

**LOCUS OF CONTROL, MOTIVATION AND ACADEMIC SUCCESS OF FIRST YEAR RADIOLOGIC TECHNOLOGY STUDENTS**Mark Alipio<sup>\*1</sup><sup>\*1</sup>Student (University of the Southeastern Philippines, Davao City, Philippines)**ABSTRACT**

Dropping out from undergraduate medical education is costly for students, medical schools, and society in general. Therefore, the early identification of potential dropout students is important. The contribution of personal features to dropout rates has merited exploration. However, there is a paucity of research on psychological factors that may lead to dropping out. This paper examines the influence of locus of control and motivation on academic success of first year Radiologic Technology students. A descriptive-correlational study using survey questionnaires was employed to one hundred and thirty-one respondents who were chosen through simple random sampling and Slovin's formula. Standard questionnaires were used to gather data on locus of control, motivation and dropout intention. The Weighted Point Average (WPA) of the students was requested from the school's Registrar. Results showed that majority of the respondents have very strong external locus of control and have low level of motivation. Results also showed that majority of the respondents have very high level of dropout intention but a high level of WPA. Correlation revealed a weak positive association between locus of control and WPA. Multiple regression analysis revealed that locus of control significantly influences WPA while locus of control and motivation do not influence dropout intention.

**Keywords:**

Locus of Control, Motivation, Academic Success, Radiologic Technology

**INTRODUCTION**

Dropping out in the first year of college has become a global phenomenon [1-4]. The students, who have dropped out, often face difficulties in the transition to higher education and experience varying degrees of adjustment to college during the first year, which in turn predict their academic success [5]. Reports revealed an alarming 42% dropout rate in Sub-Saharan Africa schools and 33% dropout rate in southern and western Asian institutions [6].

In the Philippines, one of the goals of the CHED is the attainment of higher labor force [7]. Reducing dropout and increasing completion rates in higher education are two of the key strategies for achieving this goal [8]. Academic failure is a great burden, not only for the society, but also for the higher education institutions (HEIs), the students and their families. Data from the CHED revealed that enrollees in HEIs from 2001 to the present have reached 2.56 million, but the dropout rate reached an alarming 83.7 percent. This means that the Philippines is producing 2.13 million college dropouts yearly while only 500,000 students are graduating with their respective degrees. The number of dropouts is typically higher among freshmen [9-11].

In Mindanao, three Department of Education regions recorded the highest student dropout rates in the country last school year, a government survey said [12]. This Functional Literacy, Education and Mass Media Survey (FLEMMS) revealed that Davao region ranks third in dropout rate cases in the Philippines. The 12.2 percent dropout rate of Davao region is higher than the national rate of 10 percent. Of the 12.2 percent, survey also showed that 18 percent had reached but did not complete college level.

Given these hindrances, there is a need to study the factors affecting the formidable dropout issues. While there were studies about the aforementioned determinants, several scholarly literatures have circulated pointing out the need to know the predictors of academic success to lessen the formidable dropout rate [13-15]. For instance, the locus of control and motivation are considered to be stable and predictable correlates of academic performance and are often suggested as prognosticators of academic achievement in higher education [16-17]. Motivation was found to have significant positive association with academic success [18-19]. Locus of control, the most commonly studied aspect in psychology, was found to have significant positive relationship on academic achievement of students from various degree colleges of Guwahati [20].

The abovementioned researches mentioned the correlation of locus of control and motivation on academic achievement without taking consideration the influence of locus of control and motivation to the indicators of academic success namely, the dropout intention and academic performance, hence forming the research gap. Thus, this study would help HEIs, especially those that offer Radiologic Technology program, determine the level of dropout intention of the first-year students as this issue continues to happen. This study aims to know the factors

that influence dropout intention and academic performance of the students and recommends ways to increase student retention in the program using locus of control and motivation as predictors.

#### **METHODOLOGY**

This study employed a quantitative research design investigating the influence of locus of control and motivation on academic success of first year radiologic technology students of selected tertiary school. Specifically, this study utilized a descriptive-correlational design. In addition to descriptive-correlation, survey design was used. A survey design was used to gather data based on the results of the questionnaires administered to the respondents.

