

Student Engagement in South African Higher Education

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The relationship between student engagement and student outcome achievement is well documented in the higher education literature for US students (Astin, 1993; Kuh, 2003; Kuh, Kinzie, Schuh, & Whitt, 2005; Pascarella & Terenzini, 2005) and has recently gained traction for students in other countries such as Australia (Krause, 2007a, 2007b; Krause & Coates, 2008; Krause, Hartley, James, & McInnis, 2005), New Zealand (Leach & Zepke, n.d.; van der Meer, 2009; van der Meer & Scott, 2009), Malaysia (Azman, Ali, & Jelas, n.d.), and England (Mann, 2001; Yorke & Longden, 2008). Yet, few studies have examined this relationship in countries with evolving or restructured systems of higher education, such as South Africa. Student engagement and corresponding barriers may differ across cultures, underscoring the need for research in restructured higher education systems. Further, the instability and ongoing change characterizing South African colleges and universities post-Apartheid suggests that how students engage in and benefit from the college experience may vary greatly from students enrolled prior to Apartheid in the more structured higher education systems of the United States.

Amid ongoing higher education restruc-

turing and reform in South Africa, research exploring student outcomes and the barriers to engagement in South African higher education has only recently appeared in the literature and has mainly focused on intellectual ability as a primary barrier to students' academic success (Cross & Johnson, 2008; Cross, Shalem, Backhouse, & Adam, 2009). Although it is important to examine academic outcomes and their barriers, since the majority of a student's time is spent outside the classroom, it is equally important to explore how the cocurricular experiences influence student learning outcomes. Such research could prove useful to anyone invested in student learning and success and, more specifically, for faculty and administrators in higher education.

Our intent was to fill a void in the student engagement literature by assessing (a) college students' experiences with, interest in, and time devoted to cocurricular activities, (b) student characteristics and perceptions of learning outcomes, and (c) reported barriers to student engagement in post-Apartheid South Africa. Student engagement, a concept originating from Pace's (1982) measures of quality of effort and Astin's (1985) theory of involvement, refers to "the time and energy students devote to educationally

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sound activities inside and outside of the classroom, and the policies and practices that institutions use to induce students to take part in these activities” (Kuh, 2003, p. 25). Student engagement also represents how higher education institutions “allocate their human and other resources as well as how they organize learning opportunities and services to encourage students to participate and benefit” from involvement in activities (Manning, Kinzie, & Schuh, 2006, p. 25). The concept of student engagement as a predictor for achieving student outcomes (e.g., cognitive complexity, persistence, academic achievement, and leadership development) provides a framework to examine the student experience in South African higher education.

Recent qualitative studies on student transition and assimilation into higher education post-Apartheid have identified emerging themes about the South African college student experience (Cross et al., 2009; Cross & Johnson, 2008), though little research has been conducted to examine student engagement in South Africa. We examined factors influencing student outcomes at one South African university; specifically, we sought to answer the following:

1. Do students report different outcomes in significant ways based on their individual student characteristics, (i.e., student identity group, sex, residence on or off campus)?
2. Is there a difference between the time students devote to cocurricular activities and the outcomes that they report?
3. What barriers to student involvement do students report?

HISTORICAL CONTEXT OF POST-APARTHEID HIGHER EDUCATION

In order to fully understand the role of student engagement in South African higher education

and its importance to student learning today, a brief overview of the historical context from which its restructured higher education system emerged is required. After the fall of Apartheid in 1994, South African higher education slowly began what was, and continues to be, a seismic shift in the operation of its colleges and universities (Letseka & Maile, 2008). In March 2001, the National Plan for Higher Education (NPHE) mandated the reform and desegregation of South African institutions (Department of Education [DoE], 2001). The NPHE cited a postsecondary graduation rate of 15% among all matriculating university students and the inefficient structure of higher education as key justifications for an overhaul of the system. Further, the NPHE highlighted the problem of duplicated efforts among historically separate institutions for African, White, Coloured, and Indian—Apartheid-designated race groups—students still remaining in South Africa post-Apartheid (DoE).

In South African higher education literature the term *African* refers to native or indigenous South Africans (Toni & Olivier, 2004), but is used interchangeably with *Black* in this context. Similarly, the term *Coloured*, considered derogatory in the United States, is an official racial category to refer to biracial or multiracial individuals in South Africa. Some Coloured and White South Africans identify as Afrikaans-speaking or Afrikaners. Since Afrikaners were seen as the oppressors during Apartheid, Afrikaans language use and historical markers may still be dominant features in formerly all-White South African colleges and universities and continue to serve as symbols of Apartheid (Jansen, 2009).

As early as 2000, institutions historically segregated along government-defined racial lines began to merge and admit students from all backgrounds, dramatically altering the makeup of colleges and universities in South Africa (Jama, Mapesela, & Beylefeld,

2008; Jansen, 2004). In a few short years, 306 separate higher education institutions either merged or shut down, leaving 72 colleges, *technikons* (South African equivalent of technical or community college), and universities (Jansen, 2004). Nelson Mandela Metropolitan University (NMMU), the site of this study, opened in January 2004 and is one outcome of the merger process (Nel & Stumpf, 2007). One objective for the merger was to overcome the Apartheid-induced divide between historically White and Black institutions. Though the dramatic alteration of structure has extended access to previously excluded Black, Coloured, and Indian students, the DoE reported in 2005 that of the 120,000 students enrolled in South African higher education, 30% dropped out in their first year, with another 20% dropping out in their second and third years (Letseka & Maile, 2008).

Student Engagement in South Africa

The attrition rate in South African higher education has underscored the need for research about the college student experience in order to better understand the factors contributing to student success. Only since 2003 has student involvement and retention received attention in South African higher education literature (Bitzer 2009; Bitzer & Troskie-De Bruin, 2004; Cross & Johnson, 2008; Cross et al., 2009; Jama et al., 2008; Lourens & Smit, 2003; Louw, 2005; Ochse, 2003; Toni & Olivier, 2004). In the absence of a body of literature focused on South African student engagement, South African education scholars are utilizing American higher education concepts, theories, and models to inform their research of student success and engagement (Bitzer & Troskie-De Bruin; Toni & Olivier).

