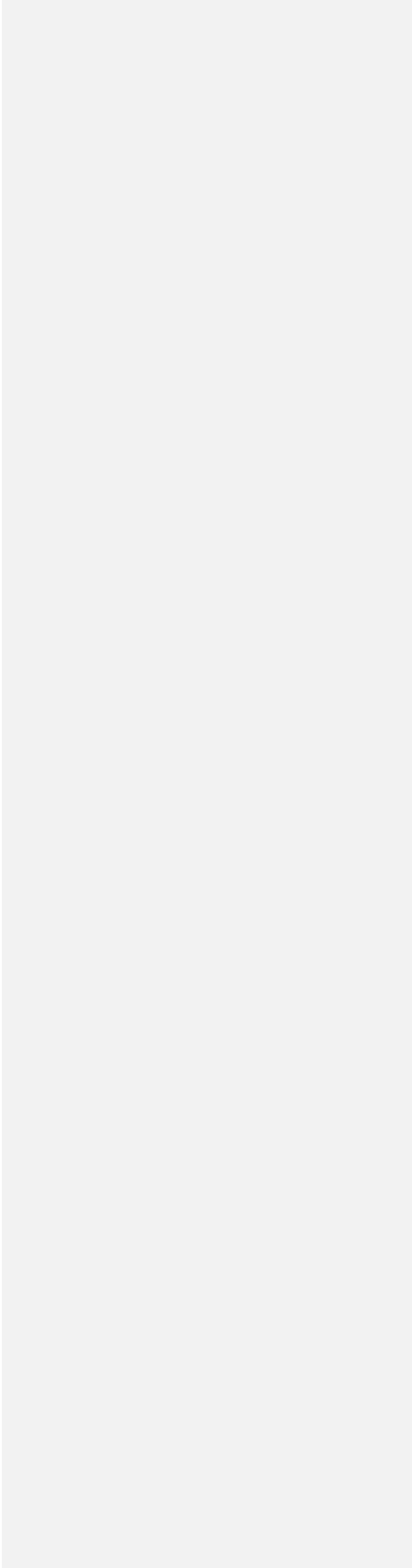


Minding the Digital Gap: Trending Toward Older Online Students



Abstract

The purpose of the study is to determine if age has a significant impact on the enrollment between online degrees versus traditional degrees. We will be analyzing Florida International University's College of Business online versus face to face degrees in 4 year intervals running from 2004-2012.

Introduction

Online education offers unique opportunities for the non-traditional student. The continuing development of technology has enabled the creation of new educational platforms. In the digital age, younger students tend to be more familiar with the technology used in online instruction, but it's the older students that have become more successful using e-learning. Studies show that the average online student is a 34 year-old woman (Kramarae, 2001).

Today's online learners are older than originally noted in research. Digital natives aren't necessarily digital learners, and this may distract the appeal of online education to younger audiences (Thompson, 2013). Studies have revealed that about 40% of online students are younger than thirty years old. Older college students are boosting online learning rates due to the convenience of a flexible learning format (Aslanian & Clinefelter, 2004).

The purpose of the study is to determine if age has a significant impact on the enrollment between online degrees versus traditional degrees. We will be analyzing Florida International University's College of Business online versus face to face degrees in 4 year intervals running from 2004-2012. The results of this study are expected to increase our understanding of the correlation of age and the enrollment outcome of online business degree programs versus traditional degrees.

Research Questions

Age related research questions:

1. Is there a significant difference between the ages of our online students and our face to face students?
2. Is there a significant difference between the ages of our online students and our face to face students over the course of each four year interval?
3. Is there a significant difference between the ages of our online students and that of the students in previous research studies?

GPA related research questions:

1. Is there a significant difference between the GPAs of our online students and our face to face students?

2. Is there a significant difference between the GPAs of our online students and our face to face students over the course of each four year interval?

Literature Review

Online education is a growing trend in higher education. A study by the Sloan Consortium spanning 10 years showed that 32% of students are enrolled in at least one online course. Additionally, completely online programs rose from 34.5% in 2002 to 64.2% in 2012 (Allen & Seaman, 2013). Online education, however, remains a fairly new field that is constantly changing, making it difficult for educators to keep up with their population.

