

Praxis II: Success for Career Changers

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The purpose of this study is to determine what factors are predictors of success on the Praxis II exams required by the *No Child Left Behind* legislation. Demographic data were collected from applications for admission to a graduate-level, initial certification program for career changers and the data were correlated with 135 Praxis II scores in four content areas. The conclusion is that undergraduate Grade Point Average (GPA) is a better predictor of success on Praxis II examinations than age, undergraduate major or year in which the undergraduate degree was awarded. Career changers with a $GPA \geq 2.0$ should not be discouraged from pursuing certification and should not be intimidated by standardized testing.

Praxis II and Career Changers in Middle Grades Education

Our Master of Arts in Teaching (MAT) in middle grades education is primarily a career changer program. Established in the summer of 2003 in response to our southern state's creation of a new middle grades certification area, it has graduated 57 highly qualified middle school teachers in two cohorts. Its third cohort is presently in classes, and it anticipates beginning its fourth cohort of students in January and May of 2006.

The purpose of the MAT is two-fold: 1) to provide highly qualified middle school

teachers to the state of South Carolina in a timely manner and 2) to establish a viable venue for career changers to enter the field of education. With this second goal in mind, our university chose to base the MAT at a location that houses an off-campus consortium of seven higher education partners located closer to an urban hub, rather than its picturesque small-town main campus. This hub, located along a corridor between major southern cities, is a major industrial center. The ebb and flow of employment and the recent trend of reexamining personal values in the post-9/11 economy has created a large market for career changers in the area.

To date, the age range of applicants for the MAT is 23 to 62 years with $SD = 9.6$. A small percentage of undergraduates apply directly out of their bachelor's degree programs, but the vast majority of applicants are true career changers. Table 1 provides age information on those candidates who actually enrolled in the MAT.

The MAT is a 36-hour intensively field-based master's program that leads to initial certification in one or two content areas (among math, science, social studies, and English language arts) in grades 5 - 8 in our state. This initial certification is presently transferable to 48 of 50 states, and MAT graduates presently teach in Arizona and Georgia as well as in South Carolina. The program can be completed

Table 1

Cohort	Sample Size	Mean Age at Begin of MAT	Age Range
1	$n = 22$	32	22-54
2	$n = 42$	34	22-60
3	$n = 32$	31	22-57
4	$n = 7$	34	22-58

in as little as one year (June – May) but most candidates start in January and take three academic semesters and a summer to finish (January 2006 - May 2007, for example). This schedule allows candidates to continue to work during their first semester in the program, taking late afternoon or evening classes and “getting their feet wet.” Candidates are thus introduced to graduate level work and the issues of education while they can still turn back, before they have given notice at their jobs. To date, no candidates have left the program due to a change of heart. Of the few who have had to drop out, financial concerns has been the common denominator.

Admission to the MAT is based on transcript evaluation, an interview, and standardized test scores. All candidates must have a bachelor’s degree in a content or related area (English, Comparative Literature, or Journalism for language arts, for example). They must express a genuine desire to teach, and they must display mastery of content through passing the Praxis II content exam in their area(s) of future certification. Of these three requirements, the last causes the greatest anxiety, especially among career changers who have been out of school for what they consider to be a long time. These candidates feel academically rusty and are often intimidated by standardized testing.

The Praxis II Exam

The Praxis II examinations are content-specific tests created and administered by the Educational Testing Services Corporation (ETS) of Princeton, New Jersey. They are the equivalent of the licensing exams for the teaching profession. Just as lawyers must pass the bar examinations in their state and doctors must pass tests from various accrediting bodies such as the Board of Surgeons, teachers must take the Praxis II exam in their content area(s).

These exams must be passed with a score that confers “highly qualified” status in the state in which they wish to teach. Being “highly qualified” is one of the requirements for new certification and a way to assure continued employment in the teaching profession. Each state sets its own passing scores. It is important to note that not all states require testing in all areas and that passing scores vary widely from state to state.

For the purposes of this study, however, it is important to note that our state has required the following tests with the following cut or passing scores for initial certification in middle grades education since it created the certification area in 2002. (See Table 2.) (Educational Testing Service, 2005)

Table2

Name of Test	Test Number	Minimum Passing Score
Middle Grades Science Content Exam	0439	145
Middle Grades Math Content Exam	0069	149
Middle Grades Social Studies Content Exam	0089	150
Middle Grades Language Arts Content Exam	0049	155

Further information about the content and test construction of each of the Praxis II exams can be obtained at <<http://www.ets.org/Media/Tests/PRAXIS>>.

Program/Study Findings

Since it began taking applications in early 2002, our MAT program has admitted 99 candidates who are (or were) members of either Cohort 1, 2, or 3. As of September 30, 2005, 22 candidates have been admitted into Cohort 4. This group of 22 will be joined by up to eighteen cohort mates, for a full compliment of 40. At the time that the calculations

were made for this study, 135 Praxis II scores had been submitted to the program coordinator for consideration in admission decisions.

The following information was tracked for all MAT candidates: age, sex, undergraduate grade point average (GPA) undergraduate major, undergraduate minor (if any), and undergraduate institution. Overall the Praxis scores for students admitted into the MAT range from 130 to 200. Summary information for each content area test is presented below in Table 3. Statistics were calculated using the Casio CFX 9850Ga Plus graphic calculator.