Cross and colleagues (2009) identified three sets of social conditions that influenced student success at one South African university

that closely resemble Astin's (2002) inputs-environment-outcomes (I-E-O) model and the use of noncognitive variables (Sedlacek, 2004): (a) student background (socioeconomic class, culture, language), (b) the learning environment created by the institution, and (c) individual student ability to navigate systems in place at the institution. Students who were unable to navigate the barriers created by these social conditions were less likely to succeed.

Bitzer and Troskie De-Bruin refer to Kuh's (2001) model of student engagement as a key theoretical concept in creating an assessment to measure first-year students' pre-entry attributes at the University of Stellenbosch, a predominantly White institution (Bitzer & Troskie De-Bruin, 2004, p. 120). In the same study, Astin's (2002) I-E-O model was used to shape the questionnaire distributed to entering first-year students, results of which revealed that workload, time spent on educational activities outside of class, academic and social integration, information literacy, and unrealistic academic self-image were determining factors for student persistence (Bitzer & Troskie-De Bruin).

Toni and Oliver (2004) also utilized American student engagement scholarship (e.g., De Sousa & Kuh, 1996; Sedlacek, 1999) to inform their study of Black female first-year students' long-term career goals. Toni and Oliver's findings indicated that long-term career goals and positive self-concept were integral to these students' defining their academic identities at South African universities, aligning with Sedlacek's (1999) research on how noncognitive variables influence student outcomes. Jama et al. (2008) examined factors affecting the academic performance of Black South African college students and created a theoretical model mapping student progression through South African higher education based on Tinto's (1993) model of

student integration. Pre-entry, initial entry into university during orientation, formal entry into academic life, and completion are identified as the primary stages through which students progress toward graduation, with precollege attributes and characteristics, family background, and prior schooling identified as the most influential factors on student success (Jama et al.). The limitations (e.g., small sample size, institutional demographics) of these studies warrant further examination of student engagement and learning outcomes in the South African context.

CONCEPTUAL FRAMEWORK

The above historical background and literature review serve as a base for understanding South African student engagement research. Since the college environment and a number of input characteristics influence student outcomes, two models anchor the conceptual framework for our study. Astin's (2002) I-E-O model assesses the influence that input characteristics (e.g., race, gender, expectations for college) and environmental experiences (e.g., involvement on campus) have on student outcomes (e.g., student engagement and student learning). Although student involvement, or "the amount of physical and psychological time and energy the student invests in the education process" (Astin, p. 7), affects outcomes, the environment is a core element of his model. Because out-of-class experiences have a large sphere of environmental influence on student outcomes, it is appropriate to use the time students devote to cocurricular involvement to better understand its potential influence on student learning outcomes; in other words, "environmental characteristics make up the institutional context and the stimulus for the amount, scope, and quality of students' effort" (Astin, p. 128). Using Astin's model, we utilized a survey that allowed for analysis

of environmental and outcome variables in the South African college student experience.

Kuh et al. (2005), building on the ideas of Pace (1979), elaborated on the environmental component of Astin's (2002) I-E-O model stating that both students and institutions can work together to create environments that produce positive student outcomes. It is necessary to examine the various environments created at universities to determine how, and which, environments have the greatest influence on student outcomes. Moreover, other researchers (Longerbeam, Sedlacek, & Alatorre, 2004; Sedlacek, 2004; Wawrzynski & Sedlacek, 2003) have examined the influence of noncognitive variables on student outcomes. Sedlacek (2004) identified eight noncognitive variables—positive self-concept, realistic self-appraisal, successfully handling the system, preference for long-term goals, availability of strong support person, leadership experience, community involvement, and knowledge acquired in the field—that influence adjustment, motivation, perceptions, and student outcomes. Students who do not report development of noncognitive variables either before or in college are less likely to achieve desired student outcomes (Sedlacek).

In order to evaluate the student outcomes, we used Sedlacek's (2004) noncognitive variables to develop questions on a survey administered to South African college students in the current study. Prior research by Sedlacek and colleagues (Boyer & Sedlacek, 1989; Sedlacek, 2003) has used noncognitive variables when studying international students, although the research was conducted on students who were studying in the United States. Survey questions specifically focused on four of the eight noncognitive variables: leadership experience (e.g., students identified the development of leadership skills), positive self-concept (e.g., students identified their strengths and confidence in abilities), community

involvement (e.g., students reported effects of being engaged in their college community), and knowledge acquired in a field (e.g., students identified career and life skills gained through their involvement on campus).

In addition to noncognitive variables, survey questions were also developed using three student learning outcomes identified in *Learning Reconsidered 2* (ACPA et al., 2006): humanitarianism (e.g., students' interactions across cultures and development of peer connections), practical competence (e.g., students' identified career goals, development of practical skills for the workforce), and persistence and academic achievement (e.g., students' reported effects of involvement on academic work). The concept of finding a "sense of belonging" as a result of living on campus and the positive effects associated with residence hall communities documented in the literature also served as basis for a survey question about the connection students felt to their campus (Berger, 1997; Gilliard, 1996; Hurtado & Ponjuan, 2005). Because the nature of the college environment for students in post-Apartheid South Africa is ever evolving, the use of a multifaceted theoretical approach to examine student engagement and progress toward desired student outcomes is supported.

METHOD

Participants

The data for this study were obtained from undergraduate students at Nelson Mandela Metropolitan University, a metropolitan South African university with a range of academic majors and disciplines. There are 25,000 students at the university, of which 19,000 were eligible to participate. Useable survey responses (728 paper-and-pencil surveys and 1,507 online surveys) were completed by 2,235 students (about 11.4% response rate). Fifty-four percent ($n = 1,207$) of the

respondents were male; 46% ($n = 1,028$) were female. Of the participants who provided their student identity group, 60% ($n = 1,107$) identified as Black, 19.3% ($n = 353$) as White, 13.1% ($n = 240$) as Coloured, 1.7% ($n = 32$) as Indian, 5.3% ($n = 97$) as international students, and 0.2% ($n = 4$) as Chinese South Africans. The average age of the participants was 21 ($SD = 3$). University demographic statistics were consulted to determine if the sample was representative of students at the university. Our chi-square test for goodness of fit revealed that, although the sample was generally representative of university students, we did have slightly more males and Black students who completed the survey.