This study was conducted at a selected tertiary school. This school is a private, non-sectarian academic institution located at Southeastern part of the Philippines. The respondents of the study were the first year Radiologic Technology students who were chosen through simple random sampling. One-hundred ninety-five first year students were enrolled during First Semester of Academic Year 2018-2019. To solve for the sample size, the Slovin's formula was used. The calculated sample size using the formula was one hundred and thirty-one.

A survey questionnaire was used to gather the primary data. The questionnaire is composed of three scales, namely: locus of control scale, motivation scale and dropout intention scale. The first part, the locus of control scale, was taken from an open source questionnaire of Curtis and Trice (2013). The 20-item scale is a standard questionnaire which measures the academic locus of control of college students. The test – retest reliability of the scale was reported by Curtis and Trice (2013) to range from 0.49 to 0.83 while the Cronbach alpha internal consistency coefficient was 0.95. The scale was composed of 10 dichotomous questions that describe external locus of control and 10 dichotomous questions that describe internal locus of control. Each item was answerable with True or False, which they strongly believe in or can relate to. Once the questions were answered, the score was tallied using a scoring guide.

The second part, the motivations scale, was measured by the standard open source Academic Motivation Scale (AMS) developed by Vallerand et al. (1992). The scale consists of 18 items measuring the following four sub-dimensions: intrinsic motivation, introjected regulation, identified regulation and external regulation. The answer format used was a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). Vallerand et al. (1992) reported reliability coefficients ranging from 0.83 to 0.86 for the different subscales of the Academic Motivation Scale (AMS).

The third part, the dropout intention scale, was determined with the question "How often do you intend to drop out of school?". The Weighted Point Average (WPA) of the respondents was taken from the school's Registrar. The scoring guide of the school for academic performance in terms of Weighted Point Average (WPA) is reported in a way that 1.0 corresponds to the highest WPA while 5.0 corresponds to the lowest WPA. This is an exact reverse for the scoring guide used to measure the level of other variables in the study which states that 5 corresponds to the highest level and 1 corresponds to the lowest. To avoid negative correlation and other statistical biases, the WPA of students was reversed and converted in a way that a score of 5.0 means that the student has a WPA of 1.0 and a score of 1.0 means that the student has a WPA of 5.0.

Permission to use the adopted survey questionnaires was taken from the original authors. After granting the permission, a letter of permission to conduct the study was given to the Chair of Radiologic Technology Program of the selected school. Questionnaires were then administered on the respondents. After the questionnaires were retrieved, the responses were tabulated, analyzed and interpreted using the following statistical tools: percentage and mean, Pearson correlation and multiple regression.

Before conducting the study, the researchers obtained the approval of the institution's Research Ethics Committee. After the approval was given, written informed consent was then obtained from the respondents. Included in the written informed consent are the direct benefits of the respondents from the study, associated risks and provision of a counselor to provide appropriate intervention to research respondents during and after the research. Respondents were fully informed that the responses from the questionnaire will be utilized solely for the results of the study. Students who were incapable of giving personal consent and/or to express their decision sought their consent through their parents or guardians. Furthermore, the respondents were given the autonomy to answer the questions in the survey questionnaires. All the answers were kept into confidentiality and the results is for research purposes only. Other external bodies or organizations that are not connected with the study who will ask for any information about the data gathered were declined by the researchers. Respondents' participation was voluntary and the researchers explained to the respondents that they are free to withdraw at any time during the study. Hard copies of information were burned and soft copies were deleted after collecting and processing the data.

**RESULTS AND DISCUSSION**

Research findings here are presented in 11 tables. Tables 1 and 2 present the degree of personality control of respondents and overall locus of control, Table 3 reveals the level of motivation, and Tables 4, 5 and 6 show the level of dropout intention, overall dropout intention and overall WPA of the respondents. Tables 7-11 show the correlation and multiple regression analysis among the variables of the study.

