THE IMPACT OF BUSYNESS, MOTIVATION, AND MENTORING ON GPA

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ABSTRACT

This is a study of the impact of three constructs on the grade point average (GPA) of students at a large open-enrollment university in the Western United States. As part of a regular major survey given to students at a large Western University, 435 students completed surveys used in this project. The three constructs measured were busyness, motivation, and mentoring. Busyness included hours worked, family responsibilities and course load. Mentoring included access to advisors and family members that had completed college degrees. Motivation was measured as a composite of questions related to an overall perception of the university and how positive or negative perceptions were to general education courses. However, the study showed that only motivation had a significant impact on GPA. The impact of this research is that it questions the assumptions that first-generation, non-traditional, minority, and less-prepared students are significantly handicapped in their college studies because they do not have access to mentors that can guide them through their college experience. Once motivation is separated from access to mentoring, motivation alone emerges as the significant predictor of college success.

Key Words:
Student success, GPA, mentoring, student motivation, student busyness, general education.

A STUDY OF THREE CONSTRUCTS ON GPA: BUSYNESS, MOTIVATION, AND MENTORING

Student success is at the heart of almost every conversation in higher education. Success can be defined a number of ways; it may involve GPA, first- to second-year retention, persistence to graduation, post-graduation employment (Adelman, 1999; Bir & Mondrail, 2015; Burd, 2004; Burns, Ellegood, Bernard Bracy, Duncan, & Sweeney, 2019; Jennings, Lovett, Cuba, Swingle, & Lindkvist, 2013; Jones-White, Radcliffe, Huesman, & Kellogg, 2010; Porter, 2003; Soria, Fransen, & Nackerud, 2014; van Rooij, Jansen, & van de Grift, 2018), educating the whole person (Handstedt, 2016), or even thriving, defined as "being intellectually, socially, and psychologically engaged in the college experience" (Schriener, 2018, p, 10). Students themselves define success primarily as academic achievement (e.g., grades and career-related activities)

although they also identify social and residential, life management, and academic engagement as important outcomes (Jennings et al., 2013).

Administrators, faculty, and staff spend a considerable amount of time identifying ways in which students can be successful and factors that impact their success. As participation in higher education has widened, more attention has focused on success for increasingly diverse populations of learners. In particular, institutions regularly examine how to best serve their first-generation, non-traditional, minority, and less-prepared students. Adult enrollments, for example, are increasing—38% of post-secondary students in the United States are over the age of 25 and 25% are over the age of 30 (Kelly & Strawn, 2011; Soares, 2013). Indeed, many learners in today's colleges and universities are employed, raising families, and studying part-time or online (Choy, 2002), suggesting the need for innovations in teaching and learning.

Concerns about retention and persistence, in particular, are paramount to not only academic and student affairs leaders, but to non-profit educational organizations (e.g., the Lumina Foundation, the Bill & Melinda Gates Foundation), which sponsor and fund initiatives to improve completion. Thirty percent of students in the United States drop out during or after their first year and 40% of those beginning a bachelor's degree fail to complete (Morshed, 2016).

Certainly these rates differ depending on context, admission standards, and institutional type, but higher education is being pressured from a variety of sources, especially state and federal governments, to increase retention and graduation rates (College Board, 2010; Government Accountability Office, 2012; Dougherty & Reddy, 2011; Dougherty, Natow, Bork, Jones, & Blanca, 2013) although some have warned this comes at the cost of ignoring the extensive reforms needed to improve learning outcomes (Bok, 2017). Indeed, employers continue to observe that recent college graduates are lacking proficiencies in oral and written communication, critical thinking and problem-solving, ethical decision-making, teamwork, and other skills that cut across disciplines (Hart Research Associates, 2016).

This study examined factors that impacted GPA for students at a large, regional, open admission university. Although GPA does not necessarily predict retention or graduation, it is one measure of success (Bir & Mondrail, 2015; Burns et al., 2019; Jennings et al., 2013; Soria, Fransen, & Nackerud, 2014; van Rooij, Jansen, van de Grift, 2018). The study compared three constructs—busyness (e.g., employment, marital status, family responsibilities, volunteerism), motivation (specifically related to general education courses), and mentoring (e.g., where students go for help). While busyness and mentoring have previously been associated with various aspects of student success as has motivation, this study focused on a specific aspect of motivation not previously studied—motivation for taking general education courses.

The three variables reflect factors that might be expected to be relevant to both non-traditional and traditional students. Busyness, for example, impacts non-traditional students (25 years of age and above) as well traditionally-aged students who work part- or full-time or have families. Mentoring plays a key role in success for all students, and in particular those who are first-generation or historically underrepresented in higher education, as all need a sense of belonging and connectedness to their new environments (Astin, 1993; Tinto, 1987, 1993, 1999). Similarly, academic integration is important to success (Astin, 1993; Tinto, 1987, 1993, 1999).