Procedure

A two-pronged approach to data collection was employed in May 2009, the fall semester for NMMU. First, we used a census approach and posted a notice informing students about the Student Life Survey (SLS), providing the relevant URL address on the University Portal System (UPS), and asking them not to complete the online SLS if they completed a paper-and-pencil version of it. The UPS serves as a central location where students log into and access their university e-mail and receive information about services and offices at the university. Our rationale for choosing such an approach was that our population was identifiable and reachable; all students who access the web through NMMU's system or check their NMMU e-mail, log into the UPS. Also, we could reduce the likelihood of coverage error (i.e., when someone has a 0% chance of being sampled) and sampling error (when only a subset of the population is sampled; de Leeuw, Hox, & Dillman, 2008). As a second means of recruitment, we used convenience sampling by placing student volunteers strategically around campus (e.g., taxi stops and public transportation areas) to ask students

to complete a paper-and-pencil version of the SLS if they did not complete the online SLS. The second method of recruiting students was used for two reasons. First, many students may not have access to computers once they leave the university, because they live in surrounding townships without electricity. Second, students are allocated a fixed amount of computer access time as part of their tuition and fees, and going beyond one's allotted computer time incurs additional fees. The respondents were assured anonymity in the online and paper versions of the consent form.

We employed listwise deletion of cases where data were missing. We chose this approach because it was the most conservative, and we believed it introduced the least amount of bias into our inferences. The trade-off of these design choices is the reality that our data may suffer from nonresponse error, which occurs when those sampled did not respond and when those units differ from those who did respond in a way that is relevant to the study; however, because our population was mostly representative of the larger population of undergraduate students at the university (confirmed by chi-square analysis), we believe our data to be adequate for an exploratory study. Although we had a low response rate compared to studies in the United States on student outcomes, surveying students at South African universities post-Apartheid is still a relatively new venture and the first of its kind administered to NMMU students.

Survey Instrument

The Student Life Survey (SLS) is a 39-item questionnaire designed to assess experiences with and interests in cocurricular opportunities (e.g., "Student life activities I participate in at NMMU help me increase my self-confidence"; and "Student life activities I participate in at NMMU enhance my academic work"), time devoted to cocurricular activities (e.g., "On

an average week, how many hours per week are you involved in the following activities?"), and barriers for involvement. Demographic information was also collected on the SLS. The SLS was developed through a consultative process with members of the Cocurricular Forum at the university, which included various campus stakeholders. The SLS has a combination of Likert-type responses from 1 (*strongly agree*) to 5 (*strongly disagree*) and categorical responses (e.g., "The time devoted each week to the four categories of student life activities included: *1-5 hours of involvement, 6-10 hours of involvement, 11-15 hours of involvement, 16-20 hours of involvement, or more than 25 hours per week*").

A variety of means established the validity of the survey. South African administrators who were knowledgeable and well versed in student experiences reviewed the survey items independently to establish content validity. Construct validity was tested through intercorrelations with the scores of the survey items. In an intercorrelation of all items, results were not unexpected; for example, "Student life activities I participate in at NMMU help me acquire skills that I can use after leaving the university" moderately correlated (.57) with "Student life activities I participate in at university help me decide on the type of work I may want to do after NMMU."

Controversy surrounds the validity of self-report data (Gonyea, 2005; Pace, 1985; Pike, 1995); however, self-report data are valid when five criteria are met: (a) requested information is known to the respondents, (b) questions are phrased clearly and unambiguously, (c) questions refer to recent activities, (d) questions merit a serious response by the respondents, and (e) answering the questions does not embarrass or threaten the respondents (Bradburn & Sudman, 1988; Converse & Presser, 1989; Gonyea; Pace; Pike, 1995). The SLS survey was pilot-tested with a group

of students to confirm that the SLS met these five criteria.

Independent Variables

Our independent variables comprised of student characteristics—student identity group (Black, Coloured, Indian, White, International), sex, residential status (on campus or off campus), and a cocurricular activities composite variable. The cocurricular activities composite was created for each student by first summing the amount of hours each week the student devoted to involvement in the cocurricular activity categories (i.e., residence events, arts and culture, sports, and student societies) and then assigning the students to one of four involvement level categories (i.e., None, Low = 1-5 hours of involvement per week, Moderate = 6-15 hours of involvement per week, High = more than 15 hours of involvement per week).

Dependent Variables

The dependent variables for some of the MANOVAS consisted of 12 individual questions from the SLS (e.g., “Student life activities I participate in at NMMU help me: develop leadership skills, acquire skills that I can use after leaving the university, decide on the type of work I may want to do after university”), which corresponded to four of Sedlacek’s (2004) noncognitive variables (e.g., positive self-concept, leadership experience, community involvement, and knowledge acquired in a field), three learning outcomes from *Learning Reconsidered 2* (i.e., humanitarianism, practical competence, and persistence and academic achievement) (ACPA, ACUHO-I, ACUI, NACA, NACADA, NASPA, & NIRSA, 2006), and concepts associated with a sense of belonging. These 12 questions used responses on a Likert-type scale from 1 (*strongly agree*) to 5 (*strongly disagree*). We also used the influence of perceived barriers on cocurricular

involvement (e.g., transportation, time, lack of knowledge of events) as dependent variables in other analyses.

Data Analysis

The data analyses proceeded in several stages. First, we employed simple descriptive statistics, frequencies, and correlations with the variables to understand and explore the relationships of the variables and to assess if any assumptions would be violated during future analyses. The second stage of our analyses included running several MANOVAs to examine our research questions: Do students report different outcomes in significant ways based on their individual student characteristics (i.e., student identity group, sex, residence on or off campus)? and Is there a difference between students’ time devoted to cocurricular activities and the outcomes that they report? MANOVAs were appropriate given that our dependent variables were intercorrelated (Bray & Maxwell, 1985); correlations ranged from .35 to .72. We used the Pillai-Bartlett Trace ($p < .01$) when interpreting our MANOVAs because it is more robust when there are unequal n values for the various groups in the independent variables (Tabachnick & Fidell, 2007).

LIMITATIONS

As with all studies there are limitations that must be noted: we note three here. Although the institution in the current study has one of the largest university student populations in South Africa, it still represents the experiences and expectations of students at one institution. Second, there were a greater proportion of Black students than other racial groups in our sample living on campus. Third, since the South African higher education literature has limited student outcomes established in theoretical or empirical studies, we used single-item measures as exploratory outcomes, and as a result greater

construct validity should be established in the future. Despite these limitations, the results are still noteworthy as it establishes a critical foundation for future research in the South African context and expands knowledge of college students globally.

