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Exploring the Impact of Work Experience on Part-Time Students' Academic Success in Malaysian Polytechnics

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Disciplines

Agriculture | Bioresource and Agricultural Engineering | Engineering Education

Comments

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Abstract

The study explored the influence of work experience on adult part-time students' academic success as defined by their cumulative grade point average. The sample consisted of 614 part-time students from four polytechnic institutions in Malaysia. The study identified six factors to measure the perceived influence of work experiences—positive belief, negative belief, intrinsic motivation, learning orientation, deep learning approach, and surface learning approach. The results indicated that lower academic success was associated with higher negative belief, lower intrinsic motivation and adopting surface learning approach. Students with a deeper learning approach, greater intrinsic motivation, and greater learning orientation tended to perceive higher positive belief. In contrast, students who favored surface learning approaches were more likely to perceive negatively the impact of work experiences on their academic learning. The best-fitted path model demonstrated students' academic success was affected negatively by negative belief and weakly by intrinsic motivation. Other factors did not have significant direct effects on students' academic success. These findings suggest that the success of adult part-time students does not rely on their positive attitude alone, but also could depend on the effectiveness of the classroom environment, teaching and learning strategies, and assessment methods.

Keywords: adult learner, learning approaches, motivational factors, nontraditional students

Introduction

Pressured to enhance employability and quality of life, many adults decide to pursue higher education. The growing trend of adults' participation in higher education is evident in many countries. Recent data from the Organization for Economic Co-operation and Development (OECD) (2010) indicate that from 1995 to 2008, the enrollment for 20- to 29- year-olds in tertiary education increased at a rate exceeding 12% for most of the OECD countries. Adults appear to have a higher preference for part-time over full-time enrollment in higher education, because they can continue to earn a living and take care of dependents (Chen & Carroll, 2007; Pusser et al., 2007).

Despite their increased participation in higher education, adult learners' degree-completion rates remain substantially lower than that of traditional students, particularly for those enrolled part-time. For instance, the Higher Education Funding Council in England (2009) reported that 59% of the part-time students in United Kingdom higher education institutions from the 1996-97 cohort failed to complete their degrees. Similarly, in the United States, 73% of the part-time

students from the 2000-01 cohort left universities without degrees (Chen & Carroll, 2007). Thus, determining factors that could facilitate or impede part-time students' academic success have become a major concern in higher education.

In pursuing their academic goals, adult learners assume multiple roles. Conflicting roles between academics and other responsibilities such as family, work, and social life may create new challenges for adults that may limit their academic achievement (Chao, DeRocco, & Flynn, 2007; Fairchild 2003). Arguably, the varying complexity of life's demands and experiences acquired throughout their lives makes each adult unique (Chao et al., 2007). Their unique characteristics could influence their academic learning differently (Donaldson & Graham, 1999; Graham, Donaldson, Kasworm, & Dirx, 2000; Kasworm, Polson, & Fishback, 2002; Merriam, 2005).

Adults bring their life experiences to their classroom (Graham et al., 2000; Kasworm et al., 2002; Merriam, 2005). Therefore, their academic learning and life experiences, such as social and work responsibilities, are closely intertwined. Yet, only a very limited array of studies attempts to understand students' perceptions on how life experiences, specifically work experience, could facilitate or hinder their engagement with academic learning.

This area remains unexamined in Malaysia, specifically in the context of the polytechnic educational system. Despite the number of part-time students in higher education increasing by 50% from 2002 to 2007 (Ministry Of Higher Education [MOHE], 2009), very little is known about how adult students use their job knowledge and skills in their academic learning, and how these factors influence their academic success. Thus, to better understand the impact of work experience on part-time students' academic success in Malaysian polytechnics, this study explored various aspects of student motivations and learning approaches to integrate their work experience with academic learning and how these factors influence their academic success. Understanding these relationships may help educators and administrators develop and implement policies that address the needs of polytechnic adult learners to ensure their success in part-time programs.

Literature Review

Adult Learning

Adult students in higher education can be distinguished from traditional students—who enter higher education directly after graduating from high school—through the aspects of age, education, socio-economic background, and social roles. Predominantly, adult students in higher education are older (aged above 25); lack academic preparation or have parents with no post-secondary education; come from families with lower socio-economic status and minority ethnic groups; and likely are married, have dependents, work full-time, and are financially independent (Chen & Carroll, 2007).

