CHAPTER 5

Discussion

This study examined three specific student outcomes between groups and sub-groups of students who completed a subject-based First Year Experience (FYE) course and comparable groups and sub-groups of first semester students (NFYE) who did not complete one of the 17 FYE courses offered during fall 1999 at UNR. Data obtained from student records were analyzed to determine whether differences in academic performance (GPA) and retention over three semesters existed between these FYE groups and traditional status sub-groups. Survey data were analyzed to determine whether differences in commitment to continue attending the University of Nevada, Reno (UNR) existed between these FYE groups and traditional status sub-groups. Three research questions determined whether in the three outcome areas under investigation existed between students in the FYE groups. Additionally, three research questions determined whether differences in the three outcome areas existed between students across the same traditional status sub-groups in different FYE groups. The following section addresses each outcome area for both FYE groups and traditional status sub-groups, and discusses the conclusions, implications and recommendations for this study.

Conclusions

The findings of this study were not ambiguous. Clearly, the results from data analysis indicated no significant differences in academic performance between students who had or had not completed an FYE course during the fall 1999 semester at UNR. Neither the MANOVA nor a post hoc independent t-test of semester GPAs from fall
1999, spring 2000, nor fall 2000 for the FYE groups found that completion of an FYE course was associated with significantly different mean GPAs.

The MANOVA analysis also found that comparable traditional status group mean GPAs were not significantly different whether they completed an FYE course or not. A significant difference was found between mean GPAs for the three semesters, however, for all students in this study. Mean GPAs trended lower for each semester through the study period. A significant difference was revealed between the mean GPAs for two semesters among traditional status sub-groups, however, this was independent of FYE status. Highly Nontraditional FYE and NFYE student mean GPAs for the fall 1999 and spring 2000 semesters were significantly lower than the other three nontraditional sub-groups. There was no difference in mean GPA between nontraditional sub-groups for fall 2000.

High school GPA and entrance exam scores were not factors used to categorize nontraditional student groups. High school GPAs and entrance exams (ACT) were significantly different across these four groups, however. Highly Nontraditional FYE and NFYE students were lower on both antecedent measures, and a significant difference in college GPA was found for this sub-group through the fall 1999 and spring 2000 as well. The significant difference in traditional status GPAs for fall 1999 and spring 2000 mirrored students’ high school GPA and entrance exam score differences for the Highly Traditional student, but this difference was not evident among Highly Nontraditional students completing the fall 2000 semester.

The analysis of retention frequencies for differences between FYE groups and comparable traditional status sub-groups revealed no differences between students who
had or had not completed an FYE course independent of students’ traditional status in this study. Compared with the entire fall 1999 freshman class, the retention rate into the spring 2000 semester for both FYE groups was higher than the 67% for the entire entering class. The spring 2000 to fall 2000 retention rate for the fall 1999 freshman class (78%) however, approximated the 81% fall 1999 to fall 2000 retention rate found for the combined FYE groups.

As with GPA, Highly Nontraditional student retention for both FYE groups was found to be significantly lower than the retention rates of the other three traditional status sub-groups. This difference was significant for both the fall 1999 to spring 2000 and fall 1999 to fall 2000 periods. Fall 1999 to spring 2000 attrition reflected the lower retention rate of the 1999 freshmen class as a whole. Highly Nontraditional students continued to be enrolled at nearly a 10% lower rate during spring 2000 and at nearly a 15% lower rate during fall 2000 compared to the Moderately Nontraditional, the next closest sub-group.

The analysis of commitment responses indicated results similar to those found for academic performance and retention. Commitment was not found to be significantly different between either the FYE groups or between like traditional status sub-groups for either the Beginning or End of the Semester survey instruments. FYE course completion, therefore, was also not associated with commitment responses. Commitment did increase significantly for both FYE groups over the fall 1999 semester. Although commitment among traditional status sub-groups varied somewhat, no significant differences were found.