RESULTS

The multivariate analysis of variance in our analyses revealed significant and practical differences between particular student characteristics—student identity groups, sex, and residence on or off campus—and the achievement of desired student outcomes. The data in Table 1 represent the statistically significant mean differences and the effect sizes (i.e., partial eta-squared) for the influence of students’ on-campus or off-campus living on their outcomes, Pillai-Bartlett Trace = .13, $F(12, 1675) = 20.91, p \leq .001$. As Table 1 illustrates, students who live on campus consistently

reported greater gains in student outcomes as a result of their cocurricular involvement than did their counterparts who resided off campus. The partial eta-squared, however, indicate that living on or off campus has small effects on students’ outcomes (Cohen, 1988) with the exception of the question, “I feel a sense of connection with NMMU,” which revealed a moderate effect of 0.07 and indicated that a student’s living situation moderately effected whether he or she developed a sense of connection with the institution. Notably, students living off campus, on average, felt more connected to NMMU ($M = 2.49, SD = 1.47$) than students who lived on campus ($M = 3.46, SD = 1.38$).

Since the student outcomes between students who lived on campus or off campus were statistically significant, we used a chi-square test for independence to further explore these students’ characteristics and found a significant association between student identity

TABLE 1.
Differences in Student Outcome Achievement Based on Residential Status^a

Student Outcomes	On Campus (n = 343)		Off Campus (n = 1,345)		Partial η^2
	M ^b	SD	M ^b	SD	
Enhanced Academic Work	1.91	0.97	2.43	1.06	.04
Leadership Experience	1.75	0.89	2.17	1.02	.02
Knowledge Acquired in a Career Field	2.27	1.04	2.53	1.06	.01
Career Decision-Making	1.92	0.98	2.27	1.06	.01
Enhanced Profile to Attract Future Employers	1.47	0.75	1.74	0.86	.02
Stress Relief	2.26	0.95	2.66	0.97	.03
Positive Self-Concept	2.05	1.03	2.45	1.06	.02
Community Involvement	1.82	0.94	2.23	1.03	.03
Interaction With People From Diverse Backgrounds	1.72	0.86	2.15	0.98	.03
Sense of Institutional Connection	3.46	1.38	2.49	1.47	.07

^a Pillai-Bartlett Trace = .13; $F = 20.91; p \leq .001$.

^b 1 = *strongly agree*; 2 = *agree*; 3 = *neutral*; 4 = *disagree*; 5 = *strongly disagree*.

and whether a student lived on or off campus, $\chi^2(1, n = 1,756) = 161.7, p \leq .001, V = .30$. Of the five identity groups (Black, White, Coloured, Indian, international students), a significantly higher proportion of Black students live on campus (of the 21% of students who live on campus, 87% are Black).

A second MANOVA was used to examine whether student identity group was associated with involvement in cocurricular activities and student outcomes. The findings suggest that students from different identity groups engaging in cocurricular activities achieve differing levels of student outcomes, Pillai-Bartlett Trace = .17, $F(48, 6576) = 6.95, p \leq .001, \eta^2 = .05$. The data in Table 2 represent the statistically significant mean differences and the effect sizes for the influence of a student's identity group on his or her student outcomes. Of the 12 questions asked pertaining to different student outcomes, 11 were found to have significant differences between varying student identity groups. The partial eta-squared indicated small to moderate effects for most of the questions; yet, a moderate to large effect was found between students' identity and their belief that participation in cocurricular activities helps them feel like they give back to the campus community (i.e., community service), $\eta^2 = .09$. Tukey post hoc tests revealed that Black students ($M = 1.89, SD = .91$) were significantly different from Coloured students ($M = 2.14, SD = .96$) and White students ($M = 2.68, SD = 1.13$). Additionally, Coloured students ($M = 2.14, SD = .96$) and international students ($M = 2.21, SD = .99$) were significantly different from White students ($M = 2.68, SD = 1.13$). For a majority of the questions, Black students reported greater student outcomes resulting from involvement in cocurricular activities.

A third MANOVA was used to examine differences between student's sex and the attainment of student outcomes, Pillai-Bartlett

Trace = .03, $F(12, 1655) = 4.06, p \leq .05, \eta^2 = .03$. Statistical significance was found between sex and 3 of 12 questions related to student outcomes (i.e., acquisition of skills to use after university, community service, and peer connections), but the eta-squared revealed small effects, $\eta^2 = .03, .005, \text{ and } .006$ respectively.

Involvement Levels and Student Outcomes

In addition to the influence of student characteristics on outcomes achievement, we used a MANOVA to explore whether there were differences between the amount of time students spent on cocurricular activities and their reported outcomes. We used our cocurricular activities composite as our independent variable. Findings suggest that our MANOVA was statistically significant, Pillai-Bartlett Trace = .17, $F(36, 4815) = 8.04, p \leq .001; \eta^2 = .06$; and in post-hoc tests using a Bonferonni adjustment, we found significant differences between 10 of the 12 student outcomes. Table 3 presents the statistically significant results suggesting that differences do exist between how much time students devote to cocurricular activities and the outcomes that they report. These data indicate that students who were involved in cocurricular activities, as opposed to those with no involvement, reported statistically significant higher student outcomes in all areas, except for two (i.e., peer connections and help others).

Additionally, high amounts of involvement (25 or more hours a week devoted to cocurricular activities) were likely to have a greater effect on enhancing students' academic work ($\eta^2 = .12$). The partial eta-squared indicated that time devoted to involvement had a moderate to large effect on development of leadership skills ($\eta^2 = .09$), with significant differences reported between students with no involvement and all three groups of students reporting different amounts of time devoted

