Exploring The Relationship Between Locus Of Control, Self Assessment and Academic Achievement in an e-Learning Context.

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Abstract

The aim of this study was to investigate the relationship between students' academic locus of control orientation (ALOC) and their ability to assess their own performance in the course. Twenty students participated in the study. Euchaus and Cassidy developed the Academic Locus of Control Scale which was adapted in this study;, the instrument used in this study included a section, which requested students to indicate their expected overall grade for the course. The findings suggest that this group of online students had low self-assessment skills; also the results did not reveal any significant association between students' self-assessment skills and their academic locus of control.

INTRODUCTION

In the 1998/1999 academic year, the School of Education, University of the West Indies (Mona Campus) introduced web-based courses in education using Virtual U software for graduate students (Ezenne & Cook, 2002). Educators in the School of Education have, in the last decade of the twentieth century, considered that the central objectives of online learning and teaching are to create open and lifelong learning societies in the Caribbean region, thereby overcoming the limitations of traditional classroom teaching and learning, and preparing citizens to meet the challenges of
information technology and globalization .

BACKGROUND

Several findings suggest that online instruction can effectively enhance learning. Howland and Moor's (2002, as cited in Yang & Cornelius, 2005) findings from their study of students' experiences in an online environment suggested that students who had the most positive attitude to online learning were proactive, independent and took responsibility for their learning. Kekkonen-Moneta and Moneta's (2002, as cited in Cramer, Collins, Snider & Fawcett, 2007) findings revealed that online students and students in a face -to-face lecture of an introductory course in computer achieved comparable learning outcomes on the factual aspect of an

assessment, while the online students outperformed the face-to-face class in applied conceptual learning.

In the virtual classroom the learner must be a constructivist learner (Clark, 2002, Yang & Cornelius, 2005). The e-learner must be active in the teaching-learning process which involves the development of new skills "which go beyond technical functionality and how to use the internet… learners need strategies to find and organize time for learning, prioritize tasks and fit online and offline aspects of the study around work and family responsibilities in order to manage their workload" (Bennett, Marsh & Killen, 2007, p.119). E-learning students are self-directed learners, this is fundamental to their success. The self-directed learner is able to think, learn and behave autonomously. Fazey and Fazey (2001) pointed out that "autonomous people are intrinsically motivated, perceive themselves to be in control of their decision-making, take responsibility for the outcomes of their actions, and have confidence in themselves" (pp. 345-346). Several authors link autonomy and intrinsic motivation with an internal locus of control (Leftcourt, 1982; Liu, 2006; Stipek, 2002; Wang and Newline, 2000).

Locus of control (LOC) is associated with personality traits which can be used to distinguish between two groups of persons: those persons who are highly intrinsically motivated and those who are extrinsically motivated. Results from several studies indicate that LOC scores for students enrolled in web-based instruction increased, that is, moved toward internality over the course of a semester. They became more self-motivated than students who attended traditional classes (Parker, 2003; Drennan & Kennedy, 2005).

One component of learners who are self-directed and internal in their LOC is the ability to monitor and self -assess their learning (Cassidy, 2007). According to Cassidy, what defines self-assessment for students is the acceptance of their responsibility for their own learning process and outcomes. Cassidy and Eachus (2000, as cited in Cassidy, 2007) reported significant correlation between students perceived academic proficiency and achievement and their personal locus of control in the academic context (ALOC).

The following research questions were used to guide our exploration:

1. What is the current level of students' academic locus of control and participation in this online course?

2. Is there a relationship between online students' academic locus of control and the frequency of students' participation in conferences, students' actual grades, the Grade Differential Index and students' self-assessed grades?

METHOD

Data for this study were collected from a postgraduate course, Cognition and Learning, during the September, 2008 semester. This is an elective course which earns students three credits towards graduation.

Participants

Approximately 21 participants comprising 15 females and 6 males participated in the research. These participants were all registered in an online Master of Education programme. The most frequently occurring age for this group of participants was forty and over. The average years of length of service for these participants as educators were 17. Four of the participants were not teachers, but worked with various educational institutions such as the Ministry of Education and technical /vocational institutions in the region. The remaining 17 participants taught either at the primary, secondary or tertiary level. Fifty-two percent of the participants (11) were from Jamaica, while the remaining forty - eight per cent (10) were from other islands in the Caribbean region (such as Antigua, Grenada, St. Vincent, Dominica, Trinidad & Tobago, Tortola and The Bahamas).

Instrument

Euchaus and Cassidy developed the Academic Locus of Control Scale adapted in this study. This 18-item context specific scale was developed to measure internal (positive score) and external (negative score) control beliefs of students undertaking courses at the higher education level. In this current study the Cronbach Alpha for the modified instrument was .809. Also, the instrument used in this study included a section, which requested students to indicate their expected overall grade for the course.