This can occur through one's studies and academic interests. The current study focuses on the role of general education courses in academic motivation, and consequently, on GPA.

One focus of this research is to disaggregate motivation from the factors of busyness and mentoring. A motivated person may do well at school despite being first-generation, a non-traditional minority, or simply busy. Likewise, an unmotivated student may perform poorly despite having the advantages of ample time and the example of college graduates in the family.

LITERATURE REVIEW

Academic achievement is a much-studied topic. With increasing numbers of students balancing multiple responsibilities, particularly work, study, and family, one might expect that level of busyness would have a negative impact on GPA. Motivation for learning, particularly in terms of taking required courses that may not be of high interest or be perceived as relevant (e.g., general education), might also be expected to affect achievement. This applies both to those lacking cultural capital in higher education such as first-generation students who may not understand the purpose of general education and how it helps develop the broad skills valued by employers (Hart Research Associates, 2016), as well as students with a clear focus on a particular major who may have limited interest in other subjects. Similarly, increasing numbers of first-generation and underprepared students seeking degrees suggest the need for mentoring to facilitate informed decision-making. Indeed, making academic and social connections is critical to retention for all students (Astin, 1993; Tinto, 1987, 1993, 1999). We review each of these areas of research—busyness, motivation, and mentoring—which form the hypotheses for the study.

Busyness

Busyness has been examined in several ways, the most prominent of which is work and family responsibilities as this may interfere with academic success. Approximately 58% of students work 20 or more hours per week, 42% are living in poverty, and 26% are raising children (Lumina Foundation, n. d.). The need for university students to work to make ends meet is a worldwide trend, at least in Western countries (Callender, 2008; Beerkens, et al., 2010; Richardson et al., 2013). Financial obligations accompanied by work and family responsibilities account for 38% of students withdrawing from school in the first year while only 11% of those categorized as low income complete in six years (Lumina, n. d.). However, work can provide valuable experience leading to post-graduation employment (Beerkens, Mägi, & Lill, 2010).

Research findings exploring the effects of part-time work on grades and GPA vary. Some have determined positive effects (Ma, 1984; Volkwein & Strauss, 2002), others no effect or minimal effect (Beerkens et al., 2010; Derous & Ryan, 2008; McInnis & Harley 2002; Nonis & Hudson 2006; Richardson, Kemp, Malinen, & Haultain, 2013), and still others a negative effect, particularly when students work more than a certain number of hours per week (Applegate & Daley 2005; Bartolj & Polanec, 2018; Brennan et al. 2005; Callender, 2008; DeSimone 2008; Huie, Winsler, & Kitsantas, 2014; Hunt, Lincoln, & Walker, 2004; Kalenkoski & Pabilonia

2008; McVicar & McKee. 2001; Stinebrickner & Stinebrickner 2003). In some studies, the number of hours worked has not been a factor (e.g., Callender, 2008).

These studies demonstrate that while employment does have an effect on GPA, other variables can moderate the impact. In one study, course satisfaction mediated the impact of working (Ma, 1984); in another, working fewer hours and by choice had a mediating effect (Derous & Ryan, 2008). Job type (Derous & Ryan, 2008), degree of connectedness to academic coursework (McKenzie & Schweitzer, 2010), and less demanding jobs may also have a moderating influence on the impact of working and GPA (Derous & Ryan, 2008). Analysis in another study, however, indicated that employed students may have had higher grades than non-employed students if they had not worked (Richardson et al., 2013). Working students exhibiting good time management and effort had higher grades than working students who lacked these skills (Huie et al., 2014). In sum, the academic success of students who are motivated by their coursework and engaged in their studies as well as those with effective study habits may not be negatively impacted by working.

Another aspect of busyness that may impact GPA is course load. The assumption that heavier course loads will result in a lower GPA than a lighter course load is erroneous (Szafran, 2001) although first-semester GPA tends to predict subsequent semester GPA (Duby & Schatman, 1997; Volkwein & Lorang, 1996). A higher course load may also be an indication of greater academic commitment (Szafran, 2001). At many U.S. higher education institutions, students are being encouraged to take a full load of 15 credits in order to graduate in four years. Reports on these programs demonstrate that students with a full load are more successful, as measured by GPA and retention, than those with lower credit loads (Nietzel, 2019; Smith, 2018a, 2018b). These programs may be accompanied by financial awards to cover full-time attendance or by penalizing students for not taking a full load (Smith, 2018a). Some emphasize, however, that these "15 to Finish" initiatives must be part of an integrated and targeted focus on graduation (Nietzel, 2019). Results of these programs are generally in the form of institutional reports rather than being published in academic journals.

