Future Review

International Journal of Transition, College, and Career Success

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FOREWORD

The Future Institute Research Center is proud to publish our second issue of *Future Review: International Journal of Transition, College, and Career Success*. We want to thank the authors for submitting their excellent work to our journal and the reviewers for providing their time and effort in evaluating submissions.

We have five articles in this issue. We start with three contributions to our Peer Reviewed Research section. Igor Himelfarb and Michelle Martin-Raugh use the risk and resilience framework to study non-academic predictors of grades. Specifically, they examine the influence of extra-curricular participation, delinquency, and parental involvement. Madeline Appelbaum and Jennifer Henderlong Corpus used a mixed-model approach to investigate profiles of academic motivation. To better understand the cultural influences on college retention, Janice Templeton and Jacquelynne Eccles studied 11 predictors of retention for Native American students. Each of these studies adds to our understanding of academic transitions and factors that influence success. Collectively, these articles address a broad range of issues of interest to researchers, educators, and policymakers and administrators interested in school transitions and success.

After the empirical pieces, we have two articles in our From the Field section. Anthony Greco provides a faculty member's perspective on student success with ideas on how students can evaluate the choice of academic programs and the habits they should develop as students. Barbara Kaplan Bass' essay provides both inspiration and advice to educators. Both of these articles will be useful to teachers, counselors, and advisors.

As editor of this journal, the experience of working with the authors and the reviewers has been thrilling, humbling, and satisfying. I hope readers of the journal think deeply about the contributions these articles make to the field.

John Klatt, *Future Review* Editor

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PEER REVIEWED RESEARCH ARTICLES

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Effects of Extracurricular Participation, Delinquency, and Parental Involvement in School on Grades: Structural Covariance Analysis

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This study uses the theoretical framework of risk and resilience to examine a model in which delinquency, parental involvement, and extracurricular participation predict grades. The sample is comprised of 5,523 adolescents, ranging from 12 to 18 years old, surveyed using the U.S. National Household Education Survey. Results of a structural equation model showed that parental involvement and extracurricular activities positively predict grades and that delinquency, while negatively related to grades, mediates this relationship. The relationships examined were further explored through the computation of indirect and total effects. Full mediation was demonstrated for parental involvement, while partial mediation occurred for extracurricular participation. Mediation was explained using theoretical framework of interactional theory. Results suggest resilience may be improved by increasing extracurricular participation and parental involvement while reducing the risk associated with school-related delinquency.

Keywords: Adolescents, grades, delinquency, parental involvement, extracurricular activities

Research supports the importance of academic success in high school, as high school GPA is positively associated with first-year college grades (Kobrin & Patterson, 2011; Sawyer, 2013; Zwick & Sklar, 2005), college retention (Robbins et al., 2004), and other important subsequent life outcomes, such as increased wages (Miller, 1998). Considering the connection between adolescent grades in school and later success in life (Miller, 1998; Robbins et al., 2004), studying academic achievement measured by school grades, the prevalence and effects of school-related delinquency, the role of parental involvement, and students' participation in extracurricular activities, is of fundamental importance in understanding what underlies the positive development of American youth. In this study, we examine the relations among parental involvement, extracurricular activities, and delinquency, and their direct and indirect effects on grades. Although prior research has shown that extracurricular activities, parental involvement, and delinquency are significantly related to grades (Eccles, Barber, Stone, & Hunt, 2003; Maguin & Loeber, 1996), we seek to expand upon existing research by testing a mediation model in which delinquency mediates the effects of extracurricular activities and parental involvement on grades.

Garmezy (1971) proposed a theory stating that risk and resilience affect developmental outcomes for youth and adolescents. Risk factors include behaviors that increase maladjustment and negative outcomes, while resilience is defined by successful adaptation despite the presence of adversity and is fostered through meaningful activities and experiences (Schoon, 2006). Previous research suggests that delinquency is linked to negative outcomes for youths later in life, such as crime, alcohol abuse, economic dependency, unemployment, and divorce (Sampson & Laub, 1990). However, research suggests that extracurricular participation can promote resilience by providing students with a more positive sense of self-worth and academic self-concept (Blomfield & Barber, 2011).

Delinquency and Grades

Prior studies have established a negative relationship between juvenile delinquency and academic achievement (Maguin & Loeber, 1996; Meltzer, et al., 1984). For instance, Meltzer and colleagues compared the academic achievement of delinquent and non-delinquent youths and reported that delinquent youths performed more poorly across all subject areas. Moreover, a meta-analysis conducted by Maguin and Loeber (1996) suggests that youths attaining lower academic achievement

commit delinquency more often, persist more in their delinquency, and commit acts of a more serious nature.

High academic failure rates are an important issue in the United States, as approximately 25% of ninth-graders entering high school fail to earn a diploma, with rates as high as 50% in some communities (Stillwell, 2009). Having so many youths at risk of academic failure is not only alarming, but also challenging given that unemployment or underemployment often follow such failures (Caspi, Wright, Moffitt, & Silva, 1998). Thus, identifying protective factors that are associated with a lower incidence of delinquency at school is crucial in mitigating this associated risk.

The Role of Parental Involvement

Previous research has suggested a positive link between parental involvement at school and student academic achievement (Christenson, Rounds, & Gorney, 1992; Fan & Chen, 2001). Jimerson, Egeland, and Teo (1999) examined the academic paths of socioeconomically disadvantaged youth and showed that parental involvement in schooling predicted positive gains in achievement. A meta-analysis conducted by Fan and Chen (2001) revealed that parental involvement yields a small to moderate, but practically meaningful positive relationship with students' academic achievement. Furthermore, Lagacé-Séguin and Case (2010) examined the combined effects of parental involvement and extracurricular participation on academic competence and general well-being in elementary school children. Results showed that parental involvement (support) and extracurricular activities, when paired together, predicted children's well-being and academic competence.

Tan and Goldberg (2009) examined parental involvement in children's education at school and at home. Their results demonstrated that parental involvement in their children's education predicts children's grades and other positive school-related outcomes, such as adaptation to school. However, the direction of the association revealed by their study wasn't always positive, which suggests a complexity in the relations between parental involvement and student's grades that should be further researched. Additionally, differences between ethnic groups in the type and level of parental involvement have been recorded in children who participated in an early childhood longitudinal study (Graves & Wright, 2011). The results from this study revealed that Caucasian parents are more likely to be involved in home-based activities, such as reading and storytelling, while African-American parents are more likely to be involved in school-based activities such as volunteering (Graves & Wright, 2011). Therefore, implementing control procedures for demographic differences when studying parental involvement may lead to more informative results.

Extracurricular Activities and Grades

Participation in extracurricular activities is a factor that promotes resilience in adolescents (Peck, Roeser, Zarrett, & Eccles, 2008). Extracurricular activities provide several benefits linked to positive development for adolescents, including structured regular schedules, adult supervision, opportunities to develop skills and competencies, and clear feedback (Eccles & Gootman, 2002).

Several researchers have suggested that participation in extracurricular activities on a regular basis is positively related to desirable academic outcomes. For instance, longitudinal research has shown that engagement in extracurricular activities predicted enrollment in college for vulnerable youths (Peck et al., 2008). Catterall (1998) showed that student's involvement in school and community-based activities successfully predicts recovery from low academic performance for at-risk youths. Finally, Eccles and colleagues reported a positive relationship between extracurricular participation and educational outcomes, such as high school GPA (Eccles et al., 2003).

Himelfarb, Lac and Baharav (2014) examined the relation--ships between school-related delinquency, extracurricular activities, and academic achievement for adolescents. In that study, participation in the arts, sports, clubs, tutoring and volunteering predicted grades received at school even when the sample's demographic differences and school-related delinquency were controlled. Participation in the arts, sports, clubs, and volunteering was associated with an increase in grades.

Participation in extracurricular activities may promote healthy adolescent behavior and better academic outcomes because extracurricular activities offer support and opportunities that are of developmental value to youth, including physical and psychological safety, appropriate structure, supportive relationships, opportunities to belong, positive social norms, support for efficacy, opportunities for skill building, and the integration of family, school, and community efforts (Eccles & Gootman, 2002). In this study we further examine extracurricular activities, parental involvement, and delinquency and examine the direct and indirect relationships of these variables with grades in school.

The Role of Delinquency as a Mediator

Several studies have defined behavioral control or monitoring as an aspect of parental involvement, and have explored its relation to delinquency. For example, Brody (2003) presented longitudinal data supporting the finding that maternal

monitoring is a significant factor in predicting lower levels of adolescent delinquency in the early years of adolescence. Barnes and colleagues (Barnes et al., 2006) showed that increases in parental monitoring were associated with decreases in delinquency and alcohol misuse.

Research further suggests that adolescents engaged in extracurricular activities are less likely to engage in delinquent behavior. For instance, Landers and Landers (1978) showed that rates of delinquency were highest for students that engaged in no extracurricular activities while rates of delinquency were lowest for students involved in both athletic activities and service-leadership activities. A study conducted by Agnew and Petersen (1989) reported that delinquency for adolescents was negatively related to participation in noncompetitive sports and organized leisure activities (such as drill team or participation in the school newspaper, for example).

Prior research has shown that participation in extracurr--icular activities is negatively related to delinquency (Landers & Landers, 1978). An inverse relationship between parental involvement and delinquency is also supported by research (Barnes et al., 2006; Brody, 2003). In addition, the negative relationship between delinquency and grades has been supported by empirical evidence (Maguin & Loeber, 1996). However, although these studies, among others, have shown that extracurricular activities, parental involvement, and delinquency all account for variability in grades, no research we are aware of to date has specified and tested a mediation model in which delinquency mediates the effect of extracurricular activities and parental involvement on grades. As prior research suggests that increases in parental involvement (e.g., Brody, 2003) and increased engagement in extracurricular activities (e.g. Landers & Landers, 1978) are associated with decreases in delinquency; it is conceivable that the positive relationship these factors tend to display with grades (Eccles et al., 2003) occurs, at least in part, because this relationship is mediated by delinquency.

An additional rationale for the role of delinquency as a mediator of the relationships between parental involvement, extracurricular activities, and grades stems from Interactional Theory (Thornberry, 1987). This theory posits that the basic cause of delinquency is a weakened bond between the individual and society. The theory suggests that adolescents form bonds with society via relationships with parents and peers. Thus, according to this theory, adolescents who are monitored by and involved with their parents are less likely to engage in delinquent behavior. Similarly, adolescents who participate in extracurricular activities have less time to engage in delinquent behavior. In accordance with Interactional Theory, we hypothesize that parental involvement and extracurricular participation precede delinquency. As prior research (Carroll et al., 2009) has positioned delinquency as a fundamental factor predicting academic achievement, and Interactional Theory posits that extracurricular participation and parental involvement predict delinquency, we posit that delinquency will mediate the relationship between these two antecedents and grades.

Drawing on the theoretical paradigm of risk and resilience and Interactional Theory, and considering previous research findings, in this study, we examine how parental involvement in school and participation in extracurricular activities affect student grades directly and indirectly when delinquency serves as a mediator. Using a structural equation model (SEM), we specify and test a model that explains relationships between the main predictors while controlling for demographic characteristics of the sample. We hypothesize that delinquency, a risk factor, will be negatively related to grades. On the other hand, we hypothesize that parental involvement and extracurricular activities will predict higher grades. For the purpose of testing the model, parental involvement in school was specified as a latent factor indicated by five observed variables— participation in school meetings, school or class events, volunteering at school, school fundraising, and serving on a school committee. Extracurricular participation was specified as a latent factor indicated by possible participation in five extracurricular activities—music classes, religious classes, organized sports, scouting, and the arts. Finally, delinquency was specified as a latent factor indicated by out-of-school suspension, in-school suspension (i.e. when students are detained at school, outside of their usual class schedule), expulsion from school, and the requirement to change schools as a result of delinquent behavior.

Method

Data

Overview. The dataset is publically available from NCES. The data were collected from January 2 through May 6, 2007. Information about the students was collected via random digit dial telephone surveys in the United States. To avoid legal issues associated with obtaining permission for interviewing minors over the phone, the interviews were conducted with the parent or an adult family member. Trained interviewers conducted computer-assisted telephone interviews. The selected respondent was asked a battery of questions about the children, and the responses were recorded.

Sampling. The households were selected using a stratified list-assisted method, a technique used in telephone surveys, which utilizes information from the directory listings to produce a simple random sample. (Tucker, Lepkowski, & Piekarski, 2002). Implementing a list-assisted method increases the response rate by eliminating nonworking or nonresidential telephone numbers. To limit the burden on a respondent within a household, procedures were developed to select only one child per household— in households with children younger than 20, children were enumerated, then the sampling algorithm was implemented to choose an adolescent within a specific household. Only one eligible child was selected for the survey (Hagedorn, Roth, O'Donnell, Smith, & Mulligan, 2008, p. 17). If a household contained any children enrolled in K-12 who were not homeschooled, one of these children was selected to be the subject of the interview. The interviews with household members were conducted during the same phone call as the screening procedures. Follow-up calls were made to complete the interviews that were not completed on the first attempt (Hagedorn, Roth, O'Donnell, Smith, & Mulligan, 2008, p. 8). There was no incentive offered to participate in the interview.

In order to produce a reliable nationally-representative sample, NCES used stratification to select phone numbers to include in the final sample. In the first phase, a sample of telephone numbers was drawn from the areas with high percentages of African-American and Hispanic residents. In the second phase, to see if the number corresponds to a household, telephone numbers within each minority stratum were stratified according to whether they matched with a mailing address (Hagedorn, Roth, O'Donnell, Smith, & Mulligan, 2008, p. 32).

The focus of this study included school-related delinq--uencies; therefore, to increase the number of student who may have experienced delinquencies, we selected adolescents ranging in age from 12 to 18.

Weighting. The data collected by NCES were intended for person-level analyses; therefore, person-level weights, available in the dataset, were applied in all analyses to ensure the representativeness of the data (Hagedorn, Roth, O'Donnell, Smith, & Mulligan, 2008).

Missing Responses. The item response rate for the survey was high (median response rate of 99.3%). The overall response rate (the percentage of targeted households) to the survey was 78.8% (Hagedorn, Roth, O'Donnell, Smith, & Mulligan, 2008, p. 9). Reasons for missing responses included respondents not knowing the answer to the question asked by the interviewer, reluctance to respond to a question, and unexpected interruptions during the interview, which left responses to items near the end of the interview blank.

Data Preparation. To prepare the data set for statistical analyses, variables were re-coded to account for the skip patterns, and to ensure that higher values assigned to the variables corresponded to higher values on the construct.

Participants

This study used a sample drawn from data collected by the National Household Educational Survey (NHES), which was assembled by the National Center for Education Statistics (NCES, 2007). The sample was comprised of 5,523 adolescents ranging in age from 12 to 18 years old (M = 14.9, SD = 1.9). Participants were almost equally divided between males (51.2%) and females (48.7%). The majority of the adolescents (63.6%) were Caucasian, 16.9% were Hispanic (Latino), 11.3% were African American, and 8.2% were of other ethnicities. More than a half of the parents (64.3%) reported a total annual household income of above $50,000, while 4.5% of the sample came from households earning below $25,000 annually. Approximately a quarter of parents (26.3%) reported an annual household income of between $50,000 and $100,000. Descriptive statistics for the sample are presented in Table 1.

Measures

Grades. The response to the following question constituted the main outcome variable in the study: "Now I would like to ask you about (your child's) grades during this school year. Overall, across all subjects (he/she) takes in school, does he/she gets mostly A's, B's, C's, D's or F's?" The responses were mapped to a 4.0 grade point average (GPA) scale and received the following coding: 1 = "D's or lower" (3.9%), 2 = "C's" (15.2%), 3 = "B's" (37.4%), and 4 = "A's" (43.5%).

Delinquency. Four types of delinquency were assessed by the survey: 1. "Has the child ever had an out-of-school suspension?" 2. "Has the child ever had an in-school suspension, not counting detentions?" 3. "Has the child ever been expelled?" 4. "Has the child ever been required to change schools because of behavior problems?" If the respondent reported that the child experienced a particular delinquency, the response was coded 1 (yes); otherwise, the response was coded 0 (no). Twenty-one percent of the sample were reported as having at least one delinquency.

Parental Involvement. The survey involved eight questions that assessed parental involvement in school. We initially considered all eight items to be included in the statistical

analysis; however, after preliminary investigation, we kept only five items through which we assessed parental involvement. One of the reasons for item exclusion was redundancy of the items, which would be problematic at the factor analysis stage. The responses to the following five items were included: 1. "Since the beginning of this school year, have/has you or any adult in your household attended a general school meeting, for example, an open house, or a back-to-school night?" 2. "Attended a school or class event, such as a play, dance, sports event, or science fair because of the child?" 3. "Served as a volunteer in child's classroom or elsewhere in the school?" 4. "Participated in fundraising for the school?" 5. "Served on a school committee?" The "yes" responses to these questions were coded as 1, while "no" responses were coded as 0.

Extracurricular Activities. The survey assessed partici--pation in six different extracurricular activities: music lessons, religious classes, organized sports, scouting, preparation to college exams, and participation in arts. The following question was asked by the interviewer: "During this school year, has the child participated in any of the following activities outside of school? How about…" 1. "Regular music lessons (from someone other than a homeschooling parent?" 2. "Church or temple youth group or religious classes?" 3. "Organized sports that are supervised by an adult?" 4. "Scouting, 4H, or other group or club activities?" 5. "Programs to prepare the child for college entrance exams?" 6. "Performing arts or other arts?" The participation in preparatory programs for college examinations is mostly applicable to older children, and had a lower response rate compared to all other activities; thus, we excluded this item from further consideration. Responses were coded as 1 (yes) for participation and as 0 (no) for non-participation.

Analytic Plan

To consider the protective effects of parental involvement and extracurricular activities as well as the effect of the risk factor, delinquency, on grades obtained in school, structural equation modeling (SEM) was employed. In comparison to other methods such as path analysis or multiple regression, models with latent variables are advantageous in that each latent factor captures the shared variance of the corresponding indicators and considers all endogenous variables in one model.

The model was constructed and evaluated employing a two-step approach (Anderson & Gerbing, 1992). In the first step, a confirmatory factor analysis (CFA) model was specified to test the measurement component of the model. CFA is a useful technique for testing how well measured variables represent a specific construct. CFA allows researchers to specify models indicating which measured variables are related to which factors. In the second step, structural paths were added to the measurement component, creating a full SEM model that predicted grades.

The CFA was conducted in M*plus* 7.11 (Muthén & Muthén, 1998-2013) using CFA procedures for binary or categorical items (Christoffersson, 1975; Muthén, 1996), and was tested using the first half of the sample. To evaluate the statistical fit of the CFA model, fit indices were evaluated. Following the recommendation of Hu & Bentler (1999), fit indices included the root mean square error of approximation (RMSEA; MacCallum, Browne, & Sugawara, 1996), the comparative for index (CFI; Bentler, 1990), and normed fit index (TLI; Tucker & Lewis, 1973). Considering the binary coding of the items, a robust weighted least square with adjusted mean and variance (WLSMV) estimator was used.

For the CFA model, the binary indicators were assumed to load on factors that were hypothesized to represent items' shared variability: parental involvement, extracurricular participation, and delinquency, and interfactor correlations were allowed. After establishing the appropriate psychometric properties for the measurement model, we proceeded with the second step in which the structural model was constructed. For the structural model, direct and indirect effects of parental involvement, extracurricular activities and delinquency on grades were estimated while controlling for the sample's demographic characteristics, such as age, gender, ethnicity, and income. Cutoff values of standardized loadings above .4 were used to evaluate the factorial structure of the CFA model. The sample was randomly split so that CFA and SEM could be conducted on statistically independent samples. Both samples were similar in terms of demographic covariates.

Results

Bivariate Relations between Variables

First-order correlations were estimated between the variables included in the study. Grades were negatively related to all delinquencies but positively related to all variables representing parental involvement and all variables representing extracurricular participation, except religious classes. The indicators of delinquencies were interrelated, along with the indicators of parental involvement and extracurricular participation. The correlation estimates ranged from $r = .15$ ($p < .001$) to $r = .37$ ($p < .001$) for delinquencies; from $r = .11$ ($p < .001$) to $r = .27$, ($p < .001$) for parental

Table 1
Descriptive Statistics for Key Variables

Variable		*Mean (SD)*	*% Yes*	*% No*	*N*
Grade Point Average		3.2 (0.8)	--	--	5523
Age		14.9 (1.9)	--	--	5523
Gender					
	Male	--	51.2	--	2831
	Female	--	48.7	--	2692
Ethnicity					
	White	--	63.6	--	3513
	African American	--	11.3	--	624
	Hispanic	--	16.9	--	931
	Other	--	8.2	--	455
Income		10.5 (3.8)	--	--	5523
Delinquencies					
	Out-of-School Suspension	--	12.8	87.2	5523
	In-School Suspension	--	11.5	88.5	5523
	Expelled	--	2.2	97.8	5523
	Changed Schools	--	1.9	98.1	5523
Parental Involvement					
	General School Meeting	--	84.2	15.8	5523
	School/Class Events	--	71.1	28.9	5523
	Volunteering	--	34.6	65.4	5523
	Fundraising	--	60.7	39.3	5523
	School Committee	--	15.1	84.9	5523
Extracurricular Activities					
	Music	--	16.4	83.6	5523
	Religious Classes	--	56.7	43.3	5523
	Organized Sports	--	41.1	58.9	5523
	Scouting	--	20.8	79.2	5523
	Arts	--	21.6	78.4	5523

Note : Percentages are given for binary variables. Means and *SD's* are given for ordinal variables

involvement, and from $r = .05$ ($p = .02$) to $r = .12$ ($p < .001$) for extracurricular participation. The correlations are presented in Table 2.

Confirmatory Factor Analysis

The three-factor CFA model, which included factors for delinquency, parental involvement, and extracurricular participation, produced an adequate fit to the data, $\chi^2(74) = 435.13, p < .001$ $\chi^2(74) = 435.13, p < .001$; CFI = .97; TLI = .96; RMSEA = .03, 90% CI = (.02, .03). The item loadings for the three factors ranged from .51 to .94, and were all statistically significant, ($p < .001$). The significant relations between the latent factor and its indicators suggest that items load as hypothesized.

The relationships among factors were evaluated by estim--ating interfactor correlations. Delinquency was negatively related to extracurricular participation ($r = -.32$, $p < .001$), and to parental involvement, ($r = -.36$, $p < .001$). Parental involvement was positively correlated with extracurricular participation, ($r = .73$, $p < .001$). The standardized coefficients for the CFA model are presented in Table 3, and the model is diagramed in Figure 1.

Structural Model

The three latent factors tested in the CFA model were linked with grades to specify a full structural equation model, which was tested using the second half of the sample. The measurement component of the SEM repeated the model specified in the CFA. All factor loadings in the measurement part of the structural model were of acceptable magnitude and were statistically significant (see Table 3).

The structural model controlled for the effects of demo--graphic characteristics by specifying predictive paths from age, gender, income, and ethnicity to the three latent factors and grades. The model displayed adequate fit to the data, $\chi^2(151) = 1077.91, p < .001$; CFI = .96; TLI = .95; RMSEA = .04, 90% CI = (.03, .04). The estimates of standardized coefficients for the structural model are presented in Table 4. These estimates constitute a one standardized (in the units of standard deviation) unit change in the dependent variable as a function of one-standardized unit change in the independent variable under consideration while controlling for all other independent variables included in the model. The model is diagramed in Figure 2.