It is presumed that online students are typically younger students, Digital Natives, who are comfortable with technology. Digital Natives are people born after 1980 who have been exposed to technology throughout their lives. Digital Natives (members of the generational cohorts, Generation X and the Millennials, also known as Generation Y) are used to receiving fast information and like to multi-task (Prensky, 2001a). They prefer on-demand access to media, to be in constant communication with their peers, and to have accessibility in creating their own content and work environment (Duffy, 2007). They tend to learn best through trial and error, and solve problems best within a collaborative learning environment. Prensky suggests that our educational system was not designed to teach this techy generation that now thinks and processes information radically different than previous generations (2001a). Though, research has shown that, “today’s learners, regardless of age, are on a continuum of technological access, skill, use and comfort. They have differing views about the integration of social and academic uses and are not generally challenging the dominant academic paradigm” (Bullen & Morgan, 2011).

Digital Immigrants have been obligated to adapt to a world of digital media (Prensky, 2001a). Consequently, they lack the sense of confidence of digital natives and retain an accent from the pre-digital world they once lived in (Prensky, 2001a). Job losses and the need to acquire new skills have caused many older generations to return to school to complete their degrees and remain competitive in the workplace (Oblinger & Oblinger, 2005). The popularity of online courses allows more flexibility for these students to balance work and family life while pursuing their education.

Digital Immigrants are different when they interact within online environments, but studies show this to be an advantage due to their critical thinking skills and social reliance (Bennet, Maton, & Kervin, 2010). Research reports that older cohorts tend to be socially-reliant and show more interaction online (Bennet et al., 2010). Evidence also suggests that older students perform better on transfer learning task and more active participation compared to Digital Natives (Bennet et al., 2010).

The use of technology amongst the Digital Native generation is not homogeneous. Empirical studies reveal that the Digital Native label does not provide evidence of a better use of technology to support learning (Gros, Garcia, & Escofet, 2012). There needs to be a greater focus on learning in the digital age rather than the characteristics of generations. Studies show that, “the educational model (face-to-face or online) has a stronger influence on student’s perception of usefulness regarding ICT (information and communications technology) support

for learning than the fact of being a digital native” (Gros, et al., 2012). Age related differences do exist in regards to experience and technological use, however, the use of technology to support learning is not related to being a Digital Native (Gros, et al., 2012).

The assumption that online students are younger has led to the latest trend in online education, the integration of social media applications such as Facebook and Twitter into Learning Management Systems. Fifty percent of Facebook’s users are between the ages of 12-24 (Charnigo & Barnett-Ellis, 2013). Yet, most studies show that at least 47% of the online learners are older than 26 (Allen & Seaman, 2013). While they still fit into the Digital Natives category, their motives for taking online courses may reach beyond the technological divide.

A study from the University of Central Florida states, “older learners tend to be less interested in the social aspects of learning; convenience and flexibility are much more important” (Oblinger & Oblinger, 2005). As a result, older students are more likely to participate in online education than traditional students.

Although the online student is aging and there are characteristic differences amongst Digital Natives and Immigrants, there is no significant finding that a generational divide exist between digital learners. The assumption that a generational divide exist has become a poorly defined educational issue in adult education with an unknown future to the impact on adult learners. The rapid growth of technology in education makes it difficult for researchers to keep up with student demographics and motivation of online use. Thus, our research will specifically look at age and determine whether a correlation exist between online enrollment amongst business students. Our goal is to identify the online student population in the FIU College of Business to provide a starting line for further research online educational settings that fit the lifestyle and expectations of the population.

Methods

The purpose of this study was to determine if our student population was within the age range of described in previous studies norm when it comes to online education. We are also interested in comparing the age ranges of students within the same academic year to try to understand the population of students to which online education should be catered. We used a comparison of the two groups GPAs to assess the quality of the students in the two groups.

Florida International University (FIU) is the 7th largest, public university by enrollment in the United States (Rankings & Facts, 2013). FIU is located in Miami, Florida and serves a diverse community of students with 61% Hispanic, 15% white non-Hispanic, 13% Black, 4% Asian or Pacific Islander, and 7% of students in other minority groups (About Us, 2013).