Finally, marital status and volunteerism or other forms of personal interests may be factors in busyness. Surprisingly, however, marital status and its impact on academic achievement has not been studied to any extent (Halpern, 2007) although single mothers incur more debt and take longer to complete than other college students (Cruse, Gault, & Suh, 2018). Other than these studies, research has not been conducted in this area that we could identify. Busyness in terms of volunteerism has been associated with higher GPAs (Vilunth, Cesari, Norwood, Satterfield, Shreve, Ryan, & Lewis, 2014), but additional research on this topic or other leisure time activities and possible impact on GPA is not available.

The Impact of Motivation on Grades

In addition to busyness being a potential factor in student success, as determined by GPA, motivation most certainly plays a role. Motivation in this study focused on exploring students' interest in general education, specifically learning about GE topics, having an interest in GE topics, feeling that what one learns in GE is important, and enjoying GE classes. Numerous studies have connected motivation to GPA, though not specifically motivation for taking GE

courses. As such, this study focuses on providing new insights into if and how requirements such as GE might impact grades, and by extension, retention and graduation although the latter were not part of this study.

The specifics of motivation studies vary, but the preponderance of evidence indicates that motivation positively impacts GPA (Richardson, Abraham, & Bond, 2012). The research on motivation and student success is extensive; as such, it represents a multiplicity of constructs, variables, measures, outcomes, and student populations; here we provide a brief overview of studies specifically related to aspects of motivation that impact GPA although how motivation is operationalized and measured varies extensively in these studies. No studies have focused on the relationship between motivation for taking GE courses and GPA.

One group of studies has focused on motivation in terms of the efficacy of goal-setting. Some evidence indicates that when academic goals are associated with the belief that college results in intellectual development, strong academic performance follows (Clark, Middleton, Ngyuyen, & Zwick, 2014). Learning-goal orientation also plays a role in success but impacts students in different ways; while learning-goal oriented students had higher GPAs than performance-oriented students overall, distance education students with this orientation outperformed nontraditional and traditional students in terms of GPA (Bennett, Evans, & Riedle, 2007), demonstrating the efficacy of this attribute for success in distance learning courses in particular.

Similarly, performance-approach goals (e.g., the desire to outperform others) has been shown to positively predict cumulative GPA compared to performance-avoidance goals (e.g., the desire to not perform more poorly than others) (Durik, Lovejoy, & Johnson, 2009). Additionally, student-set, specific academic goals are predictive of semester GPA in some cases (Acee, Cho, Kim, & Weinstein, 2012). Motivation for achievement, or mastery-approach goals, correlated positively with college GPA in another study, but the need for cognition, or engaging in and enjoying effortful thinking, did not (Neigel, Behairy, & Szalma, 2017). These studies demonstrate that engagement in learning, as evidenced by goal-setting under various conditions can motivate and positively impact performance.

Another variable in motivation studies, and one relevant to this study in terms of GE experiences being a variable, is course selection. The impact of course selection for students with a work mastery orientation (tendency to work hard to master skills) had less variability on achievement than students with an achievement motivation (striving to find ways to do things well) (Durik et al., 2009). Work mastery goal-oriented students, however, showed less diversity in course selection than their counterparts, demonstrating a narrower interest in academic disciplines than achievement-oriented students. These students possibly arrive at a university knowing what they want to study, and as such, take courses in fewer areas. Students with achievement goals demonstrated greater variability in course selection and broader interests. While our study did not focus on course selection, it did focus on determining how variables such as enjoyment and interest in GE courses as well as seeing the value of GE impact motivation. One might posit that students motivated to take GE might have an achievement orientation, based on the findings of the Duirk et al. (2009) study.

Academic self-efficacy, intrinsic motivation, self-regulated learning, and satisfaction with one's degree program predicts adjustment to college, but of these variables, motivation had the least impact (van Rooij et al., 2017). This finding indicates that motivation alone does not guarantee success but must be accompanied by specific behaviors. Motivation, self-efficacy, and the need for cognition (a personality trait for engaging in and enjoying cognitive activities) predicted GPAs for non-traditional students although motivation variables were the strongest (Warden & Myers, 2017). Dispositional and academic optimism correlated with motivation and adjustment to college; academic optimism was associated with high GPAs (Nes, Evans, & Segerstrom, 2009). Similarly, conscientiousness and self-motivation has also been found to positively GPAs (Cheng & Ickes, 2009; Di Domenico & Fournier, 2014). This set of studies demonstrates that motivation works in conjunction with personality factors and behaviors and has different effects depending on the variables used as well as study participants.