Table 2

Correlations Between Grades, Delinquencies, Parental Involvement, and Extracurricular Activities

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.Grades	--	-.28	-.26	-.15	-.16	.08	.05	.16	.15	.10	.16	.04	.11	.12	.13
2.Out-of-School Suspension	-.27	--	.37	.27	.29	-.07	.01	-.10	-.07	-.07	-.04	-.03	-.04	-.07	-.06
3.In-School Suspension	-.25	.37	--	.16	.21	-.07	-.01	-.11	-.07	-.07	-.03	-.02	-.03	-.04	-.06
4.Expelled	-.15	.27	.15	--	.22	-.05	.00	-.06	-.06	-.05	-.02	.02	-.01	-.01	-.03
5.Changed Schools	-.16	.28	.20	.22	--	-.05	.00	-.05	-.06	-.01	-.02	.00	-.02	-.05	-.03
6.General School Meeting	.07	-.07	-.07	-.06	-.05	--	.27	.19	.18	.11	.06	.11	.10	.08	.10
7.School/Class Events	.04	.01	-.01	-.01	-.00	.27	--	.23	.19	.20	.04	.10	.09	.10	.08
8.Volunteering	.15	-.10	-.11	-.06	-.05	.18	.20	--	.35	.41	.10	.12	.17	.12	.17
9.Fundraising for School	.14	-.07	-.07	-.06	-.07	.18	.19	.35	--	.26	.10	.18	.16	.09	.11
10.School Committee	.10	-.07	-.07	-.05	-.00	.11	.21	.41	.27	--	.11	.11	.11	.12	.08
11.Music	.15	-.04	-.04	-.04	-.02	.06	.04	.10	.09	.10	--	.10	-.04	.07	.30
12.Religious Classes	.04	-.03	-.02	-.02	-.01	.11	.10	.12	.18	.11	.10	--	.09	.11	.05
13.Organized Sports	.11	-.04	-.03	-.01	-.02	.10	.09	.17	.16	.11	-.04	.09	--	.09	.05
14.Scouting	.12	-.07	-.03	-.01	-.05	.08	.10	.12	.09	.12	.07	.11	.09	--	.09
15.Arts	.13	-.06	-.06	-.03	-.03	-.10	.08	.17	.11	.08	.30	.05	.05	.09	--

Note: The lower matrix presents CFA correlation matrix (n = 2761); the upper matrix presents SEM correlation matrix (n = 2762)
Values between |.04| and |.05| are significant at $p < .05$; values of |.06| and above are significant at $p < .01$

Table 3

Confirmatory Factor Analysis Standardized Coefficients

Factor	Indicator	Factor Loadings	
		CFA (n = 2761)	SEM (n = 2762)
Delinquency			
	Out-of-School Suspension	.94	.94
	In-School Suspension	.76	.76
	Expelled	.87	.87
	Changed Schools	.78	.79
Parental Involvement			
	General School Meeting	.58	.59
	School/Class Events	.80	.81
	Volunteering	.88	.88
	Fundraising for School	.67	.67
	School Committee	.82	.82
Extracurricular Participation			
	Music	.73	.72
	Religious Classes	.51	.51
	Organized Sports	.53	.52
	Scouting	.51	.51
	Arts	.63	.63

Note: All loadings are statistically significant, $p < .01$

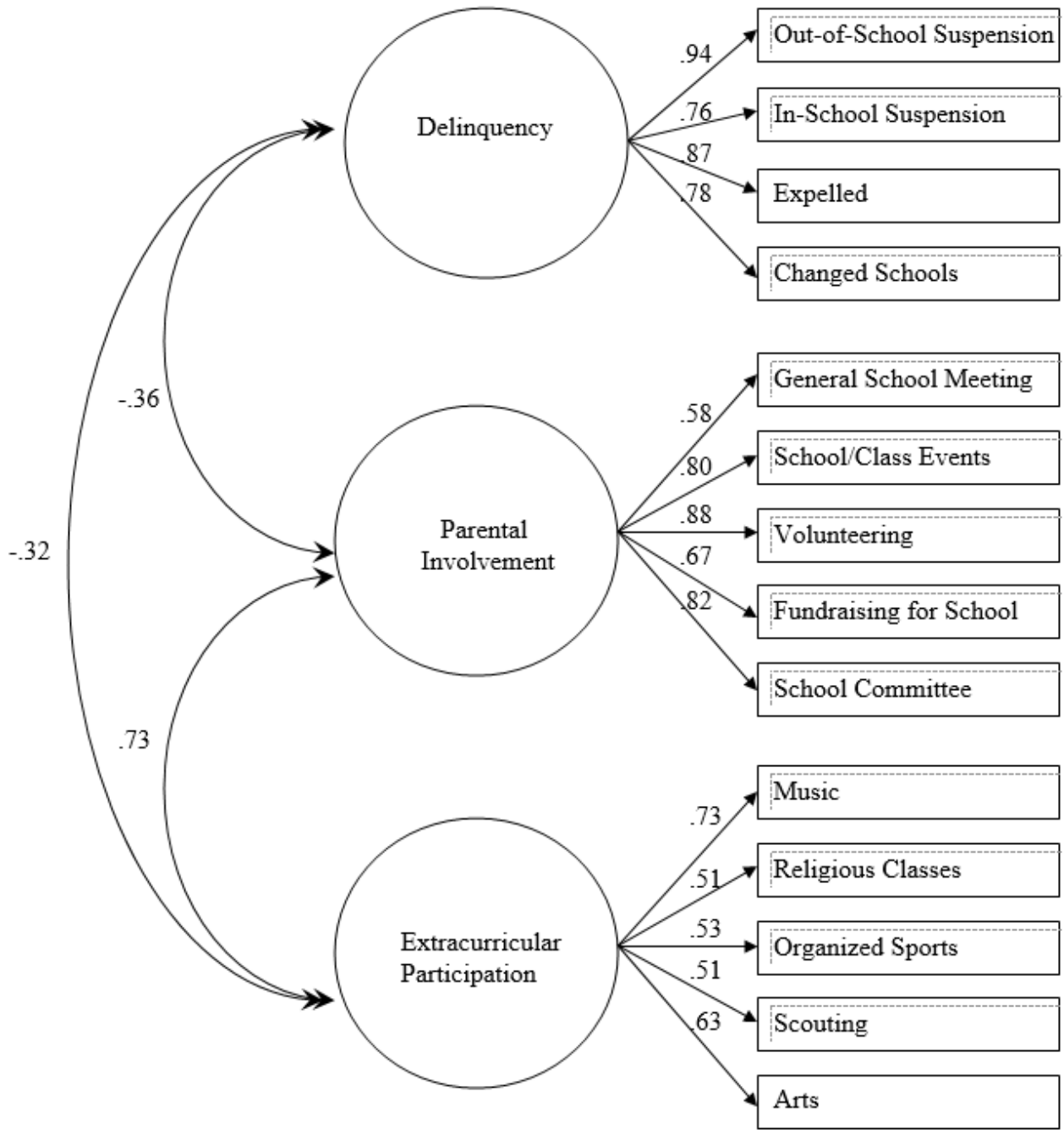

Figure 1. Confirmatory factor analysis of delinquency, parental involvement, and extracurricular participation. Standardized coefficients are presented. All paths are significant at $p < .01$ (n = 2761).

Table 4
Standardized Coefficients, Structural Model (n = 2762)

Outcome	Predictor	β	*SE*
Grades			
	Age	.04**	.01
	Male	-.08**	.01
	Income	.07**	.02
	African-American	-.05**	.01
	Hispanic	-.01	.02
	Other Ethnicity	.03	.02
	Delinquency	-.37**	.03
	Parental Involvement	-.04	.03
	Extracurricular Participation	.30**	.03
Delinquency			
	Age	.09**	.02
	Male	.23**	.02
	Income	-.11**	.03
	African-American	.21**	.02
	Hispanic	.03	.02
	Other Ethnicity	.04	.02
	Parental Involvement	-.17**	.03
	Extracurricular Participation	-.14**	.04
Parental Involvement			
	Age	-.07**	.02
	Male	-.05*	.02
	Income	.35**	.02
	African-American	-.05*	.02
	Hispanic	-.12**	.02
	Other Ethnicity	-.02	.02
Extracurricular Participation			
	Age	-.15**	.03
	Male	-.08**	.03
	Income	.34**	.03
	African-American	.05*	.02
	Hispanic	-.09**	.03
	Other Ethnicity	.03	.02

Note: *p < .05; **p < .01

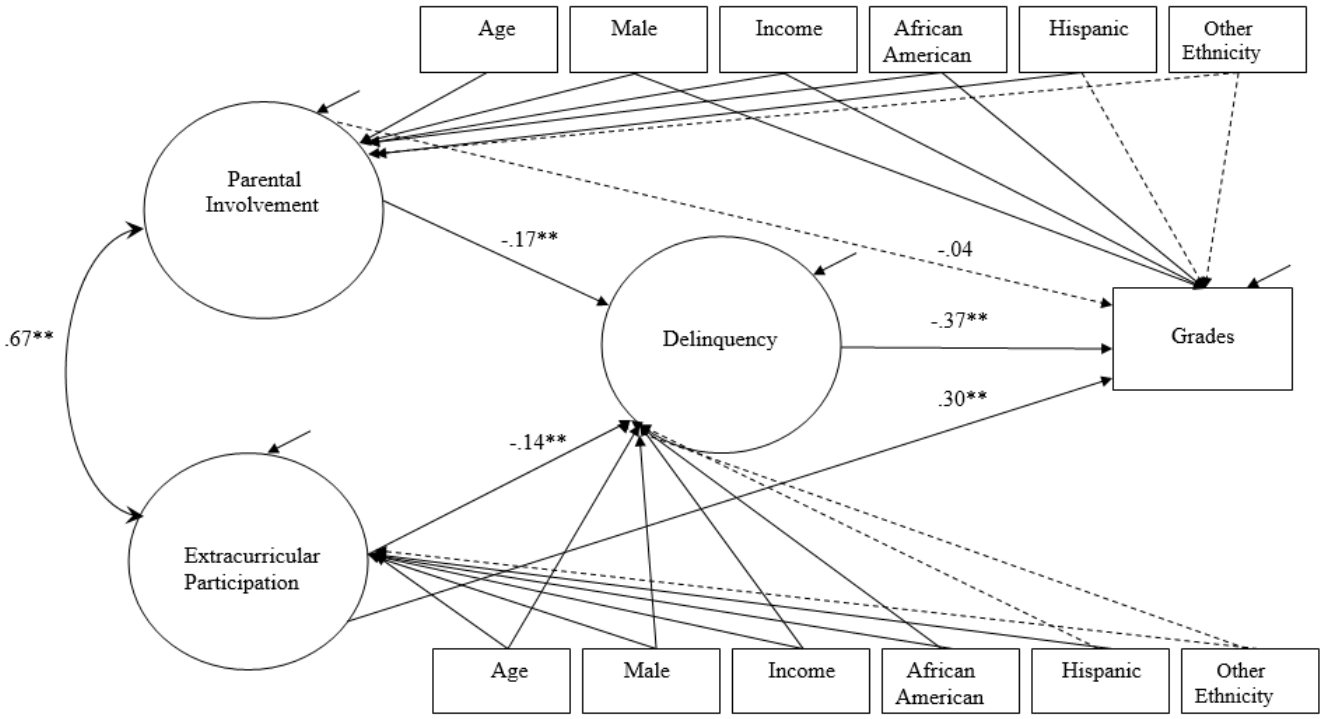

Figure 2. Structural model. Standardized coefficients are presented. For diagrammatic clarity, coefficients for demographic covariates are not presented; however, all paths represented by solid lines are significant at *p < .05; **p < .01. Demographic covariates were entered in the model only once, but are pictured twice for the clarity of the diagram (n = 2762). Reference group for race is Caucasian. Arrows pointing into endogenous variables represent disturbances.

Mediation

The specified structural model tests a mediation process from parental involvement and extracurricular participation (the exogenous factors in the model) to grades (the endogenous outcome) via delinquency, the hypothesized mediator. We tested these mediation processes for statistical significance through the decomposition of indirect and total effects for SEM models with latent variables. The decomposition of effects along with the test of statistical significance is presented in Table 5. The outcome of the test confirmed that parental involvement and extracurricular participation each indirectly predicted grades through delinquency, the mediator. The computations were performed using following formulas:

$$Effect_{indirect} = ab$$

$$Effect_{total} = c + ab$$

$$Sobel\ Test\ z = \frac{ab}{\sqrt{(b^2SE_a^2) + (a^2SE_b^2)}}$$

where a is the regression coefficient between the independent variable and the mediator, b is the regression coefficient between the mediator and the dependent variable, c is the regression coefficient between the independent variable and the dependent variable;SE_a SE_a is the standard error associated with a, and SE_b SE_b is the standard error associated with b. The 95% CI for indirect mediation effect was computed using the following formula:

$$CI = AB \pm z_{1-\alpha/2}SE_{AB}$$

where AB is the indirect mediation effect, z is a standard normal score, $^{\alpha\ \alpha}$ is the probability of Type I error, and SE_{AB} SE_{AB} is the standard error associated with the indirect mediation effect. The variance of the indirect effect was computed in the following way:

$$\sigma^2 = a^2SE_b^2 + b^2SE_a^2\ \sigma^2 = a^2SE_b^2 + b^2SE_a^2$$

(Sobel, 1982).

Table 5
Indirect Effects and Total Effects From Predictors to Grades in the Predictive Model (n = 2762)

Variable	Standardized Indirect Effect	Standardized Total Effect	Sobel Test	95% *CI*
Parental Involvement	.06	.02	5.15*	(.04, .09)
Extracurricular Participation	.05	.35	4.16*	(.02, .08)

Note: *p < .001

To examine the strength of the mediation effect, we removed the mediator from the model and estimated the effects of parental involvement and extracurricular participation on grades without the mediator. The direct effects were β = .24 (p < .001) for parental involvement and β = .35 (p < .001) for extracurricular participation. According to the criteria specified by Baron and Kenny (1986), full mediation had occurred for parental involvement, while partial mediation occurred for extracurricular participation.

Discussion

As indicated in previous research, and reaffirmed by our study, poor academic performance is related to the prevalence of delinquency—higher scores on delinquency predict lower grades (Himelfarb, Lac, & Baharav, 2014; Maguin & Loeber, 1996). Further, findings show that greater extracurricular participation was associated with higher grades. Fredrick (2012) examined a large sample of American high school students to study whether over involvement in extracurricular activities is associated with negative consequences for youth functioning. She found that, on average, 10th graders participated in 2 to 3 activities for about 5 hours per week. Based on her findings, the participation in extracurricular activities was positively related to math achievement test scores, and educational expectations at 12th grade.

Additionally, Im, Hughes, Cao, and Kwok (2016) investi--gated the effect of extracurricular participation in sports and performance arts and found that the participation was beneficial in terms of academic outcomes. Furthermore, they found that the benefits of participation were similar across gender and ethnicity; however, Latino youth were least likely to participate in extracurricular activities.

Our findings suggest that there may be two main pathways predicting grades from extracurricular activity participation in adolescents. First, a direct effect of extracurricular participation on grades was statistically significant, suggesting that greater participation in extracurricular activities predicts higher grades. Second, the significant indirect effect of extracurricular participation on grades via delinquency suggests that delinquency statistically mediates the relation--ship between extracurricular participation and grades: Higher extracurricular participation is associated with lower levels of delinquency. Furthermore, even after we controlled for the effect of extracurricular activities, parental involvement was negatively related to delinquency. Parental involvement had an indirect, but not direct, effect on grades, suggesting that parental involvement is effective in reducing the number of delinquencies. Although the direct relationship between parental involvement and grades was not statistically significant, it is not always necessary for an independent variable to exert a significant direct effect on a dependent variable for mediation to occur (MacKinnon & Fairchild, 2009). However, when delinquency was removed from the model, parental involvement was significantly positively related to grades.

Income was the strongest significant predictor of parental involvement and participation in extracurricular activities—adolescents with higher annual family income and tended to have parents more involved in school tended to participate more in extracurricular activities. This is logical, as parents often have to pay for out-of-school extracurricular participation. Furthermore, income was a significant predictor of grades and delinquency. Adolescents from more affluent backgrounds received higher grades, while adolescents with lower family income were more likely to have increased delinquency.

Although prior work has demonstrated that extracurricular activities, parental involvement, and delinquency are all significantly related to grades (Eccles et al., 2003), as far as we are aware, we are the first to examine a mediation model in which delinquency mediates the effects of extracurricular participation and parental involvement on grades. Our findings confirmed the hypothesized mediation. The model specified suggests that parental involvement and engagement in extracurricular activities may be distal antecedents that primarily affect grades through their effect on delinquency, which may be a more proximal predictor of grades. As such, efforts to directly reduce delinquency in adolescents may be beneficial in resulting in increased grades in high school that are in turn associated with improved college retention

(Robbins et al., 2004), and increased wages (Miller, 1998). However, we must caveat that the research reported here is cross-sectional and that longitudinal research would be best equipped to provide evidence for this causal pattern of relationships. Future research may benefit from longitudinal designs examining the relationship between parental involvement, extracurricular activities, and grades.

Results from this study align with Interactional Theory (Thornberry, 1987). In line with Interactional Theory, we hypothesized that parental involvement and extracurricular participation would predict delinquency, and that delinquency would predict grades. Our hypotheses were supported, providing further evidence to support Interactional Theory and extend prior research testing this theory (e.g., Thornberry, Lizotte, Krohn, Farnworth, & Jang, 1994), through our operationalization of adolescents' bonds to society via reported parental involvement and adolescents' engagement in extracurricular activities.

The findings of the current study call for greater parental involvement in general school meeting, school and classroom events, volunteering, fundraising, and serving on school committees alongside with participation in extracurricular activities in order to counterbalance the effects of school-related delinquencies on grades.

Limitations and Future Directions

The findings presented in this study should be interpreted in light of potential limitations. The majority of the adolescents sampled in this study participated in some type of extracurricular activity. In this study we did not distinguish between different types of extracurricular activities, but modeled their shared variance as a latent factor. However, in reality, various extracurricular activities may have different effects on delinquency and grades. Moreover, this study relied on a publicly available dataset, which included information on a limited number of delinquencies, and items indicating parental involvement and extracurricular activities. As a result, we were limited by the variables available in the dataset in the evaluation of our hypotheses—four variables loading on delinquency, five variables loading on parental involvement, and five variables loading on extracurricular activities. A broader investigation including more types of delinquency, parental involvement, and extracurricular activities may be beneficial for future research. Finally, because this study relied on a publically available data set, we were unable to examine the impact of additional constructs on the variables we examined here. For instance, future research may examine how including cognitive ability as a covariate may affect the relationships with grades observed in this investigation.

Methodologically, our study's design involved a non-experimental approach evaluating cross-sectional variables. Thus, causal relationships may not be established between the predictors and the outcomes. Additionally, measures included in this study were completed by the parents of adolescents or their guardians, who may have engaged in socially desirable responding (Crano, Brewer, & Lac, 2014). For instance, we cannot rule out the possibility that parents may have overstated their involvement in school or adolescents' school grades, potentially biasing our results with respect to parental involvement and grades.

Despite the limitations, we believe that our study provides valuable information on the joint effects of parental involvement, extracurricular activities and delinquency on grades. While adolescents who experience delinquency may be at risk of inadequate academic achievement, being involved in extracurricular activities, and having parents involved in school may help adolescents reduce the risk associated with delinquency and obtain higher grades. Using the theoretical model of risk and resilience, findings suggest that even after controlling for a host of demographic variables, higher availability of extracurricular activities in schools with students at risk may serve as a protective factor against adolescent delinquency. Furthermore, involving parents in different forms of school activities, such as school or class events, volunteering, and raising money for the school may help to reduce the risk of delinquency for adolescents.

References

Agnew, R., & Petersen, David, M. (1989). Leisure and delinquency. *Social problems, 36*(4), 332-350.

Anderson, J. C., & Gerbing, D. W. (1992). Assumptions and comparative strengths of the two-step approach. *Sociological Methods & Research, 20*(3), 321-334.

Barnes, G. M., Hoffman, J. H., Welte, J. W., Farrell, M. P., & Dintcheff, B. A.. (2006). Effects of parental monitoring and peer deviance on substance use and delinquency. *Journal of Marriage and Family, 68*, 1084–1104.

Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic and statistical considerations. *Journal of Personality and Social Psychology, 51,* 1173-1182.

Bentler, P. M. (1990). Comparative fit indexes in structural models. *Psychological Bulletin, 107*, 238–246. doi:10.1037/0033-2909.107.2.238

Blomfield, C. J., & Barber, B. L. (2011). Australian adolescents' extracurricular activity participation and positive development: Is the relationship mediated by peer attributes? *Australian Journal of Educational & Developmental Psychology, 40*, 582–594.

Brody, G. H. (2003). Parental monitoring: Action and reaction. In A. C. Crouter & A. Booth (Eds.), *Children's influence on family dynamics: The neglected side of family relationships* (pp. 163 - 169). Mahwah, NJ: Erlbaum.

Carroll, A., Houghton, S., Wood, R., Unsworth, K., Hattie, J., Gordon, L., & Bower, J. (2009). Self-efficacy and academic achievement in Australian high school students: The mediating effects of academic aspirations and delinquency. *Journal of Adolescence, 32*, 797-817.

Caspi, A., Entner Wright, B. R., Moffitt, T. E., & Silva, P. A. (1998). Early failure in the labor market: Childhood and adolescent predictors of unemployment in the transition to adulthood. *American Sociological Review, 63*, 424–451. http://doi.org/10.2307/2657557

Catterall, J. S. (1998). Risk and resilience in student transitions to high school. *American Journal of Education, 106*, 302–333. http://doi.org/10.1086/444184

Christenson, S. L., Rounds, T., & Gorney, D. (1992). Family factors and student achievement: An avenue to increase students' success. *School Psychology Quarterly, 7*, 178–206. http://doi.org/10.1037/h0088259

Christoffersson, A. (1975). Factor analysis of dichotomized variables. *Psychometrika, 40*, 5–32. doi:10.1007/BF02291477

Crano, W. D., Brewer, M. B., & Lac, A. (2014). *Principles and methods of social research* (3rd Ed.). New York, NY: Routledge.

Eccles, J. S., Barber, B. L., Stone, M., & Hunt, J. (2003). Extracurricular activities and adolescent development. *Journal of Social Issues, 59*, 865-889.

Eccles, J. S., & Gootman, J. A. (Eds.). (2002). *Community programs to promote youth development.* Washington, D.C.: National Academy Press.

Fan, X., & Chen, M. (2001). Parental involvement and students' academic achievement: A meta-analysis. *Educational Psychology Review, 13*, 1-22. http://doi.org/10.1023/A:1009048817385

Fredricks, J. A. (2012). Extracurricular participation and academic outcomes: Test the over-scheduling hypothesis. *Journal of Adolescence, 41*, 295-306.

Garmezy, N. (1971). Vulnerability research and the issue of primary prevention. *American Journal of Orthopsychiatry, 41*, 101–116. http://doi.org/10.1111/j.1939-0025.1971.tb01111.x

Graves, S. L. Jr., & Wright, L. B. (2011). Parent involvement at school entry: A national examination of group differences and achievement. *School Psychology International, 32*, 35–48. http://doi.org/10.1177/0143034310396611

Hagedorn, M., Roth, S.B., O'Donnell, K. Smith, S., & Mulligan, G. (2008). National Household Education Surveys program of 2007: Data file user's manual, volume I. (NCES 2009-024). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC.

Himelfarb, I., Lac, A., & Baharav, H. (2014). Examining school-related delinquencies, extracurricular activities, and grades in adolescents. *Educational Studies, 40*, 81–97. http://doi.org/10.1080/03055698.2013.821941

Im, M. H., Hughes, J. N., Cao, Q., & Kwok, O.-m. (2016). Effects of extracurricular participation during middle school on academic motivation and achievement at grade 9. *American Educational Research Journal, 53*(5), 1343-1375. doi:10.3102/0002831216667479

Jimerson, S., Egeland, B., & Teo, A. (1999). A longitudinal study of achievement trajectories: Factors associated with change. *Journal of Educational Psychology, 91*, 116-126.

Kobrin, J. L., & Patterson B. F. (2011). Contextual factors associated with the validity of SAT scores and high school GPA for predicting first-year college grades. *Educational Assessment, 16*, 207-226.

Lagacé-Séguin, D. G., & Case, E. (2010). Extracurricular activity and parental involvement predict positive outcomes in elementary school children. *Early Child Development and Care, 180*, 453-462.

Landers, D. M., & Landers, D. M. (1978). Socialization via interscholastic athletics: Its effects on delinquency. *Sociology of Education, 51*(4), 299-303.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological Methods, 1*, 130–149. doi:10.1037/1082-989X.1.2.130

MacKinnon, D. P., & Fairchild, A. J. (2009). Current directions in mediation analysis. *Current Directions in Psychological Science, 18*, 16-20.

Maguin, E., & Loeber, R. (1996). Academic performance and delinquency. *Crime and Justice, 20*, 145-264.

Meltzer, L. J., Levine, M. D., Karniski, W., Palfrey, J. S., & Clarke, S. (1984). An analysis of the learning styles of adolescent delinquents. Journal of Learning Disabilities, 17, 600-608.

Miller, S. R. (1998). Shortcut: High school grades as a signal of human capital. *Educational Evaluation and Policy Analysis, 20*, 299-311.