In summary, this study found that FYE course completion was not a factor that significantly differentiated either mean GPA, retention, or commitment outcomes
between FYE groups. In addition, differences in GPA, retention, or commitment outcomes between traditional status sub-groups were not found to be associated with FYE status. For the students in this study, completion of a FYE course was, therefore, unrelated to the outcomes under investigation.

Implications

The findings from this study are important in light of the significant differences that were found in several antecedent student characteristics between FYE groups. Significantly higher high school GPAs and entrance exam (ACT) scores had been found among FYE students, yet the supposed academic advantage possessed by FYE students did not result in a higher mean GPA compared to NFYE students for any semester. In light of the absence of difference in academic performance found in the study and significant differences found in antecedent measures, it may be reasonable to question the utility of these measures as predictors of students’ college GPAs for certain groups of students.

The use of pre-enrollment quantitative measures is efficient; however, their function as proxies for students’ academic resources (Adelman, 1999) upon which to base college performance may be insufficient. Adelman’s study analyzed high school transcripts in conjunction with other high school measures. Adelman’s National Center for Educational Statistics (NCES) sponsored longitudinal study determined that the GPA was less predictive of degree completion (a function of retention and academic success) than the actual courses students completed during high school. These findings suggest a predictive advantage for student success and retention may be found through a more in-depth assessment of a wider range of student characteristics. Assessment of students’
high school course work in conjunction with student characteristics used in this study could add additional data that was unavailable during the analyses conducted by this investigator.

Findings regarding high school GPA and entrance exam scores were consistent with differences found between nontraditional status sub-groups. High school GPAs and entrance exam (ACT) scores among nontraditional students with three or less nontraditional characteristics exhibited significantly higher GPAs and ACT scores than students with four or more nontraditional characteristics. This finding suggests that lower high school GPAs or entrance exam scores may be more useful as predictors of lower college academic performance and persistence than higher high school grades and exam scores are for students entering with fewer nontraditional characteristics.

Students who are admitted to colleges with suspect high school records and entrance exam scores have been identified and on some campuses required to complete remedial courses as a condition of continued enrollment. UNR’s Special Admissions program (Laden, 1996) is one such example. Other institutions have developed programs to assist student transition to campus when a specific nontraditional characteristic has been identified, such as the Bridge programs on the UNR campus for students from small (rural) high schools. Many metropolitan institutions attempt to accommodate the scheduling needs of commuter and part-time students. FYE’s focus on students in general appears to have been of little consequence for students with numerous factors associated with attrition. Targeting FYE toward defined needs of specific groups should be considered. Early identification of student characteristics among prospective students would provide a clearer understanding of the breadth of factors that potentially play a role
in student performance and continuance, as well as determine the most appropriate content for FYE and other student interventions.

At some point antecedent measures and nontraditional factors should be assessed in order to trigger proactive interventions for Highly Nontraditional students. Students admitted to college with significantly lower antecedent measures and four or more nontraditional characteristics as assessed by these measures may benefit from additional social and academic support than was provided by the fall 1999 subject-based FYE courses. This Highly Nontraditional group clearly indicated a propensity to perform academically at less proficient levels than other students. Either as an outcome of their academic performance or reduced integration into the campus community, they departed more frequently than students in other groups.

This study provided no support that completion of an FYE course could be associated with students’ academic performance for any traditional status group. Pascarella and Terenizini’s (1978) suggestion that “what happens to a student after matriculation may be more important . . . than are the attributes the student brings to college” (p. 362) was not found to be the case for the most highly nontraditional FYE sub-group in this study. The Highly Nontraditional sub-group had a significantly lower retention rate as well as lower GPAs overall. The departure of 39 of the 80 Highly Nontraditional students in this study was not the preferred outcome from an institutional perspective. The fiscal and programmatic impacts that will result from reduced enrollment of this group of students are one aspect of retention that deserves further attention. Because a student’s perception regarding their individual departure was not a
focus within this investigation, the departure outcome, which may be viewed in a more positive light by an individual, was not examined.