In sum, while studies generally demonstrate that motivation plays a role in student success, inconsistencies in the definitions of motivation, constructs measured, and combinations of variables used make it somewhat challenging to draw specific conclusions. An in-depth treatment of this subject is beyond the scope of this study, particularly as motivation for general education coursework has not been studied.

The Impact of Mentoring on Grades

In addition to busyness and motivation, mentoring may be particularly important for first-generation college students who lack knowledge about higher education, may be academically unprepared, and may be from low socioeconomic backgrounds (Pascarella, 2004). Their transition is more challenging than that of other students and they are more likely to leave after the first year (Pascarella, 2004). They also complete fewer credit hours the first year, study less and are employed more hours, and are less likely to perceive that faculty are concerned about them (Terenzini et al., 1996). They lack cultural capital, or the knowledge, skills, and behaviors of the dominant social class, as well as social capital, having fewer networks through which to access information to make good decisions (Bourdieu, 1986; Coleman, 1988; Pascarella, 2004).

Academic advising gives students the opportunity to interact with an official institutional representative, thereby supporting academic and social integration (King, 1993), which is linked to retention (Tinto, 1993, 1999). The impact of advising on academic outcomes has been mixed, however (Kot, 2014). High quality advising, as rated by students, has been linked to lower attrition and low quality advising to higher attrition (Metzner, 1989; Pascarella & Terenzini, 2005); in other studies, advising impacted third semester persistence but not first and second semester GPA (Seidman, 1991). Centralized advising, where advisors are co-located in a centralized unit resulted in increased first- and second-semester GPAs, first-year cumulative GPAs, and decreased attrition in the first year (Kot, 2014). Others have found no relationship between the number of advising sessions and GPA (Hester, 2008).

Peer mentoring can also provide a network of support (Alcocer & Martinez, 2018). Peer mentors aid in the transition to college by providing information on courses and services, and giving informal advice, leading to increased retention (Collings, Swanson, & Watkins, 2014). They serve as advisors, friends, confidantes, study partners, and role models (Egege & Kutieleh,

2015). These relationships can be particularly helpful for minority students, and result in increased sense of belonging (Phinney, Torres Campos, Padilla Kallemeyn, & Kim, 2011) and higher completion rates (Johnson, Simon, & Mun, 2014). Cultural background must be considered when determining the components of effective mentoring for specific populations (Alcocer & Martinez, 2018). Peer mentoring has been linked to GPA, particularly when combined with tutoring in academic subjects, such as biology or STEM disciplines (Mayer, Christofferse, & Fiorella, 2017).

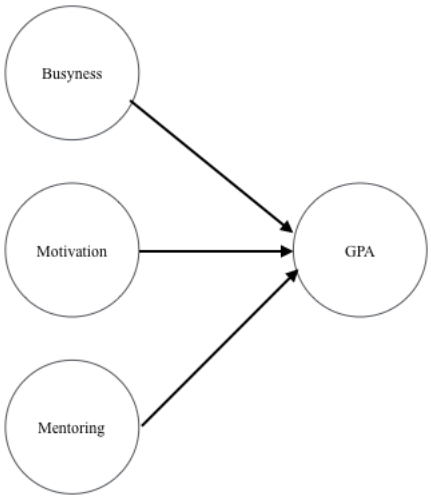
Mentoring can occur on both formal and informal levels. Informal and naturally-occurring mentoring in adolescence for first-generation college students, for example, helps offset their lack of social and cultural capital that other young people possess, and helps predict academic success (Fruiht & Chan, 2018). Formal mentoring of first-generation students by a supportive adults leads to higher GPAs compared to non-mentored students (Campbell & Campbell, 1997; Crisp & Cruz, 2009; Salinitri, 2005). Overall, a variety of types of mentoring result in positive outcomes such as retention and academic achievement, and particularly for various target populations.

This literature review has identified a number of gaps, some of them surprising. With the enormous emphasis on student success and the need to identify factors that impact it, some aspects of relevant research appear to be lacking. While research on working while attending school is fairly robust, busyness in the form of volunteerism or other leisure activities, research articles on course load as opposed to institutional reports, and the impact of marriage on academic performance are only weakly represented or the studies are dated. Additionally, the role of GE courses as a motivational factor in GPA has not been represented.

MODEL

The proposed model consists of three constructs that impact the grade point average of students. These constructs are busyness, motivation, and mentoring and are illustrated in Figure 1.

Figure 1: Model of predictors of GPA



The use of GPA as a measure of success was chosen because the data is easily available for each student, and, as mentioned above, is often used as a measure of student success. The GPA for each student was pulled from university records.