The distinctive characteristics of adult students have led to significantly different learning experiences from traditional students. Some studies associated adult characteristics with poor time management, limited study skills, lack of financial resources, problems related to work, and family commitments that contributed to their failure to complete studies or their low academic achievement (Abdol Latif & Fadzil, 2007; Fairchild, 2003; Robotham & Julian, 2006). However, some studies argued that adult learners' life experiences, such as work, family, and other social roles, could create opportunities for their success in academic studies (Graham et al., 2000; Rogers, 2002). These experiences may contribute to greater maturity and motivation to persist

and succeed in their academic learning (Graham et al., 2000; Spanard, 1990). As many adults enroll in higher education for job-related reasons, they tend to demonstrate clear learning goals and greater intrinsic motivations than do younger students (Desjardins et al., 2006; United Nations Educational, Scientific and Cultural Organization [UNESCO], 2009). Additionally, in interviews with successful mature students, Reay, Ball, and David (2002) discovered their positive characteristics, such as determination, commitment, and adaptability to persist and succeed in their studies.

Knowles in 1980 through the self-directed theory emphasized life experiences as an integral part of adult learning (Cranton, 1992). This theory assumes that adult learning is influenced by their self-control over their own learning goals, their vast learning resources gained from life experiences and social roles, their own learning strategies, and their evaluation of their own performance. Self-directed learning theory has made a major contribution towards understanding how adults learn. However, Garrison (1997) pointed out that Knowles overlooked the influence of cognitive and motivational aspects of learning. Garrison (1997) proposed a comprehensive model of self-directed learning, which focused on three interconnected components of learning in educational contexts: “external management (contextual control), internal monitoring (cognitive responsibility), and motivational (entering and task) issues associated with learning” (p. 2). Consistent with Garrison’s comprehensive self-directed learning model, motivational factors (Alderman, 2008; Linnenbrink & Pintrich, 2003; Zimmerman & Schunk, 2008) and learning approaches (Biggs, 1987; Richardson, 1995) are delineated as two key factors that impinge upon understanding student learning.

Motivational Factors and Learning Approaches

The concept of motivation explains the reasons students engage in particular actions and persist toward achieving their goals (Alderman, 2008). According to social-cognition theory, motivational factors, such as the learners’ beliefs about efforts, competences, and goals, affect their academic achievement (Alderman, 2008). Literature on motivation reveals other motivational constructs such as self-efficacy beliefs (Linnenbrink & Pintrich, 2002, 2003), task value (Zimmerman & Schunk, 2008), intrinsic motivation (Pintrich et al., 1991), extrinsic motivation (Pintrich et al., 1991), and learning orientation (Pintrich et al., 1991) also influence learners’ academic success.

Another important concept needed to understand adult learning is through their approaches to learning (Biggs, 1987). Based on students’ strategies and motives to accomplish a task, Biggs (1987) identified two widely used learning approaches—surface and deep. Students with a surface approach focus on meeting the minimal requirements and tend to emphasize memorization of important items without a clear understanding of the contents they learned (Biggs, 1987). On the other hand, deep learning students focus on meaningful understanding of the materials learned using higher levels of cognitive thinking, such as relating to previous knowledge and theorizing about what is learned (Biggs, 1987). Mature students were more likely to adopt a meaning-orientation (deep) approach, compared to non-mature students, who were more likely to use a reproduction-orientation (surface) approach (Biggs, 1987; Richardson, 1995).

Research studies also showed the motivational constructs are reciprocally interrelated with learning approaches (Linnenbrink & Pintrich, 2003). Learners with high self-efficacy beliefs, learning goal orientation, intrinsic motivation, and task value, are more likely to display a deeper learning approach and better performance (Pintrich & Garcia, 1991; Wolters & Pintrich, 1998).

Pintrich and Garcia (1991), on the other hand, found that surface processing strategies are weakly related to both intrinsic and extrinsic orientation.

Consistent with the literature, it is expected that the ability of adult students to relate work experiences to their academic learning will result in higher academic achievement. Thus, this study investigated the impact of work experiences on part-time students' academic success through the interrelated concepts of motivational factors and learning approaches. The motivational concept used for this study was derived from social cognitive theory, which includes self-efficacy beliefs, task value, intrinsic motivation, extrinsic motivation, and learning orientation as motivational factors. Students' approaches to learning were characterized as deep and surface learning approaches.

Research Questions

This study explored three research questions:

1. How does work experience influence the academic learning of adult part-time students in the aspects of motivational factors and learning approach?
2. What is the relationship between adult part-time students' motivational factors, learning approaches, and academic success?
3. How do adult part-time students' perceive the impact of work experiences on their academic learning influence their academic success?

