

Factors influencing students performance in Wawasan Open University: does previous education level, age group and course load matter?

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FACTORS INFLUENCING STUDENTS PERFORMANCE IN WAWASAN OPEN UNIVERSITY: DOES PREVIOUS EDUCATION LEVEL, AGE GROUP AND COURSE LOAD MATTER?

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ABSTRACT

Factors influencing students' performance have interest education providers especially those keen to produce knowledgeable and skillful graduates that can contribute to the social and environmental landscape. Ascertaining the factors governing the academic performance of students is a challenging task as this is a product of various factors eg. psychological, socio-economic and environmental factors.

With a view to making higher education more accessible to adult learners and recognizing open distance learning as a new alternative in the tertiary education arena in Malaysia, its Ministry of Higher Education has implemented the Open Entry Policy in July 2006. Wawasan Open University (WOU) is one of three institutions in Malaysia that has been approved to admit students under this Open Entry Admission System. The entry requirements for adult learners as outlined in this policy emphasizes the age of the learner and their prior academic/experiential qualifications.

The objective of our study is to examine whether the students' age or their prior formal education moderated by the semester course load would influence their performance. The sample of this study comprised 1271 students gathered from three different intakes. The GPA of each student obtained at their first semester of studies was employed to measure their performance.

The outcomes of this study revealed that the number of courses registered by each student from diverse academic background and various age did not impact on their GPA performance. It was also discovered that the combined factors of academic background and age have very little significant effect on the GPA as well. Nevertheless, independently the academic background or the student's age significantly affected the GPA performance. This finding will provide useful information for the development and improvement of the learner support system to meet the learning needs of students based on their diverse academic background and age groups.

INTRODUCTION

Education institutions worldwide have always placed great emphasis on the factors governing the performance of students. Growing numbers of educational institutions particularly distance learning universities where its student populations are matured working adults are expressing concern as their students may get deviated or their performance affected along the course of study because of other commitments in life. Hence, the scope of this study is to determine some of the underlying factors that may affect student's performance eg. previous education level, age group and the semester coarse load.

Distance learning may still be a new phenomenon in developing countries like Malaysia but in developed countries like USA and UK this field of education is no longer a new trend. Today, a significant number of students have received their formal education through this mode. Distance learning has pervaded all levels of education that it has now moved from being a marginal to becoming an integral part of the overall educational and training provision (Moore, 22002; UNESCO, 2002). Malaysia in its role to make higher education more accessible has implemented the Open Entry Policy in July 2006 to be adopted by two open and distance learning institutions in Malaysia namely Wawasan Open University (WOU) and Open University Malaysia (OUM).

The education pathway in Malaysia consists of the following ascending stages:

- Primary Education (begins at the age of 7 and ends at the age of 12 which is equivalent to Year 1 to Year 6)
- Secondary Education (begins at the age of 13 and ends at the age of 17 which is equivalent to Year 7 to Year 11)
- Pre-University (begins at the age of 18 and ends at the age of 19)
- Tertiary Education (usually would begin at the age of 20 and ends at the age of 24)

Students will be required to undertake and pass certain standardised tests at the secondary education and pre-university stage before they are allowed to proceed to the next stage.

The standardised test at the secondary education level consists of PMR (Year 9) and SPM (Year 11, which is equivalent to O-Level) while at the pre-university level the exit test is STPM (equivalent to A-Level).

In a conventional university in Malaysia, to be considered for admission into the undergraduate degree a candidate must possess a minimum qualification of STPM/A-Level (Year 19). However under the recent Open Entry Policy implemented by the Ministry of Higher Education of Malaysia, candidate must be at least 21 years of age as well as possess a minimum of PMR (Year 9) qualification and will be subjected to an assessment of prior learning experience to assess his academic ability, interest and suitability for tertiary level studies.

On the basis of the implementation of this Open Entry Policy system, the objective of this study was to explore whether the previous education level or the student's age or these amalgamated factors would have any impact on their performance. This study also investigated the effect of a moderator (number of courses enrolled) on the said-factors. Through these findings, instructors may improve the course design, syllabus, teaching methods and assessment strategy and enhance its learning support system to achieve the learning outcomes or programme goals. Another contribution is to demonstrate the impact of these variables on student performance in admission of students via Open Entry System.

LITERATURE REVIEW

Students performance such as grades and test scores had been identified as one of the measures to determine the effectiveness of distance education (Merisotis & Phipps, 1999). Grade point average (GPA) has long been regarded as a numerical criteria of academic performance (Jossey, 1977). Student's academic performance is a product of various factors eg. psychological, socio- economic and environmental factors (Syed & Raza, 2006). Students performance are not the result of simple cause- effect relationships, but of interactions among factors such as ethnicity, gender, age, learning abilities, learning support, motivation of learning and achievement (Patricia et al, 2006). Yvonne & Kola (2001) even elaborated that student performance is very much dependent on the type and location of the institution as well as the socio-economic background.