Busyness was chosen as one of the main constructs because of the frequency with which students, parents, faculty, and advisors discuss the issue. The perception is that this is a major factor in student success, and so should be tested. This leads to the first hypothesis.

Hypothesis 1: Busyness will have a negative impact on GPA

Motivation is well established as a contributor to student success and, therefore, was included in the model and is represented in the second hypothesis.

Hypothesis 2: Motivation will have a positive impact on GPA

Mentoring was chosen as a construct to capture both the perceived needs of first-generation, non-traditional, minority, and less-prepared students, and the related needs of all students for assistance in navigating the university environment. This led to the third and final hypothesis.

Hypothesis 3: Mentoring will have a positive impact on GPA

METHODS

Approximately 12,000 students at a large university in the Western United States, were asked to participate in a major survey in the fall of 2017. The institution is open enrollment with 38% of the student body being first-generation, 27% over the age of 24, 38% married, 56% working part-time, and 52% receiving financial aid, and is also characterized by increasing ethnic diversity.

Each fall and spring semester the university's institutional research office conducts a major survey among its students. All currently registered university student email addresses (minus any high school concurrent enrolment students) are placed in a list which is then randomized in a Microsoft EXCEL worksheet. Next, about half of these student headcount records (12,000 out of around 26,000 each semester) are pulled off as a group from the top or bottom of this randomized list. These students are sent an invitation to participate via their student email account using Qualtrics software. Invited students receive an initial invitation email, which includes survey instructions, notice of confidentiality, survey-time-commitment estimate, and statement of voluntary participation. Additionally, up to three reminder emails are sent until the student completes the survey or the survey administration window closes. The survey is open for about two weeks. Following that, all survey sessions are closed, with some being recorded as a partial-complete. An average of about 1,200 students completed the survey. This resulted in a 10% response rate. The 1,200 student participants who responded are considered representative of the entire student population within a margin of + or – 3 percentage points for the survey as a whole.

The survey has two consistent sections of about 15 questions each that ask students about their experiences at the institution (satisfaction, ability to register for classes, etc.) and their demographic characteristics (marital status, religious affiliation, parental status, etc.). Two

"student experience" blocks begin the survey, and the demographics section ends the survey. Additional, small blocks of student opinion questions (roughly 5 questions per block) fill in the bulk of the survey and vary every semester. These blocks are usually presented at the mid-point of the survey, and are solicited from a broad array of campus departments.

The specific block of questions used in the current study was randomly assigned by the computer software. The survey was programed to randomly, but evenly, present 4 of 9 available survey blocks to participants following the initial two blocks of common "student experience" question sets. The block of questions examined here was presented to participants roughly half-way through the survey. As a result, 435 randomly selected students completed this block resulting in responses being representative of the total population within a margin of + or – 4.6 percentage points. The responses were then linked to the university's database for additional information, including GPA. Once linked, the data were de-identified by the university's institutional research office and made available to the researchers.

Constructs

Due to the diversity of students in higher education and the increasing number who work while going to school and have family responsibilities, busyness was determined to be an area with potential impact on GPA. Additionally, since little is known about how required university components such as general education impact motivation, and this was specifically identified as a gap in the literature, the motivation questions in the survey focused on general education courses. The intent was to gauge the broader motivation for studying at a university, rather than enthusiasm for a student's major. The third component, mentoring, was selected due to its importance in helping students connect with others and obtain needed information for success. As such, the following questions were asked in the survey. These are organized around the three constructs:

For busyness:

- BU1: Please indicate the number of hours per week you work at your primary employment.
- BU2: What is your current marital status? This was coded as 0=Married and 1=Single as no other complete answers were given.
- BU3: Do you have children in the home whom you support? This was coded as 0=No and 1=Yes.
    - BU4: How many children and what ages?
- BU5: Do you spend time each week participating in volunteer work? This was coded as 0=No and 1=Yes.
    - BU6: How many hours per week do you spend participating in volunteer work?

For motivation:

On a scale of 1-5 please mark how much you agree or disagree with the statements below:

- MO1: How would rate your overall experience at the university?
- MO2: How would you rate your sense of student pride in the university?
- MO3: I am motivated to learn about the topics in my general education classes.
- MO4: The topics taught in my general education classes are interesting to me.
- MO5: What I learn in my general education classes is important for my educational goals.
- MO6: I enjoy my general education classes.

For mentoring:

On a scale of 1-5 please mark how much you agree or disagree with the statements below:

- ME1: When I have complicated questions about scheduling classes at the university, I have someone whom I can ask.
- ME2: I have confidence that my academic advisor has my best interest in mind when scheduling my classes.
- ME3: When I have questions about classes, I have someone whom I can ask without feeling embarrassed.
- ME4: How many of your family members have college degrees?
- ME5: How many of your friends attend or have attended college?