Muthén, B. O. (1996). Psychometric evaluation of diagnostic criteria: Application to a two-dimensional model of alcohol abuse and dependence. *Drug and Alcohol Dependence, 41*, 101–112. doi:10.1016/0376-8716(96)01226-4

Muthén, B. O., & Muthén, L. K. (1998-2013). *Mplus: Statistical analysis with latent variables.* (Version 7.1). Los Angeles, CA: Muthén & Muthén.

Peck, S. C., Roeser, R. W., Zarrett, N., & Eccles, J. S. (2008). Exploring the role of extracurricular activity involvement in the educational resilience of vulnerable adolescents: Pattern- and variable-centered approaches. *Social Issues, 64*, 135–155.

Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin, 130*, 261-288.

Sampson, R. J., & Laub, J. H. (1990). Crime and deviance over the life course: The salience of adult social bonds. *American Sociological Review, 55*, 609–627.

Sawyer, R. (2013). Beyond correlations: Usefulness of high school GPA and test scores in making college admissions decisions. *Applied Measurement in Education, 26*, 89-112.

Schoon, I. (2006). *Risk and resilience: Adaptations in changing times.* New York, NY: Cambridge University Press.

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology, 13*, 290-312

Stillwell, R. (2009). *Public School Graduates and Dropouts from the Common Core of Data: School Year 2006–07* (NCES 2010-313). National Center for Education Statistics, Institute of Education Sciences, U.S. Department of Education. Washington, DC. Retrieved from http://nces.ed.gov/pubsearch/pubsinfo.asp?pubid=2010313.

Tan, E. T., & Goldberg, W. A. (2009). Parental school involvement in relation to children's grades and adaptation to school. *Journal of Applied Developmental Psychology, 30*, 442–453. http://doi.org/10.1016/j.appdev.2008.12.023

Thornberry, T. P. (1987). Toward an interactional theory of delinquency. *Criminology, 25*, 863-891.

Thornberry, T. P., Lizotte, A. J., Krohn, M. D., Farnworth, M., & Jang, S. J. (1994). Delinquent peers, beliefs, and delinquent behavior: Longitudinal Test of Interactional Theory. *Criminology, 32,* 47-84.

Tucker, C., Lepkowski, J. M., & Piekarski, L. (2002). The current efficiency of list-assisted telephone sampling designs. *Public Opinion Quarterly, 66*, 321–338. http://doi.org/10.1086/341499

Tucker, L. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika, 38*, 1–10. doi:10.1007/BF02291170

Zwick, R., & Sklar, J. C. (2005). Predicting college grades and degree completion using high school grades and SAT scores: The role of student ethnicity and first language. *American Educational Research Journal, 42*, 439–464.

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Assessing Competing and Combining Motives to Learn in College Students: A Self-Determination Theory Approach

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The present study used a mixed-methods, profile-centered approach to identify and evaluate common profiles of academic motivation among undergraduates. Cluster analysis revealed five motivational profiles based on Self-Determination Theory's (SDT) continuum of relative autonomy: a primarily autonomous group, an autonomous-introjected group, a primarily controlled group, a moderate group, and a high quantity group. Groups were examined for differences in academic achievement, engagement, emotions, and needs support based on survey responses (n = 177) and qualitative interviews (n = 20). Students in the primarily controlled group showed the least adaptive pattern, reporting the least needs support and engagement, and the most maladaptive academic emotions (i.e. low enjoyment, high shame). Profiles with higher levels of autonomous motives were the most adaptive. The richness of a mixed-methods approach both supported the central tenets of SDT and provided a more nuanced understanding of how different motive types operate in conjunction with one another.

Keywords: Self-Determination Theory, motivation, college students, profile-centered approaches, mixed-methods

Students are motivated to pursue higher education for a variety of reasons. These motivators come from both within (e.g., curiosity about particular subjects) and without (e.g., requirements for a future career). Such motivational factors are important to understand because they are reliable predictors of students' academic performance and retention, both over the transition to college and through the duration of the collegiate experience (Meens, Bakx, Klimstra, & Denissen, 2018; Richardson, Abraham, & Bond, 2012; Tinto, 1993; Wu, 2019). Moreover, the transition to college is often marked by new experiences that may act as a destabilizing force for previously held motivational patterns (Robinson et al., 2019). Compared to most secondary educational contexts, for example, the balance of intrinsic and extrinsic constraints may shift upon the transition to college (e.g., greater autonomy in class choice, less accountability for daily behaviors; Brooks & DuBois, 1995). The present study, therefore, focused on how these varying drivers to engage in academic work relate to student success.

One fruitful framework for conceptualizing college student motivation is Self-Determination Theory (SDT; Deci & Ryan, 2000; Ryan & Deci, 2000). This theory seeks to explain the range of human functioning that exists, and the psychological needs that must be met to achieve optimal functioning. This theory has been applied across various domains, and has been particularly useful in the field of education. According to SDT, it is critical to adopt a differentiated approach to motivation based on the degree of authenticity or self-endorsement of behaviors. Motives can range from wholly intrinsic (e.g., enjoyment of learning), to identified (e.g., recognition of a task as personally meaningful), to introjected (e.g., avoidance of feelings of guilt) to completely external to the self (e.g., seeking parental approval). More autonomous motives (intrinsic motivation, identified regulation) are theorized to be most adaptive and many studies in the domain of education using college samples confirm a link between autonomous motivation and high academic achievement (Taylor et al., 2014) and persistence (Guiffrida, Lynch, Wall & Abel, 2013; Meens, et al., 2018), but low levels of stress (Baker, 2004), and burnout (Pisarik, 2009).

SDT puts forth that in order to achieve this optimal autonomous motivation, individuals' basic psychological needs must be satisfied (Allen & Bowles, 2012; Deci, Vallerand, Pelletier & Ryan, 1991). An individual must feel that she has

enough ability to succeed, called competence, sufficient options to make meaningful choices about her tasks, called autonomy, and adequate support to feel connected to those around her, called relatedness (Ryan & Deci, 2000). These three basic needs of competence, autonomy, and relatedness provide a filter through which individuals interact with the world around them, particularly their successes and failures. Empirically, these needs have been shown to be connected directly to outcomes related to academics, mental health, and emotional well-being (Cordeiro, Paixão, Lens, Lacante & Sheldon, 2016; Hofer & Busch, 2011), as well as an individual's place on the continuum of motives described above (Allen & Bowles, 2012; Deci & Ryan, 2011).

A Profile-Centered Approach

While there clearly exists a benefit to maintaining autonomous motivation, it denies complexity to ignore that many, if not most, students do not consistently endorse exclusively autonomous motives. Rather, students are often propelled to study by a combination of motives, some autonomous and some more controlled (e.g., introjected or external regulation). Consider a student majoring in economics, funded partially by a merit-based scholarship. This student is highly autonomously motivated, reading ahead in the textbook, fueled by interest in the subject matter. Yet, because she knows she must maintain a 3.5 GPA to retain her scholarship, controlled motives drive her to put in several extra hours of work in the week before the midterm. One way to capture this complex interplay of motives is to approach research from a profile-centered standpoint. As opposed to variable-centered approaches, which analyze how each type of motivation predicts various outcomes, profile-centered approaches sort participants into like groups based on particular combinations of motives, and then consider how such groups may differ on a set of outcomes (see Magnusson, 2003).

Given the abundance of destabilizing motivational forces and the potential for rebalancing of motives upon the transition to college (Robinson et al., 2019), it is critical to examine motivational profiles during the collegiate years. The body of work using profile-centered approaches with college students to date has produced compelling, but limited, results. While the number and characteristics of groups has varied across studies, one consistent finding has been the identification of both (a) a group driven by primarily autonomous motives and (b) a "high quantity" group driven by high levels of both autonomous and controlled motives (Boiché & Stephan, 2014; Gillet, Morin & Reeve, 2017; Ratelle, Guay, Vallerand, Larose, & Senecal, 2007). A primarily autonomous group is defined by a high ratio of autonomous to controlled motives, with the former typically being above average and the latter being below average. A high quantity group is typically defined by above average levels of both autonomous and controlled motives. Students with primarily autonomous motives have shown an adaptive pattern of correlates across studies, but evidence for the adaptability of a high quantity group is more mixed.

Considering the specific research on motivational profiles in collegiate populations, Ratelle et al. (2007, Study 3) found three profiles among first-year college students in Canada: the two profiles discussed above, and a profile with moderate levels of both motivators. Students in the primarily autonomous profile were significantly less likely to drop out of college than the other two groups, although their academic achievement did not differ from that of their high quantity peers. Boiché and Stephan's (2014) analyses of first-year college students revealed five profiles: the two common profiles, as well as a controlled group, a moderate group, and a group with low levels of all motivators. Students with a primarily autonomous profile attended a higher percentage of classes than their peers and achieved a higher GPA, thus demonstrating an advantage of primarily autonomous motivation over high quantity motivation. Gillet et al. (2017) found six profiles among their first-year students enrolled in a French university, including the common profiles, a moderate profile, a moderate profile with high amotivation, a controlled profile, and a profile low in all motivators. On measures of achievement and retention, the common profiles as well as the moderate profile appeared most adaptive. In this study, then, the high quantity group was just as adaptive as the group with primarily autonomous motivation.

Significantly, each of these studies incorporated all four motive types (i.e., intrinsic, identified, introjected, external) into the statistical procedure when forming profiles, thus investigating the full SDT continuum. One additional study identified motivational profiles among Belgian college students using "autonomous" and "controlled" composites as inputs to analysis, finding four profiles: the two common profiles, a primarily controlled group, and a low quantity group (Vansteenkiste, Sierens, Soenens, Luyckx, Lens, 2009, Study 2). Across a variety of correlates, the primarily autonomous and high quantity profiles were most adaptive, with the primarily autonomous group showing a distinct advantage over their high quantity peers in terms of lower test anxiety and higher autonomy support.

In summary, there is a relatively limited number of studies examining motivational profiles in college students, some consistency across studies in the particular profiles that have

been identified, but a mixed pattern in terms of the adaptive value of a high quantity profile. The present study, therefore, sought to expand on these findings in two major ways. First, after using all four motive types (intrinsic, identified, introjected, and external) to create profiles, we assessed a novel set of correlates in order to more comprehensively judge the adaptive value of each profile. These correlates were chosen based on prior research and potential relevance to SDT, with a goal of expanding the set of measured variables beyond achievement-related indicators to include well-being, learning processes, and contextual supports. Secondly, we adopted a mixed-methods approach (i.e., surveys and semi-structured interviews) to more richly characterize functioning and perceived needs support in each of the profiles. Both the richer set of correlates and the inclusion of a qualitative component were expected to shed light on the adaptive value of various motivational profiles among college students. These goals are described in greater detail below.

Correlates

Achievement. In order to understand the utility of maintaining each motivational profile, it is crucial to assess academic achievement, given that it serves as a traditional marker of success in education. Decades of theory and variable-centered research in SDT support the idea that achievement is promoted by autonomous motives and threatened by controlled motives (Deci et al., 1991). Profile-centered studies have largely confirmed the high academic achievement of primarily autonomous profiles and the relatively low achievement of primarily controlled profiles (e.g., Boiche & Stephan, 2014; Vansteenkiste et al., 2009). But – as noted above – there is some evidence that college students who exhibit high levels of both autonomous and controlled motives perform just as well as their primarily autonomous peers (Gillet et al., 2017; Ratelle et al., 2007). Perhaps pairing high autonomous motivation with some amount of controlled motivation is beneficial for keeping up with a high workload in a challenging collegiate environment. We expected this could be the case in the present research, however the limited number of relevant previous studies focusing on the collegiate level made it difficult to formulate a definitive hypothesis.

Emotions. While measuring achievement reveals information about students' outcomes, measuring emotions reveals the internal, often invisible, experiences that accompany those outcomes. Previous profile-centered studies with college populations have measured test-anxiety (Vansteenkiste et al., 2009) academic boredom, and positive affect (Gillet et al., 2017), finding adaptive emotions (i.e. decreased anxiety and boredom, increased positive affect) to be most common in primarily autonomous profiles. When investigating motivational profiles through the lens of SDT, it seems logical to assess emotional correlates with strong theoretical connections to particular autonomous and controlled motivators. Because the concept of intrinsic motivation is predicated on participating in academic activities for pleasure (Deci & Ryan, 2000; Deci et al., 1991), we assessed academic enjoyment as a validity check on measures of autonomous motivation, expecting profiles high in autonomous motivation to also be high in enjoyment. Likewise, because introjected regulation is characterized by a desire to avoid feelings of guilt or shame, we assessed academic shame, and its opposite, pride, expecting both to be higher in profiles high in controlled motives.

Engagement. Among the most powerful factors at play in bridging the gap between motivation and achievement is the construct of engagement. This multifaceted construct encompasses the myriad ways students involve themselves in their education, and often serves as a partial mediator between stagnant demographic variables (e.g., socioeconomic status, race) and achievement (Reeve, Jang, Carrell, Jeon & Barch, 2004; Skinner & Belmont, 1993). Engagement has traditionally been broken down into three subset categories: behavioral engagement, referring to a student's involvement in activities surrounding her studies, emotional engagement, signifying a student's internal and expressed feelings in academic settings, and cognitive engagement, meaning a student's use of deep learning strategies in school (Skinner & Belmont, 1993). More recently, agentic engagement has been proposed in order to account for the ways students contribute to the flow of instruction (Reeve & Tseng, 2011).

Despite the robust relationship between engagement and achievement and the potential for engagement as a lever for intervention, it has been largely neglected in profile-centered research with college student populations. At the high school level, however, there is some evidence that both high quantity and primarily autonomous profiles exhibit more behavioral engagement than profiles with less autonomous motivation (Wormington, Corpus, & Anderson, 2012). The present study aims to add to understanding of engagement by connecting four forms of this construct to motivational profiles in a college sample. We expected to find all four types of engagement to be higher in profiles with more autonomous motivation.

Needs Support. According to SDT, autonomous motivation will flourish when the learning context supports students' basic needs for competence, autonomy, and relatedness (Ryan & Deci, 2000). Empirically, these needs have been shown to

predict outcomes related to academics, mental health, and emotional well-being (Cordeiro, Paixão, Lens, Lacante & Sheldon, 2016; Deci & Ryan, 2011; Hofer & Busch, 2011). In the only profile-centered study to assess needs support among college students, Vansteenkiste et al. (2009) found the highest level of support for autonomy among their primarily autonomous group, and the highest levels of support for competence and relatedness among both primarily autonomous and high quantity profiles. The present study aims to further establish the relationship between needs support and motivational profiles in college students, which may suggest a potential factor driving students to adopt a particular set of motivations over another. In line with the tenets of SDT, we expected the primarily autonomous profile to report particularly high needs support.

Mixed-Methods Research

While measuring motivational profiles and their correlates indicates how students with different combinations of motivation experience collegiate life to some extent, quantitative survey research alone may not fully capture individual students' perspectives and understandings of their own experiences. Qualitative research provides the opportunity for individuals to volunteer information that researchers did not intentionally seek out. Consistent with the aim of adopting a profile-centered approach, including a qualitative component was expected to reveal nuances of how different groups function within a system.

Bridging the gap between quantitative and qualitative approaches to psychological research is the mixed-methods technique, which includes elements of both approaches in a single study. Mixed-methods research has the potential to combine the ease and power of data collection available through quantitative methods with the in-depth richness offered by qualitative methods, often producing stronger and more meaningful results (Greene, Caracelli & Graham, 1989; Johnson & Onwuegbuzie, 2004). The present study included both a quantitative survey component that was used to establish motivational profiles and their correlates and a qualitative interview component focusing on a subset of students representing each motivational profile. To our knowledge, a mixed-methods, profile-centered approach in the SDT tradition has not yet been used with a collegiate population. One study with younger students, however, can provide a useful model: Corpus, Wormington, and Haimovitz (2016) interviewed elementary and middle school students representing each of four motivational profiles they found based on responses to a survey assessing intrinsic and extrinsic motivations, producing qualitative data which allowed for a deeper understanding of each profile. Likewise, the present study aimed to solicit novel information from participants through interviews that would aid in characterizing each motivational profile found, and lend insight into their relationships with the correlates measured.

Methods

Participants

Participants in the online survey portion of the study were 181 undergraduates (48% female) currently enrolled at a small liberal arts college in the Northwestern United States. First-year students made up the largest group of participants (37%), followed by seniors (26%), and then juniors (20%), and sophomores (16%). Students also reported on their major area of study: 41% social science, 32% natural science, and 27% humanities. No other demographic data were collected. A subset of the survey respondents (n = 20; 55% female) participated in a subsequent face-to-face interview. Survey participants were recruited using postings on campus and social media. Interview participants were randomly chosen from each profile group, with the interviewer blind to individuals' profile membership. The Qualitative Results section presents additional information about interview participants.

Measures

The survey included 89 items, as detailed below.

Motivation. Students' academic motivation was measured with the Academic Self-Regulation Scale (ASRS), as adapted by Vansteenkiste and colleagues (2009). This 16-item scale asked participants to rate their agreement with responses to the question "Why are you studying in general?," on a Likert scale ranging from 1 (completely not important) to 5 (very important). Answers corresponded with intrinsic (e.g. "because it's fun"), identified (e.g. "because it is personally important to me"), introjected (e.g. "because I would feel guilty if I didn't study"), and external (e.g. "because I'm supposed to do so") forms of regulation. Internal consistency in the present study was satisfactory for each subscale (intrinsic $\alpha = .88$, identified $\alpha = .76$, introjected $\alpha = .82$, external $\alpha = .82$).

Needs Support. Students' needs support was measured using the shortened form (24 items) of the Teacher as Social Context Measure (TASC; Belmont, Skinner, Wellborn, & Connell, 1988). This scale was altered slightly from its original form in order to fit with the college context ("teacher" was changed to "professors" and "schoolwork" was changed to "work"). Using three subscales, this measure assessed experienced support of the autonomy need (autonomy support;

e.g. “my professors listen to my ideas,” 8 items), relatedness need (teacher involvement; e.g. “my professors talk with me,” 8 items), and competence need (teacher provision of structure; e.g. “my professors make sure I understand before they go on,” 8 items). Participants responded using a 4-point Likert scale. Internal consistency in the present study was poor for autonomy support (α = .58) but satisfactory for the relatedness (α = .82) and competence (α = .75) needs support.

Engagement. The 10-item Engagement vs. Disaffection with Learning Scale (Skinner, Furrer, Marchland, & Kindermann, 2008) was used to assess behavioral engagement (e.g. “I pay attention in class,” five items) and emotional engagement (e.g. “when I’m in class, I feel good,” five items). Cognitive engagement was measured using the four items that best captured deep learning strategies from Wolters’ (2004) eight-item scale of cognitive strategy use (e.g. “when doing work for my classes, I try to relate what I'm learning to what I already know”). Agentic engagement was measured with a five-item scale developed by Reeve (2013), although items were adjusted to fit the college context, with “teacher” being changed to “professors” (e.g., “I let my professors know what I am interested in”). Participants responded using a 4-point Likert scale. Internal consistency in the present study was satisfactory for all measures (behavioral α = .71, emotional α = .84, cognitive α = .73, agentic α = .84).

Academic Emotions. Emotions experienced in and around school were measured using the three subscales (30 items total) from the Achievement Emotions Questionnaire (AEQ; Pekrun, Goetz, Titz, & Perry, 2002). The Class-Related Enjoyment subscale (10 items) was used to measure students’ feelings of enjoyment before, during, and after class (e.g. “during class I enjoy being in class”); the Class-Related Pride subscale (9 items) assessed participants’ feelings of pride, also before, during, and after class (e.g. “after class, I am proud of myself”); the Class-Related Shame subscale (11 items) was used to measure feelings of shame surrounding the class experience (e.g. “during class, I get embarrassed”). These subscales were chosen because of their potential theoretical relevance to the autonomous and controlled forms of motivation being assessed. Responses were recorded on a 5-point Likert scale and internal consistency in the present study was good for each subscale (enjoyment α = .90, pride α = .82, shame α = .92).

Academic Achievement. Participants’ cumulative grade point average (GPA) measured on a four-point scale was retrieved from institutional records.

Interview Protocol

The interview protocol was created with the intention of both assessing theoretically based questions and eliciting novel information. Both unstructured interview techniques, wherein open-ended questions prompt a variety of descriptive answers, and structured interview techniques, wherein a particular set of questions are asked in a particular order, had potential to provide value here (De Groot, 2002). A semi-structured interview protocol, incorporating specific but open-ended questions, was chosen, in order to capitalize on the strengths and minimize the weaknesses of these two approaches.

The first section of the interview aimed to expand on quan--titative information gathered by the motivation and needs support measures. Participants were asked about the support, or lack thereof, they experienced for autonomy, competence, and relatedness, while attending college. More specifically, participants were asked to describe how frequently, and in what situations, they had the opportunity to make choices regarding their academic work (autonomy), to what degree they felt capable of succeeding academically (competence), and how often they experienced a sense of belonging among their peers and professors (relatedness).

The second section consisted of questions about partici--pants’ experiences of motivation in school. Participants were encouraged to detail anecdotes of positive and negative experiences surrounding motivation and to characterize their own motivation more broadly. Here the intention was for participants to provide richer detail on their motivation that would not be captured by the motivation survey items. The open-ended nature of these questions also served as an opportunity to collect data on potential differences between profile groups not captured in the quantitative data. At this point, the interviewer provided a brief explanation of the autonomous and controlled types of motivation proposed by SDT and asked participants to consider their own motivation in terms of this framework.

Interviews lasted 20-30 minutes, and were conducted by the first author, who was blind to participants’ survey responses.

Results

Missing data was minimal: 0% for the motivation items, .5% for GPA, 1.7% for the needs support items, 4.5% for the engagement items, and 9.6% for the emotion items, which came last in the survey. Listwise deletion was therefore used for all analyses reported below.

Quantitative Data

Table 1 provides descriptive statistics and correlations among all the measured variables. As predicted by SDT, the different motive types related to one another in a simplex pattern, such that motives closer to one another along the

Table 1: *Correlations and Descriptive Statistics for All Variables*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. External Reg.	–														
2. Introjected Reg.	.40**	–													
3. Identified Reg.	–.18*	.13	–												
4. Intrinsic Mot.	–.18*	.02	.67**	–											
5. Autonomy Support	.23**	.04	.45**	.45**	–										
6. Involvement	.25**	-.03	.38**	.35**	.67**	–									
7. Structure	-.27**	-.09	.33**	.35**	.63**	.66**	–								
8. Enjoyment	-.25**	.05	.54**	.67**	.59**	.53**	.52**	–							
9. Pride	-.07	.25**	.39**	.41**	.50**	.48**	.39**	.74**	–						
10. Shame	.29**	.31**	-.17*	-.20**	-.31**	-.34**	-.38**	-.27**	.21**	_					
11. Behavioral Eng.	-.14	.10	.39**	.39**	.33**	.31**	.35**	.48**	.42**	-.29**	–				
12. Emotional Eng.	-.34**	-.00	.50**	.57**	.59**	.52**	.51**	.80**	.65**	-.35**	.58**	–			
13. Cognitive Eng.	–.19*	-.14	.41**	.37**	.34**	.30**	.30**	.39**	.30**	-.27**	.49**	.51**	–		
14. Agentic Eng.	-.12	-.05	.32**	.37**	.46**	.53**	.49**	.56**	.53**	-.58**	.57**	.61**	.43**	_	
15. GPA	-.23**	.06	.21**	.25**	.23**	.17*	.34**	.20*	.12	-.26**	.23**	.29**	.16*	.23*	_
Mean	2.51	3.12	4.18	3.73	3.08	3.05	2.91	3.33	3.26	2.61	3.21	3.17	3.20	2.76	3.18
Standard Deviation	.93	.96	.67	.93	.46	.53	.49	.82	.72	.97	.51	.56	.57	.70	.52
N	177	177	177	177	174	174	174	160	160	160	169	169	169	169	176

Note: Reg. = Regulation; Mot. = Motivation; Eng. = Engagement; *$p < .05$, **$p < .01$

continuum of self-regulation (e.g., intrinsic and identified) correlated more positively with one another than with types that are further away (e.g., intrinsic and external). Relationships among the four motive types and the correlates of emotion, engagement, and needs support were all consistent with theory and prior research. External regulation was negatively correlated with enjoyment, emotional and cognitive engagement, autonomy support, involvement, and structure. Introjected regulation was positively correlated with both pride and shame, but not significantly related to enjoyment, engagement, or needs support. The two types of autonomous motivation were both correlated positively with all variables, discounting shame, with which they correlated negatively.