Methods

This study employed a non-experimental, correlational research design (Gliner & Morgan, 2000) to understand the patterns of part-time students' perceptions concerning the impact of work experiences on their academic learning and to investigate this relationship to students' academic success.

Measures

A two-part survey questionnaire was developed. The first section measured perceived influence of work experience on academic learning. The *Motivated Strategies for Learning Questionnaires* (MLSQ) (Pintrich et al., 1991), the *Learning and Studying Questionnaire* (LSQ) (Enhancing Teaching-Learning Environments in Undergraduates Courses [ETL], 2001), and the *Approaches and Study Skills Inventory for Students* (ASSIST) (Entwistle, 1997) were adapted to focus specifically on the influence of job knowledge and skills on part-time student's academic learning rather than their experience in specific courses. For example, item 10 in MLSQ "*It is important for me to learn the course material in this class*" was amended to "*It is important for me to learn the course materials to improve my work performance*" (Table 1).

Table 1

Description of Items by Construct

Deep Learning Approach

When a theory, interpretation, or conclusion is presented in class or in the readings, I try to relate it to my job knowledge and skills¹.
 I often find myself questioning things I hear or read in my courses based on my understanding from my job knowledge and skills².
 I try to apply my job knowledge and skills in problem solving activities in class¹.
 I can memorize better if I relate new concepts to my job knowledge or skills⁴.

Surface Learning Approach

I find that most of my courses are not related to my job knowledge and skills².
 I find I can get by in most assessment by memorizing key sections rather than trying to understand them².
 I am happy if I get good grades even though do not fully understand the material².
 I tend to memorize facts and procedures rather than distinguish principles or concepts².

Learning Orientations

I hope the learning experience here will make me more independent and self-confident³.
 I mainly need the qualification to enable me to get a good job when I finish³.
 I want to learn things, which might let me help people, and/or make a difference in the world³.

Extrinsic Motivation

Getting a good grade in my courses is the most satisfying thing for me right now¹.
 The most important thing for me right now is improving my overall grade point average¹.
 I want to do well in my courses because it is important to show my ability to my family, friends, employer, or others¹.
 I take my courses just to get my degree².

Intrinsic Motivation

I find most topics in my courses interesting if they are related to my job knowledge and skills¹.
 The most satisfying thing for me in my courses is when I can relate the course content to my job knowledge and skills¹.
 When I have the opportunity, I choose course assignments that I can relate to my job knowledge and skills even if they don't guarantee good grades¹.

Task Value

It is important for me to learn the course materials to improve my work performance¹.
 I think I will be able to use my job knowledge and skills in most of my courses¹.
 I think courses in my program are useful for the improvement of my job knowledge and skills¹.

Note. ¹adapted from the Motivated Strategies for Learning Questionnaires (MLSQ) (Pintrich et al., 1991); ²adapted from The Learning and Studying Questionnaire (LSQ) (Enhancing Teaching-Learning Environments in Undergraduates Courses [ETL], 2001); ³adapted from the Approaches and Study Skills Inventory for Students (ASSIST) (Entwistle, 1997); ⁴New

Twenty-four items related to deep and surface learning approaches, learning orientations, extrinsic motivations, intrinsic motivations, self-efficacy beliefs, and task value were selected

and adapted to suit the non-traditional population and the context of this study. Nine additional items were developed by the researchers, including four items on negative beliefs, four items on positive beliefs, and one item on deep learning approach. Participants were asked to respond to each statement, using a five-point Likert-type scale from 1 = strongly disagree to 5 = strongly agree. Detailed description of items according to their constructs is shown in Table 1. The second section assessed demographic variables such as gender, age, marital status, number of children, financial resources, and parent's educational level.

Academic success was measured using students' cumulative grade point average (CGPA). The CGPA for each participant was extracted from the semester academic reports obtained from the examination coordinator in the selected institutions.

The questionnaire used dual languages, English and Malay, to increase clarity during the collection of data. The translation was completed by a graduate student from Iowa State University and a lecturer from one of the polytechnic institutions in Malaysia. Both of them were native Malay speakers.

Participants

The population for this study was part-time diploma-level students enrolled in at four polytechnic institutions in Malaysia. Students in second- to final- semester were selected because they had at least one semester of academic learning experience as non-traditional students. With the experience of at least one semester of studying while working, these students could provide a broader perspective of the impact of work experience on their academic learning. First-semester students were excluded because they had limited academic learning experience and no CGPA score, which was used as a measure for academic success.