Additional data was obtained from the university's institutional research office in order to determine the extent to which these three constructs had an effect on GPA. Analyses were performed using R (R Core Team, 2019) and Jamovi (The Jamovi Project, 2019), as well as the GPower program (Erdfelder, Buchner, & Land, 2009).

RESULTS

Given that the questions were taken from an already existing set used by the Institutional Research division at our university, we first desired to assess whether the groupings we hypothesized (busyness, motivation, and mentoring) had statistical validity. Analyses were performed utilizing both R (R Core Team, 2019) and Jamovi (The Jamovi Project, 2019). The results from a confirmatory factor analysis (see tables 1, 2, and 3) on the z-scored variables show that the survey questions seem to fit the specified model, with a Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) each above 0.95 and both SRMR and RMSEA below 0.08 as per Kline (2011) and Hooper, Coughlan, and Mullen (2008). Additionally, regression analyses utilizing the subscales (see tables 5-8 for term GPA; and tables 9-12 for cumulative GPA) show that only the motivation subscale is predictive for both term and cumulative GPA. In Table 1, the results indicate that the loadings for each of the indicator variables were statistically significant, with the exception of ME4, the number of college degrees for family members, in the Mentoring Factor. Overall, it appears that the indicators are appropriately included in their respective Factors. While in Table 2, the model chi-square was significant (see Schermelleh-Engel, Moosbrugger, & Müller, 2003), Table 3 shows that the fit measures are each within recommended levels as noted by Hooper, Coughlin, and Mullen (2008). Table 4 shows the correlation matrix with each correlation being statistically significant save that of Mentoring and Busyness, which is also the only negative correlation. Table 5 shows overall fit results for the regression on Term GPA, showing substantial statistical significance, though a small effect in terms of the R-squared (see Cohen, 1988). While not shown, a power analysis was run utilizing the GPower program (Erdfelder, Buchner, & Land, 2009) with the power for the Term GPA regression falling at 0.99. The results of Table 6 indicate that only the Motivation variable was statistically significant in the Omnibus ANOVA while Table 7 shows the regression coefficients for the model as well. Table 8 shows that, based on the variance inflation factor (VIF), multicolinearity does not seem to be at issue with these variables, (see Hair, Anderson, Tatham, & Black, 1995). Table 8, which begins the analyses specific to the cumulative GPA, again shows a high level of statistical significance, with a small effect size based on Cohen (1988). Table 9

and 10 show that, again, only the Motivation variable was statistically significant in the models. While not shown, a power analysis was run utilizing the GPower program (Erdfelder, Buchner, & Land, 2009) with the power for the cumulative GPA regression falling at 0.98. Table 11 indicates that multicolinearity does not appear to be an issue with the variables in the model as Hair and his coauthors (1995) specify.

Table 1: Confirmatory Factor Analysis

Factor Loadings

				95% Confidence Interval				
Factor	**Indicator**	**Estimate**	**SE**	**Lower**	**Upper**	**Z**	**p**	**Stand. Estimate**
Busy	BU1	0.1006	0.0477	0.00704	0.194	2.11	0.035	0.0645
	BU2	0.2625	0.0143	0.23453	0.291	18.38	< .001	0.5520
	BU3	0.7246	0.0209	0.68366	0.766	34.68	< .001	0.9875
	BU4	0.8729	0.0321	0.80993	0.936	27.15	< .001	0.7704
	BU5	0.0978	0.0151	0.06830	0.127	6.50	< .001	0.2000
	BU6	0.1346	0.0289	0.07804	0.191	4.66	< .001	0.1434
Motivation	MO1	0.2461	0.0326	0.18219	0.310	7.55	< .001	0.3202
	MO2	0.3579	0.0422	0.27520	0.441	8.48	< .001	0.3618
	MO3	1.1572	0.0477	1.06371	1.251	24.26	< .001	0.9017
	MO4	1.1429	0.0461	1.05254	1.233	24.80	< .001	0.9131
	MO5	1.1590	0.0511	1.05876	1.259	22.67	< .001	0.8661
	MO6	1.1126	0.0461	1.02233	1.203	24.16	< .001	0.8996
Mentoring	ME1	1.0226	0.0527	0.91933	1.126	19.42	< .001	0.8267
	ME2	1.0553	0.0560	0.94548	1.165	18.83	< .001	0.8089
	ME3	0.9549	0.0513	0.85426	1.055	18.60	< .001	0.7983
	ME4	0.0594	0.0565	-0.05128	0.170	1.05	0.293	0.0547
	ME5	0.1304	0.0423	0.04746	0.213	3.08	0.002	0.1590