Over 30% of the Highly Nontraditional sub-group enrolled during spring 2000 did not return for fall 2000 compared to the 19% attrition for the other three traditional status groups. The significantly lower retention of Highly Nontraditional students may account for no significant GPA difference between traditional status sub-groups during fall 2000. The expectation that marginal students might perhaps benefit from the FYE intervention was not supported (Shanley & Witten, 1989). Students with four or more nontraditional characteristics and lower antecedent measures earned significantly lower GPAs regardless of FYE status. These students continued into the spring 2000 and fall 2000 semesters at significantly lower frequencies than students with three or less nontraditional characteristics and higher high school GPAs and entrance exam scores.

The finding that a minority (15%) of new UNR students was categorized as Traditional and that nearly 50% Moderately Nontraditional should be of particular interest to university administrators. Combined SIS and survey data used to determine nontraditional characteristics found that less than 100 of the 713 students in this study could be categorized as a Traditional student. Assuming some inaccuracy within the data, it should be fairly safe to assert that at least 75% of fall 1999 new students were not Traditional. The majority of students categorized as Moderate and Highly Nontraditional in this study is an important finding. The identification of 431 of the 713 students in this study who possessed two or more nontraditional characteristics was enlightening especially as high school GPA and entrance exam scores were not determining factors. This finding suggests that consideration should be given to redefining the character of the
UNR student body as a whole. The university may wish to re-examine its mission to reflect the diversity of students that are currently matriculating.

To some extent, the large number of students that were categorized as nontraditional in this study can be attributed to the 402 commuters and 319 students employed over 20 hours off campus. Anecdotal information gathered informally that was not presented had suggested that this is a common perception among university staff. Historically, such a large number of commuters and employed students have not been enrolled at land grant institutions with residential student populations. These characteristics in particular are among those that “depict the diversity of students attending the metropolitan university” (Smart, 1994, p. 10) rather than non-metropolitan state university campuses. Nonetheless, the retention rate that was found for students in this study, when measured with the retention rates of similarly situated public institution regardless of residential facilities, appeared to be remarkable.

Without regard to FYE or nontraditional status, the significant commitment change over the fall 1999 semester found among all students in this study is also noteworthy. The significant commitment increase that was determined by responses to the End of the Semester instrument should be an encouraging indicator for university leadership, even though commitment was unrelated to FYE students’ participation. Indeed, if this outcome can be substantiated through further investigation, it would appear that such an increase in commitment to UNR by students following their initial semester on campus reflects positively on the university’s services as a whole and its effort to address students’ needs generally. This outcome requires further verification however.
These findings may have been an artifact of the instruments employed to gather commitment data or the reorganization of responses into quartiles.

The significant downward trend in GPAs for all returning students through the three semesters in the study was unexpected, especially as the departure of students who earned lower fall 1999 and spring 2000 GPAs excluded their GPA from the fall 2000 mean GPA. Whether the downward GPA trend was evident for the entire UNR entering class or entering classes in previous or subsequent years was not examined; nonetheless, CIRP findings (Astin et al., 1997) may have forecasted this trend. The 1997 CIRP report focused attention upon entering college student academic expectations. As Astin et al. suggested, high school grade inflation and enhanced “students’ sense of interpersonal competency” (p. 16) has lead to higher academic expectations in college that were not manifested in “greater involvement with academics and learning” (p. 18). As the goals for UNR’s subject-based FYE courses were to provide a venue for increasing social and academic involvement with faculty, between students, and student organizations (integration), the results of this study suggest that the university’s goals for FYE were not achieved during the fall 1999 semester.