A total of 614 out of 1,054 part-time students returned the questionnaires, representing a 58% response rate. The sample consisted of 437 (71.5%) males and 174 (28.5%) females and ages ranged from 20 to 49 years (mean=25.5). Most of the respondents had work experience of less than 3 years (55.3%), were first generation students (88.2%), were single or married with no children (78.6%), were enrolled in a program related to their job (75.7%), had a monthly salary between Malaysian Ringgit 1000 and 2000 (71.0%), and relied on earnings from employment to support their studies (63.3%).

Procedure

Formal approval for conducting the study was obtained from both the Iowa State University Human Subject Institutional Review Board (IRB) and the Director of the Department of Polytechnic and Community College Education in Malaysia.

The questionnaires were hand-delivered to all part-time students in the study during their scheduled classes either by the researcher or their academic advisor. A letter of introduction assuring participants' anonymity and confidentiality was attached to each questionnaire. They were given approximately thirty minutes of class time to complete the questionnaire. The completed questionnaires were returned directly to the researcher or academic advisor in class using a provided envelope. Participation was voluntary and consent was implied if the participants returned the questionnaires.

Participants were asked to write their identification numbers on the questionnaire for the purpose of assessing their CGPAs from their semester academic reports. Copies of the semester academic reports were obtained from the examination coordinator at each polytechnic. To ensure

confidentiality and anonymity, names of students were deleted from the academic reports. The researcher matched the survey data with the academic reports using participant's identification numbers.

Data Analysis

The data gathered from this survey were analyzed using Statistical Packages for Social Sciences (SPSS) Version 17. The data were analyzed for data screening, multivariate assumption tests, factor structures, reliability, correlations among variables, and relational model testing.

Data were screened using SPSS Frequencies analysis to account for the accuracy of data entry, missing data, skewness, kurtosis, and frequency histogram. This information was used to evaluate the three important multivariate assumptions: 1) the absence of outliers, 2) normality, and 3) linearity.

Factor analysis was performed to ensure valid measurement for the influence of work experience on academic learning variables, based on students' perceptions with no specified a priori restrictions. Exploratory factor analysis (EFA) is best applied for scale development and to evaluate the pattern of relationships among items (Tabachnick & Fidell, 2007). Furthermore, EFA helps to minimize scale overlapping and improve internal consistency. Initial factor analysis was conducted using principal component extraction with varimax rotation to estimate the factorability of the correlation matrices, the absence of multicollinearity and singularity, the Kaiser measures of sampling adequacy, the number of factors, and the inter-factor correlations. The maximum likelihood extraction method was used for further analysis, because it provides a stricter test of relationship among variables, which happen because it requires a positive definite covariance matrix (Tabachnick & Fidell, 2007).

The final decision on the number of factors to retain was based on the Kaiser criterion of eigenvalue greater than 1, percent of variance explained, number of items in each factor, and interpretability of the factor solution. Cronbach's Alpha, the measure of internal consistency, was used to determine the reliability of the measuring instruments (Gliner & Morgan, 2000).

Linear relationships between factors of the perceived influence of work experience and students' academic success were evaluated using Pearson's correlation coefficient, 'r'. The relationships among variables identified as statistically significant at .05 were used for the relationship model.

The path analysis technique, using AMOS software, was used to further investigate the relationships among the variables. The Maximum Likelihood estimation method was chosen because it has been shown to perform reasonably well with multivariate normally distributed data (Tabachnick & Fidell, 2007). A well-fit model was determined by examining the chosen indicators: Chi-squared model fit (χ^2), the root mean square of error approximation (RMSEA), the comparative fit index (CFI), and the goodness of fit index (GFI) (Tabachnick & Fidell, 2007).

Results

Data Screening

Frequency analysis indicated four respondents had more than 30% non-response variables and were deleted (Tabachnick & Fidell, 2007). The remaining 610 respondents were used for the analysis. No extreme cases of outliers were found. The two missing data for CGPA were

replaced by the mean of all cases, since the amount missing was less than 5% (Tabachnick & Fidell, 2007). Descriptive statistics for the perceived influence of work experience and academic success variables indicated all but two items (first item from both constructs—*Extrinsic Motivation* and *Learning Orientation*) had skewness within ± 2 and kurtosis within ± 3 , the acceptable range for assuming a normal distribution (Tabachnick & Fidell, 2007). The item from *Extrinsic Motivation* was omitted from further analysis because its kurtosis value was higher than 7. The other item was retained because the kurtosis value was slightly higher than 3. Moreover, the examination of the histograms also showed normal distributions. Because there was no statistical inference in this study, it was reasonable to conclude the assumption of normality was not violated for exploratory analysis. The assumption of linearity among pairs of items was met because no serious contradicting skewness for each pair of items was noted. The subject-to-item ratio for this study was 18:1 (610:33). Therefore, the sample size met the rule of 10 (at least 10 subjects for each item in the instrument) and the minimum sample size of 5:1 (the subjects-to-variables ratio) (Garson, 2008; Tabachnick & Fidell, 2007).