Table3

Test	Range	Sample Size	Mean	Standard Deviation
Science	131 – 181	18	158	13
Mathematics	147 – 200	37	170	12
Social Studies	130 – 196	31	167	16
Language Arts	143 – 200	36	177	15

A scatterplot of the GPA and Praxis II scores was created using Excel. Because the relationship appeared to be linear, the Pearson-Product Moment Correlation was calculated in order to determine the strength of the relationship. Although a rank difference correlation would have been appropriate for the Science content area data, $n < 30$, for consistency across samples, the Pearson-Product Moment Correlation was chosen to determine the strength of the relationship between Undergraduate GPA and Praxis II scores. This correlation was computed using Excel. The first significant finding from an examination of MAT candidate Praxis scores is that there is a very weak correlation between age and Praxis score ($r = 0.11$). There is, however, a significant correlation between GPA, *regardless of when the bachelor's degree was awarded*, and Praxis score. For candidates whose date of birth is prior to 1980, the correlation between undergraduate GPA and Praxis II scores is somewhat weaker than that of candidates whose date of birth is 1980 or later, $r = 0.34$, $p = 0.00008$, as opposed to $r = 0.39$, $p = 0.02$. The overall, the correlation is $r = 0.35$, $p = 0.0000002$, with a mean Praxis score of 163 for those with GPAs less than 3.0 on a 4.0 scale and 174 for those with GPAs greater than or equal to 3.0. Table 4 contains information concerning the correlation between GPA and Praxis II Scores.

Upon examination of the correlation coefficients, the correlations appear to be moderate at best. However, the range of the GPA scores has been restricted. Individuals with extremely low GPAs (below 2.0) are not included in the data set because most colleges and universities require a minimum GPA of 2.0 to graduate, and the MAT requires a completed bachelor's degree to apply for admission. The lowest GPA included in the study was, indeed, a 2.0. Any time that only a portion of the entire range of a variable is considered, the strength of the correlation coefficient decreases (Kubisyn & Borich, 1990). Therefore the correlation values are particularly significant when considering this restriction of the range of the values of GPA. It is likely that the correlation would be even greater if lower GPAs were included in the data set. Therefore, one can conclude that GPA is a significant predictor of testing success on the Praxis II exam.

To compare the percentage of variance in Praxis scores determined by a student's GPA, a coefficient of determination was calculated. The correlation of the GPA and Praxis score for math is approximately three times as strong as that for social studies and approximately 7 times as strong as that for language arts. The weakest correlation between GPA and Praxis score occurs for language arts.

Table 4
Content Area Praxis Test Summary

Content Area	Total Sample Size	Correlation Coefficient	Coefficient of Determination	Mean Praxis Score GPA < 3.0	Mean Praxis Score GPA ≥ 3.0
Science	18	0.50	0.26	156 (n = 6)	164 (n = 12)
Math	37	0.60	0.36	162 (n = 18)	177 (n = 19)
Social Studies	31	0.36	0.13	162 (n = 20)	173 (n = 17)
Language Arts	36	0.22	0.05	173 (n = 14)	177 (n = 22)

In addition to the primary discovery that age does not affect Praxis II performance and that undergraduate GPA is a good predictor of testing success, a number of trends were also determined. As the program grows and the initial data set increases, these are the areas that have been identified for further research.

One trend that this study must address is the relatively weak correlation between GPA and language arts Praxis II score. One explanation for this might be that language arts is the one content area that can be strengthened through life-long learning and daily experience working with language. Individuals who enjoy reading or are required to read a great deal at work continue to maintain their exposure to text and may read more thoughtfully. Over time, these individuals might strengthen their language arts skills as a side effect of their continued reading. Undergraduate major or GPA would therefore not be as much of a factor in determining Praxis II scores.

Anecdotal evidence to support this theory can be derived from the following information: only two of the top five language arts Praxis II scores were submitted by individuals who had majored in English. The top score (200/200) was submitted by a journalism major who had been working at a small newspaper writing, reading, and editing on a daily basis. One of the English majors who was in the top five also had a doctorate in jurisprudence and was a practicing attorney. This individual also worked in a text-rich environment. Although all five of these individuals had an undergraduate GPA over 3.0, they did not have the five highest GPAs for language arts test takers.

In addition, the 200/200 score on the mathematics Praxis II exam was not submitted by a math major. However, this individual had been a practicing actuary, using statistics and applying other mathematical concepts on a daily basis, when she applied to the program.

As a result of this study, two additional questions have been identified for further research. One question that arises from the analysis of the data is: Is there a correlation

between undergraduate major and Praxis II scores? A second question is: Is there a correlation between previous career choices and Praxis II scores?

Conclusions

Age should not be a deterrent for those seeking a second career in teaching where standardized testing is concerned. If an individual was a good student (an A or B average, as evidenced by a GPA of 3.0 or better on a 4.0 scale) in college, then he or she should be successful on the Praxis II content exam regardless of how long it has been since a bachelor's degree has been awarded. Success on Praxis II standardized tests seems to be a characteristic that is associated with success in the college classroom, rather than with age.

References

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