This study focuses on two groups of students within the FIU College of Business, those enrolled in face-to-face (traditional classroom setting) and online course for academic years 2004-2005, 2008-2009, and 2012-2013. An academic year is defined as a year beginning in the fall term and ending in the following year’s summer term. These years were chosen for the purpose of comparing the ages and GPAs of students during the first year that FIU offered both online and face to face College of Business programs and then comparing those results to years 4 and 8 (the most recent year).

Year 1 (2004-2005) included 971 online student participants and 17,601 face to face participants. Year 4 (2008-2009) included 2,069 participants and 19,585 face to face participants. Year 8 (2012-2013) included 5,327 online participants and 16,550 participants. Our sample ranges in age from 13 to 77.

This study uses secondary data obtained by FIU from their student database. The data was reported to us by the Office of Planning and Institutional Research upon our request. The data set included: student ID number, program code, semester of enrollment, gender, GPA, academic units transferred into the program, total cumulative units completed, Florida Residency status, Ethnicity, International Residency status, age at the beginning of the term, and Instructional mode (face to face or online). We chose to focus on the student’s ages and GPAs for the purpose of learning more about the needs of our online student population.

We used the t-test to compare the mean ages and GPA of each instructional mode. A one-way ANOVA was used to test for the changing effects of the categorical independent variables of age and GPA among the span of eight years. The level of significance for all tests was set at a .05 significance level.

Online only students were clustered into the following five age groups: 24 and younger, 25-31, 32-38, 39-45, 46 and over. This was done using SPSS to transform our variables into age groups. We analyzed the frequencies of our variables to obtain the descriptive statistics of the age groups amongst our online students.

Table 5: Age Group Clusters

Groups	1: 2004-2005		4: 2008-2009		8: 2012-2013	
	Frequency	Percentage	Frequency	Percentage	Frequency	Percentage
24 and younger	465	47.9	974	46.9	1678	31.5
25-31	332	34.2	747	35.9	2081	39.1
32-38	108	11.1	211	10.2	913	17.1
39-45	45	4.6	101	4.9	416	7.8
46+	21	2.2	45	2.2	239	4.5
Total	971	100%	2078	100%	5327	100%

Results

Table 1: Descriptive Statistics for Online Students

Year	Sample Size	Mean Age	Mean GPA
1: 2004-2005	971	26.69	2.68001069
4: 2008-2009	2078	26.72	2.84625195
8: 2012-2013	5327	29.17	3.14498491

Table 2: Descriptive Statistics for Face to Face Students

Year	Sample Size	Mean Age	Mean GPA
1: 2004-2005	17601	24.77	2.85233851
4: 2008-2009	19585	24.83	2.97822662

8: 2012-2013 16550 24.60 3.14760933

Objective 1: Examine the relationship between the age of online and face to face students.

To examine the relationship between GPA and age in the three groups, graphs were generated. Figure 1 presents the mean age of online students only from 2004-2012. The general trend in the graph supports the notion that a significant increase occurred in 2012, with a 2.48 increase in the mean age from previous years. Figure 2 presents the data of face-to-face students which shows insignificant change throughout the study, remaining at an average age of 24.

Online students mean age showed insignificant change from 2004-2008, however, a significant increase occurred in 2008-2012 with a mean age of 29.17 compared with mean age of 26.69 in 2008-2009 academic school year. Thus, online students are older and aging through the study than the face-to-face students.