Factor Analysis

The results from the principal component extraction with varimax rotation on the remaining 32 items showed inter-item correlations for all items were within the range of .3 to .5, suggesting reasonable factorability, and no multicollinearity or singularity cases. The overall Kaiser’s measure of sampling adequacy (MSA) was .88, above the recommended value of .5 (Tabachnick & Fidell, 2007). The inter-factor correlations presented in Table 2 show the factors were correlated with each other. Given these overall indicators, exploratory factor analysis was then conducted with 32 items using maximum Likelihood extraction and direct oblimin rotation.

Table 2
Inter-factor correlation matrix

Factor	Positive Belief	Negative Belief	Learning Orientation	Deep Learning Approach	Surface Learning Approach	Intrinsic Motivation
1	1.000	-.082	.284	-.449	-.159	.407
2	-.082	1.000	-.079	-.035	.458	.134
3	.284	-.079	1.000	-.197	-.110	.259
4	-.449	-.035	-.197	1.000	-.095	-.343
5	-.159	.458	-.110	-.095	1.000	.097
6	.407	.134	.259	-.343	.097	1.000

Note. Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization.

The maximum likelihood factor extraction method identified six factors, based on the eigenvalue of more than 1, with 51% of the total variance explained. Table 3 summarizes the factor loadings for the 32 items. Items were ordered and grouped by the value of loading. The six factors were interpreted as positive belief (6 items), negative belief (4 items), learning orientation (3 items), deep learning approach (4 items), surface learning approach (4 items), and intrinsic motivation (3 items). Items on positive belief factor measured the students’ judgments on the

importance and usefulness of their job knowledge and skills to accomplish their academic tasks and vice versa, which included self-efficacy and task value items from MLSQ.

Negative belief is concerned with students' perceptions that their work experiences would hinder their studies and their academic achievements. Learning orientation described the student's learning objectives, which included learning orientation questions from LSQ. The deep learning approach described the higher-order thinking strategies used by students to relate their job skills and knowledge to their academic learning, which included questions related to elaboration strategies and help seeking in MLSQ. The surface approach focused on memorization strategies used by students to achieve good grades, which included questions from ASSIST. The intrinsic motivation related to internal motivation and satisfaction in learning, which included items related to intrinsic learning goals from MLSQ. Eight items were deleted because of a factor loading less than .4. Thus, the extrinsic motivation factor was dropped from further analysis.

An examination of the histograms identified few cases of outliers in four factors: intrinsic motivation (1), deep learning approach (2), learning orientation (1), and positive belief (1). After replacing the outliers with the mean value, the skewness and kurtosis of all factors were within a tolerable range of ± 2 for assuming a normal distribution. Thus, the identified factors were used in Pearson's correlational and path analysis.

Table 3
Factor Loadings Based on a Maximum Likelihood Analysis with Direct Oblimin Rotation for 32 Items from Perceived Influence of Work Experience on Academic Learning (N = 610)

ITEMS	POSB ¹	NEGB ²	LO ³	D LA ⁴	SLA ⁵	INTM ⁶
I am confident that I can relate my job knowledge and skills to the concepts taught in my courses.	.789					
I think courses in my program are useful for the improvement of my job knowledge and skills.	.762					
It is important for me to learn the course materials to improve my work performance.	.656					
I think I will be able to use my job knowledge and skills in most of my courses.	.591					
I am confident that I can understand the most complex material presented by the instructor in my courses if I can relate it to my job knowledge and skills.	.460					
Considering the difficulty of the courses in my program, my job knowledge and skills have had a great impact on my success.	.407					
My job knowledge and skills reinforce my understanding of new concepts or ideas I learn in class.						
In class, I often miss important points because I am thinking of my job responsibilities or tasks.		.671				
I cannot concentrate in class because of my fatigue from my job responsibilities.		.667				
I find my job responsibilities or tasks limit my study time.		.631				
I often miss class because of my job responsibilities		.493				
I believe I will get better grades in my courses (modules) if I were a full-time student (not working).						
I find that most of courses are not related to my job knowledge and skills.						
I try to relate my job knowledge and skills with the new concepts that I learn on my own, without help from anyone						
I mainly need the qualification to enable me to get a good job when I finish.			.646			
I hope the learning experience here will make me more independent and self-confident.			.555			