Tinto (1993) and Bean (1980) focus considerable attention on the concept of integration as a factor influential in student departure decisions. Within the general departure model presented in the literature, retention has been viewed as one outcome of each student’s academic and social integration into the campus community. The academic performance results of this study suggest that subject-based First Year Experience courses, offered during fall 1999, did not influence academic integration. Even though fall 1999 to spring 2000 retention was greater for students in the study
compared to the fall 1999 freshman class as a whole, these differences were not sustained into the fall 2000 semester. Since retention differences were not found between the FYE and NFYE groups, any FYE influence on student integration and resultant increased retention continues to be suspect.

Attention has also been focused upon the relationship between off-campus environmental factors and retention in the general departure models. The academic performance and retention findings of this study among students with the highest number of nontraditional characteristics tend to support the association between these factors and student departure. Yet, by examining those measures traditionally used to project student success, evidence also supported Astin’s (1993) assertion based upon 30 years of CIRP data that indicators of past performance remain the best predictor of college degree completion.

Studies (House & Kuchynka, 1997; Maisto & Tammi, 1991; Sommers, 1997) that have shown positive outcomes for subject-based FYE courses have been limited to the departmental level. Campus wide FYE courses such as the University 101 model used at the University of South Carolina that have demonstrated positive outcomes (Fidler, 1991; Fidler & Hunter, 1989; Fidler & Moore, 1996; Shanley, 1987) have not historically been subject-based. The organizational structure found on each campus might suggest the most practical method under which an FYE intervention may be implemented. As suggested by UNR’s departmental based advising structure, implementation of FYE courses during fall 1999 was encouraged through academic departments. This iteration of FYE in its initial implementation may not have incorporated the fidelity of either the University 101 model’s academic success content faithfully or the departmental focus of
the subject-based FYE that found positive academic and retention outcomes of earlier studies.

The fall 1999 semester was the initial implementation of the subject-based FYE model on the UNR campus. Mechanisms to assure curricular fidelity were not in place during the timeframe in which this study was completed. Data regarding course content in individual FYE courses was not obtained, thus no method was available upon which to base assumptions that FYE content was provided similarly or in equivalent amounts. Questions of treatment validity are beyond the scope of this study.

Further, implementation was not fully campus wide as many departments elected not to offer an FYE course. For strategic reasons, departmental decision processes and course level outcomes were not a part of this investigation. If further evaluation of subject-based FYE courses does determine that higher GPAs, retention, or student commitment are associated with FYE course completion in general, each department will need to evaluate their intervention and gather a level of data that would more precisely answer questions of value to them.

The knowledge and instructional experience among faculty teaching FYE courses was not examined as part of this study. These factors may also have had an influence upon the outcome measures. Noel (1978) and other researchers have found that a factor students use to judge their experience on campuses is the quality of instruction they experience. Beal and Noel (1980) similarly found the attitude of faculty toward student learning and development was a factor in student retention. Hossler and Bean (1990) emphasized differences that can occur that are directly related to contact with students in and out of the classroom by tenured, full-time faculty between private institutions and
research oriented faculty at public institutions. Specifically, faculty with the most knowledge and teaching experience are involved in research and graduate education and their abilities have no influence upon improving undergraduate retention.

As student integration is enhanced (Astin, 1984; Tinto, 1993) through exposure to quality instruction and contact with faculty (in and out of class) in the student’s field, offering FYE courses that are taught by tenured, full-time academic faculty may provide a different outcome than those found in this study. Full-time academic faculty did not appear to represent the majority teaching subject-based FYE courses offered during fall 1999. Knowledgeable student service personnel, graduate assistants, or adjunct faculty may appropriately teach courses that provide FYE content alone; however, subject-based courses may necessitate a different paradigm. Since a major purpose of subject-based FYE courses is to enhance retention through academic integration, faculty teaching these courses may need to be those concerned with student cognitive and non-cognitive development. An effort should be undertaken to recruit and provide staff development for the most knowledgeable and proficient faculty to teach FYE courses at the introductory level. These instructors would have a better opportunity to influence students’ perceptions of instructional quality positively as well as facilitate the skills and interest of students’ selecting specific major fields of study.