Table 1 presents the degree of control personality of the respondents. There are 53 respondents who have strong external locus of control with a corresponding percentage of 40.5%. This means that 53 of the respondents have a strong belief that events are beyond their control. There are 33 respondents who have external locus of control with a corresponding percentage of 25.2%. This means that 33 of the respondents have a moderate belief that events are beyond their control. There are 19 respondents who have both external and internal locus of control with a corresponding percentage of 14.5%. This means that 19 of the respondents have inconsistent views about the degree to which they control their own fate. There are 12 respondents who have internal locus of control with a corresponding percentage of 9.2%. This means that 12 of the respondents have a moderate belief in their ability to influence their outcomes. There are 14 respondents who have very strong internal locus of control with a corresponding percentage of 10.7%. This means that 14 of the respondents have a strong belief in their ability to influence their outcomes. Overall, majority of the respondents have very strong external locus of control while the least number of respondents have internal locus of control. The overall locus of control as shown in Table 2 is 33 which belongs to the external locus of control category. This means that the respondents have a moderate belief that events beyond their control.

**Table 1. Degree of Control Personality of Respondents**

Degree of control personality	Number of Respondents	Percentage (%)
Very strong external locus of control	53	40.5
External locus of control	33	25.2
Both external and internal locus of control	19	14.5
Internal locus of control	12	9.2
Very strong internal locus of control	14	10.7
Total	131	100

**Table 2. Overall Locus of Control**

Overall Locus of Control	Category	Meaning
33	External locus of control	Respondents have a moderate belief that events are beyond their control.

Legend: 0 – 15 = Very strong external locus of control; 20 – 35 = External locus of control; 40 – 60 = Both external and internal locus of control; 65 – 80 = Internal locus of control; 85 – 100 = Very strong internal locus of control

This finding concurs to a study [21] which revealed that most of the freshmen had external locus of control and had more tendencies to attribute success to backing; however, they base failure upon environmental factors. The study also found out that the students with external locus of control agree upon the ability, method, and noticing factors of the learning dimensions more when compared to the students with internal locus of control.

Table 3 presents the level of motivation of the respondents in terms of the indicators namely, the intrinsic regulation, extrinsic regulation, introjected regulation and identified regulation. All of the indicators of motivation have a descriptive equivalent of low. This means that respondents are seldom motivated.

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**Table 3. Level of Motivation**

Indicators of Motivation	Mean	Descriptive Equivalent
1. Intrinsic regulation	2.27	Low
2. Extrinsic regulation	2.26	Low
3. Introjected regulation	2.05	Low
4. Identified regulation	1.94	Low
Total mean	2.13	Low

Legend: 4.20-5.00=Very High; 3.40-4.19=High; 2.60-3.39= Moderate; 1.80-2.59=Low; 1.00-1.79=Very low

This finding concurs to a study [22] which reported that female medical nursing students of Khalid University in Saudi Arabia have low mean score in academic motivation. The longitudinal study also found out that there is a decreasing level of motivation as the students' year level increases. Furthermore, the study recommended the initiation of counseling programs to improve nursing students' motivation throughout their academic study years.

Table 4 presents the level of dropout intention of the respondents. There are 23 respondents who have high level of dropout intention with a corresponding percentage of 17.6%. This means that 23 of the respondents are very likely to leave college before they graduate. There are 108 respondents who have very high level of dropout intention with a corresponding percentage of 82.4%. This means that 108 of the respondents definitely will leave college before they graduate. Majority of the respondents have very high level of dropout intention. The overall level of dropout intention as shown in Table 5 has an overall mean score of 4.82 which falls under very high category. This means that the respondents definitely will leave college before they graduate.

**Table 4. Level of Dropout Intention**

Dropout Intention	Number of Respondents	Percentage (%)
High	23	17.6
Very High	108	82.4
Total	131	100

**Table 5. Overall Dropout Intention**

Overall Dropout Intention	Category	Meaning
4.82	Very High	Respondents definitely will leave college before they graduate.

Legend: 4.20-5.00=Very High; 3.40-4.19=High; 2.60-3.39= Moderate; 1.80-2.59=Low; 1.00-1.79=Very low

This finding agrees with a study [23] which found out that the first two years in college are critical for the students as they present the higher dropout points. The findings of the related study reported an almost 40% dropout rate for these years. Poor quality of teaching, increased demands and poor performance have been identified as critical factors in student's decision to dropout in their chosen disciplines.

