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Online education perceptions of community college students entering a bachelors program: A two year study

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Abstract

The purpose of this research study was to investigate the perceptions of community college students entering an online bachelors program in an American Midwest university. This study, conducted over a time period of two years, evaluated the students' perception of rigour and effectiveness of the various community college programs from which they had matriculated. The students' grades were recorded at the end of their first semester at the university to determine how well they were prepared to begin an online bachelor's degree in technology.

The questions that were asked of over 150 students included their perception of previous educational institutions with regards to rigour, study skills, level of technology, and technical knowledge of faculty. The grades earned in this first introductory course were correlated with the students' perceptions. It is the hope of this study that student perceptions can be a good predictor of how well they will do in a technology focused bachelor's degree program.

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Introduction

The current study takes place at an American Midwest regional university where students wishing to pursue a Bachelor of Science degree in Computer Information Technology (CIT) have matriculated from several regional 2-year Community Colleges. The matriculation agreement between the Community College and the University required the students to have successfully completed a certain regiment of CIT preparation courses. The assumption was that the students were properly prepared to enter the program consisting of 300-level and 400-level (3rd and 4th year) CIT classes.

Two courses required by all students in the CIT program are an introduction to the CIT program called "On-line Training Foundations" and a Web development course. For the Foundations course, students are exposed to the CIT program hardware and software requirements, the modality and delivery for assignments, and the CIT degree program graduation requirements. Additionally, this class focuses on the self-directed learner, thus giving students the freedom to practice creative thinking without having the faculty member provide step-by-step

assignment directions. The Web development course serves as a foundation course for all the other Web development courses. All coding in this class is done with a text editor and no GUI html editors are allowed. This allows the student to focus on the mechanics of website development and not rely on a graphical html editor program.

The CIT program is an entirely online program with the only student interaction coming in the way of discussion boards. Early in the semester students were asked the following question: "How did your previous educational institutions prepare you for the CIT program? In detail, discuss items like study skills, level of technology, rigor, and technical knowledge of faculty." It is the response to this question that is the basis for this research.

Literature Review

Community colleges in the United States account for over 11 million students with 6.5 million of the studying for college credit (Anonymous, 2010). Students who begin their education by starting at a community college are 36% less likely to achieve a bachelor's degree if they had started at a 4-year institution (Anonymous, 2010). Students enter into a local community college for various reasons. One community college in Oklahoma attributes their success to "campus design, classroom design, and organizational structure with the goal of creating independent learners who engage in the learning process" (Joch, 2008, p. 16). Other attributes that are desirable include the professor and the actual course (Strage, 2008). The professor's desirable traits include knowledgeable, caring, concerned about their students, and entertaining. The ideal course should be engaging, fun, relevant to students' interests and informative. Hoover (1997), states that in order to avoid mismatches between what the preconceived expectations of the student is and what is actually expected of him or her, the university personnel must know the assumptions and expectations of each student's perceptions of each college and/or university.

When designing online curriculum for students, universities and community colleges should be aware there are an increasing number of students who have been exposed to the use of computers for most of their lives. A study by Aziz, Khan, and Singh (2010) found that a significant number of community college students reported that information technology helped them to be actively engaged in learning. Khan (2009) also suggests that the learning process can be enhanced when computers are used to increase the interactions among students and the instructor.

Previous studies indicate that student success at a university has only been measured in GPA scores after the first semester of "transfer shock" (Hills, 1965) and little has been published on the actual perception of the students' prior community college experience as a predictor of success at the university (Townsend & Wilson, 2006). Student perceptions of a community college are generally positive (Bauer & Bauer, 1994) with the additional workload of the university being their main concern. Some of the student perceptions may have originated as early as high school. Tacciarone (2007) affirms that the perceptions of high-school students entering a community college instead of a university include an "open door policy, a low student/teacher ratio, and dedicated faculty who focus on teaching, not research" (p. 40); however, community colleges continue to be "portrayed as low quality institutions of higher education" (Tacciarone, 2007, p. 49).