Departments will need to examine their specific circumstances fiscally and programmatically. Over the past three decades, FYE programs have been designed to assist students and institutions broadly. As subject-based FYE studies (House & Kuchynka, 1997; Maisto & Tammi, 1991; Sommers, 1997) have discussed, subject-based FYE provides an efficient administrative mechanism on campuses that disperse new
students into academic departments upon matriculation. The findings from these studies suggest that this intervention functions to recruit better skilled, informed, and committed students who chose to major in the department in which the course was offered.

If subsequent studies of UNR’s FYE program do determine positive outcomes related to FYE that were not found in this study, FYE may not be advantageous for every department. Academic departments that function generally to provide a teaching service to students majoring in other departments will need to consider whether there is any practical advantage to offering FYE courses. Some academic departments that graduate few majors historically, but teach many courses to fulfill requirements for majors in other departments may not be enticed to provide FYE courses. Based upon the findings accumulated thus far, there is little evidence to suggest that subject-based FYE courses on the University of Nevada, Reno campus should be expanded.

Recommendations

In addition to the analysis of outcomes for students that did or did not complete a First Year Experience course, this study documents characteristics in more detail than those data currently being accumulated on entering students and sought to determine whether certain student characteristics were related to outcomes locally. This study also points out that not all-available student information is being utilized to assess student needs and potential comprehensively. This study suggests recommendations that could facilitate further analysis and understanding of student outcomes on the UNR campus.

1. A broader range of non-academic antecedent characteristics should be continuously gathered on all prospective students. Clearly, the need to acquire data on the factors used in this study determined that the degree to which they were abundantly
distributed in the study groups must be verified for subsequent entering students. Data and information need to be provided in a timely fashion. The value of these data have the potential to impact student outcomes. Accurate data at this level can facilitate timely intervention through student services personnel as well as within the classroom. The character of any postsecondary institution is to an important extent defined by the nature of the student body that inhabits its classrooms, residential facilities, dining halls, and shuttle buses. University leadership must utilize a broader range of student data as they examine the need to re-define the mission of the institution and its programs.

2. Additional data on student academic history also needs to be assessed. Procedures need to be developed which can provide an academic resource rating based upon students’ completion of specific high school courses. This should include some mechanism to negate any effect of grade inflation at the high school level by considering the academic difficulty inherent in honors and advanced placement high school courses. A scheme similar to that described by Adelman (1999) provided data that was used to construct an academic resource variable and was shown to possess more utility in predicting retention and completion than either high school GPA or entrance exam scores. Such a measure would further discriminate among student characteristics. This would provide an additional independent variable useful in a longitudinal examination of retention as well as degree completion by differentiating among academic potential levels. This study confirmed, in part, that students with lower antecedent measures departed after their first year; however, there currently does not appear to be any mechanism, which assesses long-range retention and completion nor discriminates comparatively among different ability groups.
3. The students that participated in this study over three semesters should be followed as they progress in the future. New data for subsequent semesters should be added to that which was obtained and the analysis repeated periodically. Additional analysis that could measure group differences defined by other characteristics such as entrance exam scores or gender should be undertaken.

4. A multiple regression study should be devised, to analyze the part each of the nontraditional characteristics may have played in determining differences in academic performance.

5. A logistic regression study should be devised to analyze the nontraditional characteristics that may have played in student departure decisions. This analysis should also be extended to assess whether any nontraditional characteristics can be associated with degree completion over four, five, and six years after initial enrollment.

6. A longitudinal study of this student cohort and the outcomes being analyzed in this study should be designed and implemented by researchers on the UNR campus.

