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Date: 11/23/09

Introduction

Researchers generally agree that a constellation of familial factors exert significant influence on the educational aspirations and academic achievements of adolescents (e.g. Garg, Kauppi, Lewko, & Urjnik, 2002; Garg, Melanson, & Levin, 2007; Sánchez, Reyes, & Singh, 2006; Teachman, & Paasch, 1998). Among those salient factors are parent's occupation, educational attainment, socioeconomic status, family composition, parental involvement, peer and teacher influence, and adolescent self-efficacy. In the extant literature, each of these factors has been examined in relation to one another with some emerging as having greater direct effect.

Sánchez, Reyes, and Singh (2006) identified negative domains within the family such as low parental school involvement, socioeconomic status, and educational level to explain Latino youths' educational failure. Behnke, Piercy and Diversi (2004) found a connection between Latino youth's educational and occupational expectations and their parents' education. Garg et al. (2002) reported that "educational self-schema," referring to the student's perception of self and school, along with parental expectations, resulted in 76% of the predicted variance in educational aspirations of adolescents. A study on the effects of parental involvement as a form of social capital found a greater likelihood of the youth enrolling in both a 2-year and 4-year college (Perna & Titus, 2005). The data used for the analyses in Lippman, Guzman, Dombrowski Keith, Kinukawa, Schwalb, and Tice's (2008) report originated from the 2003 National Household Surveys Program (NHES) Parent and Family Involvement in Education Survey (PFI). They found 88% of students whose parents had earned at least a bachelor's degree had parents who expected them to finish college compared to 44% of students whose parents had graduated from high school or who had less than a high school diploma (Lippman et al., 2008).

When an adolescent rehearses mental images of success or failure scenarios, they become the construct of self-efficacy (Bandura, 1994). “These visualizations can serve to motivate one to take action to pursue a given goal” (Vick & Packer, 2008, p. 476). Self-efficacy was identified as a possible mediating factor of instrumentality in future goal possibilities such as “becoming a college student” (Vick & Packer, 2008). Kao and Tienda (1998) concluded that eighth grader aspirations to attend college derive primarily from parent’s education and family background. Other researchers found substantial support for positive relationship between mothers' and fathers' supportive educational behaviors, educational level, language spoken in the home, and adolescents' aspirations (Plunkett & Bamaca-Gomez, 2003).

A same-sex traditional model emerged in another study (Lomax, & Gammill, 1984) that confirmed the same-sex parent had stronger influence on their child’s choice of career plans in terms of educational and occupational direction. Teachman and Paasch (1998) reported it was mothers' expectations and the students’ grades in school that had a positive correlation to educational aspirations.

There were a few studies of interest for the present study that examined the independent variable of parent education on students’ current scholastic success. The study sample in Vick and Packard’s (2008) research resided in a town with a disproportionately high percentage of families in poverty and a high school dropout rate more than twice the statewide average. This negative outcome was linked to participants’ parents who had graduated from a 4-year college at a rate of 17% or less. Suitor, Plikuhn, Gilligan, and Powers’ (2008) study isolated the variable of mother’s education and its impact on her children. Thirty-five women in this sample were followed for a decade to determine the longitudinal effect of their return to school and the consequence their academic achievements had on children’s educational goals and orientations. The researchers found

that return to school was consequential on children's aspirations only when mothers completed their degrees (Suitor et al., 2008).

Chiu and Khoo (2005) reported 15-year-old students' test scores correlated significantly with mothers' mean years of schooling. In a study among black and white men born from 1907-1946, Kuo and Hauser (1995) found that at least half the variance in educational attainment was attributed to family background, including parental schooling. Other researchers noted only about 40% of the variance within families can be explained by standard domains of socioeconomic standing (Teachman & Paasch, 1998). "Most of the relationship is due to differences in parental education" (Teachman & Paasch, 1998, p. 712).