Community colleges offer many technology programs through distance education, and Ragan (2003) posits that "quality for distance education involve the institution's ability to articulate goals and objectives-taking into account the intended audience-and the purpose for the course or program" (p. 98). Additionally, quality is accomplished in part by promoting interaction with faculty and classmates, and having a program that is effective [rigorous] (Moore, 2002). Susskind (1997) speculates that while "community colleges have been suspected at doing a second-rate job" (p. 1156), there is no reliable data that verifies this. Former New York Governor Eliot Spitzer stated that it is the state's responsibility to ensure a smooth transition from community colleges to four-year universities (Murray, 2007). A study by Reeves and Osho (2010) found that community college students enrolled in a distance education course were more satisfied with the course than those that enrolled in a face-to-face course. This is consistent with earlier studies that found students who work full-time and attend off-campus courses have a positive attitude toward distance learning (Reeves & Osho, 2010).

Additional research indicates that students lack confidence in themselves and their abilities to succeed in a university (Hoffman & Wallach, 2005). The authors continue by stating that students need a mentoring program that would assist them with the path of success and not necessarily the path of least resistance in order to be effective. Skolitis and Grybeal (2007) indicate that effectiveness relies on the faculty and staff participating in the student's career with designed processes. Their study also indicated that community college campuses tend to have "significant latitude in determining their particular institutional effectiveness policies and practices" (p. 306). Miller and Tuttle (2006) hypothesise that community colleges should not only have the highly-trained and quality faculty and staff to ensure the student's success but that learning infrastructure should be able to support high-speed computing traffic.

The Research Questions

1. Does the GPA earned at the community college have a predictive value for the grade a student will earn at the university level?

2. Does the total number of hours earned at the community college have a predictive value on the grade earned at the university level?

3. Does student perceptions of how well prepared they were by their community college have a predictive value of how well they will do in an online program at a university level?

In the first research question it was assumed that a high GPA at the community college level would indicate a more scholarly student who would do well at the university level. With the second research question, it was assumed that students who had earned more hours that transferred into the university from the community college would represent more work done at a comparable university level. In the third research question it was assumed that students who felt that they had been well prepared by their community college would do better than the students that did not feel well prepared by their community college. It would be reasonable to assume that the more hours they transferred in, the better prepared they would be able to do university level work and thus earn a higher level grade in the class. While the first research question asked the students how well prepared they thought they were, the community college GPA and hours earned from the community

college are direct measures of how prepared they were to do well at the university level.

Methodology

Student responses to the following question were collected from the On-Line Training Foundation Course with the following discussion question: "How did your previous educational institutions prepare you for the CIT program? In detail, discuss items like study skills, level of technology, rigor and technical knowledge of faculty." Two faculty members categorised the student responses independently of each other and then cross checked the accuracy of the categorisation. Categories include: Prepared (yes or no), Study Skills (yes or no), Competent Faculty, (yes or no), and Rigor (yes or no) for the community college program. Responses were collected from over 150 students; however, not every student answered every question and thus the number of valid responses was reduced to 41 students. Responses that the faculty members could not agree upon were removed and only responses that were categorised the same by the faculty members were kept for this study.

Results

Listed in Table 1 is the frequency of responses we received for the different categories that the students could have responded to. It should be noted that each of these categories: prepared, study skills, competent faculty and rigour indicates a different dataset that could serve as a predictor for a regression study. Due to not having a sufficient number of responses in each category, the only categories that could be analysed were the Prepared and Competent Faculty Categories.

Table 1: *Frequency of Responses*

Categorized	Prepared	Study Skills	Competent Faulty	Rigour
Yes	33	14	27	10

Table 2 lists the averages, max and min for the final set of grades in the On-Line Foundations Training and Web development course. Table 2 also contains the same information on the number of hours transferred in and the GPA from the community college. The community college GPA was obtained by evaluating each student's transcripts.

Table 2: *Grade Distributions and GPAs from the Community College*

	On-Line Foundations Course Grade	Web Development Course Grade	Hours	Community College GPA
Average	3.11	2.76	68.79	3.27
Max	4.00	4.00	179.00	4.00
Min	0.00	0.00	6.00	0.57
Standard Dev.	1.26	1.16	29.88	0.58

In Table 3, the community college GPA and hours transferred into the university were obtained by evaluating each student's transcripts. Being "Prepared" was the only category receiving enough responses to conduct any sort of regression analysis with the categories listed in Table 1.

A linear regression model was used to see if there was any correlation between the dependent variable (University Grade) and the independent variables of Prepared, Community College GPA, and Hours Transferred into the University. For the Online Training Foundations Course, there was a weak correlation between the community college GPA and the student's final grade. There was a slight negative correlation between the number of hours transferred into the university from their respective community college and their final grade. Finally, there was a positive correlation of the student's perception of being prepared and their final grade.