Table 3 (continued)

ITEMS	POSB ¹	NEGB ²	LO ³	D LA ⁴	SLA ⁵	INTM ⁶
I want to learn things which might let me help people, and/or make a difference in the world.			.516			
try to apply my job knowledge and skills in problem solving activities in class				-.750		
Instructors help me to integrate my job knowledge and skills into the course content in class.				-.549		
The evaluation (assessment) of my assignments reflects my work experience application and competencies.				-.445		
When a theory, interpretation, or conclusion is presented in class or in the readings, I try to relate it to my job knowledge and skills.				-.402		
I can memorize better if I can relate new concepts to my job knowledge and skills.						
I am happy if I get good grades even though do not fully understand the material.					.795	
I take my courses just to get my degree.					.672	
I find I can get by in most assessment by memorizing key sections rather than trying to understand them.					.583	
I tend to memorize facts and procedures rather than distinguish principles or concepts.					.538	
The most satisfying thing for me in my courses is when I can relate the course content to my job knowledge and skills.						.439
I find most topics in my courses interesting if they are related to my job knowledge and skills.						.438
I often find myself questioning things I hear or read in my courses based on my understanding from my job knowledge and skills.						.421
I want to do well in my courses because I want to show my ability to my family, friends, employer, and others,						.407
The most important thing for me right now is improving my overall grade point average.						
When I have the opportunity, I choose course assignment that I can relate to my job knowledge and skills even if they don't guarantee good grades.						
% Variance Explained (Total=51.02)	20.14	12.96	5.42	4.76	4.04	3.70

Note. ¹Positive belief; ²Negative belief; ³Learning Orientation; ⁴Deep Learning Approach; ⁵Surface learning Approach; ⁶Intrinsic motivation

Descriptive Statistics and Pearson's Correlations

The correlational relationships are reported in Table 4. Mean scores, standard deviations, and Cronbach's Alpha for each factor are also displayed. Alpha coefficients were found to range from .63 to .82, indicating a moderate to excellent internal consistency of the scales (Tabachnick & Fidell, 2007). Standard deviation of CGPA was the smallest, therefore caution should be taken when interpreting the results. The results showed the average academic achievement of students was in the range of B and above. The students in the sample also *moderately agreed* they used deep learning approaches, but they rated closely to *unsure* for using surface learning approaches. Participants also scored higher mean for positive belief as compared to negative belief. On average, students rated *moderately agree* to both learning orientation and intrinsic motivation.

Table 4
Means, Standard Deviations, Reliabilities and Pearson's Correlation Coefficients of the Variables

Variable	Mean	Std. Deviation	Reliability Cronbach's Alpha	CGPA	Positive Belief	Negative Belief	Learning O ¹	Deep LA ²	Surface LA ²	Intrinsic M ³
CGPA	3.13	0.41		1						
Positive Belief	4.10	0.60	.82	.046	1					
Negative Belief	2.98	0.95	.78	-.242**	-.070	1				
Learning Orientation	4.42	0.58	.65	-.021	.299**	-.046	1			
Deep Learning Approach	3.85	0.61	.72	.002	.544**	-.022	.358**	1		
Surface Learning Approach	2.83	0.92	.75	-.161**	-.152**	.500**	-.030	.017	1	
Intrinsic Motivation	4.23	0.53	.63	.093*	.539**	-.051	.384**	.470**	-.027	1

Note. *statistically significant at $p < .05$, ** statistically significant at $p < .01$
¹orientation; ²learning approach; ³motivation

Pearson's correlation analysis yielded significant positive and negative relationships among the variables. The correlation size was drawn from the following interpretations: a coefficient value greater than 0.7 is strong, below 0.3 is weak or low association, and in between these values is a moderate relationship (Furlong et al., 2000). Positive belief was moderately associated with deep learning approach, intrinsic motivation, and learning orientation. Intrinsic motivation was also moderately related to learning orientation, and deep learning approach, and weakly correlated with students' academic success. Another significant positive relationship was between negative belief and surface learning approach. The results also revealed that students' academic success was negatively related to negative belief and surface learning approach. Surface learning approach was also negatively associated with positive belief.