Table 6 presents the overall Weighted Point Average (WPA) of the respondents. During the prelim term of the First Semester, Academic Year 2018-2019, the overall Weighted Point Average (WPA) of the respondents is 2.36. The statistician converted this number for facility and ease during computation for correlation in such a way that 1.0, the highest WPA, is converted to 5.0 and vice versa. The converted number is 3.64 which belongs to the category 'High'. This means that the respondents have above average Weighted Point Average (WPA).

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**Table 6. Overall Weighted Point Average (WPA)**

Term	Overall WPA	Converted	Category
Prelim	2.36	3.64	High

Legend: 4.20-5.00=Very High; 3.40-4.19=High; 2.60-3.39= Moderate; 1.80-2.59=Low; 1.00-1.79=Very low

Table 7 presents the correlation among the variables employed in the study. It shows the correlation between locus of control and academic success indicators namely, the dropout intention and WPA; and between motivation and academic success indicators namely, the dropout intention and WPA. In terms of locus of control and dropout intention, because the p-value of 0.223 is greater than 0.05 alpha level of significance, the null hypothesis is accepted, therefore, there is no significant relationship between locus of control and dropout intention. In terms of locus of control and WPA, because the p-value of 0.039 is lesser than 0.05 alpha level of significance, the null hypothesis is rejected, therefore, there is significant relationship between locus of control and WPA. The correlation coefficient (r value) is 0.181 which has a positive direction but a weak strength of association. This means that as the locus of control increases, WPA also increases and as locus of control decreases, WPA also decreases. It follows that as locus of control becomes more internal, the WPA increases while as locus of control becomes more external, the WPA decreases. However, the strength of increase or decrease is weak. In terms of motivation and dropout intention, because the p-value of 0.842 is greater than 0.05 alpha level of significance, the null hypothesis is accepted, therefore, there is no significant relationship between motivation and dropout intention. In terms of motivation and WPA, because the p-value of 0.865 is greater than 0.05 alpha level of significance, the null hypothesis is accepted, therefore, there is no significant relationship between motivation and WPA.

**Table 7. Correlation among variables employed in the study**

		dropout intention	WPA
locus of control	Pearson Correlation	0.107	<b><u>0.181</u></b>
	Sig. (2-tailed)	0.223	<b><u>0.039</u></b>
motivation	Pearson Correlation	0.018	0.015
	Sig. (2-tailed)	0.842	0.865

Legend: Bolded and underlined - Correlation is significant at the 0.05 level (2-tailed).

This finding agrees with a study [24] which found out that there is a positive relationship between academic performance in terms of grade average and locus of control. The study revealed that as students' locus of control increases or becomes more internal, their belief that their academic success depends on themselves also increases and this significantly increases their grade average for the time of study. The study also found out that students who attributed their academic success to the environment and opportunities or students with external locus of control had diminishing school performance in terms of grade average.

Table 8 presents the model summary examining the influence of locus of control and motivation on dropout intention. From the multiple regression analysis, 1.2% of the variation in the dropout intention can be explained by variation in locus of control and motivation. The 98.8% of the variation in the dropout intention is unexplained by locus of control and motivation. Hence, other factors were overlooked.

**Table 8. Model summary examining the influence of locus of control and motivation on dropout intention**

Model Summary				
	R	R square	Adjusted R square	Se
1	0.108 <sup>a</sup>	0.012	-0.004	0.38262

a. Predictors: (Constant), motivation, locus of control

b. Dependent Variable: dropout intention

Table 9 presents the regression of predictors, namely the locus of control and motivation to dropout intention. The regression analysis shows that because the p-values of locus of control and motivation which are 0.226 and 0.860, respectively, are greater than 0.05 alpha level of significance, the null hypothesis is accepted. Therefore, locus of control and motivation do not influence dropout intention.