TABLE 2.
Differences in Student Outcome Achievement Based on Student Identity^a

Student Outcomes	Black (n = 999)		Coloured (n = 218)		Indian (n = 27)		White (n = 327)		Int'l Students (n = 86)		Partial η^2	
	M ^b	SD	M ^b	SD	M ^b	SD	M ^b	SD	M ^b	SD		Sig.
Enhanced Academic Work	2.14	1.03	2.40	0.95	2.23	0.69	2.68	1.09	2.56	0.99	1v2, 1v4, 1v5, 2v4	.04
Leadership Experience	1.90	0.96	2.17	0.93	2.09	0.81	2.36	1.00	2.29	1.04	1v2, 1v4, 1v5, 2v4	.04
Knowledge Acquired in a Field	2.28	1.04	2.48	0.97	2.73	0.94	2.86	1.09	2.71	1.02	1v4, 1v5, 2v4	.05
Makes My CV Attractive to Future Employers	1.56	0.82	1.71	0.79	1.82	0.73	1.94	0.92	1.76	0.82	1v4	.03
Career Decision-Making	2.05	1.04	2.23	0.96	2.09	0.97	2.46	1.12	2.43	1.07	1v4	.02
Stress Relief	2.43	0.98	2.55	0.82	2.32	0.78	2.95	0.92	2.69	1.03	1v4, 2v4, 3v4	.04
Positive Self-Concept	2.18	1.03	2.54	0.98	2.64	1.22	2.77	1.08	2.40	1.04	1v2, 1v4, 2v4, 4v5	.05
Community Involvement	1.89	0.91	2.14	0.96	2.32	0.78	2.68	1.13	2.21	0.99	1v2, 1v4, 2v4, 4v5	.09
Interaction With People From Diverse Backgrounds	1.90	0.91	2.11	0.89	2.23	0.97	2.37	1.02	2.17	0.95	1v4	.04
Peer Connections	2.20	0.95	2.37	0.83	2.32	0.78	2.66	0.91	2.44	0.88	1v4, 2v4	.04
Sense of Institutional Connection	2.56	1.49	2.40	1.37	2.27	1.35	3.30	1.52	2.49	1.31	1v4, 2v4, 3v4, 4v5	.04

^a Pillai-Bartlett Trace = .19; $F = 6.95, p \leq .001$.

^b 1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree; 5 = strongly disagree.

to involvement. Interestingly the more time students devoted to cocurricular involvement, the less likely they were to report a sense of institutional connection.

To further explain the influence of cocurricular involvement on student outcomes, a chi-square test for independence, $\chi^2(1, n = 1,677) = 85.5, p < .001, V = .13$, was conducted to examine differences in time devoted to cocurricular activities across student identity groups and between students who live on or off campus. Black students represented the highest percentage of respondents reporting high involvement (26.6%), and 742 out of 1,004 Black students reported some level of involvement in cocurricular activities. Of the five student identity groups, international students reported the most time devoted to involvement (77.8%), followed by Black students (74.0%).

A chi-square test for independence indicated that there is significance between living on or off campus and time devoted to involvement, $\chi^2(3, n = 1,641) = 219.3, p < .001, V = .37$. Not surprisingly, a greater proportion of students living off campus were less likely to be involved in cocurricular activities. When considering the students who live on campus, 94% of students reported that they devoted at least some time to involvement (low, moderate, or high). Of the students reporting no involvement, 96% lived off campus.

BARRIERS TO COCURRICULAR INVOLVEMENT

Following examination of student characteristics and corresponding levels of involvement, we explored what barriers might prevent students from participating in cocurricular activities. Descriptive statistics were used to examine students' responses to the question, "How often do the following [barriers] interfere with your involvement in student life activities?" Students were permitted to report on the following barriers to involvement:

time commitment for involvement (Time), lack of financial resources (Finances), lack of transportation to activities (Transportation), lack of knowledge about activities (Awareness), limited interest in cocurricular offerings (Interest Level), and class or lecture conflicts (Class Schedule). Nearly 50% of respondents reported that transportation constrained their ability to get involved in cocurricular activities and 47% indicated time commitment as a significant barrier to involvement. We used MANOVAs to explore whether there were differences in barriers reported among male and female, Pillai-Bartlett Trace = .01, $F(6, 1086) = 2.66, p \leq .05, \eta^2 = .01$; commuter and residential students, Pillai-Bartlett Trace = .02, $F(6, 1061) = 2.79, p \leq .05, \eta^2 = .02$; as well as among student identity groups, Pillai-Bartlett Trace = .117, $F(24, 4320) = 5.41, p \leq .001, \eta^2 = .03$. The majority of MANOVA results were statistically, but not practically, significant with the exception of barrier differences among student identity groups (see Table 4). Black students were more likely to report Transportation ($M = 2.57, SD = 1.14$) and Time ($M = 2.23, SD = 1.13$) as barriers to involvement than all other identity groups, with small to moderate effect sizes ($\eta^2 = .02, .05$), and White students reported Awareness of activities ($M = 2.59, SD = 1.1$) as a barrier in higher proportions than other student identity groups with a small effect size ($\eta^2 = .03$).

DISCUSSION

The current study investigated three research questions associated with student cocurricular involvement and student learning outcomes. Given the gap in South African higher education literature with regard to the influences of engagement on student outcomes, as well as the comparisons that may be drawn between the experiences of South African college students and students studied in US institutions, the findings of the current

TABLE 3.
Differences in Student Outcome Achievement Based on Time Devoted to Involvement^a

Student Outcomes	No Involvement (n = 511)		Low (n = 329)		Moderate (n = 433)		High (n = 355)		Sig.	Partial η^2
	M ^b	SD	M ^b	SD	M ^b	SD	M ^b	SD		
Enhanced Academic Work	2.82	1.07	2.31	0.96	2.12	0.94	1.88	1.00	1v2, 1v3, 1v4, 2v4, 3v4	.12
Leadership Experience	2.53	1.07	2.06	0.92	1.88	0.86	1.77	0.98	1v2, 1v3 1v4, 2v4	.09
Knowledge Acquired in a Field	2.69	1.09	2.54	1.02	2.39	1.00	2.24	1.05	1v3, 1v4, 2v4	.03
Career Decision-Making	2.50	1.13	2.12	0.98	2.12	0.96	1.90	1.05	1v2, 1v3, 1v4, 3v4	.05
Stress Relief	2.84	1.00	2.59	0.95	2.50	0.90	2.21	1.08	1v2, 1v3, 1v4, 2v4, 3v4	.04
Positive Self-Concept	2.68	1.06	2.33	1.03	2.17	1.00	2.21	1.08	1v2, 1v3, 1v4	.04
Community Involvement	2.42	1.10	2.17	1.01	1.96	0.89	1.93	0.98	1v2, 1v3, 1v4, 2v3, 2v4	.04
Interaction With People From Diverse Backgrounds	2.41	1.05	2.08	0.91	1.90	0.86	1.80	0.92	1v2, 1v3, 1v4, 2v4	.06
Sense of Institutional Connection	2.51	1.52	2.62	1.52	2.77	1.49	2.86	1.49	1v4	.01
Enhanced Profile to Attract Future Employers	1.99	0.99	1.67	0.74	1.52	0.70	1.46	0.76	1v2, 1v3, 1v4, 2v4	.07

^a Pillai-Bartlett Trace = .17; F = 8.04; p ≤ .001.