Path Model

Based on Pearson's correlational matrix between the variables, several models with different combinations of significant paths and plausible structure were analyzed using AMOS. The adjustments made to the models were based on the modification index and the improvement of the goodness-of-fit indices. The best fit path model, illustrated in Figure 1, suggested the deep and surface learning approach as exogenous variables. Furthermore, the model included intrinsic motivation, learning orientation, positive belief, negative belief, and students' academic success as endogenous variables. Positive belief mediated the influence of the deep learning approach, intrinsic motivation for learning, and surface learning on students' academic success. Negative belief, on the other hand, mediated the relationships of surface learning on students' academic success. Learning orientation and intrinsic motivation mediated the relationship between the deep learning approach and academic success.

Discussion

Motivation Factor and Learning Approach Pattern

As adult learners, part-time students in polytechnic institutions in Malaysia demonstrate high mean scores in positive belief, learning orientation, and intrinsic motivation. The high score in positive belief suggests that most students agree their job knowledge and skills are important and useful to accomplish their academic tasks and vice versa. Furthermore, high scores in learning orientation and intrinsic motivation indicate they are internally motivated to learn. Consistent with other studies, polytechnic part-time students perceive they are more inclined toward adopting deep learning as compared to surface learning approaches (Biggs, 1987; Richardson, 1995). These results indicate that part-time students tend to relate their job knowledge and skills to understanding new concepts taught in class. Clearly, the students rank lower on beliefs that their work commitments could limit their academic involvement.

Relationship between Motivational Factors and Learning Approaches

The high correlation between the surface learning approach and negative belief is explainable. According to Biggs (1987), learners with surface learning approaches tend to become depressed and fear the possibility of failure. Thus, those with high surface learning approaches tend to have perceptions that their work commitments could be the main barrier to their involvement in academic learning. Reay et al. (2002) revealed that adult learners who are unsuccessful in their studies tend to put the blame of their failure on other responsibilities, such as family and work commitments. True enough, the surface learning approach and negative belief are not significantly related to either learning orientation or intrinsic motivation. In contrast, students with higher scores in the deep learning approach tend to believe their work experiences could improve their academic learning. Viewing their learning to be interesting and exciting, as it is related to their job knowledge and skills, could be the main reason for the higher scores in positive belief. Furthermore, the fact students employing more toward deep learning approaches was also positively related to higher scores of intrinsic motivation and learning orientation variables (Pintrich & Garcia, 1991).

The most important finding of this study is the significant association between negative belief and students' academic success. Students who believe that work experience hinders their academic learning tend to have lower academic achievement. It is possible that their negative beliefs lead them to disengage in learning, which explains their lower academic achievement. Furthermore, the strong relationship between the negative belief and the surface learning approach adds to their lower academic achievement. Lack of clear understanding of the contents they learned and focusing on memorizing information as segregated ideas may contribute to their lower academic achievement. In fact, the lower scores in learning orientation and intrinsic motivation by students with higher negative beliefs indicate that they are not internally motivated. Those with lower intrinsic motivations tend to be less motivated when they face problems in their academic learning.

Surprisingly, positive belief, learning orientation, and deep learning approach are not statistically related to students' academic success, while intrinsic motivation is weakly associated to students' academic success. Perhaps the use of students' cumulative grade point average as a single measure of academic success could be one of the causes. A more comprehensive measurement of student success that also includes completion time, specific course exams, or standardized assessments could enhance the results.

These findings indicate the higher scores of students' positive beliefs, deep approaches, and learning orientations do not guarantee higher grades. Dart et al. (1999) showed that students' adoption of learning approaches is very closely related to their personal intentions with regard to learning, the context of learning, and their personal characteristics. The learning environment also plays a significant role in the integration of work experience and academic learning (Knowles, 1989). These previous findings explain the obscure relationships among these factors on students' academic success. Even though students perceive they are able to relate their work experience and apply the deep learning approach to their learning, they may not be able to make connections between work experiences and new concepts taught in class. They may need their instructor's help, effective teaching and learning methods, and appropriate classroom environments to encourage application of job skills and knowledge in academic learning environments.

Path Model

Subsequently, the path analysis illustrates the correlational effects among the motivational factors, learning approaches, and students' academic success. The best fitted path model in this study indicates the salient factor affecting students' academic success is the belief that their work commitments constrain their academic learning involvement. Intrinsic motivation weakly influences students' academic success. Other factors, such as the deep learning approach, the surface learning approach, positive belief, and learning orientation, do not have direct effects on students' academic success.