Cluster Analysis

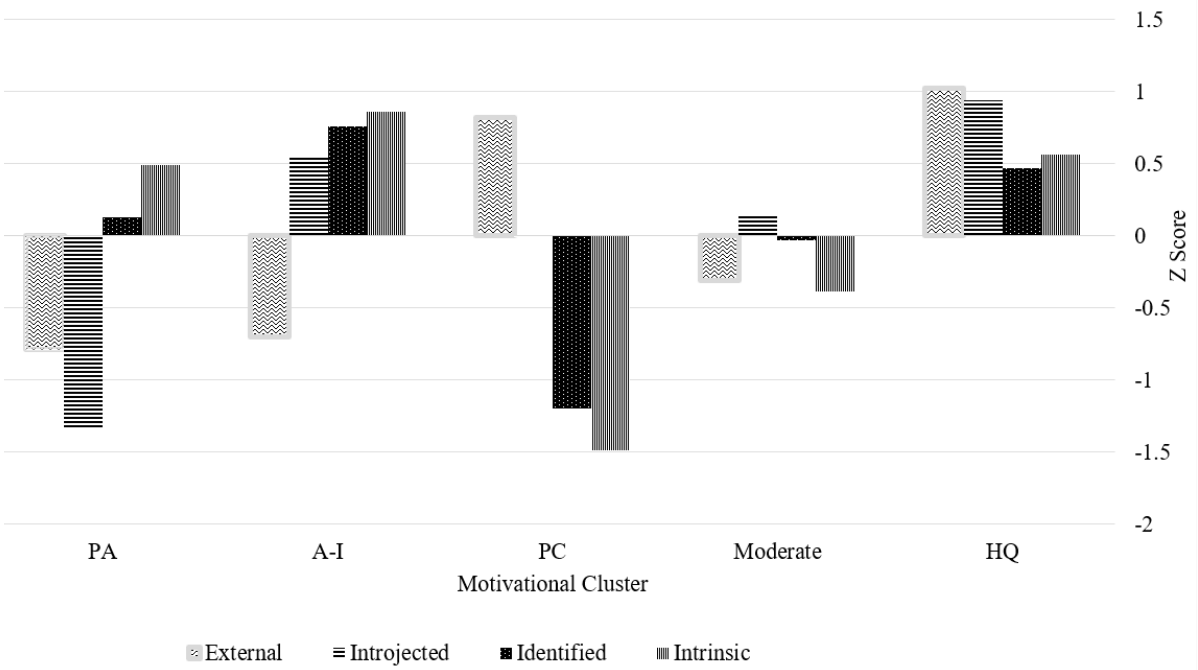
Because clustering procedures are highly sensitive to out--liers in the data, four cases that were greater than 2.5 standard deviations from the mean on one or more of the four subscales of the ASRS were removed, leaving a clustering sample of 177. Participants' answers to the four subscales of the ASRS (i.e., intrinsic, identified, introjected, external) were used as inputs to a two-step clustering procedure, as recommended by Hair, Anderson, Tatham, and Black (1998).

Ward's method of hierarchical clustering was used in the first step of the cluster analysis. Within this procedure, each participant begins in their own cluster, and clusters are systematically merged based on similarity until all data points are in one cluster. Based on previous related research (Boiche & Stephan, 2014; Ratelle et al., 2007; Vansteenkiste et al., 2009), solutions of three, four, five, and six clusters were cons--idered. Based on the agglomeration matrix, dendrogram, and percent variance explained, a 5 cluster solution was chosen. This solution explained 51% of the variance in external regulation, 70% in introjected regulation, 42% in identified regulation, and 64% in intrinsic motivation, which is comparable to the variance explained in previous research (e.g., 64%-66% in Vansteenkiste et al. 2009), and exceeded the recommended 50% of variance explained (Milligan & Cooper, 1985) on three of the four constituting dimensions. A four-cluster solution was also considered because of its comparable explanatory power, but the five cluster solution was chosen because it included a theoretically interesting additional cluster, which provided a meaningful connection to the correlates tested.

In the second step of the cluster analysis, a non-hierarchical k-means procedure was used to refine the clusters, maximizing homogeneity within clusters and heterogeneity across clusters. The refined clusters explained 61% of the variance in external regulation, 67% in introjected regulation, 43% in identified regulation, and 68% in intrinsic motivation. A double-split cross-validation procedure (see Breckenridge, 2000) resulted in a kappa of .52, which is above the .40 threshold for moderate agreement (see Fleiss, 1981) and suggests that the solution is likely stable and replicable.

The final cluster solution is presented in Figure 1. The primarily autonomous group (n = 40) consisted of students with relatively high levels of intrinsic motivation and above average identified regulation but relatively low levels of introjected and external regulation. The *autonomous-introjected group* (n = 29) was made up of students with

Figure 1*: Standardized (z) Scores of Academic Motive Types by Profile*
PA = Primarily Autonomous, A-I = Autonomous-Introjected, PC = Primarily Controlled, HQ = High Quantity



relatively high levels of intrinsic motivation, identified regulation, and introjected regulation, but relatively low levels of external regulation. The primarily controlled group (n = 28) included students with relatively low levels of intrinsic motivation and identified regulation, average introjected regulation, and relatively high levels of external regulation. The moderate group (n = 42) was composed of students with near average scores on each of the inputs. Lastly, the high quantity group (n = 38) included participants with relatively high levels of each type of motivation. A series of one-way ANOVAs affirmed that these clusters significantly differed on the four component motivation types (see Table 2). Chi-Square tests revealed no significant differences between clusters in terms of their gender composition, $\chi 2(4, N = 177) = 7.74$, *ns*, participant class level, $\chi 2(12, N = 175) = 16.46$, *ns*, or participant major, $\chi 2\ (8, N = 177) = 7.00$, *ns.*

Correlates

One-way ANOVAs were conducted to determine whether the five cluster groups differed on each of the measured correlates. Table 2 reports test statistics as well as the means and standard deviations for each correlate by cluster group. Across all correlates, the primarily controlled group reported less favorable outcomes than the other four groups.

Needs Support. All three needs support variables showed significant differences among profile groups, $Fs(4, 169) \geq 6.08$, $ps \leq .001$, $\eta 2s \geq .13$. For autonomy support, provision of structure, and professor involvement, the primarily controlled group reported less needs support (*Ms* from 2.53 to 2.68) than their peers in the other four groups (*Ms* from 2.91 to 3.29).

Engagement. One-way ANOVAs revealed that group membership had a significant effect on all four forms of engagement, $Fs(4, 164) \geq 6.43$, $ps \leq .001$, $\eta 2s \geq .14$. The primarily controlled group reported the lowest levels of engagement across all four indices (*Ms* from 2.17 to 2.85), and the autonomous-introjected group reported the highest levels (*Ms* from 2.98 to 3.56). The autonomous-introjected group did not significantly differ from the primarily autonomous or high quantity groups on any of the four indices except for behavioral engagement, in which case it was superior to all other groups.

Emotions. There was also a significant difference across groups in all three types of academic emotions, $Fs(4, 155) \geq 3.64$, $ps \leq .01$, $\eta 2s \geq .09$. The primarily controlled group reported the lowest levels of pride (M = 2.73) and enjoyment (M = 2.42), particularly compared to the autonomous-introjected and high quantity groups (*Ms* from 3.57 to 3.83). The primarily controlled group also reported the highest levels

Table 2: *Mean Values of Motivation Dimensions and Outcome Variables by Profile*

Variable	Primarily Autonomous $n = 40$	Autonomous –Introjected $n = 29$	Primarily Controlled $n = 28$	Moderate $n = 42$	High Quantity $n = 38$	F	η^2
Motivation Dimensions							
Intrinsic Motivation	4.16 (.65)$_a$	4.51 (.34)$_a$	2.25 (.48)$_b$	3.31 (.55)$_c$	4.23 (.57)$_a$	89.17**	.68
Identified Motivation	4.24 (.65)$_{ad}$	4.70 (.38)$_b$	3.27 (.54)$_c$	4.12 (.40)$_d$	4.48 (.53)$_{ab}$	32.90**	.43
Introjected Motivation	1.79 (.42)$_a$	3.63 (.47)$_b$	3.09 (.82)$_c$	3.23 (.51)$_c$	4.01 (.55)$_d$	88.57**	.67
Extrinsic Motivation	1.78 (.09)$_a$	1.86 (.11)$_{ac}$	3.31 (.11)$_b$	2.24 (.09)$_c$	3.50 (.10)$_b$	65.80**	.61
Needs Support							
Autonomy Support	3.13 (.51)$_a$	3.29 (.36) $_a$	2.68 (.48)$_b$	3.07 (.41)$_a$	3.19 (.35)$_a$	8.40**	.17
Structure	3.07 (.49)$_a$	3.03 (.50) $_a$	2.53 (.42)$_b$	2.92 (.43)$_a$	2.91 (.48)$_a$	6.08**	.13
Involvement	3.17 (.46) $_a$	3.15 (.50) $_a$	2.59 (.50) $_b$	3.11 (.41) $_a$	3.09 (.61)$_a$	6.75**	.14
Engagement							
Behavioral Engagement	3.22 (.50)$_a$	3.56 (.40)$_b$	2.85 (.46)$_c$	3.10 (.50)$_{ac}$	3.33 (.44)$_{ad}$	8.85**	.17
Cognitive Engagement	3.37 (.53)$_{ac}$	3.44 (.52)$_a$	2.82 (.55)$_b$	3.07 (.50)$_c$	3.28 (.57)$_{ac}$	6.43**	.14
Emotional Engagement	3.35 (.48)$_{ac}$	3.54 (.41)$_a$	2.53 (.49)$_b$	3.08 (.46)$_c$	3.32 (.48)$_{ac}$	18.82**	.32
Agentic Engagement	2.86 (.75)$_a$	2.98 (.67)$_a$	2.17 (.52)$_b$	2.75 (.71)$_a$	2.95 (.56)$_a$	7.08**	.15
Academic Emotions							
Pride	3.14 (.67)$_{ab}$	3.57 (.71)$_{ac}$	2.73 (.67)$_b$	3.27 (.54)$_{ac}$	3.61 (.75)$_c$	8.15**	.17
Shame	2.18 (.66)$_a$	2.49 (1.02)$_{ab}$	3.07 (1.17)$_b$	2.65 (.89)$_{ab}$	2.71 (.97)$_{ab}$	3.64**	.09
Enjoyment	3.49 (.12)$_{ac}$	3.83 (.14)$_a$	2.42 (.13)$_b$	3.29 (.11)$_c$	3.59 (.12)$_{ac}$	16.35**	.30
GPA	3.19 (.08)$_{ab}$	3.49 (.10)$_b$	2.88 (.10)$_a$	3.16 (.08)$_{ab}$	3.21 (.09)$_{ab}$	4.85**	.11

Note: Cell values are means with standard deviations in parentheses. Subscripts indicate significant differences in mean values across motivational profiles according to Tukey's HSD test. * $p < .05$. ** $p < .01$.

of shame (M = 3.07), particularly compared to the primarily autonomous group (M = 2.18).

Achievement. A one-way ANOVA revealed a significant effect of profile group on achievement, $F(4, 158) = 4.85$, $p < .01$, $\eta 2 = .11$. Once again, the primarily controlled group showed the poorest outcome, with an average GPA of 2.88 compared to averages ranging from 3.16 to a high of 3.49 in the autonomous-introjected group.

Qualitative Data

Of the 20 participants interviewed, eight were in the prima--rily autonomous group, four were in the autonomous-introjected group, two were in the primarily controlled group, three were in the moderate group, and three were in the high quantity group. Although we had targeted approximately four interview participants per group, the group sizes varied due to differences in response rate and recruitment errors.[1]

Transcripts were analyzed by the first author using them-atic analysis (Braun & Clarke, 2006). In the first step of this process, data were combed through for codes, defined as the most basic elements that appeared relevant, resulting in 38 distinct, but not mutually exclusive, codes. These codes were determined using an inductive, bottom-up approach, meaning they reflected common utterances in the data and were developed with the goal of capturing participants' experiences. Frequency of codes within the sample ranged from 2 to 14 participants, with an average of 6.58 participants receiving each of the 38 codes. These codes were then sorted into broader themes that appeared with some frequency across the dataset, and each interview was again considered in light of these broader themes. The first author then became unblinded to participants' motivational profiles and considered the distribution of codes and themes within each profile category. This thematic analysis procedure allowed for commonalities within each motivational profile to be identified and examined for their relevance to the research questions, as described below (Braun & Clarke, 2012).

Primarily Autonomous Profile. The primarily autono--mous group stood out in terms of a high level of needs support. A great majority of participants in this group (6 of 8) said that they frequently felt competent in school, compared to half or less of those interviewed in the other profile groups. Of particular note, on occasions when needs supports were not provided or easily accessed, individuals in this group made a point of seeking them out. One participant said, "As a transfer student…I'm definitely on the more alienated side of belong-

[1] In order to ensure that the first author remained blind throughout the interview and coding process, the second author used participants' survey responses to generate a list of candidates for interview recruitment that was evenly distributed across clusters. When that list was exhausted, the second author provided a set of additional interview candidates, which mistakenly overrepresented the primarily autonomous cluster. This disparity was not realized until the first author was unblinded to profile membership following the coding process. The response rates across groups was as follows: primarily autonomous - 8 of 10 recruited (80%); autonomous-introjected - 4 of 8 recruited (50%); primarily controlled - 2 of 7 recruited (29%); moderate - 3 of 5 recruited (60%); high quantity - 3 of 9 recruited (33%).

-ingness...so I've actually really had to work at that to get a sense of belongingness." These students also reported being able to take solace in their community when their needs were not being supported. A participant said, "I often feel like the dumbest person in the room, but I also often am like, everyone feels like the dumbest person in the room, so it's not a big deal."

As might be expected based on theoretical work on intrin--sic motivation, primarily autonomous participants often discussed their enjoyment and interest in their academic pursuits. When this group recalled experiencing moments of high motivation, personal interest was often a key motivator. One participant said, "I just really enjoyed [chemistry] and I just like doing all the problem sets," and another volunteered "I know a lot of people probably don't like problem sets, but I like them...it could take six hours but I'm just motivated the whole time."

Primarily Controlled Profile. Participants in this group spoke about the lack of needs support leading to a sense of alienation and amotivation. Both participants in this group (2 of 2) said they only occasionally feel a sense of belonging. One student said, "I've definitely felt belonging in certain groups on campus, so extracurricular groups, or friends, or people in my dorm. It's harder to feel that in a classroom." And another reported, "There is very little interaction between you and your classmates, and it's very easy to feel like you are struggling alone." Likewise, both of those interviewed reported only occasionally feeling competent in school. One said, "It's hard, because you have to figure out what the expectation is before you can figure out how reasonable it is, and it's usually too late at that point."

Like the students in the primarily autonomous group, these participants reported that a key part of finding adequate needs support in school is seeking out that support for oneself. Unlike the participants in the primarily autonomous group, though, primarily controlled participants saw pursuing these supports as a barrier to success, rather than an opportunity to achieve it. When discussing a lack of feeling competent in school, one participant reported, "Sometimes I feel like that where teachers are putting me in the position where they are giving me the tools to succeed and do well, it does come down to the student a little bit." The provision of freedom and expectation of agency in making use of these resources -- which seemed to allow primarily autonomous students to feel responsible and competent -- left primarily controlled students feeling unsupported.

Autonomous-Introjected Profile. In the domain of needs support, participants in the autonomous-introjected group expressed some characteristics reminiscent of the primarily autonomous cluster, and some more in line with the primarily controlled cluster. While they did not report the same low needs support as the primary controlled group, most participants in this cluster (3 of 4) did describe feeling some level of incompetence. One participant said, "I always feel competent, but just sometimes in the moment I feel like I'm on a different page," and another said, "I think I've felt more competent the more time I spend here." Interestingly, half of the autonomous-introjected group (2 of 4) volunteered information on feelings of imposter syndrome during their college careers. One said, "I know that I belong [at college] but don't always feel like I belong… like impostor syndrome." This can contribute significantly to our understanding of this cluster, as none of the other participants interviewed mentioned experiencing impostor syndrome in school.

More than those in other groups, participants in the autonomous-introjected group reported experiencing high motivation when learning was relational in nature. When asked about situations of high motivation, all 4 participants mentioned interaction with a professor, either in receiving constructive feedback or building a close relationship. One participant said, "If you feel like your professors believe in you, you can't let them down." Another student described the importance of cultivating a feeling of belongingness along peers in the classroom: "Right now I'm in a class where...it can feel pretty intimidating because I'm not part of that group."

Moderate Profile. Participants with a moderate profile appeared to place a high value on the support they received for autonomy, competence, and relatedness. One of the three participants said, "people around me definitely push me, and that's why I really like the community I have here." The same participant named competence as a key motivator, saying his motivation comes from "just having enough knowledge to research whatever I want and feel as though I have enough working knowledge to find things and understand them even though I know nothing about them."

Despite this, for participants in this group, motivation during college seemed to vary over time and situation. Specifically, these participants often discussed a change in motivation across the years of college. When describing experiences of competence, one said, "I think the first two years very little, but the last two years I've felt pretty competent." When another participant discussed belongingness, she said "only in my junior year [I felt a sense of belonging], and it was only because the department was so small.... so I felt like that created this really great group dynamic where I felt like I belonged...now none of us talk."

High Quantity Profile. Participants in the high quantity group placed significant value on the support they received for

belongingness in school, particularly involving interaction with professors. Two of three participants named interactions with professors as a motivator, and lack of interaction with professors as a factor that thwarted motivation. One participant explained the value she places in this, saying "The thesis has been the project I have felt most motivated on, that is because I have an advisor who is genuinely listening to what I have to say." Another said she is most motivated "when a professor clearly is caring about whether or not I do well." Thus, the relatedness need seemed to be prominent in this group.

Participants in this group reported experiencing varying degrees of needs support over their time in college, however all reported that they currently were feeling well supported. When asked about competence, one senior said, "When you start out your freshman [year]...you're just really aware of what you are doing.... But I feel like senior year it comes naturally." Though many of these participants reported not having always felt fully motivated at college, unlike those in the autonomous-introjected group, they did not discuss experiencing imposter syndrome. One participant said, "I know a lot of people...are like, everyone is so much smarter than I am, and I've been really lucky I've never felt that way, I've always felt like I am good enough to be [here]."

Discussion

By incorporating both qualitative and quantitative data to this profile-centered analysis of academic motivation, the present study represents a rich characterization of motivational profiles found in college students. This process allowed for the identification of five combinations of motive types that naturally occurred among undergraduates attending a liberal arts college. The five cluster solution found here is not uncommon amongst studies of this sort. The primarily autonomous, primarily controlled, and high quantity clusters have each been found by all four previous profile-centered studies of college students (Boiche & Stephan, 2014; Gillet et al., 2017; Ratelle et al., 2007; Vansteenkiste et al., 2009), and two previous studies identified something similar to the moderate cluster (Boiche & Stephan, 2014; Gillet et al., 2017). The autonomous-introjected cluster found here, however, was not present in any of these studies, and is rarely found in profile-centered studies of any age group. To our knowledge, only one study has previously found a similar profile, in a high school physical education class context (Boiché, Sarrazin, Grouzet, Pelletier, & Chanal, 2008). The presence of this profile, and its status as the highest achieving of the sample, speaks to the importance of imputing the full set of motive types into cluster analysis rather than the autonomous and controlled composites.

By examining a rich and novel set of correlates, inferences could be drawn about which particular combinations of motives appeared to be most and least adaptive in this context. Considering both the quantitative and qualitative findings, the primarily controlled profile distinguished itself as the least adaptive, with the least experienced needs support and engagement, most maladaptive academic emotions, and lowest GPA of the groups. This result is consistent with SDT, which proposes that students who are motivated by entirely controlled factors will fare much worse than those motivated by autonomous factors (see Ryan & Deci, 2000). This is further confirmed by the qualitative data, in which primarily controlled participants reported feeling a lack of belongingness and competence in school.

SDT also posits, however, that students who are exclusive--ly motivated by autonomous factors will experience the most optimal outcomes, compared to students who are motivated by a combination of factors. Though the primarily autonomous group here was in no way maladaptive, it was consistently matched by the high quantity group and even outmatched by the autonomous-introjected group on quantitative correlates. This was true for engagement, academic enjoyment, and achievement, with the autonomous-introjected group reporting the highest scores on these measures. Similar to several previous profile-centered studies with college students (Gillet et al., 2017; Ratelle et al., 2007), then, the primarily autonomous group did not distinguish itself in terms of academic achievement.

The qualitative data paints somewhat of a different picture, highlighting drawbacks present in profiles that incorporate high levels of controlled motivation alongside autonomous motivation, that did not arise in the quantitative data. For the autonomous-introjected profile, this manifested in participants more frequently experiencing imposter syndrome, while those in the high quantity profile reported some variation in feelings of competence throughout their time in college. Contrastingly, those in the primarily autonomous group reported feeling responsible for and capable of seeking out resources on their own when needs support was lacking. Although this group did not distinguish itself on the quantitative measures, this result points to there being some additional benefits to maintaining a primarily autonomous approach over one with higher levels of controlled motivation.

Why then, despite this, did the autonomous-introjected group distinguish itself as most adaptive on several of the quantitative measures? Results of Boiché et al. (2008) may offer some insight. In this study, a similar autonomous-introjected profile was found to be the highest achieving in a compulsory high school physical education class. Boiché and colleagues theorize that, in this context, participants with

higher introjected motivation became more behaviorally engaged, in order to avoid feelings of guilt that may have come from exhibiting noticeably low engagement. Introjected motivation, then, may be compatible with autonomous motivation in a context-dependent manner. It is possible that when classes are compulsory, as in Boiché et al. (2008), or highly demanding, as in the present study, some amount of obligation-based motivation may be advantageous for completing the workload needed to achieve highly. If this is true, it is logical that introjected motivation, being closer to the autonomous side of the SDT continuum, would be optimal. Drawing on even more controlled forms of motivation, such as external regulation, could perhaps also push students to complete their workloads but that advantage may ultimately be negated by the costs of externally imposed pressure to achieve.

Additional research is needed to explore the potential benefits of incorporating introjected motives alongside autonomous ones in particular contexts. This issue notwithstanding, it is clear that profiles with the highest levels of autonomous motivation showed the most adaptive outcomes in terms of engagement, well-being, and success in school. In other words, autonomous motivation itself appears to be the critical factor in determining the adaptability of a motivational pattern. The degree to which an individual simultaneously maintains various controlled motives may be either helpful, or inactive, depending on context.

Implications for Instruction

Taken together, the quantitative and qualitative portions of this study offer several practical implications for supporting students in the collegiate environment. Although the autonomous-introjected group generally reported the most adaptive pattern of responses in the survey data, it would seem misguided to advocate for encouraging students to feel more guilt and shame surrounding academics, particularly as the qualitative data revealed concerns about incompetence in this group. What is clear, however, is that students should be led away from experiencing controlled motivation without accompanying high levels of autonomous motivation to serve as a buffer. Indeed, the present findings indicate that students are most successful when they are attending college because they enjoy and are interested in their studies, regardless of what other factors may also motivate them to learn.

One clear path to heightening students' autonomous motiv--ation in school is to increase their feelings of autonomy, competence, and relatedness (Deci & Ryan, 2011; Ryan & Deci, 2000). Indeed, interventions aimed at providing support for these three needs have been shown to enhance both motivation and achievement (e.g., Cheon & Reeve, 2015; Kaur, Hashim & Norman, 2015; Soenens & Vansteenkiste, 2005; Vansteenkiste, Simons, Lens, Sheldon, & Deci, 2004; Walton & Brady, 2017). In an incredibly non-invasive intervention, Vansteenkiste and colleagues (2004) found that simply altering the text of reading material, from using statements like "you must" to more autonomy supportive "you may choose to," led to increased autonomous motivation, deeper processing of information, and higher performance among college students. Using a more involved intervention, Cheon and Reeve (2015) trained teachers through a series of professional development workshops to use more autonomy-supportive practices, which led to students feeling stronger support for both autonomy and competence over time compared to those in a control condition. Finally, regarding the relatedness need, multiple interventions have shown that facilitating social connections among students and faculty in collegiate settings ultimately results in a stronger sense of belonging and higher academic achievement (see Walton & Brady, 2017).