^b 1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree; 5 = strongly disagree.

TABLE 4.
Differences in Barriers to Cocurricular Involvement Among Student Identity Groups^a

Barriers	Black (n = 631)		Coloured (n = 149)		Indian (n = 25)		White (n = 224)		Int'l Students (n = 58)		Partial η^2	
	M ^b	SD	M ^b	SD	M ^b	SD	M ^b	SD	M ^b	SD		Sig.
Transportation	2.57	1.14	2.42	1.12	2.00	1.08	2.25	1.17	2.00	1.27	1v4	.02
Time	2.23	1.12	2.33	1.23	2.84	1.25	2.88	1.36	2.53	1.34	1v4, 2v4	.05
Lack of Knowledge	3.06	1.09	3.04	1.03	2.84	1.25	2.59	1.10	3.00	1.21	1v4, 2v4	.03

^a Pillai-Bartlett Trace = .117; $F = 5.408$; $p \leq .001$.

^b 1 = strongly agree; 2 = agree; 3 = neutral; 4 = disagree; 5 = strongly disagree.

study are particularly significant. Students at NMMU who engaged in cocurricular activities reported positive outcomes that mirror outcomes reported by students in the US higher education literature (Astin, 2002). But, our results are contrary to empirical and theoretical US student engagement research and are potentially unique to the South African college student experience.

We found that NMMU students who live on campus were more likely to report positive student outcomes and be engaged in cocurricular activities than those who lived off campus. Yet, students who lived on campus were less likely than commuting students to report feeling connected to their institution, a finding that challenges the link between on-campus living and sense of belonging cited in American higher education literature (Astin, 2002; Kuh, 2001). The relatively recent merger of three segregated institutions to form NMMU may be connected to students' reported feelings of disconnection to the campus. As NMMU is still in the process of forming its new identity, it may be difficult for on-campus students to feel that they belong to a cohesive campus community, as opposed to the sense of belonging reported by US students in college environments with longstanding histories and traditions. Off-campus students reported a stronger sense of connection to the institution as a result of their involvement, suggesting that students who commute may be seeking to maximize their time on campus through engagement in cocurricular activities that help them feel more connected to the university. Off-campus students may also be able to avoid some of the tensions and realities of living on a campus formerly segregated by race.

Second, we found that Black students living on campus reported the most time devoted to cocurricular involvement, which parallels American research findings of influence

between on-campus residence and student engagement (Astin, 1985, 1993; Kuh, 2001). Also, the Black students in our sample were more likely to identify with the institution, which may be explained by their recent opportunity to receive similar educational opportunities as their White counterparts 2 years after the institutional merger. During Apartheid, non-White South Africans were denied access to many of the most well-resourced and prestigious universities in the country, enlarging the achievement gap between non-White and White South Africans. In the aftermath of Apartheid, non-White South Africans have gained access to formerly segregated institutions, including NMMU. This relatively new opportunity for access to higher education—similar to increased access for marginalized groups that followed the Civil Rights movement in US history (Thelin, 2004)—may account for Black students' increased campus involvement and identification with NMMU.

Third, students who spent more time engaged in cocurricular activities reported significantly greater gains across a number of outcomes, affirming studies that found involvement positively influences student outcomes (Astin, 1993; Pascarella & Terenzini, 2005). The students in the current study who devoted the most time to cocurricular involvement indicated that their academic and leadership skills were enhanced as a result, which is particularly salient to research linking cocurricular involvement to academic achievement among South African college students (Bitzer & Troskie-De Bruin, 2004).

Notably, enhancement of students' academic skills had the greatest differences among students and the time that they devote to involvement in cocurricular activities. Additionally, international students represented the largest percentage of students reporting high involvement of all identity groups. Because

international students have purposefully sought a learning experience outside of their own country, they may also be more intentional about seeking cocurricular opportunities to increase their sense of belonging at the institution than were domestic students. Further, because international students may come to the institution from home countries without the complex racial history of South Africa, they may more easily overcome barriers to involvement than domestic students.

In the South African context it is important to consider the additional amount of psychological stamina needed to overcome racism, a challenge many South African students still face in the post-Apartheid era (Cross et al., 2009; Jansen, 2009). Jansen referred to universities in South Africa as “legally desegregated but socially segregated spaces” (p. 136), which may account for some of the differentiation in the amount of time students devoted to cocurricular activities and subsequent achievement of student outcomes by different identity groups in our study. As the product of a relatively recent merger of three separate, segregated institutions, NMMU may still be in the process of ridding itself of the vestiges of Apartheid segregation and racism. Residence halls on campus house 99% non-White students, and White students remain the least involved in cocurricular activities. Chronicling his work with White South African students at the University of Pretoria, Jansen stated that “White students step into schools and enter universities with a powerful knowledge of the past. With such knowledge they also carry the emotions of defeat and uncertainty” (p. 49). Such emotions may influence ways in which White students have reentered the post-Apartheid higher education landscape and their decisions about campus involvement.

Finally, our results also showed that Transportation (50%) and Time (47%) may influence student ability to participate in

cocurricular events, thus blocking the acquisition of certain student outcomes. This finding is significant, considering that the majority of NMMU students commute to campus. Black students were also the most likely to report Transportation and Time as barriers to involvement when compared to other student identity groups. Phinney and Haas (2003) identified transportation issues as barriers to a successful transition and involvement in college for first-year minority students in the United States, creating a point of comparison for South African and US college students. The greatest gains in student outcomes are reported by those who are involved in cocurricular activities, 93% of whom reside on campus. Ninety-six percent of students reporting no involvement lived off campus, suggesting that the inability to get to cocurricular activities or finance them are major barriers to their involvement and, by association, achievement of desirable student outcomes.

RECOMMENDATIONS

For Practice

The results of this study contribute to the body of higher education literature by focusing specifically on student engagement and student learning outcomes achievement in the South African context. The findings may advance conversations in higher education about the importance of providing cocurricular opportunities and encouraging college students to devote time to being involved. Students in this study reported positive benefits of cocurricular involvement across a wide spectrum of noncognitive variables and student learning outcomes, including leadership development, long-term goals, and positive self-concept. Most importantly, students reported that cocurricular involvement enhanced their academic achievement. The results indicate that university community members, both in

South Africa and other countries, should take an active role in encouraging and supporting student cocurricular involvement so that greater numbers can experience positive student learning outcomes. Further, the results suggest that assessing current cocurricular offerings, who participates, and how information about involvement opportunities is disseminated is useful for higher education practitioners seeking to achieve academic and developmental student learning outcomes.