**Table 9. Regression of Predictors to Dropout Intention**

Coefficients <sup>a</sup>			
Model		B	Sig
1	(Constant)	4.753	0.000
	locus of control	0.001	0.226
	motivation	0.012	0.860

Table 10 presents the model summary examining the influence of locus of control and motivation on WPA. From the multiple regression analysis, 3.3% of the variation in the WPA can be explained by variation in locus of control and motivation. The 96.7% of the variation in the WPA is unexplained by locus of control and motivation. Hence, other factors were overlooked.

**Table 10. Model summary examining the influence of locus of control and motivation on WPA**

Model Summary				
	R	R square	Adjusted R square	Se
1	0.181 <sup>a</sup>	0.033	0.018	0.49484

a. Predictors: (Constant), motivation, locus of control

b. Dependent Variable: WPA

Table 11 presents the regression of predictors, namely the locus of control and motivation to WPA. The regression analysis shows that because the motivation p-value of 0.896 is greater than 0.05 alpha level of significance, the null hypothesis is accepted. Therefore, motivation does not influence WPA. The regression analysis also shows that because the locus of control p-value of 0.040 is lesser than 0.05 alpha level of significance, the null hypothesis is rejected. Therefore, locus of control does significantly influence WPA. Also presented in the table is the Beta Coefficient of locus of control which is 0.003 which can be interpreted as: for every unit increase in locus of control, there is an increase of 0.003 in WPA. This means that as locus of control increases by one unit or as locus of control becomes internal, WPA increases by 0.003. The Beta Coefficient of the intercept (constant) is 3.514 which can be interpreted as: even without locus of control and motivation, WPA still increases by 3.514, This further implies that there are other factors that significantly influence the WPA of the respondents.

**Table 11. Regression of Predictors to WPA**

Coefficients <sup>a</sup>			
Model		B	Sig
1	(Constant)	3.514	0.000
	locus of control	0.003	0.040*
	motivation	0.011	0.896

a. Dependent Variable: WPA

**CONCLUSION**

The thrust of the study was to determine the influence of locus of control and motivation on academic success of first year Radiologic Technology students. Based on the findings of the study, several conclusions are drawn. Majority of the respondents had very strong external locus of control while the least number of respondents had internal locus of control. The respondents had a moderate belief that events are beyond their control. Overall, respondents were seldom motivated. In terms of intrinsic regulation, respondents were seldom motivated. In terms of introjected regulation, respondents were seldom motivated. In terms of identified regulation, respondents were seldom motivated. Majority of the respondents had very high level of dropout intention. Respondents definitely will leave college before they graduate. Respondents had above average Weighted Point Average (WPA). There was no significant relationship between locus of control and dropout intention, between motivation and dropout intention and between motivation and WPA. There is weak significant relationship between locus of control and WPA. Locus of control and motivation did not influence dropout intention. Motivation did not influence WPA but multiple regression analysis found out that locus of control did influence WPA.

Based on the findings of the study and conclusions, few recommendations are formulated. Since students had external locus of control, they generally believe that their successes or failures result from external factors beyond their control, such as teachers and educational facilities, the school should strengthen teaching skills of the instructors and implement interactive programs that would increase the knowledge of the students in a particular area of study. The school may revisit the offered educational materials and facilities and check them if they are still effective or not.

Since it was found out that students had very low level of motivation, the school should tap organizations to implement activities that can intensify the motivation of the students. Instructors could also influence the motivation of students by giving reward to students and making pressures in the deadline since identified regulation was found out to be low. Since it was found out that students had very high level of dropout intention, the school should recheck the teaching strategies of the Radiologic Technology program as well as the factors that affect the dropout intention of the students. The school may implement programs and activities that would increase the retention of the students to gain more profit as well as produce more healthcare professionals in the future.

Since locus of control had positive direct correlation with the WPA of the students, the students should use the teaching materials and educational facilities offered by the school. In response for this increasing demand of the students, the school should offer the best facilities since this had positive impact on the students. Since it was found out that locus of control influences the WPA of the students, programs that could increase study skills of the students could be strengthened. Lastly, the future researchers may look for other factors that would affect the dropout intention as well as the academic performance of the students. Aside from those factors, they may add other demographic profile that could affect the relationship between the variables employed in the study.

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