Table 3: *Correlation and Linear Regression Results for the Online Training Foundations Course*

Dependent Variable: Final Grade	Community College GPA	Hours Transferred	Prepared	R Square
Pearson Correlation	.139	-.021	.372	.139
Standardized Coefficients (Beta)	.004	-.001	3.71 Sig. .032	
Constant = 2.696				

For the Web Development Course (Table 4), there was a moderate correlation between the community college GPA and the final grade in the class (r^2 = .455). There was also a negative correlation with the number of hours transferred from the community college and the final grade in the course. Finally, there was a positive correlation of .361 between the student's perception of being prepared and their final grade. The only significant coefficient in this model was the Community College GPA.

Table 4: *Correlation and Linear Regression Results for the Web Development Course*

Dependent Variable: Final Grade	Community College GPA	Hours Transferred	Prepared	R Square
Pearson Correlation	.455	-.274	.361	.203
Standardized Coefficients (Beta)	.413 Sig. .043	.056	2.71	
Constant = 3.092				

Implications and Conclusions

The weak correlation in the Online Training Foundations Course between the community college GPA and the student's final grade could be due to grade inflation that exists at some regional community colleges (Susskind, 1997). Also, while students complain at the pedagogical differences between the community college and the universities, Fiume (2009) explains this phenomenon by speculating that one of the main functions of the community college is to "connect the campus to the community within the context of specific curriculum" (p. 75). Thus, the student's community college GPA may be a weak predictor of their CIT300 grade.

The slight negative correlation between the number of hours transferred into the university from the student's respective community college and their CIT300 final grade could be resultant from the number of technology classes already taken before they enter the university and also from the student actually developing a community college "sense of security" where faculty fully engage with the student (Davies & Casey, 1999) by demonstrating procedures for the student or provide step-by-step instructions in technology labs. In the Online Training Foundations Course, students are given minimum instructions for each assignment; however, an explicit set of deliverables is expected for each assignment. It is conceivable that students may consider that their previous training would predict their university grade in CIT300, yet CIT300 requires little previous technology training in order to earn a successful grade.

Additionally for CIT300, the positive, yet minimal correlation of the student's perception of being prepared and their final grade could be the resultant of the student's confidence in their previous community colleges, so students feeling "prepared" when they begin the CIT program has minimal bearing on the grade earned for the Online Training Foundations Course. The reader should keep in mind that students entering the CIT program have an Associates of Applied Science degree in a computer related field. Thus, these community college students should be (and feel), more prepared for this introductory course than a traditional entering freshman student by being exposed to technology, even though it is unrelated to this foundations course.

For the Web Development Course, the moderate correlation between the community college GPA and the final grade in the class (r^2 = .455) may have been attributed to students having previous Web development experience at the

community college, although student experience in html is very minimal or even non-existent. In this case, the earned Community College GPA appears to have a moderate impact on what the student will earn in the Web Development Course. The negative correlation with the number of hours transferred from the community college and the final grade in the course is interpreted similarly to the Online Training Foundations Course. As was previously hypothesised, students may have developed a "sense of security" where community college faculty provided students with too much of a step-by-step approach to the assignments. Instructions for the assignment in the Web Development course were listed in the text book used for the course and no additional instructions were given. Therefore, the number of hours earned at the Community College, not only has no impact on the earned grade at the university, but may actually be detrimental to the student's earned grade. The moderate positive correlation of .361 between the student's perception of being prepared and their final grade could be attributed to the student's confidence level that is reinforced at the community college level by faculty mentoring (Hoffman & Wallach, 2005). Thus, the perception of how well prepared students feel when they enter the CIT program will have a moderate effect on their Web Development Course grade.

One difficulty that was encountered in data collection was that some students failed to answer all of the components of the discussion question. While it would have been possible to repeat the unanswered question components, that may have contaminated the data pool. It was expected that a student's perception of being prepared would be positively correlated with their class grade; however, it was not expected that with both introductory university courses, CIT300 and CIT302, there was a negative correlation with the number of hours transferred in and their final grade in the class.

Further study is needed to determine why a negative correlation exists between hours earned at the community college and university grade. Recommendations include developing and administering a survey to all incoming CIT students that includes specifics about these areas including a more definitive focus on student self-efficacy. This survey could allow students to voice concern about their college degree faculty, their study habits, or other specific pedagogical areas. Additional research should be done to determine if individual labs and specific discussion questions could be predictors of success in the CIT foundations courses.

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