Chansarkar and Mishaeloudis (2001) reported that the performance of students is not affected by factor such as age but is associated with qualification in the context of quantitative subjects. Nevertheless there are researchers who have discovered significant differences in performance, learning, attitudes, motivation and experiences based on age (Rekkedal, 1983).

In Alstete & Beutell (2004) investigation, it was found that the prior academic qualification which was measured in standardized test score such as SATs and GMATs did not relate to the performance of students in distance learning courses.

Considering all these possible variables that affect the students performance as discussed by researchers either from a conventional or open distance learning institutions, we have selected the age and prior academic qualification factors moderated by the number of courses registered in our study. A moderator is a quantitative or qualitative variable that may affect the direction and/or strength of the relationship between the dependent and independent variables. Specifically within a correlational analysis framework, a moderator is a third variable that affects the zero-order correlation between two other variables (Baron & Kenny, 1986) . In most of the research reviews, the number of courses enrolled by a student is rarely used as the moderator of the study.

METHODOLOGY

Data collected was obtained from the university's student records data base for 1271 students who have sat for their first semester exams. This sample comprised students from three different intakes. The sample size studied was relatively larger than the sample size usually employed by researchers which was an average of 200 to 300 students. This sample represented a range of socioeconomic groups who are geographically distributed across Peninsular Malaysia and is homogenous in nationality. First semester GPA being the dependent variable had been regarded as an indicator of the student's performance or success transitioning from his last academic pursuit to tertiary education in Wawasan Open University open distance learning environment.

The student's age and the highest academic qualification obtained prior to joining the university were used as the independent variables for this study. The number of courses

enrolled by each student varied from 1 to 4 courses was employed as the moderator of this investigation.

For analysis of data and to assess the objective of this study, the quantitative information obtained was analysed using the SPSS software which operated the ANOVA test and multiple linear regression. Correlation coefficient was used to measure the strength of the relationship between variables while coefficient of determination was used as the descriptive measure of the utility of the regression equation for making predictions (Weiss, 1994).

FINDINGS

The age of the students' population is distributed across a wide range with the youngest being 21 years of age and the oldest is 71 years. As illustrated in Table 1, the average age for the students is 31 years. These students were able to achieve a mean GPA score of 2.80. The lowest GPA obtained was 0.42 and the highest GPA recorded was 4.0 which incidentally is the maximum limit for the GPA performance. The number of courses which a student was permitted to enroll in a semester varied from 1 to 4 courses and averagely a student would register for 3 courses.

Table 1 also indicated that almost 99% of the students would have received their formal education until Year 11 before progressing to tertiary studies.

Table 1. Descriptive Statistics for the variables investigated (n=1271)

Quantitative Variables	Mean	Standard Deviation
Age	30.68	8.32
GPA	2.80	0.91
Number of courses (Moderator)	2.93	0.60

Qualitative variable	Level	Number of students
Academic qualifications	PMR <i>[equivalent to Year 9]</i>	11 [0.9%]
	SPM <i>[equivalent to Year 11]</i>	510 [40.1%]
	STPM <i>[equivalent to A-LEVEL]</i>	272 [21.4%]
	DIPLOMA	444 [34.9%]
	DEGREE	32 [2.5%]
	MASTER	2 [0.2%]

Table 2 presents the results of the multiple regression analysis. The correlation coefficient, R of 0.196 signifies a very weak positive correlation between the GPA obtained and the multiple independent variables of age and previous academic background of students. As indicated in R-square only approximately 4% of the variation in GPA is accounted by the compound factors of age and academic background while the rest of 96% is explained by other factors not mentioned in our regression model.

Similar trend was also observed when multiple regression statistical analysis was applied to determine the effects of several joint independent variables such as age, education background and number of courses enrolled on the GPA attained. Concurrently, these three factors only accounted for 4% of the variation in GPA. This would connote that 96% of the variation is governed by other factors not studied in this regression model.

Table 2. Multiple Regression Analysis

	Model	R	R Square
	Education background & Age	0.196	0.038
	Education background, age & number of courses enrolled	0.199	0.040

Independent variables : Education background/age/number of courses enrolled
Dependent variable : GPA

The ANOVA details displayed in Table 3 provide details of the variation explained by the regression model. A model with large regression sum of squares in comparison with residual sum of squares indicates that the model accounts for most of the variation in the dependent variable. In both of the study models here, the magnitude of residual sum of squares is reversely larger than the regression sum of squares, thus denoting that both the models investigated are not able to account for significant variation in the GPA acquired.