It is critical to consider what lever researchers can activate to achieve the most significant result in terms of heightening needs support. In the present study, participants spoke frequently about their professors when asked to discuss their experiences with needs support. Though interactions with professors most clearly fall within the domain of relatedness, participants in each profile group discussed these interactions as being supportive of competence and autonomy as well. Discussions with professors seemed to help students feel empowered to choose their own academic path (autonomy), positive feedback from professors allowed students to feel competent in their abilities (competence), and social interactions with professors led students to feel a sense of belonging in their environment (relatedness). This was reflected clearly in the qualitative data across all profile groups. One participant in the primarily autonomous group said, "professors at [college] have inspired excellence and motivated me to work really hard on projects." Even participants in the primarily controlled group echoed this sentiment by citing positive feedback from professors as a source of competence: "In the first days of class, before I lost all my shit and stopped being a good student, [I felt competent when] my professors would tell me I was doing well."

Perhaps, then, one step in solving the problem of primarily controlled motivation is implementing interventions that encourage high quality, autonomy supportive interactions between professors and students (Strayhorn, 2012; Trolian et al., 2016). Such interventions may be as simple as educating faculty about the impact they can have on students, which could be achieved through faculty workshops, distribution of reading materials through university teaching and learning centers, or even provision of incentives for faculty to engage

in out-of-class activities alongside students. Importantly, these relationships need not only be developed when students are succeeding academically, as this can exclude those who are most in need of encouragement. Though it may be trickier to provide, there is room for connection and support even when students are not currently meeting academic standards. As one participant in the primarily controlled group said, "my paper conferences with my [Humanities] conference leader… always made me feel like I could succeed, even if I wasn't currently successful." For all students, these supportive relationships with faculty may be particularly important to foster during the early college years. It is at this time when new experiences tend to destabilize previously held motivational patterns (Robinson et al., 2019) and interpersonal interactions tend to make the difference between retention versus dropout (Tinto, 1993).

Limitations and Future Directions

The present study raises a number of important questions for future work. Given the correlational nature of our data, establishing the causal relationship among constructs in future work is essential. While we theorized that needs support contributed to profile membership and profile membership led to academic emotions, it is possible that the opposite is true, or that these things simply occurred in conjunction with one another due to a third, unmeasured variable. In order to assess these questions from a causal standpoint, future studies could make use of classroom interventions aimed at altering one construct (e.g. needs support) in order to assess the causal effect this has on another (e.g. profile membership).

Though much can be gleaned from the richness of the inter--view data, the sample size was only a small subset, 11%, of the total participants. Additionally, the sample of interviewed participants was uneven across profiles, with substantially more participants from the primarily autonomous group consenting to be interviewed. Retrospectively, that more participants from this group than others were interested in participating in an interview is not surprising, as these participants maintain the style of motivation that is most endorsed by the liberal arts college culture. This type of motivation is likely the easiest to discuss subscribing to, whereas participants with more controlled motivation may have been unwilling to spend 20 minutes talking about their potentially stigmatized style of motivation. Including more of their perspectives in future research would enrich our understanding of how the more controlled motivational profiles play out in daily collegiate life.

Conclusion

Using a profile-centered approach, the present study show--ed that students characterized by primarily controlled motives exhibited maladaptive responses in terms of academic emotions, academic engagement, needs support, and academic achievement. Because support for the competence and relatedness needs were particularly lacking among those with primarily controlled motives, addressing these needs may be a promising target for educational interventions. More generally, efforts to collect rich information on the perspectives of individuals who inhabit various motivational profiles may both inform our understanding of motivation and direct the application of that knowledge to enhance motivation during the college years.

References

Allen, K. A., & Bowles, T. (2012). Belonging as a guiding principle in the education of adolescents. *Australian Journal of Educational and Developmental Psychology, 12*, 108-119.

Baker, S. R. (2004). "Intrinsic, extrinsic, and amotivational orientations: Their role in university adjustment, stress, well-being, and subsequent academic performance," *Current Psychology, 23,* 189–202.

Belmont, M., Skinner, E., Wellborn, J., & Connell, J. (1988). Teacher as social context: A measure of student perceptions of teacher provision of involvement, structure, and autonomy support (Tech. Rep. No. 102). Rochester, NY: University of Rochester.

Boiché, J. C. S., Sarrazin, P. G., Grouzet, F. M. E., Pelletier, L. G., & Chanal, J. P. (2008). Students' motivational profiles and achievement outcomes in physical education: A self-determination perspective. *Journal of Educational Psychology, 100,* 688–701.

Boiché, J., & Stephan, Y. (2014). Motivational profiles and achievement: A prospective study testing potential mediators. *Motivation and Emotion, 38*, 79–92.

Braun, V., & Clarke, V. (2006) Using thematic analysis in psychology. *Qualitative Research in Psychology, 3,* 77-101.

Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), *APA handbook of research methods in psychology, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological* (p. 57–71). American Psychological Association.

Breckenridge, J. N. (2000). Validating cluster analysis: Consistent replication and symmetry. *Multivariate Behavioral Research, 35,* 261-285.

Brooks, J. H., & DuBois, D. L., (1995). Individual and environmental predictors of adjustment during the first year of college. *Journal of College Student Development, 36,* 347-360.

Cheon, S. H., & Reeve, J. M. (2015). A classroom-based intervention to help teachers decrease students' amotivation. *Contemporary Educational Psychology, 40,* 99-111.

Cordeiro, P., Paixão, P., Lens, W., Lacante, M., & Sheldon, K. (2016). Factor structure and dimensionality of the balanced measure of psychological needs among Portuguese high school students. Relations to well-being and ill-being. *Learning and Individual Differences, 47,* 51-60.

Boiché, J. C. S., Sarrazin, P. G., Grouzet, F. M. E., Pelletier, L. G., & Chanal, J. P. (2008). Students' motivational profiles and achievement outcomes in physical education: A self-determination perspective. *Journal of Educational Psychology, 100,* 688–701.

Corpus, J. H., & Wormington, S. V. (2014). Profiles of intrinsic and extrinsic motivations in elementary school: A longitudinal analysis. *The Journal of Experimental Education, 82,* 480–501.

Corpus, J. H., Wormington, S. V., & Haimovitz, K. (2016). Creating rich portraits: A mixed-methods approach to understanding profiles of intrinsic and extrinsic motivations. *The Elementary School Journal, 116,* 365-390.

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry, 11,* 227– 268.

Deci, E. L., & Ryan, R. M. (2011). Levels of analysis, regnant causes of behavior, and well-being: The role of psychological needs. *Psychological Inquiry, 22*, 17-22.

Deci, E. L., Vallerand, R. J., Pelletier, L. G., & Ryan, R. M. (1991). Motivation and education: The self-determination perspective. *Educational Psychologist, 26,* 325–346.

De Groot, E. V. (2002). Learning through interviewing: Students and teachers talk about learning and schooling. *Educational Psychologist, 37,* 41-52.

Fleiss, J. (1981). Statistical methods for rates and proportions (2nd ed.). New York: Wiley.

Furrer, C., & Skinner, E. A. (2003). Sense of relatedness as a factor in children's academic engagement and performance. *Journal of Educational Psychology, 95,* 148–162.

Gillet, N., Morin, A. J., & Reeve, J. (2017). Stability, change, and implications of students' motivation profiles: A latent transition analysis. *Contemporary Educational Psychology, 51,* 222-239.

Greene, J., Caracelli, V., & Graham, W. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis,* 255-274.

Guiffrida, D. A., Lynch, M. F., Wall, A. F., & Abel, D. S. (2013). Do reasons for attending college affect academic outcomes?: A test of a motivational model from a Self-Determination Theory perspective. *Journal of College Student Development, 54,* 121-139. Doi:10.1353/csd.2013.0019

Hair, J. R., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis*. New York: Macmillan.

Hofer, J., & Busch, H. (2011). Satisfying one's needs for competence and relatedness: Consequent domain-specific well-being depends on strength of implicit motives. *Personality and Social Psychology Bulletin, 37,* 1147-1158.

Johnson, R., & Onwuegbuzie, A. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher, 33,* 14-26.

Kaur, A., Hashim, R. A., & Noman, M. (2015). Teacher autonomy support intervention as a classroom practice in a Thai school. *Journal for Multicultural Education, 9,* 10-27.

Magnusson, D. (2003). The person approach: Concepts, measurement models, and research strategy. New *Directions for Child and Adolescent Development, 101,* 3-23.

Meens, E., Bakx, A., Klimstra, T., & Denissen, J. (2018). The association of identity and motivation with students' academic achievement in higher education. Learning and *Individual Differences, 64*, 54-70

Milligan, G. W., & Cooper, M. C. (1985). An examination of procedures for determining the number of clusters in a data set. *Psychometrika, 50,* 159-179.

Pekrun, R., Goetz, T., Titz, W., & Perry, R. P. (2002). Academic emotions in students' self-regulated learning and achievement: A program of qualitative and quantitative research. *Educational Psychologist, 37,* 91–105.

Pisarik, C. (2009). "Motivational orientation and burnout among undergraduate college students," *College Students Journal, 43*, 1238-1252.

Ratelle, C. F., Guay, F., Vallerand, R. J., Larose, S., & Senecal, C. (2007). Autonomous, controlled, and amotivated types of academic motivation: A person-oriented analysis. *Journal of Educational Psychology, 99,* 734 –746.

Reeve, J. (2013). How students create motivationally supportive learning environments for themselves: The concept of agentic engagement. *Journal of Educational Psychology, 105,* 579–595.

Reeve, J., Jang, H., Carrell, D., Jeon, S., & Barch, J. (2004). Enhancing high school students' engagement by increasing their teachers' autonomy support. Motivation and Emotion, 28, 147-169.

Reeve, J., & Tseng, C.-M. (2011). Agency as a fourth aspect of students' engagement during learning activities. *Contemporary Educational Psychology, 36,* 257– 267.

Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin, 138*, 353-387.

Robinson, K. A., Lee, Y.-k., Bovee, E. A., Perez, T., Walton, S. P., Briedis, D., & Linnenbrink-Garcia, L. (2019). Motivation in transition: Development and roles of expectancy, task values, and costs in early college engineering. *Journal of Educational Psychology, 111,* 1081-1102.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55,* 68-78.

Ryan, R. M., Stiller, J., & Lynch, J. H. (1994). Representations of relationships to teachers, parents, and friends as predictors of academic motivation and self-esteem. *Journal of Early Adolescence, 14,* 226-249.

Skinner, E. A., & Belmont, M. J. (1993). Motivation in the classroom: Reciprocal effects of teacher behavior and student engagement across the school year. *Journal of Educational Psychology, 85,* 571-581.

Skinner, E., Furrer, C., Marchand, G., & Kindermann, T. (2008). Engagement and disaffection in the classroom: Part of a larger motivational dynamic? *Journal of Educational Psychology, 100,* 765–781.

Soenens, B., & Vansteenkiste, M. (2005). Antecedents and outcomes of self- determination in three life Domains: The role of parents' and teachers' autonomy support. *Journal of Youth and Adolescence, 34,* 589–604.

Strayhorn, T. L. (2012). *College students' sense of belonging: A key to educational success for all students.* New York: Taylor & Francis.

Taylor, G., Jungert, T., Mageau, G. A., Schattke, K., Dedic, H., Rosenfield, S., & Koestner, R. (2014). A self-determination theory approach to predicting school achievement over time: The unique role of intrinsic motivation. *Contemporary Educational Psychology, 39,* 342-358.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). Chicago, IL: University of Chicago Press.

Trolian, T. L., Jach, E. A., Hanson, J. M., & Pascarella, E. T. (2016). Influencing Academic Motivation: The Effects of Student–Faculty Interaction. *Journal of College Student Development, 57*(7), 810–826.

Vansteenkiste, M., Sierens, E., Soenens, B., Luyckx, K., & Lens, W. (2009). Motivational profiles from a self-determination perspective: The quality of motivation matters. *Journal of Educational Psychology, 101,* 671–688.

Vansteenkiste, M., Simons, J., Lens, W., Sheldon, K. M., & Deci, E. L. (2004). Motivation learning, performance, and persistence: The synergistic effects of intrinsic goal contents and autonomy-supportive contexts. *Journal of Personality and Social Psychology, 87*, 246-260.

Walton, G. M., & Brady, S. T. (2017). The many questions of belonging. In A. J. Elliot, C. S., Dweck, & D. S. Yaeger (Eds). *Handbook of competence and motivation*, 2nd Ed. (pp. 272-293). New York: Guilford.

Wolters, C. A. (2004). Advancing achievement goal theory: Using goal structures and goal orientations to predict students' motivation, cognition, and achievement. *Journal of Educational Psychology, 96,* 236–250.

Wormington, S. V., Corpus, J. H., & Anderson, K. G. (2012). A person-centered investigation of academic motivation and its correlates in high school. *Learning and Individual Differences, 22*, 429–438.

Wu, Z. (2019). Academic motivation, engagement, and achievement among college students. *College Student Journal, 53,* 99-112.

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Do I Stay or Do I Leave? Factors Influencing Native American College Freshman Retention

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Although college enrollment has increased for under-represented minorities, retention and graduation rates continue to lag behind non-minority peers. This study investigates the applicability of empirically validated retention predictors to Native American (i.e., American Indian/Alaskan Native) college student retention. Self-reported data collection began in week four of the fall semester from first time, full time freshman. Out of eleven predictors, fall GPA, institutional commitment, homesickness, academic self-efficacy, and social integration predicted whether or not Native American students returned the fall following their freshman year. Unexpectedly, students' reporting greater social integration and self-efficacy were less likely to return the following fall. Results emphasize the importance of examining cultural influences on college retention.

Keywords: college success, retention, under-represented minority, Native American, undergraduates

Introduction

Finishing college has many possible benefits. At the peak of the Great Recession, college graduates were much less likely to be unemployed, 4.7%, vs. nearly 15% for those without a college degree (Hout & Cumberworth, 2012). A college degree also brings higher wages (Baum & Ma, 2007; Pascarella & Terenzini, 2005). Compared to those with a high school diploma, individuals with a bachelor's degree earn $32,000 more annually and are 3.5 times less likely to experience poverty (Trostel, 2015).

Although equitable access to higher education has been a chief concern of colleges and universities for decades, racial and ethnic disparities in degree attainment remain. Under-represented minority students are more likely to drop out of college (de Bray et al., 2019) and are less likely to graduate from college (Shapiro et al., 2017), than their nonminority peers. Representing less than 1% of college students (Ginder & Kelly-Reid, 2013; de Bray et al., 2019), Native Americans (i.e., American Indians and Alaska Natives) are the most underrepresented racial/ethnic group at colleges and universities in the United States. Although Native American college enrollment increased by 29% between 2000 and 2010 (from 139,000 to 179,000), the gains were lost when enrollment dropped by 28% (to 129,000) in 2016. In addition to representing a smaller proportion of college students, graduation rates remain lowest for Native Americans. Compared to other undergraduates enrolled at 4-year postsecondary institutions, Native Americans lag behind Asian (74%), White (64%), Hispanic (54%), and Black (40%) students with 39% of first-time, full-time Native American graduating in 6 years (de Bray et al., 2019).

College dropout influences graduation rates, thus persistence of Native American students is a priority at postsecondary institutions. In a 2005 study of first-time, full-time enrolled students, only 39% of Native American students graduated in four years compared to 60% of White students (Knapp et al., 2012). More recently, Ifill and colleagues (2016) reported 23% of Native Americans were still enrolled at a 4-year institution after 3 years compared to 39% of the entire sample. Why has the retention rate for Native American college students remained so low?

College Retention

According to Tinto (1975, 1987, 1993), experiences in the first year of college are key because this is the time when campus social and academic integration are most likely to influence initial commitment goals to persist and attain a degree. During the freshman year, initial commitment goals are modified as the student interacts with campus academic and social systems. More socially and academically integrated students reaffirm their initial commitments and are more likely to persist and graduate, conversely the lack of integration decreases commitment and increases the chances of a departure decision. In support of these hypotheses, college persistence has been linked to social integration (Berger, 1997; Strayhorn, 2012; Woosley & Miller, 2009), academic integration (Wortman & Napoli, 1996; Pascarella & Terenzini, 1997; Pickering et al., 1992; Strauss & Volkwein, 2004; Woosley & Miller, 2009), homesickness (Sun & Hagedorn, 2016) and institutional commitment (Berger & Milem, 1999; Bowman et al., 2019; Cabrera et al., 1993; Credé & Niehorster, 2012; Robbins et al., 2004; Savage et al., 2019) by several researchers.

Traditional measures of academic performance predict college retention. Student departure decisions are associated with high school academic performance (Adelman, 1999); however early college academic performance may be an even better predictor of college success. The higher a student's first-year GPA, the less likely the student is to drop out of college (Ishitani & DesJardins, 2002; Mayhew et al., 2016; Pascarella & Terenzini, 1991, 2005). Other studies (e.g. Kern et al., 1998; Robbins et al., 2004) have shown a positive link between productive study habits and cumulative GPA and college persistence. Empirical attention has also been focused on motivation and socio-emotional characteristics

(referred to by sociologists and economists as "non-cognitive" factors or "soft skills").

Non-cognitive Factors and Retention

In a meta-analysis, Robbins and colleagues (2004) examined the contribution of psychosocial factors in predicting cumulative grade point average and retention. Academic goals (i.e., commitment to attaining a college degree and value of college education), academic self-efficacy (i.e., self-evaluation of ability to succeed in academics) and academic-related skills (i.e., time management, study skills and habits, problem-solving and coping strategies, and communication skills) emerged as the strongest predictors of retention. The best predictors of first year college GPA were academic self-efficacy (see also Richardson et al., 2012) and achievement motivation (i.e., motivation to achieve success, enjoyment of challenges, drive to work for academic success). They argue for the integration of motivation (Eccles & Wigfield, 2002; Harackiewicz, et al., 2002) and educational persistence theories (Tinto, 1975, 1987) to understand freshman college retention.

Academic self-efficacy and social integration play a prominent role in the college success literature, but are these noncognitive factors relevant for Native American college success? Building on Bandura's (1977, 1986) concept of self-efficacy, academic self-efficacy refers to peoples' domain specific belief in their to ability to succeed at academic tasks and education goals (Pajares, 1996; Zimmerman, 2000). As discussed earlier, academic self-efficacy robustly predicts college grades and retention (Richardson et al, 2012; Robbins et al., 2004), but race/ethnicity were not considered in the meta-analyses due to insufficient data. Some evidence links academic self-efficacy to college success for minorities. In a sample of immigrant and minority college freshman, Zajacova and colleagues (2005) reported academic self-efficacy a stronger predictor of first year GPA and college retention than perceived college stress. However, the sample did not include Native American students.

Two empirical studies specifically focused on Native American academic self-efficacy and persistence intentions. Gloria and Robinson Kurpius (2001) found that higher academic self-efficacy was associated with decreased nonpersistence intentions at a large predominantly White university. Similarly, Thompson and colleagues (2013) reported a positive link between self-efficacy for coping with educational barriers and persistence intentions. Participants in both these studies ranged from freshman to seniors and the intention to persistence, rather than actual persistence behavior, was the outcome of interest. Thus, the question remains, does academic self-efficacy predict Native American freshman retention decisions?

Like academic self-efficacy, social integration, or belonging, has been emphasized in the college success literature. The connection between a sense of belonging and college success (Allen et al., 2008; Berger, 1997; Hausmann et al., 2007; Hoffman et al., 2002, Hurtado & Carter, 1997; Rhee, 2008) sparked interest in understanding the role of colleges and universities in fostering a sense of belonging. For example, positive relationships with faculty and peers (Baumeister & Leary, 1995, Hurtado & Carter, 1997; Strayhorn et al., 2016), and freshman learning communities (Hoffman et al., 2002) promote social integration within campus communities.

Walton and Cohen (2007) observed that some socially stigmatized minorities question whether they belong or fit in the college context. To address this concern, they developed a brief psychological intervention to promote a sense of belonging in African American students (Walton & Cohen, 2011). Unlike students in the control group, African American students randomly assigned to the belonging intervention did not report declines in belonging and they also experienced other positive outcomes (e.g., more time studying, more frequent communication with professors and GPA improvement). The study did not evaluate student retention as an outcome.

Other brief interventions aimed at increasing belonging yielded mixed retention results. White and Black college students participated in a simple belonging intervention (Hausmann et al., 2007). Although White students' sense of belonging and retention improved, African American students' belonging and retention were unaffected by the intervention. Another brief social belonging intervention (Patterson Silver Wolf et al., 2019) focused on the retention of community college freshman (53% minority, primarily Black) enrolled in the fall semester. Students participating in the belonging intervention were 17.4% more likely to return for the spring semester than those in the control condition. Fall to fall retention was not reported.

While social integration interventions show promise for White, and some underrepresented minorities, the picture is less clear for Native Americans. The University of New Mexico implemented the Native American Studies Academic Retention and Intervention Project (Belgarde & Lore, 2003) to improve Native American retention rates. Social integration was encouraged and measured by frequency and types of services received though the intervention project and other Native student services on campus. Although Native American students who used the retention project services completed more cumulative credit hours than non-participants, no difference was found between participants and non-participants in stopping out for at least one semester. Strayhorn (2012) proposed that lacking a sense of belonging leads some students to depart from college prior to degree completion, but the relevance for Native American retention is unclear.

Purpose of the Present Study

Identification of factors associated with college success, of which retention is a basic component, stems from studies of mostly White participants. Do the empirical findings hold true for Native Americans? Or should institutions heed the warnings of critics (Rendon et al., 2000) that current theories of retention have gaps when applied to minority populations? Several scholars argue that the traditional models of student persistence may not apply to nonwhite students (Hurtado & Carter, 1997; Nora & Cabrera, 1996; Tierney, 1992). For example, Tinto's (1987) initial assertion that students must "break away" from past associations and traditions to become integrated into the college's social and academic realms has been replaced with the understanding that

continued connection to family and community is crucial for NativeAmerican student college persistence (Guillory & Wolverton, 2008; HeavyRunner & DeCelles, 2002; Jackson et al., 2003; Tierney, 1992; Waterman, 2012).

Historically the rate of empirical publications focused on ethnic minorities has lagged well behind those focused on majority White populations (Nagayama Hall & Maramba, 2001; Hartmann et al., 2013). This is especially true for Native Americans as their small numbers at postsecondary institutions limits, and often omits, their representation in college success research (Fryberg & Stephens, 2010; Shotton et al., 2013). Thus, empirical research remains largely silent regarding factors that predict Native American college retention (see review, Lopez, 2018). Our goal is to examine whether retention predictors identified in the existing retention literature apply to Native American freshman, the time when college departure is greatest at 4-year institutions (Chen 2012; Ishitani 2006).

Method

Participants. Four weeks into the fall semester of 2013 and 2014, all enrolled, first-time full time freshmen at a public liberal arts college in the southwest were asked to participate in a first-year student web-based survey (MAP-Works; Making Achievement Possible). Out of 498 Native American freshman, 355 (71%) completed the survey. Of these students 56% were female and 34% were first generation mirroring the demographic characteristics of all first-time full time Native American freshmen.

Measures.

The five MAP-Works scales below were created from Likert-type items with a one to seven response scale (see Woosley & Jones, 2011). All individual scale items, along with scale Cronbach's alphas, are included in Table 1. Table 2 contains descriptive statistics and correlations.

Institutional Commitment. Commitment to the institution was assessed by three items (e.g., "To what degree do you intend to come back to this institution for the next academic year?") based on a response scale of 1 = "Not at All" to 7 = "Extremely".

Time Management. Participants responded to the prompt "To what degree are you the kind of person who:" for three items assessing time management (e.g., plans out your time) with scale anchors of 1 = "Not at All" to 7 = "Extremely".

Academic Skills. Participants responded to the prompt, "To what degree are you the kind of person who:" for four Likert-type items assessing academic skills (e.g., attends class) on a scale ranging from one to seven (1 = "Not at All" to 7 = "Always").

Academic Self-Efficacy. Academic self-efficacy was assessed by the prompt "To what degree are you certain that you can:" for three items (e.g., "do well on all problems and tasks assigned in your courses"). The response scale (1 = "Not at all certain" to 7 = "Absolutely certain").

Homesickness. Distress related to leaving home was assessed by four items (e.g, "To what degree do you think about going home all the time?"). Participants responded to Likert-type items on a scale ranging from one to seven: 1 = "Extremely" to 7 = " Not at All". For analytical interpretive clarity, the scale was reverse scored so that high scores indicated a greater degree of homesickness (i.e., 1 = "Not at All" to 7 = "Extremely").