Figure 1: Mean Age of Online Students

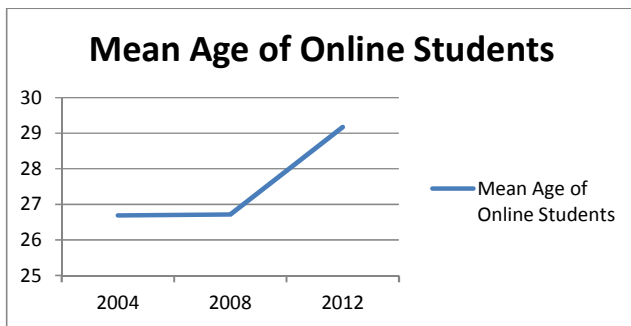


Figure 2: Mean Age of Face-to-Face Students

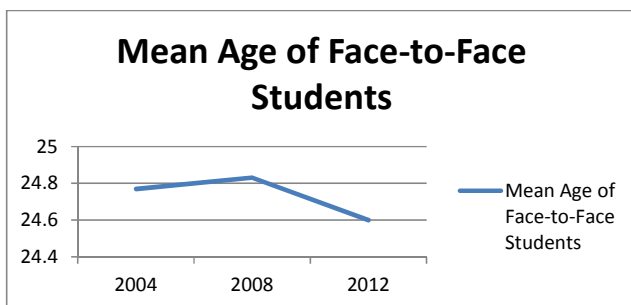


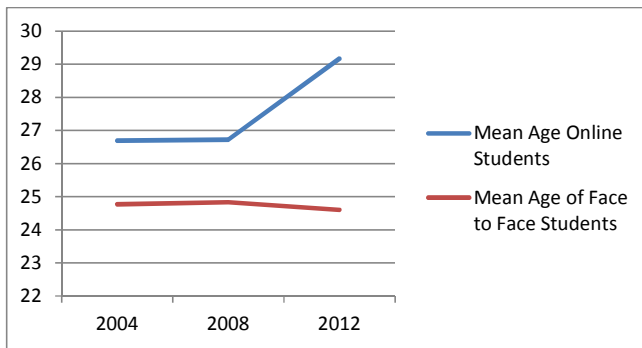
Table 3 is a summary of the major differences among the means of age. It organizes the means of the three years studied into homogeneous subsets or subsets of means that do not differ from each other at $p < .05$. This indicates that those groups are insignificantly different.

Table 3: Independent Samples Test of Age (Online vs. Face to Face)

Year	t	Sig. (2-tailed)
1: 2004-2005	8.963	.000
4: 2008-2009	12.370	.000
8: 2012-2013	42.298	.000

In Figure 3 separate lines are drawn the height of the mean for each level of instructional mode. The graph indicates that online students are older than face-to-face students and they continued to increase with an ending mean age of 29.17 compared with the ending mean age of 24.60 for the face-to-face students. The graph illustrates that the face-to-face students' age remained steadily at an average age of 24 throughout the study.

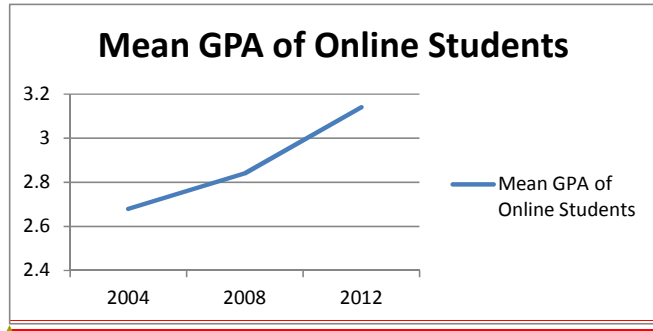
Figure 3: Mean Age of Online Students and Face to Face Students



Objective 2: Examine the relationship between the GPA of online and face to face students.

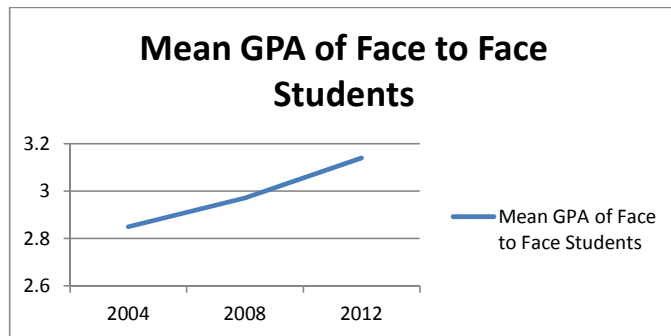
Figure 4 and 5 present similar data but reveal the mean GPA of online students and face-to-face student's separately. The graph illustrates an increasing pattern in both instructional modes GPA positively increasing, however, online students began the study with a significantly lower GPA than face-to-face students.