Given that students who invested time in cocurricular activities experienced positive learning outcomes, we recommend that practitioners better inform students of involvement benefits, as well as assess what barriers their student population may need to overcome in order to be involved. We found that many students were constrained by financial need, transportation, and knowledge of programming. These barriers persist beyond South African institutions and across higher education, illustrating opportunities for campus staff to make cocurricular engagement more attainable for students. For example, if transportation is a major barrier to student involvement, a safe, reliable, and affordable campus shuttle to and from cocurricular events might aid more students in participation. Other means to overcome barriers may include creating more opportunities for students to live in on-campus housing. As highlighted by this study, students who live on campus were more involved in student activities than students living off campus. Providing additional on-campus housing may seem like a good option for some, but it is an oversimplified answer for many of the students lacking financial resources. Ultimately, on campus housing will not fix the transportation issues faced by larger numbers of students for whom on campus living is not a viable or realistic option. We recommend practitioners consider whether a campus shuttle service or on-campus housing

options may provide more access for students to be involved in cocurricular activities.

For Research

Though students in our study reported positive benefits of involvement, the value reported by students may differ across demographic factors, including race, residence, and year in school. To better understand student outcome achievement across demographic variables, further study is warranted beyond our initial study in the form of an in-depth longitudinal research project examining student perceptions about involvement, time devoted to cocurricular programming, and barriers to measure outcome achievement over the college experience.

Contrary to previous research (Astin, 1993; Pascarella & Terenzini, 1991, 2005), students in our study who live on campus felt less connected to the university, which may be explained by Black students, who live on campus in large proportions at NMMU, being located in residential housing at NMMU that used to be part of the Afrikaans-speaking institution. Having artifacts, such as plaques written in Afrikaans, and symbols that are representative of only one culture may influence Black students' connection to and identification with NMMU. Additionally, the study by Cross et al. (2009) revealed that many Black South African students still experience racism in the classroom at the hand of lecturers and classmates. Although the current research did not examine whether racism or influence of Afrikaans campus artifacts played a part in student involvement decisions, a study of residual racism and Apartheid-era campus features as they affect student involvement would be beneficial to further understand

why certain student identity groups are more involved than others.

Student learning outcomes attainment, through the means of student involvement, is influenced by time committed to and the resources allocated to cocurricular activities (Astin, 1993; Kuh et al., 2005). The findings of this study give support to the conversation about the benefits of student involvement in cocurricular activities and also advance the scholarship to an international context. We found that students at NMMU who lived on campus and spent more time engaged in cocurricular activities reported higher levels of attainment of student outcomes. The most notable finding in this study is the strong effect participation in cocurriculars had on students' academic achievement.

These results also contribute to the larger dialogue among higher education researchers about what elements of the campus experience contribute to a sense of belonging to the institutional community. The students living on campus in this study reported less of a connection to campus than commuter students, a finding not echoed in US or international research. The economic challenges facing many higher education institutions in the wake of worldwide recession—loss of departments, staff, and other resources on college campuses—may lead to structural changes that influence student learning and development. This finding may provide the catalyst for new research regarding how students' sense of belonging is influenced by an evolving or restructured higher education environment.