Social Integration. Participants responded to three items (e.g., "Overall, to what degree do you belong here?") on a scale ranging from one to seven: (1 = "Not at All" to 7 = "Extremely") to assess belonging perceptions.

Academic Integration. Participants responded to four items (e.g., Overall, to what degree are you keeping current with your academic work?) on a scale ranging from one to seven (1 = "Not at All" to 7 = "Extremely").

Additional data, including fall to fall retention, was collected from institutional records.

Fall to Fall Retention. The outcome variable, the decision to stay or leave the institution, was a dichotomous measure of whether the student was enrolled the fall after their freshman year (0 = no, 1 = yes).

Sociodemographic. Analyses included gender (0 = male, 1 = female) and first generation status (0 = no, 1 = yes).

Academic Performance. High school GPA and college fall semester GPA were based on a standard 4-point grade point average.

Social Integration. Participants responded to three items (e.g., "Overall, to what degree do you belong here?") on a scale ranging from one to seven: (1 = "Not at All" to 7 = "Extremely") to assess belonging perceptions.

Table 1. *Scales and Alphas*

Scale	Items	α
Institutional Commitment	To what degree are you committed to completing a degree/certificate/ licensure at this institution? To what degree do you intend to come back to this institution for the: Spring term? The next academic year?	.758
Time Management	To what degree are you the kind of person who: Plans out your time Makes "to-do lists" Balances time between classes and other activities (work, student activities, etc.)	.631
Academic skills	To what degree are you the kind of person who: Attends class Takes good notes in class Turns in required homework assignments Spends sufficient study time to earn good grades	.761
Self-Efficacy	To what degree are you certain that you can: Do well on all problems and tasks assigned in your courses Do well in your hardest course Persevere on class projects even when there are challenges	.893
Homesickness	To what degree do you: Regret leaving home to go to school Think about going home all the time Feel an obligation to be at home Feel that attending college is pulling you away from your community at home	.845
Social Integration	Overall, to what degree: Do you belong here Are you fitting in Are you satisfied with your social life on campus	.866
Academic Integration	Overall, to what degree are you: Keeping current with your academic work Motivated to complete your academic work Learning Satisfied with your academic life on campus	.853

Table 2. *Means, Standard deviations, and Intercorrelations*

	Variable	*M*%	SD	1	2	3	4	5	6	7	8	9
1	High School GPA	3.15	0.45									
2	Fall Semester GPA	2.08	1.07	.31**								
3	Institutional Commitment	6.13	1.05	-.03	.04							
4	Time Management	4.88	1.27	.18**	.24**	.15**						
5	Academic Skills	5.97	0.77	.19**	.23**	.20**	.47**					
6	Self-Efficacy	5.18	1.11	.05	.11*	.27**	.32**	.43**				
7	Homesickness	2.44	1.43	-.03	-.13*	-.29**	-.06	-.11*	-.18**			
8	Social Integration	5.20	1.37	.02	-.03	.34**	.23**	.29**	.33**	-.25**		
9	Academic Integration	5.59	1.06	.15**	.18**	.30**	.43**	.61**	.52**	-22**	.46**	
10	First Generation +	34%		-.07	-.04	-.01	-.02	.03	.01	.08	-.001	-.02
11	Female +	56%		.17**	.14**	.05	.18**	.17***	-.08	.07	-.02	.08
12	Fall to Fall Retention +	53%		.21**	.51**	.23**	.13*	.11*	-.05	-.18**	-.04	.07

Note: * $p < .05$, ** $p < .01$, +point-biserial correlation coefficients (r_{pb})

Results

Just over one half (52%) of the students returned the fall following their freshman year. As expected (see Table 2), high school GPA, fall semester GPA, institutional commitment, time management, academic skills were positively correlated with fall to fall retention (r = .21, .51, .23, .13 and .11, respectively) and greater homesickness was associated with leaving college (r = -.18). Self-efficacy, social integration and academic integration were not associated with retention.

Table 3, Model 1, presents the results of a simultaneous multiple logistic regression (unstandardized logistic coefficients) regressing fall to fall retention onto three pre-entry characteristics and the seven MAP-Works scales. Institutional commitment (b = .67, p < .001), homesickness (b = -.27, p < .01), academic self-efficacy (b = -.39, p < .01), high school GPA (b = 1.06, p < .001), and social integration (b = -.27, p < .01) were the strongest predictors of fall to fall retention. First generation status (b = -.14, p > .10), gender (b = -.11, p >.10), academic skills (b = .14, p >.10) and time management (b = .19, p >.10) were not significant predictors of retention.

Table 3. *Results from Two Logistic Regressions Predicting Native American Freshman Fall to Fall Retention*

	Model 1		Model 2	
Variables	*b*	*Odds Ratio*	*b*	*Odds Ratio*
First Generation	-0.14	.87	-0.13	.88
Gender	-0.11	.89	0.05	1.05
High School GPA	1.06***	2.90	.60	1.82
Commitment	0.67***	1.94	.88***	2.42
Time Management	0.19	1.21	.14	1.15
Academic skills	0.14	1.15	-.02	.98
Self-Efficacy	-0.39**	.68	-.40**	.68
Homesickness	-0.27**	.77	-.21*	.81
Social integration	-0.32**	.73	-.29*	.75
Academic integration	0.04	1.04	-.08	.92
Fall Term GPA			1.20***	3.34
Model chi-square	67.87***		146.76***	
Cox & Snell R^2	.17		.34	
Nagelkerke R^2	.23		.45	

Notes. Unstandardized logistic coefficients. Model 1 includes pre-entry characteristics and fall semester predictors. Model 2 adds fall semester GPA. For First Generation, (0 = no, 1 = yes). For Gender, (0 = male, 1 = female). N=355. *$p < .05$ **$p < .01$ ***$p < .001$

Fall GPA was added to the logistic regression (see Table 3, Model 2) to evaluate the robustness of these effects. Fall GPA (b = 1.20, p < .001) predicted fall to fall retention and eliminated the contribution of high school GPA (b = .60, p > .05). Institutional commitment (b = .88, p < .001), homesickness (b = -.21, p < .05), academic self-efficacy (b = -.40, p < .01) and social integration (b = -.29, p < .05) remained significant predictors of retention. As in model 1, first generation status (b = -.13, p > .10), gender (b = .05, p >.10), academic skills (b = -.02, p >.10) and time management (b = .14, p >.10) did not predict fall to fall retention.

The odds ratio for fall to fall retention provides perspective on what the coefficients represent. A significant odds ratio greater than 1 indicates that as the predictor increases, the odds of the outcome occurring increase. Therefore, the odds ratio for institutional commitment (1.94 in Model 1, Table 3) indicates that the odds of students with higher commitment returning are 1.94 times higher than those of students with lower commitment. Conversely, a significant odds ratio with a value less than 1 indicates that as the predictor increases, the odds of the outcome (fall to fall retention) occurring decreases. Subtracting 1 from the ratio and multiplying by 100 gives the percent changes in the odds of the outcome variable having a value of 1. Students experiencing more homesickness (.77 in Model 1, Table 3) were 23%less likely to return than those reporting less homesickness. Surprisingly, students reporting greater social integration (.73 in Model 1, Table 3) were 27% less likely to return the following fall than those reporting lower social integration. In addition, students reporting higher academic self-efficacy (.68 in Model 1, Table 3) were 32% less likely to be retained the following fall than those with lower self-efficacy.

To investigate the unexpected negative effects of self-efficacy and social integration on retention, suppression effects were considered (MacKinnon, Krull & Lockwood, 2000). Potential suppressor variables were added one at a time to logistic regression models consisting of pre-entry characteristics (i.e., first generation status, gender and high school GPA) and the negative effect predictors (i.e., self-efficacy or social integration). Only institutional commitment acted as a suppressor magnifying the negative effect of social integration (b = -.24, p < .01) on retention (see Table 4, Model 2). The lack of interaction between social integration and institutional on retention in Model 3 (b = -.08, p > .10) suggests the suppression effect occurs at all levels of commitment.

Table 5 demonstrates the suppression effects of homesickness, academic integration, academic skills and commitment on self-efficacy. In model 1, self-efficacy does not influence retention (b = -.12, p > .10). In Models 2, 3, 4 and 5 homesickness, academic integration, academic skills and commitment act as a suppressor by increasing the magnitude of the relationship between self-efficacy and retention (b = -.23, p =.03, b = -.24, p =.04, b = -.22, p =.05,. b = -.28, p =.000, respectively). In Table 6 the non-significant interactions of the suppressor variables (i.e., homesickness, academic integration, academic skills, and institutional commitment) with self-efficacy demonstrate that the suppression effect on retention occurs at all levels of each of the suppressor variables.

Table 4. *Results from Logistic Regressions Identifying Suppressor Variable for Social Integration Effect on Native American Freshman Fall to Fall Retention*

	Model 1		Model 2		Model 3	
Variables	*b*	*Odds Ratio*	*b*	*Odds Ratio*	*b*	*Odds Ratio*
First Generation	.02	1.02	-.00	1.00	-.02	.98
Gender	-.22	.80	-.17	.84	-.18	.84
High School GPA	.96***	2.60	1.15***	3.15	1.16***	3.20
Social Integration	-.06	.94	-.24**	.79	-.32**	.73
Commitment			.67***	1.95	.67***	1.95
Social Integration x Commitment					-.08	.92
Model chi-square	17.70***		49.72***		50.25***	
Cox & Snell R^2	.05		.13		.13	
Nagelkerke R^2	.06		.17		.17	

Notes. Model 1 includes pre-entry characteristics and social integration. Model 2 adds institutional commitment. For First Generation, (0 = no, 1 = yes). For Gender, (0 = male, 1 = female). Model 1 and 2 used unstandardized logistic coefficients. Model 3 used standardized logistic coefficients. N=355. $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$

Table 5. *Results from Five Logistic Regressions Identifying Suppressor Variables for the Negative Self-Efficacy Effect on Native American Freshman Fall to Fall Retention*

	Model 1		Model 2		Model 3		Model 4		Model 5	
Variables	*b*	*Odds Ratio*	*b*	*Odds Ratio*	*b*	*Odds Ratio*	*b*	*Odds Ratio*	*b*	*Odds Ratio*
First Generation	.03	1.03	-.11	.90	.01	1.01	.03	1.03	.02	1.02
Gender	-.19	.83	-.25	.78	-.15	.86	-.12	.89	-.13	.88
High School GPA	1.03***	2.79	.99***	2.69	.94***	2.56	.95***	2.60	1.23***	3.42
Self-Efficacy	-.12	.89	-.23**	.80	-.24*	.79	-.22*	.80	-.28**	.76
Homesickness			-.31***	.73						
Academic Integration					.20	1.22				
Academic Skills							.30	1.35		
Commitment									.61***	1.84
Model chi-square	20.54***		33.58***		21.94***		24.32***		49.72***	
Cox & Snell R^2	.05		.09		.06		.06		.12	
Nagelkerke R^2	.07		.12		.08		.08		.16	

Notes. Unstandardized logistic coefficients. Model 1 includes pre-entry characteristics and self-efficacy. Model 2 adds homesickness. Model 3 adds academic integration. Model 4 adds academic skills. Model 5 adds institutional commitment. For First Generation, (0 = no, 1 = yes). For Gender, (0 = male, 1 = female). N=355. $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$

Table 6. *Results from Four Logistic Regressions Testing Interaction Effects of Suppressor Variables with Self-Efficacy Effect on Native American Freshman Fall to Fall Retention*

	Model 1		Model 2		Model 3		Model 4	
Variables	*b*	*Odds Ratio*	*b*	*Odds Ratio*	*b*	*Odds Ratio*	*b*	*Odds Ratio*
First Generation	-.09	.91	.01	1.01	.02	1.02	.02	1.02
Gender	-.26	.77	-.16	.86	-.13	.88	-.13	.88
High School GPA	.99***	2.70	.94***	2.56	.93***	2.54	1.24***	3.46
Self-Efficacy	-.26*	.77	-.27*	.77	-.25*	.78	-.30**	.74
Homesickness	-.42***	.66						
Self-Efficacy x Homesickness	.08	1.08						
Academic Integration			.20	.13				
Self-Efficacy x Academic Integration			-.01	.90				
Academic Skills					.22	1.25		
Self-Efficacy x Academic Integration					-.16	.85		
Commitment							.67***	1.95
Self-Efficacy x Commitment							.08	1.08
Model chi-square	34.12***		26.43***		50.34***		50.34***	
Cox & Snell R^2	.09		.07		.12		.12	
Nagelkerke R^2	.12		.09		.17		.17	

Notes. standardized logistic coefficients. For First Generation, (0 = no, 1 = yes). For Gender, (0 = male, 1 = female). N=355. $^{*}p < .05$ $^{**}p < .01$ $^{***}p < .001$

Discussion

Building on a tradition of research on college retention, we investigated effects of retention predictors for Native American freshman. College grades, institutional commitment, and homesickness were better predictors of the decision to return to college than first generation status, gender, high school grades, academic integration or academic skills. Unexpectedly, students reporting greater social integration and academic self-efficacy were less likely to return than peers experiencing less social integration (i.e., belonging) and self-efficacy at the beginning of the semester.

Although we cannot rule out that transfer to another institution rather than drop out, other explanations for the negative effects of belonging and academic self-efficacy should be considered. For example, self-efficacy was assessed at the beginning of the semester prior to substantial academic performance feedback. Perhaps students had an inflated sense of academic self-efficacy based on high school academic experiences and those expectations were reset by actual academic performance feedback such as mid-term grades. In addition to tracking changes in self-efficacy during the academic year, future studies also need to assess whether departing students are dropping out, stopping out or transferring to another institution.

As with self-efficacy, students' sense of social belonging may have declined during the freshman year after the initial assessment. Even more concerning is the possibility that the early fall semester survey captured students' high expectation that they would belong. If this interpretation is correct, Native American freshman arrived expecting to belong, but didn't, then were less likely to be retained than those who arrived with a lower expectation of belonging.

It is also possible that a traditional model of belonging is inadequate to understand this group. In the vein of Nigrescence theory for Black identity (Cross, 1971), Native American freshman transitioning from a majority Native American environment (e.g., reservations, Native villages) to a majority white college campus may experiences events that change their understanding about their ethnicity and in turn affect their sense of campus belonging. For example, attending college may increase the challenge of living in two worlds (LaFromboise, Coleman, & Gerton, 1993) as they attempt to reconcile their cultural beliefs and values with the majority culture.

Native American culture emphasizes interdependency and responsibility for family, community and the collective welfare (DuBray, 1985; Garrett & Garrett, 1994; Garrett, 1995; Kasten, 1992; LaFromboise & Dizon, 2003) compared to the emphasis on personal self-oriented goals in mainstream culture (Markus & Kitayama, 1991). Students' who begin to question their belonging to the majority campus community may instead turn to similar peers limiting their exposure to the larger community. These students' may report a strong sense of belonging based on their close knit peer group rather than the larger campus community. A more differentiated view of belonging processes that might be at play for Native American students should be considered.

Cultural factors need to be added to the study of college retention, but not based on an assumption of homogeneous ethnic groups. For example, although family interdependency is

a strong Native American cultural value, individual students may vary substantially in the importance they place on family connections. Therefore, other dimensions, such as their ethnic identity and/or the degree of tradition emphasized in their family should be considered.

In terms of ethnic identity, Oyserman and colleagues (2003) report increased school engagement when minority youth felt they are part of both their in-group and the larger society, or when they are a member of an in-group that must overcome barriers to success in the larger society. Numerous studies report that a strong ethnic identity is associated with psychological and social well-being indicators as well as academic achievement (Arroyo & Zigler, 1995; Jones & Galliher, 2007; Moran, Fleming, Somervell, & Manson, 1999; Oyserman, Kemmelmeier, Fryberg, Brosh, & Hart-Johnson, 2003; Phinney & Alipuria, 1990; Wong, Eccles, & Sameroff, 2003). Ethnic identity should be considered in studies of college retention.

Another dimension potentially related to ethnic identity is goal orientation in different cultures. Evidence suggests under-represented minorities hold stronger other-focused goals than other groups. Communion, a trait emphasizing working with or helping others, is higher among ethnic minorities (Markus & Conner, 2013). Native American cultures especially emphasize helping members of their own communities (Brayboy et al., 2014; Fryberg & Markus, 2007; Smith, Cech, Metz, Huntoon & Moyer, 2014; Torres, 2009). If the motivation for earning a college degree is based on other-focused goals for some Native American students, investigating whether these students perceive their goals are being met should be addressed in the context of retention. A cultural value mismatch (i.e., when students do not perceive support for their other-focused goals on campus) could have detrimental effects on retention. Developing institutional interventions to address cultural mismatch issues could follow from this line of inquiry.

College and universities are often limited in addressing demographic variables linked to departure decisions because those factors are external to the institution. However, campus social integration is an important factor associated with student retention that the institution can do something about, interventions should address cultural mismatches to meet the needs of diverse populations. For students with strong ties to family and community, bridging the gap between the institution and family may be needed to support campus social integration. Institutions can also create a better person-environment fit by helping students with communal goals realize those goals in their courses and majors. In summary, improving retention for under-represented minorities begins with viewing these students through a cultural lens that may not always align with prevailing best practices to improve college retention based on majority populations.

References

Adelman, C. (1999). Answers in the tool box: *Academic intensity, attendance patterns, and bachelor's degree attainment.* U.S. Department of Education. https://files.eric.ed.gov/fulltext/ED431363.pdf

Allen, J., Robbins, S. B., Casillas, A., & Oh, I. S. (2008). Third-year college retention and transfer: Effects of academic performance, motivation, and social connectedness. *Research in Higher Education, 49*, 647-664. https://doi.org/10.1007/s11162-008- 9098-3

Arroyo, C. G., & Zigler, E. (1995). Racial identity, academic achievement, and the psychological well-being of economically disadvantaged adolescents. *Journal of Personality and Social Psychology,* 69(5), 903-914. https://doi.org/10.1037/0022-3514. 69.5.903

Aud, S., Hussar, W., Kena, G., Bianco, K., Frohlich, L., Kemp, J., & Tahan, K. (2011). *The Condition of Education* 2011(NCES 2011-033). U.S. Department of Education, National Center for Education Statistics. http://ies.ed.gov/pubsearch/pubsinfo.asp?pubid=2011033

Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavior change. *Psychological Review*, *84*(2), 191–215. https://doi.org/10.1037/0033-295X.84.2.191

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Prentice-Hall.

Baum, S., & Ma, J. (2007). *Education pays: The benefits of higher education for individuals and society.* The College Board.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3)*,* 497-529. https://doi.org/10.1037/0033-2909.117.3.497

Brayboy, B. M. J., Solyom, J. A., & Castagno, A. E. (2014). Looking into the hearts of Native peoples: Nation building as an institutional orientation for graduate education. *American Journal of Education*, *120*(4), 575-596. https://doi.org/10.1086/676908

Belgarde, M. J., & Lore, R. K. (2003). The retention/ intervention study of Native American undergraduates at the University of New Mexico. *Journal of College Student Retention: Research, Theory & Practice*, *5*(2), 175-203. https://doi.org/10.2190/ML98-8WQF-EFWP-7MCY

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.

Berger, J. B., & Milem, J. F. (1999). The role of student involvement and perceptions of integration in a causal model of student persistence. *Research in Higher Education, 40*(6)*,* 641-664. https://doi.org/10.1023/A:1018708813711

Bowman, N. A., Miller, A., Woosley, S., Maxwell, N. P., & Kolze, M. J. (2019). Understanding the link between noncognitive attributes and college retention. *Research in Higher Education, 60*(2), 135-152. https://doi.org/10.1007/s11162-018-9508-0

Cabrera, A. F., Nora, A., & Castaneda, M. B. (1993). College persistence: Structural equations modeling test of an integrated model of student retention. *Journal of Higher Education, 64*(2), 123-139. https://doi.org/10.1080/00221546.1993.11778419

Chen, R. (2012). Institutional characteristics and college student dropout risks: A multilevel event history analysis. *Research in Higher Education, 53(5),* 487–505. https://doi.org/10.1007/s11162-011-9241-4

Credé, M., & Niehorster, S. (2012). Adjustment to college as measured by the Student Adaptation to College Questionnaire: A quantitative review of its structure and relationships with correlates and consequences. *Educational Psychology Review, 24(1),* 133–165. https://doi.org/10.1007/s10648-011-9184-5

Cross, W. E., Jr. (1971). Negro-to-Black conversion experience: Toward psychology of Black liberation. *Black World, 20,* 13–27.

de Brey, C., Musu, L., McFarland, J., Wilkinson-Flicker, S., Diliberti, M., Zhang, A., Branstetter, C., and Wang, X. (2019). Status and Trends in the Education of Racial and Ethnic Groups 2018 (NCES 2019-038). National Center for Education Statistics. https://nces.ed.gov/ pubsearch/

DuBray, W. H. (1985). American Indian values: Critical factor in casework. *Social Casework, 66*(1)*,* 30-37. https:// doi.org/10.1177/104438948506600104

Eccles, J. S., & Wigfield, A. (2002). Motivational beliefs, values, and goals. *Annual Review of Psychology,* 53, 109–132. https://doi.org/10.1146/annurev.psych.53.100901.135153

Fryberg, S. A., & Markus, H. R. (2007). Cultural models of education in American Indian, Asian American, and European American contexts. *Social Psychology of Education, 10(2),* 213–246. http://dx.doi.org/10.1007/s11218-007-9017-z

Fryberg, S. A., Covarrubias, R., & Burack, J. A. (2013). Cultural models of education and academic performance for Native American and European American students. *School Psychology International, 34*(4)*,* 439-452. https://doi.org/10.1177/0143034312446892

Fryberg, S. A., & Stephens, N. M. (2010). When the world is colorblind, American Indians are invisible: A diversity science approach. *Psychological Inquiry, 21*(2)*,* 115-119. https://doi.org/10.1080/1047840X.2010.483847

Garrett, J. T., & Garrett, M. W. (1994). The path of good medicine: Understanding and counseling Native American Indians. *Journal of Multicultural Counseling and Development, 22*(3), 134-144. doi: 10.1002/j.2161-1912.1994.tb00459

Garrett, M. W. (1995). Between two worlds: Cultural discontinuity in the dropout of Native American youth. *School Counselor, 42*(3), 186-195. www.jstor.org/stable/23901324

Ginder, S. A., & Kelly-Reid, J. E. (2013). *Postsecondary institutions and cost of attendance in 2012-2013; Degrees and other awards conferred, 2011-12 and 12-month enrollment,* 2011-2012. National Center for Education Statistics. https://nces.ed.gov/pubs2013/2013289rev.pdf

Gloria, A. M., & Robinson Kurpius, S. E. (2001). Influences of self-beliefs, social support, and comfort in the university environment on the academic nonpersistence decisions of American Indian undergraduates. *Cultural Diversity and Ethnic Minority Psychology, 7*(1), 88-102. https://doi.org/10.1037/1099-9809.7.1.88

Guillory, R. M., & Wolverton, M. (2008). It's about family: Native American student persistence in higher education. *Journal of Higher Education, 79*(1), 58–87. https://doi.org/10.1080/00221546.2008.11772086

Harackiewicz, J. M., Barron, K. E., Tauer, J. M., & Elliot, A. J. (2002). Predicting success in college: A longitudinal study of achievement goals and ability measures as predictors of interest and performance from freshman year through graduation. *Journal of Educational Psychology, 94*(3), 562–575. https://doi.org/10.1037/0022-0663.94.3.562

Hartmann, W. E., Kim, E. S., Kim, J. J., Nguyen, T. U., Wendt, D. C., Nagata, D. K., & Gone, J. P. (2013). In search of cultural diversity, revisited: Recent publication trends in cross-cultural and ethnic minority psychology. *Review of General Psychology, 17*(3), 243-254. https://doi.org/10.1037/a0032260

Hausmann, L., Schofield, J., & Woods, R. (2007). Sense of belonging as a predictor of intentions to persist among African American and White first-year college students. *Research in Higher Education, 48*(7), 803-839. https://doi.org/10.1007/s11162-007-9052-9

HeavyRunner, I., & DeCelles, R. (2002). Family educational model: Meeting the student retention challenge. *Journal of American Indian Education, 41*(2), 29–37. www.jstor.org/stable/24398576

Hoffman, M., Richmond, J., Morrow, J., & Salomone, K. (2002). Investigating "sense of belonging" in first year college students. *Journal of College Student Retention: Research, Theory & Practice, 4*(3), 227–256. https://doi.org/10.2190/DRYC-CXQ9-JQ8V-HT4V

Hout, M., & Cumberworth, E. 2012. The Labor Force and the Great Recession. Stanford Center on Poverty and Inequality.