Figure 4: Increasing pattern of online students GPA years of 2004, 2008, & 2012



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Figure 5: Face-to-face students GPA are positively increasing throughout the span of the study.



The t-test result comparing between the GPA of online students vs. face-to-face students in 2012-2013 did not show a significant difference ($t = -2.52, p = 0.801$). In contrast, the GPA differences between online and face-to-face students in 2004-2005 and 2008 and 2009 are significant showing t-values of $-7.951 (p = 0.000)$ and $-8.478 p = 0.000$, respectively.

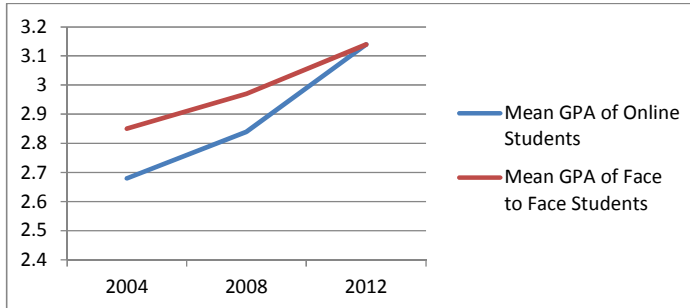
Table 4: Independent Samples Test of GPA (Online vs. Face to Face)

Year	t	Sig. (2-tailed)
1: 2004-2005	-7.951	.000
4: 2008-2009	-8.478	.000
8: 2012-2013	-2.52	.801

In Figure 6 separate lines are drawn the height of the mean for each level of instructional mode. The graph illustrates that face-to-face students began the study with a higher average GPA of 2.85 compared to that of online students with an average 2.68 GPA. The GPA of online

students increases dramatically and both instructional modes end with an average 3.14 GPA. The Pearson correlation of these two variables is .801, a strong positive relationship.

Figure 6: Both instructional modes of students GPA are positively increasing



Discussion

Our findings indicate that while the GPAs of face to face students and online students are significantly closer, the online students are getting older. An explanation for this could be that when the online programs began in 2004, students had to deal with the learning curve in regards to the technology. This could have caused students to not do as well with the online courses as their face to face counterparts.

As time has passed, students have become more familiar with the expectations and technologies used in online courses. This year's online students have known online education as an alternative for their entire school career. Florida Virtual School was opened in August 1997 (Hart, 2008), when this year's mean age group (29) was in middle school. Growing up with online education as an alternative may have given this year's students understanding of what online education requires, therefore producing better results.

The fact that the students are getting older is an issue that needs to be addressed in the design of online courses. Instead of adding social media to courses to make it trendier, Instructional Designers and Professors should be thinking of ways to make courses more flexible and appealing for older students to whom "convenience and flexibility are much more important" (Oblinger & Oblinger, 2005). For these students, self-paced courses might be a better alternative than courses with weekly deadlines. Also, chunking lessons into small parts that can be worked-through in small increments of time, such as 20 or 30 minutes, may be easier for older students to fit into their schedule.

Limitations of our studies include secondary data given to use by FIU. We do not know the integrity of this data because we did not collect it firsthand. In a future study, researchers should try to collect their own data.

Another limitation of our study was that it was not a longitudinal study which could provide more insight into how the online student fared over time versus their face to face

counterparts. GPAs from person to person could be based on external factors, such as ability, making GPAs an unreliable way to assess the quality of student in each group.

Equally limiting is the fact that we don't have the same professors teaching the courses in face to face and online. Although not every face to face professor is capable of teaching well online, it would even the two sides if the professors were the same for the purpose of evaluating the student outcomes.

Suggestions for future studies include longitudinal studies of the same group of students in face to face settings and online settings. Variables to control for would be the professor, the course content, the technical ability of the students, previous experience with online courses and level of interest in the course.

For older online students, suggestions for future studies could include an investigation into the motives for taking online courses alongside their technical ability and expectations of online courses. A list of best practices for designing for older online students would be a beneficial outcome of this study. Researchers could investigate the tools older online students use and do not use or expect to have available in an online course. A study of the social media aspect of online education as it is used with older online students could also be beneficial in narrowing down the expectations of older online students.

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