Table 2: Model Fit

Test for Exact Fit

χ^2	df	p
324	113	< .001

Table 3: Fit Measures

				RMSEA 90% CI			
CFI	TLI	SRMR	RMSEA	Lower	Upper	AIC	BIC
0.960	0.952	0.0682	0.0388	0.0339	0.0438	28637	28929

Table 4: Correlation Matrix

		Busyness	Motivation	Mentoring	GPA Term	GPA Cumulative
Busyness	Pearson's r	—				
	p-value	—				
Motivation	Pearson's r	0.057 *	—			
	p-value	0.046	—			
Mentoring	Pearson's r	-0.046	0.373 ***	—		
	p-value	0.335	< .001	—		
GPA Term	Pearson's r	0.074 **	0.134 ***	0.143 **	—	
	p-value	0.009	< .001	0.003	—	
GPA Cumulative	Pearson's r	0.060 *	0.136 ***	0.144 **	0.768 ***	—
	p-value	0.035	< .001	0.003	< .001	—

Note. * p < .05, ** p < .01, *** p < .001

Table 5: Linear Regression for Term GPA

Term GPA Fit Measures

							Overall Model Test			
Model	R	R^2	Adjusted R^2	AIC	BIC	RMSE	F	df1	df2	p
1	0.230	0.0530	0.0464	1048	1069	0.796	8.06	3	432	< .001

Table 6: Model Specific Results for Term GPA

Term GPA

Omnibus ANOVA Test

	Sum of Squares	df	Mean Square	F	p
Busy	0.0815	1	0.0815	0.128	0.721
Motivation	9.4542	1	9.4542	14.789	< .001
Mentoring	1.2187	1	1.2187	1.906	0.168
Residuals	276.1569	432	0.6393		

Note. Type 3 sum of squares

Table 7: Term GPA Model Coefficients

			95% Confidence Interval					95% Confidence Interval	
Pre-dictor	Estimate	SE	Lower	Upper	t	p	Stand. Estimate	Lower	r
Intercept	3.4050	0.0383	3.3297	3.4803	88.897	< .001			
Busy	-0.0216	0.0604	-0.1403	0.0971	-0.357	0.721	-0.0168	-0.1093	0.0757
Moti-vation	0.2043	0.0531	0.0999	0.3087	3.846	< .001	0.1948	0.0952	0.2944
Mentor-ing	0.0865	0.0626	-0.0366	0.2096	1.381	0.168	0.0699	-0.0296	0.1694

Table 8: Collinearity Statistics

	VIF	Toleranc e
Busy	1.01	0.991
Motivation	1.17	0.854
Mentoring	1.17	0.856

Table 9: Linear Regression for Cumulative GPA

Cum. GPA Fit Measures

							Overall Model Test			
Model	**R**	**R^2**	**Adjusted R^2**	**AIC**	**BIC**	**RMSE**	**F**	**df1**	**df2**	**p**
1	0.232	0.0539	0.0473	731	751	0.553	8.20	3	432	< .001

Table 10: Model Specific Results for Cum. GPA

Omnibus ANOVA Test

	Sum of Squares	**df**	**Mean Square**	**F**	**p**
Busy	0.0579	1	0.0579	0.188	0.665
Motivation	4.4829	1	4.4829	14.525	< .001
Mentoring	0.6442	1	0.6442	2.087	0.149
Residuals	133.3300	432	0.3086		

Note. Type 3 sum of squares

Table 11: Model Coefficients

			95% Confidence Interval					95% Confidence Interval	
Predictor	**Estimate**	**SE**	**Lower**	**Upper**	**t**	**p**	**Stand. Estimate**	**Lower**	**Upper**
Intercept	3.4399	0.0266	3.3876	3.492	129.251	< .001			
Busy	0.0182	0.0420	-0.0643	0.101	0.433	0.665	0.0204	-0.0720	0.113
Motivation	0.1407	0.0369	0.0681	0.213	3.811	< .001	0.1930	0.0934	0.292
Mentoring	0.0629	0.0435	-0.0227	0.148	1.445	0.149	0.0731	-0.0263	0.173

Table 12: Collinearity Statistics

	VIF	Tolerance
Busy	1.01	0.991
Motivation	1.17	0.854
Mentoring	1.17	0.856

These results impact the hypotheses as follows:

Hypothesis 1: Busyness will have a negative impact on GPA
Not supported
Hypothesis 2: Motivation will have a positive impact on GPA
Supported
Hypothesis 3: Mentoring will have a positive impact on GPA
Not supported

DISCUSSION

The lack of confirmation of hypothesis 1 is not surprising, considering the research. An intuitive understanding of busyness leads to the conclusion that higher levels of activity can take away from the performance in any single course and thus reduce overall academic performance; however, research is mixed as to the impact of busyness on student success. For some the discipline required of a busy life with part-time work may translate into greater success in the classroom (Ma, 1984; Volkwein & Strauss, 2002), but for others the mere lack of available time may erode their academic performance (Applegate & Daley, 2005; McVicar & McKee, 2001; Stinebrickner & Stinebrickner, 2003). This study makes it difficult to identify the reasons behind the weak connection between busyness and academic success, but with studies showing positive, negative, and neutral effects (Callender, 2008), it is clear that this field needs more research to understand the causality between work and academic performance.