Table 3. Analysis of Variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig. (p)
Education background & Age	Regression	39.739	2	19.869	25.216	0.100
	Residual	995.967	1264	0.788		
	Total	1035.705	1266			
Education background, age & number of courses enrolled	Regression	41.067	5	8.213	10.413	0.100
	Residual	994.639	1261	0.789		
	Total	1035.705	1266			

Table 4 evidently illustrated that the two independent variables (age and academic qualification respectively) were found to have significant effect on the GPA of students. Age was a significant predictor of GPA performance ($p < 0.05$). This will imply that older students would perform better than students of the younger age. Similarly the education background of a student can also positively predict the GPA performance where students with higher academic qualification tend to have higher GPAs.

However, when the age of students was moderated by the number of courses enrolled, it did not show any significant effect on their GPA performance. This trend was also reflected when this moderator was applied on the prior education background of the students. Therefore, separately the students' age and their academic background when moderated by the number of courses registered in a semester do not influence the GPA performance.

Table 4. Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig (p)
	B	Std. Error	Beta		
- Age	0.20	0.003	0.188	6.769	0.000
- Education background	0.081	0.027	0.085	3.061	0.002
- Age moderated by number of courses enrolled	0.004	0.005	0.121	0.853	0.394
- Education Background moderated by number of courses enrolled	0.006	0.041	0.024	0.156	0.876

DISCUSSIONS

The trend revealed for the effect of age was consistent with those described in the previous research whereby older matured students inclined to achieve higher GPA and perform better academically than younger students. Based on this, we can infer that younger students may likely achieve poorer results in their studies under the open distance learning system. Therefore a concrete learning support system must be developed, implemented and enhanced to guide these younger students for self-study and serve as the interface between the institution and the student. If the students are not fully aware of the various learning support services and system available before joining, they may find themselves in an unfamiliar territory. This will lead to poor student performance and eventually may contribute to high attrition rate. This is more so because adult students perceive the outcomes (eg. grade performance, career options etc.) as the representation of a fair exchange of money invested as well as time and effort devoted.

Therefore, the learning support services and system established must meet the variety of needs of the adult learners. In a nutshell, these system and services will focus on the administrative and academic aspects. This should include but not be limited to, establishment of Regional Office/Learning Centres, face-to face tutorial sessions conducted

by qualified and experienced tutors, a comprehensive Learning Management System, a digital Library, career counseling, advising and registration opportunities etc.

Strong effects of prior academic qualification on GPA performance proved that prior formal education at a more advanced level will help students to thrive through their tertiary studies less strenuously. The recent Open Entry Policy implemented by the Ministry of Higher Education in Malaysia with the basic objective of providing adult learners a wider access to higher education and promoting open distance learning as an alternative mode to tertiary education in the country accept students with a minimum qualification of Year 9 (PMR) and must be at least 21 years of age. Recognizing the fact that students with lower level of formal education will deliver poorer results, it is imperative that these students be equipped with learning strategies and skills as well as fundamental knowledge that will strengthen their foundation to pursue and excel in higher level courses of their intended programme. In this regard, students with lower level of formal education must be exposed and required to register for courses such as Learning Skills for University Studies and other foundation courses during their first semester of studies. This should form an integral and essential component of distance learning education.

Interestingly, the moderator (number of courses enrolled) has minimal effect on the relationship between the GPA attained and the age or previous academic qualification. However, one may suspect that interpretation of causal relation between the number of courses and the GPA may be possible. In any case, one may conclude that higher GPAs are associated with students' age and their previous highest academic qualification.

However when the age and the previous academic qualification factors were combined to examine its effect on the GPA, no significant effect was observed. This would suggest that other hidden variables may have a collaborative effect in determining the GPA. It may be worth to examine other factors which may influence the performance of matured students as their needs are often different from the conventional students. Conventional students comprise mainly younger students whom their needs may only revolve more around academic issues. Conversely, adult matured learners are commonly associated with factors such as delayed entry into college/tertiary education institution, not having a regular high school certificate, married with children, being a single parent, being financially independent and have a full-time job. These factors may affect the motivation or mitigate the student's commitment particularly when the core of open distance learning is student-centred where the students take responsibility of learning. Teachers or tutors are merely there to facilitate learning and help students to access and process information. In this regard, student's commitment is a variable that is worth examining. The time spent on studying may be used as yardstick to measure the commitment of students.

CONCLUSION

Keeping in view of the importance of learning support system and services, future study may incorporate additional variables such as student's commitment into the present model which may help account for higher proportion of the variation in dependent variable and to achieve a better model fit.

Although the findings of this study have valid points it can be further improved. Measurement of the students' performance using GPA may also be substituted in future studies by using other indicators such as total earned credit hours. This indicator may overcome the apparent weakness in the GPA value as an indicator for which the GPA may lack of comparability across programmes, classes and schools.

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