Hurtado, S., & Carter, D. F. (1997). Effects of college transition perceptions of the campus racial climate on Latino college students' sense of belonging. *Sociology of Education, 70*, 324–345. https://doi.org/10.2307/2673270

Ifill, N., Radford, A.W., Wu, J., Cataldi, E.F., Wilson, D., and Hill, J. (2016). Persistence and Attainment of 2011-12 *First-Time Postsecondary Students After 3 Years* (BPS:12/14) (NCES 2016-401). National Center for Education Statistics. http://nces.ed.gov/pubsearch/

Ishitani, T., & DesJardins, S. (2002). A longitudinal investigation of dropout from college in the United States. *Journal of College Student Retention: Research, Theory & Practice, 4*(2), 173-201. https://doi.org/10.2190/V4EN-NW42-742Q-2NTL

Ishitani, T. T. (2006). Studying attrition and degree completion behavior among first-generation college students in the United States. *Journal of Higher Education, 77*(5), 861–885. https://doi.org/10.1080/00221546.2006.11778947

Jackson, A. P., Smith, S. A., & Hill, C. L. (2003). Academic persistence among Native American college students. *Journal of College Student Development, 44*(4), 548-565. https://doi.org/10.1353/csd.2003.0039

Jones, M. D., & Galliher, R. V. (2007). Ethnic identity and psychosocial functioning in Navajo adolescents. *Journal of Research on Adolescence, 17*(4), 683-696. https://doi.org/10.1111/j.1532-7795.2007.00541.x

Kasten, W. C. (1992). Bridging the horizon: American Indian beliefs and whole language learning. *Anthropology & Education Quarterly, 23*(2), 108-119. https://doi.org/10.1525/aeq.1992.23.2. 05x1261m

Kern, C. W., Fagley, N. S., & Miller, P. M. (1998). Correlates of college retention and GPA: Learning and study strategies, testwiseness, attitudes, and ACT. *Journal of College Counseling, 1*(1), 26-34. https://doi.org/10.1002/j.2161-1882.1998.tb00121.x

Knapp, L. G., Kelly-Reid, J. E., & Ginder, S. A. (2012). *Enrollment in postsecondary institutions, fall 2011; Financial statistics, fiscal year 2011; and graduation rates, selected cohorts,* 2003-2008. NCES 2012-280. National Center for Education Statistics. https://files.eric.ed.gov/fulltext/ED530514.pdf

LaFromboise, T., Coleman, H. L., & Gerton, J. (1993). Psychological impact of biculturalism: *Evidence and theory. Psychological Bulletin, 114*(3), 395-412. https://doi.org/10.1037/0033-2909.114. 3.395

LaFromboise, T., & Dizon, M. R. (2003). American Indian children and adolescents. In J. T. Gibbs & L. N. Huang (Eds.), *Children of color: Psychological interventions with culturally diverse youth* (pp. 45-90). Jossey-Bass.

Lohfink, M., & Paulsen, M. (2005). Comparing the determinants of persistence for first generation and continuing-generation students. *Journal of College Student Development, 46*(4), 409-428. https://doi.org/10.1353/csd.2005.0040.

Lopez, J. D. (2018). Factors influencing American Indian and Alaska Native postsecondary persistence: AI/AN millennium falcon persistence model. *Research in Higher Education, 59*(6), 792-811. https://doi.org/10.1007/s11162-017-9487-6

MacKinnon, D. P., Krull, J. L., & Lockwood, C. M. (2000). Equivalence of the mediation, confounding and suppression effect. *Prevention science, 1*(4), 173-181. https://doi.org/10.1023/A:1026595011371

Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*(2), 224-253. https://doi.org/10.1037/ 0033-295x.98.2.224

Markus, H., & Conner, A. (2013). *Clash: 8 cultural conflicts that make us who we are.* Street Press.

Mayhew, M. J., Rockenbach, A. N., Bowman, N. A., Seifert, T. A., & Wolniak, G. C. (2016). How college affects students: *21st century evidence that higher education works.* John Wiley & Sons.

Moran, J. R., Fleming, C. M., Somervell, P., & Manson, S. M. (1999). Measuring bicultural ethnic identity among American Indian adolescents: A factor analysis study. *Journal of Adolescent Research, 14*(4), 405-426. https://doi.org/10.1177/0743558499144002

Nagayama Hall, G. C., & Maramba, G. G. (2001). In search of cultural diversity: Recent literature in cross-cultural and ethnic minority psychology. *Cultural Diversity and Ethnic Minority Psychology, 7*(1), 12-26. https://doi.org/10.1037/1099-9809.7.1.12

Nora, A., & Cabrera, A. F. (1996). The role of perceptions of prejudice and discrimination on the adjustment of minority students to college. *Journal of Higher Education, 67*(2), 119–148. https://doi.org/10.1080/00221546.1996.11780253

Oyserman, D., Kemmelmeier, M., Fryberg, S., Brosh, H., & Hart-Johnson, T. (2003). Racial-Ethnic Self-Schemas. *Social Psychology Quarterly, 66*(4), 333-347. https://doi.org/10.2307/ 1519833

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of Educational Research, 66*(4): 543–578. https://doi.org/10.3102/00346543066004543

Pascarella, E. T. & Terenzini, P. T. (1991). *How College Affects Students.* Jossey-Bass.

Pascarella, E. T., & Terenzini, P. (1997). Pattern of student-faculty interaction beyond the classroom and voluntary freshman attrition. *Journal of College Student Development, 32,* 123-130.

Pascarella, E. T., & Terenzini, P. T. (2005). *How college affects students: A third decade of research.* Jossey-Bass.

Patterson Silver Wolf, D. A., Taylor, F., Maguin, E., & Asher BlackDeer, A. (2019). You are college material—You belong: An underrepresented minority student retention intervention without deception. *Journal of College Student Retention: Research, Theory & Practice.* https://doi.org/10.1177/1521025119848749

Phinney, J. S., & Alipuria, L. L. (1990). Ethnic identity in college students from four ethnic groups. *Journal of Adolescence,* 13(2), 171-183. https://doi.org/10.1016/0140-1971(90)90006-s

Pickering, J. W., Calliotte, J. A., & McAuliffe, G. J. (1992). The effect of noncognitive factors on freshman academic performance and retention. *Journal of the Freshman Year, 4*(2), 7-30.

Rendon, L. I., Jalomo, R. E., & Nora, A. (2000). Theoretical considerations in the study of minority student retention in higher education. In J. M. Braxton (Ed.), *Reworking the student departure puzzle* (pp 127-156). Vanderbilt University Press.

Rhee, B. (2008). Institutional climate and student departure: A multinomial multilevel modeling approach. *The Review of Higher Education, 31*(2), 161-183. https://doi.org/10.1353/rhe. 2007.0076

Richardson, M., Abraham, C., & Bond, R. (2012). Psychological correlates of university students' academic performance: A systematic review and meta-analysis. *Psychological Bulletin, 138*(2), 353. https://doi.org/10.1037/a0026838

Robbins, S. B., Lauver, K., Le, H., Davis, D., Langley, R., & Carlstrom, A. (2004). Do psychosocial and study skill factors predict college outcomes? A meta-analysis. *Psychological Bulletin, 130*(2), 261-288. https://doi.org/10.1037/0033-2909.130.2.261

Savage, M. W., Strom, R. E., Ebesu Hubbard, A. S., & Aune, K. S. (2019). Commitment in college student persistence. *Journal of College Student Retention: Research, Theory & Practice, 21*(2), 242-264. https://doi.org/10.1177/1521025117699621

Shapiro, D., Dundar, A., Huie, F., Wakhungu, P., Yuan, X., Nathan, A. & Hwang, Y., A. (2017). *Completing college: A national view of student attainment rates by race and ethnicity - Fall 2010 Cohort.* National Student Clearinghouse Research Center. http://hdl.handle.net/10919/84035

Shotton, H. J., Lowe, S. C., & Waterman, S. J. (Eds.). (2013). *Beyond the asterisk: Understanding Native students in higher education.* Stylus.

Smith, J. L., Cech, E., Metz, A., Huntoon, M., & Moyer, C. (2014). Giving back or giving up: Native American student experiences in science and engineering. *Cultural Diversity & Ethnic Minority Psychology, 20*, 413–429. http://dx.doi.org/10.1037/a0036945

Strauss, L. C., & Volkwein, J. F. (2004). Predictors of student commitment at two-year and four-year institutions. The Journal of Higher Education, 75(2), 203-227. https://doi.org/10.1080/00221546.2004.11778903

Strayhorn, T. L., Bie, F., Dorime-Williams, M. L., & Williams, M. S. (2016). Measuring the influence of Native American college students' interactions with diverse others on sense of belonging. *Journal of American Indian Education, 55(*1), 49-73. https://doi.org/10.5749/jamerindieduc.55.1.0049

Sun, J., & Hagedorn, L. S. (2016). Homesickness at College: Its Impact on Academic Performance and Retention. *Journal of College Student Development, 57*(8), 943-957. https://doi.org/10.1353/csd.2016.0092

Thompson, M. N., Johnson-Jennings, M., & Nitzarim, R. S. (2013). Native American undergraduate students' persistence intentions: A psychosociocultural perspective. *Cultural Diversity and Ethnic Minority Psychology, 19*(2), 218. https://doi.org/10.1037/a0031546

Tierney, W. G. (1992). An anthropological analysis of student participation in college. *The Journal of Higher Education, 63*(6), 603-618. https://doi.org/10.1080/00221546.1992.11778391

Tinto, V. (1975) Dropout from higher education: A theoretical synthesis of recent research. *Review of Educational Research, 45*(1), 89-125. https://doi.org/10.3102/00346543045001089

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition.* University of Chicago Press.

Tinto, V. (1987). *Leaving college: Rethinking the causes and cures of student attrition* (2nd ed.). University of Chicago Press.

Torres, L. (2009). Latino definitions of success: A cultural model of intercultural competence. *Hispanic Journal of Behavioral Sciences, 31*(4), 576–593. https://doi.org/10.1177/0739986309349186

Trostel P. A. (2015). It's not just the money: The benefits of college education to individuals and to society. *Government & Civic Life. 4.* *https://*digitalcommons.library.umaine.edu/mcspc_gov_civic

Walton, G. M., & Cohen, G. L. (2007). A question of belonging: Race, social fit, and achievement. *Journal of Personality and Social Psychology, 92*(1), 82–96. https://doi.org/10.1037/0022-3514.92.1.82

Walton, G. M., & Cohen, G. L. (2011). A brief social-belonging intervention improves academic and health outcomes among minority students. *Science*, *331*, 1447–1451. https://doi.org/10.1126/science.1198364

Waterman, S. (2012). Home-going as a strategy for success among Haudenosaunee college and university students. *Journal of Student Affairs Research and Practice, 49*(2), 193–209. https://doi.org/10.1515/jsarp-2012-6378

Wong, C. A., Eccles, J. S., & Sameroff, A. (2003). The influence of ethnic discrimination and ethnic identification on African American adolescents' school and socioemotional adjustment. *Journal of Personality, 71*(6), 1197-1232. https://doi.org/10.1111/1467-6494.7106012

Wortman, P. M., & Napoli, A. R. (1996). A meta-analysis of the impact of academic and social integration on persistence of community college students. *Journal of Applied Research in the Community College, 4*(1), 5-21.

Woosley, S., & Jones, D. (2011). The foundation of MAP-Works. Benchmarking (EBI). https://www2.indstate.edu/studentsuccess/pdf/The%20Foundation%20of%20MAP-Works.pdf

Woosley, S. A. & Miller, A. (2009). "Integration and institutional commitment as predictors of college student transition: Are third week indicators significant?" *College Student Journal, 43*(4), 1260-1271.

Zajacova, A., Lynch, S. M., & Espenshade, T. J. (2005). Self-efficacy, stress, and academic success in college. *Research in Higher Education, 46*(6), 677-706. https://doi.org/10.1007/s11162-004-4139-z

Zimmerman, B. J. (2000). Self-efficacy: An essential motive to learn. *Contemporary Educational Psychology, 25*(1), 82–91. https://doi.org/10.1006/ceps.1999.1016

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Preparing for Admittance to and Completion of College

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This paper provides some guidelines on things that educators should consider in helping students decide on whether or not to pursue a college degree. It offers suggestions on how to prepare students for college while they are in high school, as well as, assisting them in choosing and completing an appropriate degree program once admitted to college.

Introduction

Inevitably students graduating from high school or nearing graduation are faced with the question of "What do I do now?" or "Where do I go from here?" This question arises from their own natural introspection, as well as, from a number of external sources, such as parents, guardians, relatives, friends, and society as a whole. Having reached this crossroad in their lives where they are no longer truly children but are not yet fully-matured adults, they ponder whether they should pursue a college or a trade-school education, what institution of either variety they should attend, what major or trade the should choose, or should they disdain further education, temporarily or permanently, and seek immediate employment instead? Given that the choices one can make seem limitless and, worse, that the costs, opportunities, outcomes, etc., associated with the choices are unknown at the time the choices are made can create considerable angst for high school students, their parents, and others.

This article articulates the author's observations, advice, and recommendations relative to the dilemma faced by students at this crossroad in their lives. It is written from the perspective of one who faced this same dilemma and who had to make the inevitable choices associated with it. Although it is unavoidably discussed from the author's experiences and observations, it attempts to provide some general and helpful advice for educators in helping students, rather than suggesting or advocating a specific path to young people pondering their future. The discussion herein focuses on things for students to consider and do before and following high school graduation. The former will undoubtedly influence the latter, at least initially.

Future Preparation While in High School

While students are preoccupied throughout high school with academic courses, extracurricular activities, social activities, family relationships, and other challenges and pursuits, they should be encouraged to begin thinking about and planning for their future after graduation from high school. Is college in their future or will they pursue vocational training or seek immediate employment? In making this decision, students must be made aware of their aptitudes and interests. These will, no doubt, be revealed, to some extent, by their attention to and progress in their academic courses, as well as, in their extracurricular activities (band, debate, theater, choral group, athletics, etc.). Directional help can be given by parents, relatives, friends, high school teachers, and high school vocational counselors. Students should be given aptitude tests and exhorted to take different elective courses where permitted. Further, they should be directed to seek summer internships or other opportunities or, at least, take advantage of available job- shadowing opportunities. In addition, they can be steered into taking advantage of volunteer opportunities that provide benefits to some segment of the community. Such activities would not only help to pique students` interest and develop their work skills but would also reflect favorably on their resumes.

A majority of high school graduates will, indeed, opt to attend college. Though the percentage of graduates enrolled in college was below 50% as recently as 1976, it rose to 69% by 2005. Since then, it has fluctuated. The highest enrollment rate was achieved in 2009 (70.1%). The rate fell to 66.2% in 2012 and further declined to 69.9% in 2013. It increased to 69.7% in the fall of 2016, but declined a bit to 69.1% for October 2018,

the latest figure available from the Bureau of Labor Statistics (BLS, 2019; Norris, 2014).

While the rate of high school graduates enrolling in college has been generally rising in recent years, the proportion of these incoming freshman who do not return for a second year has also been on the rise. According to the Hechinger Report, this rate of non-return reached 55% for those who started college in 2015. It had been 44% two years earlier, an alarming increase in this rate. Some students perhaps choose not to return due to such things as reversals in their financial situation, pregnancies, etc. Others leave because they did not really want to be in college. Many such students drifted into college, going along with the flow of their friends and contemporaries. Perhaps many enrolled to please or appease their parents. Others feel lonely and isolated even on small campuses. It has been contended that over a million students a year quit college. Hence, despite the fact that an increasing proportion of high school graduates have been going to college, the proportion of those who stay is flat or down (Marcus, 2018).

Nevertheless, recall that generally between two thirds and seventy percent of high school graduates enroll in college. Mention has already been made of how students` high school academic performance and their participation in extracurricular activities, both on and off high school campuses, can provide guidelines for decisions relative to their future. There is evidence to support that what students do in high school matters significantly. For example, a study by French and colleagues examined the impact of high school academic performance on future educational attainment and earnings. These researchers used data from actual high school transcripts for over 10,000 24-34 year-olds. They found a strong relationship between high school academic achievement and future educational attainment and earning levels. Specifically, their study noted that a one-point increase in high school GPA was associated with a doubling of the probability of the college completion rate for both the males and females (from 21% to 42%). Further, this result was found after having controlled for other variables, such as family size, innate ability, etc., having an impact on future educational attainment. In addition, the study concluded that students with higher high school GPAs were more likely to earn graduate academic degrees. That same one-point rise in GPA led to annual increases in earnings of 12 percent for males and 14 percent for females (French, Homer, Popovici, & Robins, 2014). It is likely true that student participation in campus and off-campus extracurricular activities alluded to above will further enhance the college completion rate and future earning levels of high school graduates by developing and solidifying their academic and interpersonal knowledge and skills. College admission and scholarships offices, as well as future employers, are always looking for highly-motivated, well-rounded individuals.

Choosing a Major in College

Students entering college will face a smorgasbord of majors. Some may know what they want to major in upon entry into college, but many will not. They will need to go through a discovery process. For most colleges, this does not necessarily pose much of a dilemma. In an attempt to provide students with a board-based education background, most colleges prescribe what courses students are to take in their first two years of study. That is, these institutions require completion of basic mathematics, English, history, communications, physical and/or biological science, social science, and perhaps, other basic or elective courses. These basically give students a cafeteria approach to not only develop basic broad-based skills but also to assist them in finding appropriate majors.

Hopefully, students will soon find their majors in keeping with their abilities, interests, and goals. In each case, the major chosen should be both something the student will enjoy, as well as, something that will provide said student with an acceptable standard of living. This standard is highly individualized as money and material possessions are evaluated quite differently among individuals. For example, in some the “psychic” income derived from a job well done or from helping others may outweigh the monetary income derived from other occupations or professions.

However, every occupation will come with a monetary salary. Students considering the pursuit of given majors in college should be assisted in ascertaining the average starting salaries of various occupations they are considering. One good source providing such information is the National Association of Colleges and Employers (NACE) Salary Survey. This survey is issued in Winter, Fall, and Summer of each calendar year, providing data by major, industry, and region. For example, the Winter 2019 issue is the first report for the college class of 2019. It provides starting salary projections by undergraduate major. This issue also provides projections for advanced degrees in selected disciplines. Actual starting salary data for the 2019 class are provided in the fall 2019 issue. Since the Summer issue of any given year serves as the final report of the final years graduating class, the Summer 2019 issue provides starting salaries for the class of 2019. Then, the Summer 2020 survey issue is the final report for the 2019 class.

Table 1 below provides the projected mean salary for a selected group of undergraduate majors for 2019.

Table 1 *Projected Average (Mean/Starting Salaries for Selected Undergraduate Majors, 2019)*

Academic Major	2019 Average Salary Projection
Chemical Engineering	$72,889
Electrical Engineering	$70,635
Mechanical Engineering	$70,329
Computer Science	$68,103
Civil Engineering	$65,977
Engineering Technology	$62,936
Mathematics/Statistics	$62,823
Management Information Systems	$61,697
Economics	$59,480
Finance	$58,464
Accounting	$57,511
Business Administration/Management	$57,133
Marketing	$56,186

Source: National Association of Colleges and Employers, Salary Survey, Winter 2019

Given such projected average salaries, one should be train--ed to consider his or her projected work life in striving to make estimates of lifetime earnings. For example, assume an 18 year-old female entering college and beginning her career at age 22 will have an expected work life of 26.6 years. Assume conservatively that her salary will increase by 2 percent per year. If she earns a degree in economics and begins her career at a salary of $64,383, one can calculate the present value of her salary for each succeeding year of her 26.6 year work life expectancy and add these to obtain the present value of her work life expected income.

Note from Table 1 that the average starting salary for economists for 2019 was $59,480. This level would be expected to be higher for each of the four years that this student would attend college. In keeping with the moderate rate of inflation and wage increases for recent years, it is assumed, as above, that the average starting salary rises by 2 percent for each year of the four years of college attendance. Hence, when this student graduates and assumes a job in the economics profession, her expected starting salary would be the $64,383 figure noted previously. Discounting the salary of each of the 26.6 years of this individual's expected work life by an appropriate discount rate (here assumed to be the approximately 2 percent observed recently for long term com--posite treasury bonds) and adding these amounts yields the present value of this individual`s expected income stream. Under these assumptions this present value amounts to approximately $2,232,480.

However, such a student must also calculate the present value of the cost of attending college. These would include the direct or explicit costs involved, as well as, the indirect or implicit costs of attending college. The direct costs of attending include tuition, fees, costs of supplies, transportation costs, and any other costs that are associated with attendance at the specific college chosen by the student. Room and board, inclusive of meals, will not be included in the direct costs of attending college because one would have such expenses whether or not one attends college. These are not expenses exclusively associated with the particular choice of college attended.

The indirect or implicit costs of attending four years of college are not as easy to identify as the aforementioned direct costs. They are, however, just as important a component of the cost of attending college, a component often ignored most likely because people are not aware of these costs. Yet every economic decision one makes involves both direct and indirect costs, that is, explicit and implicit costs. It goes back to the basic fact that all economic entities, be they individual persons, individual business firms, or the economy as a whole, face scarcity. Consequently, scarcity necessitates that choices be made which lead to implicit or indirect costs. That is, one having $10.00 (limited or scarce income) and, let's say, the opportunity to buy either a sandwich or a CD, each costing $10.00, can only buy one or the other of these products. The purchase of one (choosing to buy the sandwich) denies one the opportunity to buy the alternative product (the CD). Hence, the purchase of the one good leads to the sacrifice of the other. Sacrifice is, indeed, the real nature of the cost of making such an economic decision. One has passed up or sacrificed the opportunity to obtain the alternative good. Herein, one sees that you are to employ the idea of opportunity costs to identify the indirect or implicit costs of any economic decision.

In the present context, then, the indirect or implicit costs of attending college can be measured by considering what one would ordinarily do with one`s time if he or she did not attend college. Getting a job would be the most likely alternative activity for one not attending college. By choosing college, one would be sacrificing the income earned from a full-time job. To identify how much income is lost and, hence, the amount of the indirect or implicit costs, it is necessary to identify the income lost from his or her best-paying full-time job.

Of course, this salary (income) earned by high school grad--uates choosing work over college attendance will vary from job to job. Therefore, in this example, the average salary for high school graduates is used. For 2018, this was reported to be $35,256 per year. (Josephson, 2018). This figure will increase, under our assumptions, by 2 percent for each year of college attended. If one began college in 2019, the income lost would be about $35,961. Increasing this amount by the 2 percent in each of the succeeding years of college and applying the percent discount rate alluded to above yields the present value of the indirect (implicit) costs of going to college. This total present value for the four years of attending college would be nearly $141,025.

To this must be added the direct tuition and other costs emanating from attending college. Average costs are reported for each academic year for public four-year (in-state), as well as, for public four-year (out-of-state) and for private four-year institutions. For the 2017-18 academic year, these average direct tuition and related costs were $14,490; $30,140; and $38,690,respectively. These average costs rose by 2.6% for the first two categories above to $14,840 and $30,900, respectively and by 3.1% for the third category to $39,859 for academic year 2018-19. Assuming one begins college in the 2019-20 academic year and completes college in four years ending in the 2022-23 year, the total direct cost of attending college can be computed for each of the three types of academic institutions (ValuePenguin, 2019).

For illustration purposes, the average direct costs were incr--eased each year by 2.6% a year for the first two types of institutions and by 3.1% each year for the third category of academic institutions. The resulting mean average figures were then discounted by the appropriate discount rate (2%). This led to an average direct cost of $59,945.49 for the public four-year (in-state) schools; $125,120.57 for the public four-year (out-of-state) schools; and $163,381.02 for the private four-year schools. The annual direct and indirect costs were added for each of these three types of schools. The results are shown in Table 2.

Table 2 *Present Value of Average Costs of Attending College Over 2019-20 to 2022-23 Period for Various Institution Types*

	Direct Costs	Indirect Costs	Total
Public Four-Year (In-state)	$59, 945.49	$141,024.85	$200,970.34
Public Four-Year (Out-of-State)	$125,120.57	$141,024.85	$266,145.42
Private Four-Year	$163,381.02	$141,024.85	$304,405.87

Source: Average Cost of College in America: 2019 Report and Author Computations

Recall that the present value of the work life income stream earned for the hypothetical student described above was computed to be $2,232,480. Table 3 below displays the net present value for our student in each of the three institutional types. These figures are derived by subtracting the present values of the average costs of attending college shown in Table 2 above from the present value of the expected income stream of this hypothetical student.