This weak connection between work and academic performance does question the value of policies that call for students to not work during college or to delay family until completing a degree in order to boost academic performance. Indeed, many countries (especially in Europe) subscribe to supporting students through college so that they can focus on their studies and perform better (Brennan, et al. 2005). The results of this research question the need for such policies.

The confirmation of hypothesis 2, is not surprising. Much research ties motivation to successful college performance (Cheng & Ickes, 2009; Di Domenico & Fournier, 2014; Neigel, Behairy, & Szalma, 2017; Warden & Myers, 2017). The key insight of this research is that the focus of the survey was on general education courses, rather than major courses. Most of these courses are not part of a student's major and so could be viewed by students as annoying requirements that must be completed before enjoying the study of classes in one's major.

Therefore, the strong positive attitude to general education courses could be a good indication of overall enjoyment of being at a university and a key source of academic motivation.

The lack of confirmation of hypothesis 3 is also somewhat surprising. The prevailing belief is that many students perform poorly (as well as drop out of college) because of poor advising, both formal and informal (King, 1993; Pascarella, 2004). Informally this can be found in having relatives and friends that have attended college and can be a source of advice as a student begins and continues college studies (Alcocer & Martinez, 2018). Having a well-staffed, quality advising group is seen as essential for student success at open enrollment institutions (Metzner, 1989; Pascarella & Terenzini, 2005), such as the one that was the subject of this research. However, the results of this study do not seem to support the view that advising plays a strong roll in student success.

This is also the expectation for students without family members that have college degrees, or first-generation college students. Pascarella (2004) indicates that the lack of knowledge about higher education makes the transition more challenging, and Terenzini, et al (1996) showed that they are less likely to perceive that faculty are concerned about them. However, this study does not support that research.

One possible explanation is that the other research did not control for motivation. By making motivation a separate factor, a truer view of the impact of advisement and first-generation status is made clear. For example, Terenzini, et al (1996) and other studies may have captured lower motivation that confounded it with other elements of first-generation students.

LIMITATIONS AND FUTURE RESEARCH

Since this study was conducted at a large open-enrollment institution in the Western United States, it is difficult to generalize the results to other geographical areas and to other types of institutions. Similar studies should be conducted at other institutions to see if they produce similar results. We also acknowledge that this study did not differentiate among GE courses and that specific courses may be more motivating to some students than others (e.g., engineering students might enjoy GE math requirements). This was beyond the current study, which explored only if general perspectives about general education requirements had an impact on students' GPAs.

Future research might seek to unpack the elements of busyness and mentoring to see if other relationships with academic success could be found. Busyness might have a curvilinear relationship with GPA, in that a small amount might improve academic performance, but at a higher-level performance drops off. Mentoring might only have an impact on freshmen, and once established, students need little mentoring to finish their degree programs. This could be tested by dividing survey subjects by their year in school.

The nonsignificant results with mentoring do suggest that other research might try to make motivation a separate factor in studies. Indeed, motivation could be a mediating variable in many student success studies that look at individual specific treatments or situation and their effects on student success. Future research might test this hypothesis using more traditional measures of motivation.

CONCLUSION

A significant amount of research has been conducted into the factors that contribute to student success in college. Motivation is well established as having a positive relationship with student success (Richardson, Abraham, & Bond, 2012), and although the measures of motivation used in this study were novel (related to a positive view of general education courses and the university in general), the results concur with other studies that use more traditional measures of motivation. Mentoring is thought to also have a major impact on student success, but this study does not show a significant link between mentoring and student success. This construct includes elements of student advising as well as having family members which have completed a college degree. The student status of first generation, non-traditional, minority, or less prepared has often been considered a major handicap in college success, but it, along with additional college mentoring, appears to have no major impact in this study. Such results casts doubt on some of the work that suggests that first-generation, non-traditional, minority, and less-prepared college students have such a handicap and the value of intensive advisement. Instead, the emphasis should be on motivation. If these students have a handicap, this research suggest that it is due to lower motivation, not the myriad of others things (i.e., not knowing how to sign up for the right classes, how to study, how to get financial aid, etc.). Efforts to improve their motivation directly might prove more productive in improving their success.

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