the 0.05 level.*

Table 10 shows which among the age groups have significant differences in solid waste management practices. As shown in the table, there is a statistically significant difference between generation X age group and the millennials ($p = .001$) and generation Z ($p < .000$) groups such that the former tends to have better solid waste management practices than the latter at .05 level of significance. Also, the baby boomers when compared to generation Z ($p = <.001$) and millennials ($p = .014$) have better practices. The results indicate that the older respondents have better solid waste management practices. According to Eshwari et al. (2019), many studies have shown that elderlies exhibit higher practice towards solid waste management.

Table 10. *Pairwise Comparison of Practices According to Age Groups*

Sample 1 - Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.
Gen-Millennials	-11.852	12.823	-.924	.355	1.000
Gen Z - Gen X	-61.360	12.516	-4.902	.000	.000
Gen Z - Baby boomers	-68.319	18.247	-3.744	.000	.001
Millennials - Gen X	-49.508	12.923	-3.831	.000	.001
Millennials - Baby boomers	-56.466	18.528	-3.048	.002	.014
Gen X - Baby boomers	-6.958	18.317	-.380	.704	1.000

Each row tests the null hypothesis that the Sample 1 and Sample 2 distributions are the same. Asymptotic significances (2-sided tests) are displayed. The significance level is .05.

Table 11 shows that the only groups with a statistically significant difference in attitude towards solid waste management are between generation X and generation Z ($p = .002$). This finding suggests that the former tends to have a better solid waste management attitude than the generation Z. The result indicates that the older respondents have a better attitude towards solid waste management.

In the study of Laor et al. (2017), results showed that the youngest group age (less than 20 years old) has a more negative attitude and was recommended to be given adequate education on waste management. Therefore, that the null hypotheses stating that the distribution of practices and attitude across categories of age are the same are rejected.

Table 11. *Pairwise Comparison of Attitude According to Age Groups*

Sample 1 - Sample 2	Test Statistic	Std. Error	Std. Test Statistic	Sig.	Adj. Sig.
Gen Z - Baby boomers	-17.289	18.178	-.951	.342	1.000
Gen Z - Millennials	-31.379	12.775	-2.456	.014	.094
Gen Z - Gen X	-45.338	12.469	-3.636	.000	.002
Baby boomers - Millennials	14.090	18.458	.763	.445	1.000
Baby boomers - Gen X	28.049	18.248	1.537	.124	.746
Millennials - Gen X	-13.959	12.874	-1.094	.278	1.000

Attitude and Practices on Solid Waste Management and Educational Attainment

Table 12 shows that there is a significant difference in solid waste management practices ($p < .001$) but not with attitude ($p = .051$) among the students and employees of AUP when educational attainment is considered. The mean rank for doctorate and master’s degree holders are higher which means that they have better solid waste management practices than the high school and college groups as shown in Table 8.2. This implies that higher education makes a person aware of and realize the critical necessity of implementing solid waste management practices. However, Table 8.3 reveals that educational attainment is not a significant factor in attitude towards solid waste management.

Contrary to the result of the study, the findings of Al-Naggar et al. (2019) among Malaysian respondents revealed that educational attainment made a significant difference in the attitude towards waste management but not in their practices. However, education made a significant difference in solid waste management practices among households in Uganda (Twesigye, 2019). Therefore, the null hypothesis stating that the distribution of practices across categories of educational attainment are the same is rejected while for attitude, it is retained.

Table 12. *Comparison of Attitude and Practices According to Education*

	Educational Attainment	N	Mean Rank	Kruskal-Wallis Test (Chi-square), df=3	Significance	Interpretation
Attitude	High school	19	122.24	10.540	.051	Not Significant
	College	155	135.95			
	Masteral	83	161.39			
	Doctoral	36	174.49			
	Total	293				

{table continues on the next page}

Practices	High school	19	91.45	21.778	<.001	Significant
	College	155	134.68			
	Masteral	83	171.73			
	Doctoral	36	172.33			
	Total	293				

*. The mean difference is significant at the 0.05 level.

Based on the results of the study, it is concluded that students and employees of the University have a *high positive attitude* towards solid waste management. They also demonstrated a *substantially high practice* of solid waste management. These two variables were found to have a *significant positive moderate relationship*. Attitude and category as an employee or student predict solid waste management practices. Both age and educational attainment make a *significant difference* in the practice of solid waste management. There is also a *significant difference* in the attitude when age is considered but not educational attainment.

With the above findings, it is recommended that the University, through the Environmental Management Department, do the following to intensify and strengthen its present solid waste management program:

1. Conduct a regular awareness and education among students about the solid waste management program of the University.
2. Engage the students by involving them in planning for activities that would promote positive attitude and good practices of solid waste management.
3. Post in strategic places ordinances, regulations, and policies on solid waste management practices.
4. Recognize compliance to the solid waste management program of the University through awards/prizes among student residences and barangays.
5. Implement penalty of violators.

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