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REFERENCES

- ACPA, ACUHO-I, ACUI, NACA, NACADA, NASPA, & NIRSA. (2006). *Learning reconsidered 2: Implementing a campus-wide focus on the student experience*. Washington, DC: Authors.
- Astin, A. W. (1985). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, 25, 297-308.
- Astin, A. W. (1993). *What matters in college? Four critical years revisited*. San Francisco: Jossey-Bass.
- Astin, A. W. (2002). *Assessment for excellence*. Westport, CT: Oryx Press.
- Azman, Ali, & Jelas, (n.d.). *Effective higher education practices in UKM—A survey of student engagement: Research in progress*. Retrieved from <http://surveys.canterbury.ac.nz/herdsa03/pdfsnon/N1004.pdf>
- Berger, J. B. (1997). Students' sense of community in residence halls, social integration, and first-year persistence. *Journal of College Student Development*, 38, 441-452.
- Bitzer, E. (2009). Academic and social integration in three first-year groups: A holistic perspective. *South African Journal of Higher Education*, 23, 225-245.
- Bitzer, E., & Troskie-De Bruin, C. (2004). The effect of factors related to prior schooling on student persistence in higher education. *South African Journal of Education*, 24, 119-125.
- Boyer, S. P., & Sedlacek, W. E. (1989). Noncognitive predictors of academic success for international students: A longitudinal study. *Journal of College Student Development*, 29, 218-222.
- Bradburn, N. M., & Sudman, S. (1988). *Polls and surveys: Understanding what they tell us*. San Francisco: Jossey-Bass.
- Bray, J.H. & Maxwell, S.E. (1985). *Multivariate analysis of variance*. Newbury, CA: SAGE.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Converse, J. M., & Presser, S. (1989). *Survey questions: Hand-crafting the standardized questionnaire*. Newbury, CA: SAGE.
- Cross, M., & Johnson, B. (2008). Establishing a space of dialogue and possibilities: Student experience and meaning at the University of Witwatersrand. *South African Journal of Higher Education*, 22, 302-321.
- Cross, M., Shalem, Y., Backhouse, J., & Adam, F. (2009). How undergraduate students 'negotiate' academic performance within a diverse university environment. *South African Journal of Higher Education*, 23, 21-42.
- de Leeuw, E. D. Hox, J. J., & Dillman, D. A. (2008). Cornerstones of survey research. In E. D. de Leeuw, J. J. Hox, & D. A. Dillman (Eds.), *International handbook of survey methodology* (pp. 1-16). New York: Taylor & Francis.
- De Sousa, D., & Kuh, G. D. (1996). Does institutional racial composition make a difference in what Black students gain from college? *Journal of College Student Development*, 37, 257-267.
- Department of Education. (2001). *National Plan for Higher Education*. Pretoria, South Africa: Government Printers.
- Gilliard, M. D. (1996). Racial climate and institutional support factors affecting success in predominantly White institutions: An examination of African American and White student experiences. *Dissertation Abstracts International*, 57(04),1515A. (UMI No. 9624618)
- Gonyea, R. M. (2005). Self-reported data in institutional research. In P. Umbach (Ed.), *Survey research: Emerging issues* (New Directions for Institutional Research Monograph No. 127; pp. 73-89). San Francisco: Jossey-Bass.
- Hurtado, S., & Ponjuan, L. (2005). Latino educational outcomes and the campus climate. *Journal of Hispanic Higher Education*, 4, 235-251.
- Jama, M. P., Mapesela, M. L., & Beylefeld, A. A. (2008). Theoretical perspectives on factors affecting the academic performance of students. *South African Journal of Higher Education*, 22, 992-1005.
- Jansen, J. D. (2004). Changes and continuities in South Africa's higher education system, 1994 to 2004. In L. Chisolm, *Changing class: Education and social change in post-Apartheid South Africa* (pp. 293-314). Cape Town, Western Cape: Zed Books.
- Jansen, J. D. (2009). *Knowledge in the blood: Confronting race and the Apartheid past*. Stanford, CA: Stanford University Press.
- Krause, K. (2007a). Social involvement and commuter students: The first-year student voice. *Journal of the First-Year Experience & Students in Transition*, 19, 27-45.
- Krause, K. (2007b). *New perspectives on engaging first year students in learning*. Brisbane: Griffith Institute for Higher Education. Retrieved from http://www.griffith.edu.au/__data/assets/pdf_file/0005/37490/FYEEngagemtGriffith2007.pdf
- Krause, K., & Coates, H. (2008). Students' engagement in first-year university. *Assessment & Evaluation in Higher Education*, 33, 493.
- Krause, K., Hartley, R., James, R., & McInnis, C. (2005). *The first year experience in Australian universities: Findings from a decade of national studies*. Canberra: AGPS. Retrieved from http://www.cshe.unimelb.edu.au/research/FYE_Report_1994_to_2009.pdf
- Kuh, G. D. (2001). Assessing what really matters in student learning: Inside the National Survey of Student Engagement. *Change*, 33(3); 10-17, 66.
- Kuh, G. D. (2003). What we're learning about student engagement from NSSE: Benchmarks for effective educational practices. *Change*, 35(2), 24-32.
- Kuh, G. D., Kinzie, J., Schuh, J. H., & Whitt, E. J. (2005). *Assessing conditions to enhance educational effectiveness: The inventory for student engagement and success*. San Francisco: Jossey-Bass.
- Leach, L., & Zepke, N. (n.d.). *Engaging first year students: A concept organiser for student engagement*. Retrieved from http://www.fyhe.qut.edu.au/past_papers/papers09/content/pdf/6A.pdf
- Letseka, M., & Maile, S. (2008). *High university drop-out rates: A threat to South Africa's future* (ISBN 978 0 7969 2228 1). Human Sciences Research Council. Retrieved from <http://www.hsrc.ac.za/Document-2717.shtml>
- Longerbeam, S. D., Sedlacek, W. E., & Alatorre, H. M. (2004). In their own voices: Latino student retention. *NASPA Journal*, 41, 538-550.
- Lourens, A., & Smit, I. P. J. (2003). Retention: Predicting first-year success. *South African Journal of Higher Education*, 17, 169-176.

- Louw, A. J. N. (2005). *Student dropout at institutions for agricultural training in the Western Cape: Probable causes and possible strategies for student support*. Unpublished doctoral dissertation, Stellenbosch University, South Africa.
- Mann, S. (2001). Alternative perspectives on the student experience: alienation and engagement. *Studies in Higher Education, 26*, 7-19.
- Manning, K., Kinzie, J. & Schuh, J. (2006). One size does not fit all: Traditional and innovative models of student affairs practice. New York: Routledge.
- Nel, H., & Stumpf, R. (2007). Reflecting on the experience of the merger at Nelson Mandela Metropolitan University: Successes and challenges. *Discourse, 35*(1), 1-10.
- Ochse, C. (2003). Are positive self-perceptions and expectancies really beneficial in an academic context? *South African Journal of Higher Education, 17*, 67-73.
- Pace, R. (1979). *College student experience*. Los Angeles: UCLA Laboratories for Research on Higher Education
- Pace, R. (1982). *Achievement and the quality of student effort*. Washington, DC: National Commission on Excellence in Education.
- Pace, C. R. (1985). *The credibility of student self-reports*. Los Angeles: University of California, Center for the Study of Evaluation, Graduate School of Education.
- Pascarella, E. T., & Terenzini, P. T. (1991). *How college affects students: Findings and insights from twenty years of research* (1st ed.). San Francisco: Jossey-Bass.
- Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research* (2nd ed.). San Francisco: Jossey-Bass.
- Phinney, J. S., & Haas, K. (2003). The process of coping among ethnic minority first-generation college freshmen: A narrative approach. *Journal of Social Psychology, 143*, 707-726.
- Pike, G. R. (1995). The relationships between self-reports of college experiences and achievement test scores. *Research in Higher Education, 36*, 1-22.
- Sedlacek, W. E. (1999). Black students on White campuses: 20 years of research. *Journal of College Student Development, 40*, 538-549.
- Sedlacek, W. E. (2003). Alternative admissions and scholarship selection measures in higher education. *Measurement and Evaluation in Counseling and Development, 35*, 263-272.
- Sedlacek, W. E. (2004). *Beyond the big test: Noncognitive assessment in higher education*. San Francisco: Jossey Bass.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson/Allyn & Bacon.
- Theelin, J. (2004). *A history of American higher education*. Baltimore: Johns Hopkins University Press.
- Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (1st ed.). Chicago: University of Chicago Press.
- Toni, M. N., & Olivier, M. A. (2004). Academic identities of Black female first-year students. *South African Journal of Education, 24*, 194-199.
- van der Meer, J. (2009). I don't even know what her name is: Considering the challenge of interaction during the first year. *Studies in Learning, Evaluation Innovation, and Development, 6*(1), 112-123.
- van der Meer, J., & Scott, C. (2009). Students' experiences and perceptions of peer assisted study sessions: Towards ongoing improvement. *Journal of Peer Learning, 2*, 3-22.
- Wawrzynski, M. R., & Sedlacek, W. E. (2003). Race and gender differences in the transfer student experience. *Journal of College Student Development, 44*, 489-501.
- Yorke, M., & Longden, B. (2008). *The first year experience of higher education in the UK*. York, United Kingdom: Higher Education Academy.