Procedure

Students voluntarily participated in the study, following an online letter introducing them to the purpose of the study. They were required to respond to the questionnaire which was made available to them online approximately three weeks before the end of the course. Students' expected grades were compared with their actual grades and scores on the ALOC scale. Additionally, we corroborated the relationship between students' actual final year scores and their frequency of participation in the virtual lecture hall.

DATA ANALYSES

The data was analyzed using a Statistical Package for the Social Sciences (SPSS). Descriptive and correlation were generated to obtain answers to the research questions.

RESULTS

Levels of participation in discussion groups

Throughout the 13 weeks the students contributed 1,179 messages to their online discussions. Figure I illustrates the average time that each student participated in the weekly online discussions. Each student contributed to the discussions in the conference building an average of five times per week, with the exception of the last week where students enter the discussion an average 1.5 times for the week.

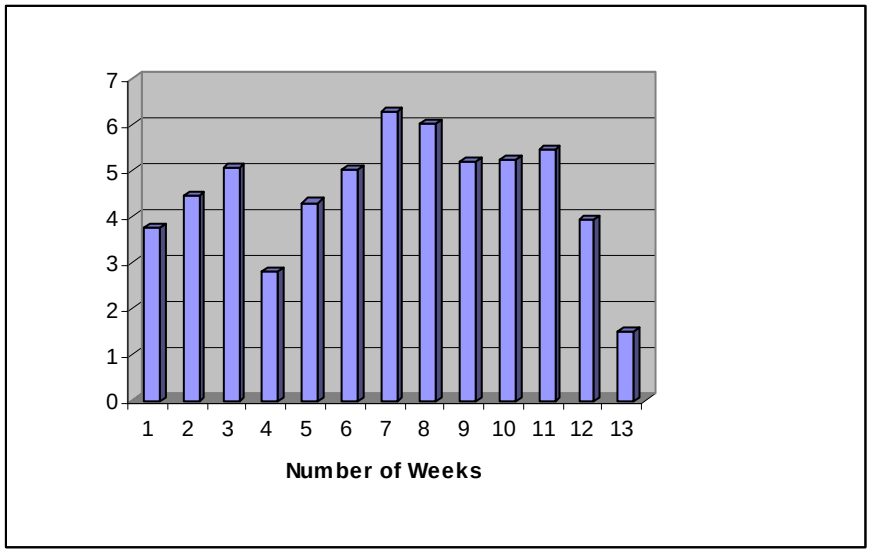

Figure 1. Average weekly participation in conference discussions

Levels of Academic Locus of control (ALOC)

Overall, the sample had an average internal score on the ALOC scale of 4.14. Also, the distribution was negatively skewed indicating that most of the participants' ALOC scores were on the upper end of the scale with the most frequently occurring score being six, based on a rating scale of one to six. Using the standard deviation of 1.44 (plus or minus) the group seemed fairly homogenous in its ALOC orientation (see table 1 & figure 2).

Table 1.Descriptives: ALOC

N	Valid	21
	Missing	0
Mode		6
Std. Deviation		1.448
Skewness		-.857
Std. Error of Skewness		.501

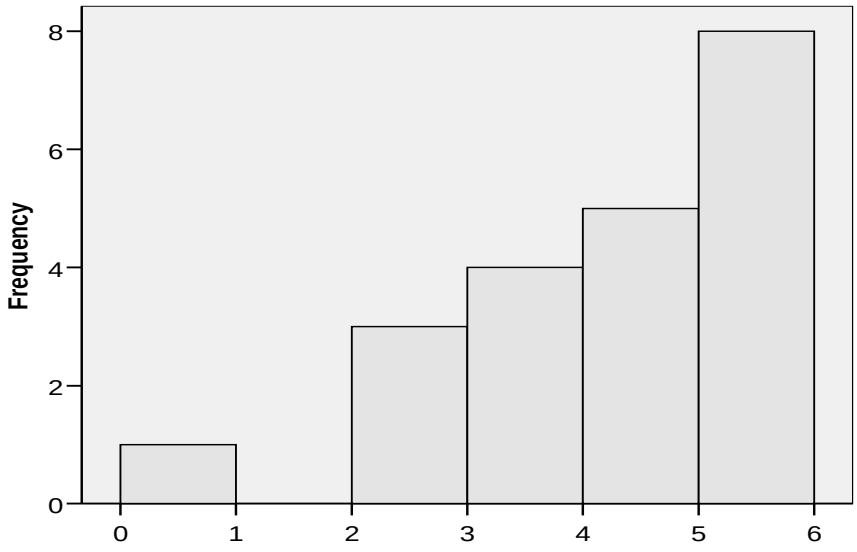

Figure 2. Average ALOC Score

Student Self-assessment skills

Students were asked to select the grade expected upon completion of the course by using categories shown in table 2. Table 3 shows the difference between students' self-assessed grade and their actual grade. There was significant difference between the lecturer's assigned score and students' expected grade using the Wilcoxon Signed Rank Test (Z= -3.924, p<.05) (see table 3).