This study evolved from a program evaluation of subject-based FYE courses initially offered on the campus of the University of Nevada, Reno during the fall semester of 1999. As such, the evaluation that was conducted was formative and the findings of this study should be viewed within those parameters. In addition, the findings of this study indicated that concerns arose regarding course-to-course fidelity. The study questions whether or not courses include enough similar content related to FYE content to make a valid comparison for any study. An additional concern related to the instructional quality perceived by students deserves further attention.
University leadership must decide whether the current retention rates are fiscally and programmatically acceptable considering available resources in order to support offering FYE courses in subsequent semesters. If the decision is made to continue to support subject-based FYE instruction, some adjustments may be useful. To enhance further assessment and improve the potential of subject-based FYE course outcomes, the following recommendations are suggested:

1. Subject-based FYE courses should be targeted in some ways to involve students that possess similar nontraditional characteristics such as commuters and students employed off campus. Academic success (FYE content) subject matter should be tailored to assist these students as they negotiate the transition to campus by focusing upon the issues pertinent to their unique circumstances.

2. Subject-based FYE courses should also be targeted for the most Highly Nontraditional students. Additional academic support should be introduced in these courses. Other FYE content should be adjusted to permit a focus on academic skill development and emphasize those skills deemed valuable to increase academic performance outcomes within the department offering the course. Collaboration between FYE faculty in these special focus courses and other campus resources such as tutoring services should be formalized and monitored.

3. Additional training should be provided to all subject-based FYE course faculty and required for faculty teaching FYE courses for targeted groups. Faculty should be recruited from interested full-time teaching faculty. A cadre of such faculty within each department should be cultivated and their activities coordinated departmentally and across campus. Two or more departmental faculty should alternate teaching any subject-
based FYE course to maintain continued interest and enthusiasm. Faculty should be acknowledged for their contributions through incentives and in their performance evaluations at a level approaching that given to scholarly work.

4. Subject-based FYE course outcomes similar to those examined in this study as well as others such as credits attempted, dropped, or earned should be analyzed similarly across campus, but also at the departmental level. Departmental analysis would permit more control over any unique characteristics related to course difficulty and organization. This step would provide a basis for analysis of long-term performance outcomes useful in assessing student learning. Attention should also be given to outcomes of particular interest to specific departments and SIS data should be easily accessible and available in a readily useable and uniform format for analysis purposes.

5. Course enrollment should be limited in all FYE courses to facilitate student involvement and interaction. Limits should be consistently maintained for subject-based FYE courses for targeted groups.

6. At least one departmental faculty member should take an active role in recruiting and advising students to enroll in an introductory subject-based FYE course. These instructors should be encouraged to work cooperatively with other university entities providing general advising, and consistent parameters should be established to provide guidance to all advisors.

7. Departments should appoint one or more general advisors from among its FYE instructors to facilitate integration of prospective majors into the department. Limited training should be provided to these faculty advisors regarding the identification of student issues beyond their scope. However, these faculty advisors should fully
understand the breadth of services available for students, the various offices and personnel within these services, and be knowledgeable of appropriate referral processes.

8. To improve the potential for course fidelity, similar course design and content information should be provided to all FYE faculty members. A means to assess the content provided during each course should be developed and data should be analyzed to determine whether any significant differences in FYE content were presented.

Summary

The purpose of this study was to investigate subject-based First Year Experience (FYE) courses offered on the UNR campus. This study evolved from a formative evaluation of FYE and the results are intended to guide postsecondary policy and program improvement. Research questions asked whether student outcomes (academic performance and retention) and survey instrument responses were different between student groups and sub-groups that had or had not completed one of 17 FYE courses offered during fall 1999. Results from this study found no basis that supports continuing subject-based FYE courses in their present form, as student groups and sub-groups who had or had not completed an FYE course could not be differentiated on academic performance, retention, or survey responses over the study period. Therefore, this study made formative recommendations projected to strengthen subject-based FYE courses as well as recommendations for further analysis of these data. If university leadership remains concerned with retention of new students through to graduation, implementation of the study’s recommendation are suggested.