Table 3 *Net Present Value for Various Institutional Types*

	Present Value of Expected Income	Present Value of Costs	Net Present Value
Public Four-Year (In-state)	$2,232,479.72	$200,970.34	$2,031,509.38
Public Four-Year (Out-of-State)	$2,232,479.72	$266,145.42	$1,966,334.30
Private Four-Year	$2,232,479.72	$304,405.87	$1,928,073.85

Hence, this hypothetical student would have a positive net present value deriving from attending any of the three types of institutions. The rule, therefore, being that one should pursue an activity having a positive net present value, this student should, therefore, attend college at any one of the three types of institutions. Of course, her best option would be to attend a public in-state institution which usually will yield the highest net present value. Of course, this example was presented to illustrate generally how one considering whether or not to attend college would compute and compare the benefits and costs associated with his or her decision. Everyone's situation will differ due to specific circumstances in each case. The example did not understandably address the monetary value of any non-salary fringe benefits associated with the job opportunities sacrificed when one attends college. Inclusion of the value of these benefits would tend to increase the total cost forgone by attending college and would, therefore, reduce the net present value of the decision to attend college. Of course, such benefits will vary considerably across different types of jobs and may, in some cases, be negligible or nonexistent.

However, the Bureau of Labor Statistics does issue regular reports on Employer Costs for Employee Compensation, the latest one of which, at the time of this writing was issued on September 17, 2019. Data on employer costs for employee compensation are reported generally for civilian workers, private industry workers, and for state and local government workers. Further, similar data are reported by occupational groups and industry groups within each of one of the three aforementioned classifications of workers. In addition, such data are reported for private industry workers by bargaining status (union or non-union), as well as, by full-time or part-time work status (BLS, Employer Costs, 2019).

These data are also available for private industry workers

by establishment size from 1-99 workers to 500 or more workers for all workers, as well as for workers within industry group (Goods-Producing and Service-Producing). Finally, data are available for private industry workers by census region, as in the Northeast region, and by census-division, as in the New England division of the Northeast region.

These average data figures can be incorporated into the calculation of the indirect or implicit costs associated with the decision to forego work and attend college for four years. The lowest of the current per hour costs of benefits for the three classifications is $10.30 for private industry workers. For a 40-hour work week, fifty-two weeks a year, this would result in a total employer costs (employee benefit) of $21,424. Allowing this figure to increase by 2 percent a year over the four years of college and then summing the present values of these amounts for the four-year college attendance yields a total present value foregone of $84,014.91.

This figure is added to each of the present values of cost amounts shown in Table 3. The new results are illustrated below in Table 4.

Table 4 *Net Present Value for Various Institutional Types Incorporating the Present Value of Fringe Benefits*

	Present Value of Expected Income	Present Value of Costs	Net Present Value
Public Four-Year (In-state)	$2,232,479.72	$284,985.25	$1,947,494.47
Public Four-Year (Out-of-State)	$2,232,479.72	$350,160.33	$1,882,319.39
Private Four-Year	$2,232,479.72	$388,420.78	$2,194,058.94

Hence, the net present value of attending four years of all of the three institutional types is reduced, as noted in Table 4. However, all three display positive net present values and would justify college attendance in our example. Quite frankly, this whole analytical process should be taught to incoming students in orientation sessions or in an introductory course which students must be required to take in their first session (semester).

How to Proceed Once in College

Once students enroll in their colleges of choice and begins attending class, educators should impress upon them that there are some logical “do’s and don’ts” to begin. Of course, one should consult with an advisor to set up a workable class schedule. As alluded to earlier, although a given student may not know what major to pursue, this is not a serious problem because students are normally required to take general educational requirements of various types for their first two years of study. However, each student will eventually settle on a given major. Each student will be aided in this selection by an academic advisor who will help the student to stay on track in pursuit of his or her degree. In the early going, some institutions provide lower division advisors for students who eventually move on to upper division advisors once they cross the threshold into upper division. The advisors may be faculty in each specific discipline or may be professional advisors operating out of the Dean`s office of each college

Students must be encouraged however, to responsibly part--icipate in the advising process by being aware of what they will have to do to satisfy the requirements of their respective majors. They should check regularly with their advisors, making sure to keep their advising appointments.

Students should be admonished to establish the habit of attending classes regularly and to participate in these to the extent that this is allowed and encouraged. Good study habits should be adopted immediately. An old Latin saying paraphrased here reads “Repetition is the mother of students” should be one of student’s first rules of thumb. That is, they should be urged to review the material of each course on an ongoing basis. The more one works with the course content, the more readily it will be retained by the student. This helps prevent exam preparation panic and cramming the night before the exam. That night becomes a review, rather than a highly anxious cramming session. Besides, cramming usually does not result in solid retention of subject matter.

Of course, students must be concerned with grades achiev--ed in their various courses. Though this alone should motivate them to attend class and study judiciously, advisors and faculty encourage them to do so. Normally doing so results in higher GPAs and greater depth of knowledge. Students need to understand that these higher GPAs will be attractive to perspective employers. Although students may often struggle a bit in the first year or two in college getting used to their new circumstances and the wide array of courses required of them, they must be advised to avoid the onus of bad grades in the early going as much as possible. An early low GPA is difficult to overcome. Advisors and faculty need to repeatedly tell students that their grades within their chosen colleges and majors are especially important in their career-development plans and will be of keen interest to perspective employers.

Faculty and advisors, of course, should do all that they can to encourage students to learn. The author herein always stresses that students should always be open to learning. He urges them to put their best effort into all of their courses realizing that they will be taking basic courses in their first two years or so of their college experience, some courses of which may not be of particular interest to them. These courses, it must be emphasized, are useful in developing a basic set of skills in mathematics, English, history, oral and written communications, etc. that will ultimately serve them well in pursuit of their chosen majors. Further, students need to be

reminded that someone is paying for them to take these courses and that they should not waste the opportunity and cost involved.

The author relates some of his own experiences in the value of acquiring whatever knowledge one can as he or she moves through the formal education process and throughout life. For example, the author relates that he earned his undergraduate degree at a university that required all students, regardless of their major, to pass thirteen hours of a foreign language consisting of two five-hour conversational courses and one three-hour literature-translation course. Although he did not enjoy this very much at the time, this exposure to a foreign language did serve him well in the future. For when he decided to pursue a Ph.D. in economics, he had to display competence in a foreign language by passing a written exam consisting of translating a passage in the foreign language of his choice. He reviewed The French that he had taken as an undergraduate and passed the written exam on his first attempt.

This made him the envy of his entering class into that Ph.D. program because none of the others in said class had attended universities requiring any classes in a foreign language. Consequently, they had to enroll in foreign language classes in addition to taking graduate classes in economics in order to prepare for the aforementioned written foreign language exam. When they complained and labeled the author as lucky, he simply responded that he had paid his dues heavily in this regard on the front end (those thirteen undergraduate hours of in French) while they were paying on the back end (with language courses while in graduate school). The author found that his basic math skills benefitted him, indeed, made him virtually indispensable in a job before he returned to graduate studies. Further, he has been complimented over the years for his writing skills by professors and administrators. As the author tells his students and advisees, knowledge and skills learned today may give them an advantage in the future.

The author also suggests that faculty, advisors, etc., period--ically remind students of the benefits and opportunities that they enjoy but often take for granted. An occasion that jolted this reminder home to the author occurred while he was Director of Graduate Studies at the university which he has long served. A young lady from the People`s Republic of China came for her admission interview with the author. She had been assigned the role of a teacher in China. Now, in her late-twenties with her new-found liberty and countless opportunities in America, she aspired to attain an MBA and pursue a career in business. Her unbounded enthusiasm and optimistic glee with being able to pursue her own self-chosen goals for the first time in her life overwhelmed the author and has always reminded him not to take such blessings for granted. Even though a student`s path through college may be long and difficult, it is still possible to traverse this path to achieve one`s ultimate goal(s). As this young lady and countless others have learned, the achievement of their goals is well worth the effort. The feeling of accomplishment attendant to such achievement is, indeed, priceless. It is something that can never be taken away.

Cheating should never be an option chosen by students. They must be made aware of this and urged instead to study and retain knowledge. Colleges normally have well-established policies relative to cheating. Faculty should post their policy on cheating on their syllabi and often remind students of the consequences of being caught cheating. That is, cheating can have serious consequences including being expelled from one`s program and / or from the institution. Being caught cheating may sully one's reputation and be hard to overcome, possibly harming one in the future. Further, let's face it, cheating makes one feel badly about oneself. Faculty should establish a well thought-out policy on cheating and post it clearly on their course syllabi. Further, they should often remind students of the consequences of cheating.

Students should ideally not work while attending college, focusing their full attention on their studies. If working is a necessity, students should seek work on campus and minimize their work time. Working off campus will require more time in traveling to and from campus. It helps to stay as much as possible in the academic environment. Further, students should be advised to avoid working extra hours that many off- campus jobs may provide or require. This can lead to exhaustion and a consequent neglect of one's studies. It is better to complete one's studies sooner rather than later. Overworking may induce students to take reduced course loads and lengthen their college attendance. However, some students become enamored of the money they can earn especially in off campus jobs. While this may be appealing, it will require students to pay tuition and other college expenses over a longer period of time. Further, it is a short-sighted strategy because it seduces students into accepting the lower income provided by the part-time jobs instead of aggressively pursuing the higher income levels and fringe benefits associated with their post-graduation full-time employment. Hence, advisors should regularly check on the work status of their advisees and encourage them to act judiciously in this regard. They can also advise students to pursue both on and off campus scholarships to eliminate or lessen the need to work.

In addition, college orientation personnel, advisors, and faculty should familiarize students with the campus facilities and opportunities available to them. Students need to be quickly exposed to the location and hours of the library, learning labs, academic and other counselors, the health center, etc. These college personnel should also prompt

students to engage in extracurricular activities available on their college campuses. These are usually quite varied in number and in scope and can enhance student knowledge, enjoyment, and overall well-being. They will also add to one's resume and may well be attractive to future employers who are seeking well-rounded student leaders. An Activities Day, or the like, should be, and usually is, held on campus near the beginning of the academic term.

Further, students should, where possible, be encouraged to seek internship opportunities. The Dean`s office or respective academic departments of students can often assist them in finding suitable internships. These allow students to broaden their knowledge and experience and allow them to put the knowledge they are acquiring in their college classes to use. Often, these internships lead to post-graduation employment with the same firms providing such internships. In my eleven years as my department`s Internship Director, I have seen many internships turn into full-time employment. If not, they certainly serve to enhance student resumes making students more attractive in the job market, as well as to graduate and professional school recruiters.

As they begin and progress along their journey through college, students should be led to develop meaningful relationships with faculty, advisors, administrators, and perhaps, other college personnel for these are typically individuals who are dedicated to educating them and helping them to discover and achieve their vocations in life. Some faculty, advisors, and other college personnel are, to be sure, more open and dedicated than others to students. Therefore, students should seek out such people as the vehicles to carry them along the proper road to the completion of their degrees and to their ultimate success and happiness in life. In modern parlance, these individuals become an integral part of students` networks. Further, it sometimes helps to have someone to talk over concerns or problems students may have.

Such faculty, advisors, etc., can often be invaluable sources for providing recommendations for students seeking jobs and / or admission to graduate or professional school. Most faculty and others are happy to, and even honored, to provide such recommendations. They do, after all, possess a broader range of knowledge and experience they can draw upon to benefit their students and advisees. It gratifies such people to assist students in solving their problems and in achieving their goals. Further, these college personnel may assist former students and advisees in their business and professional roles by recommending current and recent graduates for possible employment.

Summary

This paper has offered the advice of the author on what students and high school and college personnel can do to help students make the best of their high school experience, as well as how to use this experience to best prepare for college. It has provided a hypothetical example, based on a set of specific assumptions, to give guidance to students in determining whether or not to attend college or to delay attendance for some time. Further, the example was intended to help those students opting to attend college to decide on which type of college and which specific college they wish to attend. Finally, the article discusses ways in which educators can help students maximize their college experience, both for the experience itself, as well as for using it as an entree into the workplace, graduate school, and professional school.

It is not intended to apply to each and every student, of course. It is simply a general set of things to consider in making future educational / work decisions. The author has relied on his own experience, as well as that of friends, relatives, and colleagues. Further, the paper`s hypothetical numerical example, though based on sound economic theory and data, obviously is intended to suggest students a general approach to evaluating the net value of attending college. Each individual, with appropriate assistance from faculty, counselors, and advisors, would have to tailor the approach to his or her individual circumstances.

References

Bureau of Labor Statistics, (2019). College enrollment and work activity of recent high school and college graduates summary. *Economic News Release.* Retrieved April 25, 2019, from https://www.bls.gov/news.release/hsgec.nr0.htm

Bureau of Labor Statistics, (2019). Employer costs for employee compensation – June 2019. U.S. Department of Labor. Retrieved September 17, 2019, from https://www.bls.gov/news.release/pdf/ecec.pdf

College Board, (2019). Trends in college pricing 2018. *Trends in Higher Education,* Retrieved from https://research.collegeboard.org/trends/college-pricing.

French, M. T., Homer, J. F., Popovici, I., & Robins, P. K. (2014). What you do in high school matters: High school GPA, educational attainment, and labor market earnings as a young adult, *Eastern Economic Journal*, 41(3), 370 –386. doi 10.1057/eej.2014.22

Josephson, A. (2018, May). The average salary by educational level. *SmartAsset.* Retrieved from https://smartasset.com/retirement/the-average-salary-by-education-level

Marcus, J. (2018, July). More high school grads than ever are going to college but 1 in 5 will quit. *The Hechinger Report.* Retrieved from https://hechingerreport.org/more-high-school-grads-than-ever-are-going-to-college-but-1-in-5-will-quit/

National Association of Colleges and Employers, (2019, Winter). *NACE salary survey.* National Association of Colleges and Employers, 1-56. https://www.naceweb.org

Norris, F. (2014). Fewer U.S. graduates opt for college after high school. *The New York Times*, April, 25. Retrieved from https://www.nytimes.com/2014/04/26/business/fewer-us-high-school-graduates-opt-for-college.html

Corpus, J. H., & Wormington, S. V. (2014). Profiles of intrinsic and extrinsic motivations in elementary school: A longitudinal analysis. *The Journal of Experimental Education, 82,* 480–501.

ValuePenguin, (2019). *Average Cost of College in America: 2019 Report*. Retrieved from https://www.valuepenguin.com/student-loans/average-cost-of-college

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Abu's Lesson

Barbara Kaplan Bass

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Several summers ago, I invited Abu the Flute Maker to visit the Maryland Writing Project's Invitational Summer Teacher Institute. I wanted to introduce to the teachers gathered for our workshop a person who had found his gift, his talent, in spite of school rather than because of it. What might we learn from him to take back to our classrooms, making them into spaces where students can uncover what they do best? We discovered that afternoon lessons that we often have to look for our gifts inside as well as outside of the school room.

As a child, Abu discovered his ability to create music out of almost anything – a chair, a bedpost, a clothes hanger, for example. He could also make flutes. With his perfect pitch and uncanny ability to know just where to place the openings for air, his flutes create music with an ethereal quality. This talent, of course, "didn't count" in school, and he eventually dropped out. Now, however, he has his own band that makes music from a variety of home-made instruments.

He is a musical master craftsman and a treasured resource in Baltimore, traveling from school to school attempting to nurture the creative ability in each child he meets.

"When I was coming up in school," Abu says," I was slow, and I was a class clown. Now I want to teach kids, even if they're not academically gifted, not to give up hope in themselves. God gave everybody a talent or gift, and you can sharpen it and make a living, using your hands and your

imagination, and learning to use as many tools as possible."

Abu's visit to our Summer Teacher Institute demonstrated to us the strength of the human spirit, but we learned another lesson that day as well. While Abu was setting up his instruments, I walked across the hall to the student daycare center that was housed in the same building as our Institute and invited the teachers to bring the children to Abu's concert. They were thrilled, but asked if they could bring the students in after they awoke from their naps. I didn't think Abu would mind the interruption.

When I returned, Abu was ready to begin. At the front of the room he had set up huge home-made conga drums as well as some smaller percussion and string instruments, also home-made."Who is a musician?" he asked us. "Who is a drummer?" No one spoke. "Come up!" he entreated. "Come up and play the drums! Choose an instrument!" No one moved. The teachers' expressions said, "Who me? Don't look at me! Choose someone else. I'll make a fool of myself up there." Abu was beginning to become frustrated when the door to the room opened and the children from the day care center poured in. As soon as they saw the instruments, they ran toward them, surrounding Abu, whose eyes lit up. "Who's a musician?" he asked again. Every child responded: "I am! I am!" Some of the children didn't bother to answer. They just walked up to the drums and began playing. Others began dancing spontaneously to the music their classmates were creating. The adults in the room looked sheepishly from one to the other. I thought to myself, "What has happened to us?"

As demonstrated by the children from the daycare center, we can see that most children do not enter school anxious. They are not afraid to answer a question or take a chance at something new. Children at this age assume they are creative. They assume they can, not that they cannot. Unfortunately, most anxiety, and most hesitance at speaking up, has its roots in the classroom environment. Abu learned the hard way that he had to develop his talent not in school, but out of it.

What can we as teachers do to help students find what they can do best rather than unknowingly create an atmosphere in the classroom that causes anxiety? Studies have shown, for example, that students who take more writing classes tend to be more apprehensive about writing than those who take fewer writing courses. In their study *Exploring the Relationship between Writing Apprehension and Writing Performance: A Qualitative Study*, Badrasawi, Zubairi, and Idrus (2016) found that "writing apprehension has a negative influence on students' writing performance; the sources of contributing factors could be instructors and the teaching-learning setting." Other studies have proven that students do not become anxious right away: anxiety builds up with each successive year in school, significantly impacting a student's ability to learn and perform up to his or her capacity (Stack, 2018). Unfortunately, as can be seen in the reaction of the teachers themselves when they were asked to participate in music-making, the effect of repeated failure takes its toll, not only in elementary school, but in high school, college, and beyond. The patterns of fear and anxiety started in kindergarten grow in high school and become deeply ingrained by the time students find themselves in a post-secondary setting.

By the time students are preparing for college or the world of work, a consistent tendency emerges in their levels of anxiety. Part of this trend can be attributed to the normal self-consciousness that develops as children mature, but the school setting must take a major portion of the blame. Even though students who are affected by anxiety are usually quite capable intellectually, poor self-esteem and anxiety can interfere with their ability to produce work comparable with their abilities. Joseph Chilton Pearce, an American author of several books on child development, writes in his book *Magical Child*, "Anxiety is always the enemy of intelligence. The minute anxiety arises, intelligence closes to a search for anything that will relieve the anxiety." (Pearce, 1977, p.99) Abraham Maslow confirms Pearce's point in his seminal work *Toward a Psychology of Being*: "All those psychological and social factors that increase fear will cut out the impulse to know; all factors that permit courage, freedom, and boldness will thereby also free our need to know." (Maslow, 1988, p. 15)

When I think back to my own early educational exper--iences, I remember rules and restrictions, standing in the corner if my spirit began to emerge, being taught what I now realize was "sight" reading and after guessing a word incorrectly, not trying to answer at all. After a steady dose of these experiences, I learned to wait for someone else to answer, even when I was sure I was correct. There were no opportunities for exploration in the public schools I attended, and risk-taking was discouraged. I never felt safe when it came to participating in class discussions. My third grade teacher, Mrs. Bodine, actually told me that I asked too many questions! I saw that hesitance in the faces of the teachers on that summer morning when we gathered to meet Abu, and I see it in my own college students. They sit in class terrified that they will be called on, afraid they will say something stupid and be ridiculed. "I'm on your side," I tell them, but it takes at least a month into the semester before I can encourage them to trust me enough to make that leap, even in a revision-based classroom. One of my colleagues once referred to grading as "de-grading." As I am reading their final drafts, I always keep

that term in mind.

My school memories illustrate where my creative child went, but because of my own will and several important adults in my life, I was able to discover a way to, as Maslow says, "free our need to know." At the age of eight, I was left alone after school to care for my five-year-old brother while my parents were at work. I would pick him up from his kindergarten class and walk him home, waiting until the last possible minute before unlocking the door and stepping into our empty apartment. One afternoon, I took a long walk through the center of town before heading home, reading out loud to my brother the words printed on every door we passed. It kept him amused. When we came to the one that said "Free Public Library," I cupped my hands around my eyes and looked in through the glass door. Instead of the inside of a store, I saw people reading. There were row upon row of books, and adults and children, reading and browsing. The friendly librarian smiled at me, beckoning me to enter. I took my brother in one hand and tugged on the door with the other. She led us to the children's section and pointed out to me a separate bookcase labeled "biography." I chose a volume entitled *Amelia Earhart, Aviatrix* and began to read.

My life took a turn that afternoon that has made all the difference for me – and for my brother, who is also an avid reader, both of us encouraged by what turned out to be our daily stops at the library after school. I don't know if I'll ever understand such forces in the universe, but I will be eternally grateful for the one that brought me to that door. My library card is still one of my most prized possessions. Whenever we moved to a new town, the first place I located was the public library. I am drawn to books and am happiest when I am curled up, lost in one.

As I read my way through that library, I began to under--stand that there was a distinct difference between going to school and learning on my own. After immersing myself in reading, I naturally began to write my own stories and started keeping a journal, filling it with poetry and writing ideas. My elementary school music teacher, Miss Doris Hollenbach, even put one of my poems, "The Wind," to music for the glee club to sing at a school assembly, and my picture and an article about "the young poet" was published in our local newspaper.

My trips to the library plus a teacher who saw a spark in me (Thank you, Miss Hollenbach!) helped me recognize my self-worth. I developed a growing understanding of my potential and began to understand that there were people out there who might help me find my own happiness. I discovered a world beyond Dick and Jane, a discovery that deepened and sustained my love of reading and writing. How I felt in the library and how I felt writing in my journals influenced my ability to learn in ways I am still just beginning to understand. From that point on, too, I began to speak up in class, express my opinions, and make an impression on my teachers, who knew they could count on me to make a contribution to class discussions, a pattern that continued through secondary school and then into college and graduate school. When I started teaching, I wanted to be "that teacher," that Miss Hollenbach, for my students, the one who helped guide them into uncovering their own self-worth.

What is it that we can learn from Abu that we can pass on to our post-secondary college students and future businessmen and women? Like Abu, we, as teachers need to help them, even if they are not academically gifted, not to lose hope in themselves, to help the spark grow into a flame. We should not be asking IF a child is intelligent, but instead asking HOW a child is intelligent. As educators, we need to be better risk takers ourselves, trying out new methods, pushing the limits of discovery. If we are going to help our students uncover their gifts, help them learn that it is OK to color outside the lines, we will need to start teaching outside those lines ourselves, helping to nurture every learner.

By the end of that summer morning at the Summer Teacher Institute, every one of the teachers had been lured onto the stage through Abu's magic and the preschoolers, who were having such a wonderful time. They took a chance playing the instruments along with the children, everyone pounding, strumming, and squawking. The final moments turned into a fabulous concert, with everyone laughing and singing. There were so many of us wanting to be musicians that there weren't enough instruments for everyone, but Abu made sure that there would be another round of playing, and then another, until everyone had a turn, every one of the teachers experiencing the openness and courage to explore outside of his or her comfort zone.

Creativity is often described as a spark or a seed. And as we know, sparks quickly burn out unless fanned into flames and seeds die if not exposed to sun and water. Perhaps that is Abu's lesson: "Everyone has a spark, a seed, and gets a turn to show it off." And the librarian's lesson? "Come in! There's a place for you here." And Ms. Hollenbach's lesson? "I will help to fan the flames. I will provide fertile ground for you to grow."

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References

Badrasawi, K. J. I., Zubairi, A., & Idrus, F. (2016). Exploring the Relationship between Writing Apprehension and Writing Performance: A Qualitative Study, *International Education Studies, 9*(8), 134-143. doi:10.5539/ies.v9n8p134

Maslow, A. (1966) *Toward a Psychology of Being*, New York: Van Nostrand Reinhold.

Pearce, J. C. (1977). *Magical Child*, New York: Penguin Books.

Stack D. E. (2018) Managing anxiety in the classroom. *Mental Health America*. Retrieved from www.mentalhealthamerica.net/blog/managing-anxiety-classroom

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