Table 2: Grade Category

Grade Category	**Code**

A (70+)	**4**
B+ (60-69)	**3**
B (50-59	**2**
Less than 50	**1**

Table 3. Wilcoxon signed Rank Test

	Actual Grades – Students' Self - assessed Grade
Z	-2.858(a)
Asymp. Sig. (2-tailed)	.004

a Based on positive ranks.

The Grade Differential Index (GDI)

The Grade Differential Index (GDI) can be defined as the degree to which the student's self-assessed grade (SG) differs from his/her actual grade received in a course (AG). Prior to calculating the GDI, the raw scores for both gradings (self- assessed grade and actual grade) were re-coded on exactly the same basis to become ordinal categorical variables, (for example, 70+ coded as 4, 60+ as 3, 50+ as 2, and < 50 as 1, consistent with the questionnaire) the following formula would produce a new variable. where MaxG and MinG denote, respectively, the maximum and minimum possible grades available for the course:

$$\mathbf{GDI = (SG - AG) / (MaxG - MinG)} \ ;$$

Note that the numerator of the GDI formula is merely the difference between the students' expected grade (students' self-assessment) and the students' actual grade, and so the GDI will be zero for any student whose self-assessment was exactly the same. It is also evident that with the denominator, being the theoretical range, or spread, of all possible grades, it will always be a positive value, and therefore the GDI will be greater than zero for any student who has over-estimated his/her performance, and less than zero for any student who under-estimated his/her performance in the course.

Two features of the above formulation are that: (a) the GDI never falls below the lower limit of -1 (attained only when SG = MinG , and AG = MaxG, that is, the student self assessed the worst possible score, but actually received the best possible); and (b) the GDI never exceeds the upper limit of +1 (attained only when the student self assessed the best possible score, but actually

received the worst possible). These two features give the GDI its true nature as an index which maintains the following relationship:

$$-1 \leq \text{GDI} \leq 1.$$

For our sample, the group average GDI was 0.27, a marginally small positive value.

ASSESSMENT AND ACADEMIC LOCUS OF CONTROL

There was no significant correlations between students' self-assessed grade, the Grade differential index (GDI), the actual grade and the measure of academic locus of control (ALOC): Students' self -assessed grade with internal ALOC r= 0.347,n=20,2-tailed,p >0.05; GDI with internal ALOC r =.004, N=21, 2-tailed, p > .05; actual grade with internal ALOC r = .053, N=21, 2-tailed, p >05. There was also no relationship between ALOC and the frequency of students' participation in online discussions (r = .307,n=21,2-tailed,p > .05).

DISCUSSION

Results from the ALOC measure revealed that the participants in the online course were internally oriented. This is not an anomaly since several studies echo that the e-learner is self-motivated and self-directed. In order to be successful in a online programme e-learners must take responsibility for the input and outcomes of their learning (Clark, 2002; Yang & Cornelius, 2005).

The results suggest that ALOC is not relevant to students' self-assessment skills and the frequency of their participation in online discussions. This conclusion concurs with Cassidy (2007) who reported that internal ALOC did not correlate with students self -estimated grade. He noted "it may be that perceptions of control and of personal capability are not relevant to self assessment skill" (p.328).

There was a significant difference between students' actual grades and self- assessed grades. From table 4 it can be observed that the online students over estimated their grade. This suggests that the self -monitoring skills of these online participants were low. Self-monitoring skills are oftentimes seen as necessary for self-assessment. Self monitoring involves the students paying deliberate attention to what they are doing. It is an awareness of thinking and progress during the learning process (McMillan & Hearn, 2008). It was expected that students with an internal ALOC would have been more accurate in their self -assessment.

CONCLUSION

To assist students in becoming more effectively engaged as online learners, administrators of such programmes may consider doing training in developing students' self- monitoring skills. The results revealed that students' self- assessment skill was weak. The literature has linked students' self -assessment skills with their self -monitoring skills (McMillan & Hearn,2008; Wilaksana, & Pornapit, 2004). Self-assessment skills will further students' lifelong learning goals and empower the learner. For further research the GDI developed by the authors of this study, which provides a measure of a student's self -assessment skills, needs to be investigated more extensively by using larger samples.

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