Other important findings in this study are the effects of the deep learning approach, intrinsic motivation, and learning orientation on learners' positive beliefs. These predictors account for 44% of the variance explained, whereas negative belief is affected mostly by the surface learning approach and this predictor accounts for 25% of the variance explained. Students' academic success is influenced by negative beliefs and accounts for 7% of the total variance explained. The findings reveal that students who are more inclined toward adopting the deep learning approach, greater intrinsic motivation, and greater learning orientation tend to show positive perceptions of the impact of their work experience on their academic learning. In contrast, students who are more inclined toward surface learning approaches are more likely to perceive negatively the impact of work experiences on their academic learning.

Research Implications

These findings demonstrate the potential and relevance of significant correlational effects between motivational factors and learning approaches in relation to the impact of work experience on students' academic learning and success. However, more research is needed to further investigate and refine the relationships between these factors. It could be beneficial to investigate many other potential variables that could influence how adults learn, such as extrinsic motivation, achievement goals, and classroom learning environment. The use of existing questionnaires, which are more geared toward Western culture, may lead to a cultural impact on the responses provided by the participants. Furthermore, motivation measurement varies according to different contexts, so, looking in general to the impact of work experience on part-time students' academic success may be ineffective. Examining the impact of work experience on specific contexts, such as particular cultures and courses, requires further research.

In addition, the instrument used in this study focused on work experiences and did not take into account other influences, such as life and educational experiences, which might have limited

the findings. These findings may also be biased toward students' own beliefs and understanding rather than reality. Therefore, further research is suggested to investigate the impact of work experience on adult learners' academic learning and success from the instructors', administrators', and employers' perspectives.

Practical Implications

There are several important practical implications of the above findings. As mostly working adults, part-time students are exposed to a variety of learning opportunities at their workplace that can be applied to their academic learning. These findings indicate that positive belief, learning orientation, and the deep learning approach are not statistically related to students' academic success. Consequently, these findings emphasize that part-time students need support from institutions and instructors to make their work experiences more meaningful to their academic learning. It may be advantageous to structure a classroom learning environment that could facilitate or create more opportunities for students to actively apply their job knowledge and skills to their academic learning. For instance, various teaching techniques, such as active and reflective learning, may be employed to stimulate students' interests and motivations. Even though students believe that work experiences could provide a positive impact on their academic learning, the design of educational programs, teaching and learning strategies, and assessment methods must be congruent with their goals, needs, and beliefs to ensure their success.

Students' beliefs that work commitments limit their academic learning are associated with lower academic achievement. These students should be provided with awareness and learning skills to change their negative beliefs. Administrators and educators may want to develop motivational or interventional programs to motivate students with negative beliefs to enhance their self-efficacy, task value, intrinsic motivation, and learning orientation. Lower academic achievement is also affected by the surface learning adopted by these students. Thus, helping these students to develop deep learning approach is important. As part of the Emerging Pathways project (Pusser et al., 2007), Levin suggested that most successful adult learners received help from support programs and college leaders, such as administrators, counselors, and faculty. Thus, the establishment of support service programs at institutional level is critical in ensuring the success of adult learners.

Conclusions

This study demonstrates that the success of adult learners in their studies does not rely on their positive attitudes alone, but also could depend on the effectiveness of the classroom environment, teaching and learning strategies, and assessment methods. These findings illustrate that part-time students need appropriate learning support and guidance from the institution and instructors to relate their work experiences to their academic learning, as well as to change their negative beliefs. The suggestions outlined above should serve as practical tools to enhance adult learners' academic performance.

Recommendations for Future Research

Based on this study's discussions and conclusions, additional research is needed to further explore the findings of this study and improve the understanding of success for part-time technical students. Future research should consider:

- The inclusion of additional variables that could influence adult learning such as extrinsic motivation, achievement goals, and classroom learning environment.
- Use of a more comprehensive measurement of student success that incorporates measures beyond just CGPA such as, completion time, specific course exams, and/or standardized assessments.
- Examination of the impact of work experience on specific contexts, such as particular cultures or courses.
- Investigation of the influence of work experience from instructors', administrators' and employers' perspectives.
- Conduction of a similar study using a broader group of adult learners or part-time students to investigate potential differences due to academic discipline.

Finally, to ensure student success, the authors would encourage educational administrators to design educational programs, teaching and learning strategies, and assessment methods that are congruent with adult learner goals, needs, and beliefs, and to consider the development of programs to help students with negative beliefs enhance their self-efficacy, task value, intrinsic motivation, and learning orientation.

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