

Title: General education achievement of adult and traditional age students

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Abstract

Adult students face many unique difficulties while pursuing the college education. The primary research question addressed in this paper is the following: Do traditional age students and students over traditional age differ in general education test performance? Data from a standardized test indicate that there were no significant differences between the two groups for the subjects of English, science, social studies. There was difference in math scores. The results of this study add further evidence that adult students have lower math achievement levels than do their younger counterparts. Implications for institutions are discussed.

Introduction

In the United States, there are over 6.2 million students over the age of 24 who are enrolled in colleges and universities. Altogether they represent almost 40% of all college-going students in the country (Mini-Digest of Education Statistics, 2004). However, these returning adult students face many unique difficulties (Fairchild, 2003). Many are juggling work and family commitments, as well as their academic responsibilities. Some are returning to school after many years of being away. Finally, many adult students face institutional barriers that impede or undermine their academic success. As a result, returning adult students often struggle academically.

Because institutions have a responsibility to provide students of all ages the resources needed for academic success, they need to understand learning and achievement of students at all ages (Palomba & Banta, 1999). The extent to which learning can be documented in general education subject areas such as math, science, English and social science is the result of an effective assessment program (Banta, 2002; Palomba & Banta, 1999). There are many forms of

assessment that can be utilized to assess general education knowledge and the effectiveness of a general education program (Banta, 2002; Palomba & Banta, 1999). In the present study, we used standardized tests.

The purpose of this paper is to describe achievement differences between students of traditional age and students over traditional age. It is often assumed that students of traditional age achieve at a higher level than do students over traditional age, especially in mathematics. The primary research question addressed in this paper is the following: Do traditional age students and students over traditional age differ in general education test performance?

Method

Instrument

College BASE is a criterion-referenced academic achievement examination that evaluates knowledge and skills in English, mathematics, science, and social studies, usually after a student completes a college-level core curriculum. Currently approximately 120 institutions use this exam to assess their general education program.

Sample and Setting

Secondary data used for this study were collected from college students who had completed the *College BASE* exam. Data were recoded into two groups: 1) students 24 years old or younger and 2) students over the age of 24. The data that we worked with came from a random sample of students younger than 25 who were selected to match the sample size of the older students. The total sample size for each group was 796. Table 1 below provides background and demographic characteristics of these two groups.

Table 1.

Background and demographic characteristics

		Students younger than 25 years old N=796		Students 25 years and older N=796	
		<u>M</u>	<u>SD</u>	<u>M</u>	<u>SD</u>
Gender	Male	38.7%		34.5%	
	Female	61.3%		65.5%	
Ethnicity/Race	White/Caucasian	62.7%		68.8%	
	African American	32.0%		23.6%	
	Hispanic	1.0%		1.8%	
	Asian/PI	1.5%		1.6%	
	Other	2.8%		4.2%	
Total credit hours completed		62.99	27.14	77.18	29.20

Results

MANOVA was used to examine differences between the two groups for the four subject areas simultaneously, while ANOVA was used to examine the difference between the groups and the composite score. As indicated in Table 2, there were no significant differences in achievement levels between the two groups for the subjects of English, science, social studies, or the composite score. There was a significant difference in math scores between the two groups; however the effect size was quite small.

Table 2.

Differences in test scores between groups

Subject	Group	Scaled score	F	Partial Eta Squared
English	< 25 yrs old	255.13	1.345	.001
	25 + yrs old	258.55		
Mathematics	< 25 yrs old	282.49	23.261***	.014
	25 + yrs old	267.12		
Science	< 25 yrs old	254.54	.001	.000
	25 + yrs old	254.42		
Social Studies	< 25 yrs old	261.15	3.535	.002
	25 + yrs old	267.19		
Overall composite score	< 25 yrs old	263.45	.294	.000
	25 + yrs old	261.95		

p<.001

To further explore the difference in math scores between these two groups, two new groups were created that represent low and high math scores. The low score group were those students who scored more than 1 standard deviation below the mean, while the high score group were those students who scored more than one standard deviation above the mean. The overall mean score for math was 274.8 with a standard deviation of 64.01. As shown in Table 3, the older students were disproportionately found in the low score group while the younger students were more likely found in the high score group.

Table 3.

Low/high score math groups

Math		<25	25 +	Total
Low	<u>N</u>	123	161	284
	%	43	57	100
High	<u>N</u>	169	113	282
	%	60	40	100

$$\chi^2 = 15.648, \underline{df} = 1, p < .001$$

Discussion

The results of this study add further evidence that adult students have lower math achievement levels than do their younger counterparts. This could be due to many factors, including time passed since they last took a college level math course, math anxiety, lack of, or a change in mathematics curricula. However, this study also points out that adult students and traditional students achieve at the same level in English, social studies, and science.

The results of this study can be used to inform decisions concerning an institution's general education curriculum and the assessment of this curriculum. Faculty who teach general education courses should be aware of the number of non-traditional students in these courses. Particularly, mathematics faculty may need to address the specific needs of non-traditional students. Further studies should focus on defining these needs and developing interventions to address them.

Institutional researchers should also be aware of these differences. When using the CBASE or other standardized tests as measures of assessment, researchers should take into

account this difference in traditional and non-traditional students. Standardized test scores reflect more than just the effectiveness of a general education curriculum. They also reflect differences in groups of students with similar characteristics, in this case, age. In order for the analysis of standardized test scores to be an accurate and fair means of assessment of general education curricula, the characteristics of non-traditional students must be taken into consideration.

References

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