Teachman and Paasch's (1998) salient link of educational aspiration to education obtained by parents informed the framework for the current study. The majority of research done on the subject examined adolescents' aspirations in middle school or high school. This study bridges the gap of how those aspirations continue to affect the performance and attitudes of young adults presently enrolled in higher education. The present argument further examines to what degree parent education affects the success of university students. Success was quantifiably defined by the constructs of academic performance, educational aspirations, and educational self-efficacy. Academic performance was measured by the student's current GPA and dedicated hours of study; educational aspirations were measured by the highest degree the student hoped to obtain; academic self-efficacy was measured in a four-question Likert-scale self-report of academic skills and abilities.

Theoretical Argument and Hypotheses

Higher GPA

Parents who have advanced degrees have shown they value education. Those who attained higher GPAs in college often pursue graduate and doctoral degrees. Their past achievements become a benchmark for their children to follow as parents' past pursuits in education may augment structural factors on intergenerational behaviors. Whether the parent's GPA is tied to intelligence or disciplined study or both, these traits and behaviors are passed down to their children. Higher achieving parents foster those things that are important in their children and prioritize academic success. In contrast, those who graduated with a minimal degree generally do not have the financial means or aspirations to raise higher-achieving students.

Complete Higher College Degree

Past studies have demonstrated that first-generation college students (students who do not have a parent who attended college) often encounter major hurdles in the college process. In comparison to students whose parent(s) attended college, first-generation students experience greater challenges to college access, college involvement, institutional connectedness, academic and social integration, and degree completion. As such, first-generation students may be especially susceptible to personal doubts regarding their academic and motivational ability.
College-educated parents are typically more aware of the long-term benefits of acquiring a college degree, and thus they share this information with their children. The higher the degree the parents have obtained, the greater the support the student will have from their parents to complete a similar academic goal.

Parents who have not attended college, on the other hand, tend to have less direct knowledge of the economic and social benefits of a postsecondary education. Thus, some of these

parents may prefer that their children work rather than attend college. Students whose parents never attended college are sometimes faced with a difficult choice between fulfilling family expectations or obligations and pursuing of a degree.

Students' Dedicated Study Hours

Family characteristics such as disciplined study habits can have impact on student's study skills. Study hours spent per week on college study and the desired degree can be strong predictors of college academic success. Students learn these homework habits at an early age, guided by the social learning theory set forth by Bandura (1986). According to social learning theory, parents who model disciplined habits construct an expectation for children to also perform those desired behaviors. Their children practice and learn the behaviors and the consequences of those behaviors. Therefore, it is likely that parents who achieved the goal of an advanced degree tend to encourage disciplined study habits in their children. Children of parents who did not pursue higher education are less likely to have frequent observational learning opportunities to develop dedicated study habits.

Higher student perception of their academic ability

Parents who have succeeded in the academic arena have achieved an important personal goal. Success tends to reinforce positive behaviors, as shown by B.F. Skinner's (1971) work in behaviorism. Confidence is a product of environmental influences, and mastery of certain cognitive skills engenders more self confidence. Parents who did not find as much success and positive reinforcement in their own schooling would naturally withdraw from further academic challenges. On the other hand, parents who have achieved higher education would most likely have fostered tenacity and skills in their children to navigate pathways to success by praising and rewarding their child's budding abilities.

Based on the stated theoretical arguments, I assessed the following hypotheses:

1. Parent's educational background has a positive effect on their child's university GPA.

2. Parent's educational background has a positive impact on their child's higher educational aspirations.

3. Parent's achieved education has a positive impact on their child's study habits as a university student.

4. Parent's achieved education has a positive effect on their child's perception of their own ability (self-efficacy) while enrolled in higher education.

Participants

The sample data were obtained from a cross-section of undergraduate students matriculated at a state university in the Intermountain West. Classes were randomly chosen from all available courses, including randomization of day of the week and time of day. Data were retrieved from 12 classes, each of a different field of study. The probability sample (n=202) was fairly evenly distributed between males (51.5%) and females (48.5%). There was no designation on the questionnaire for class ranking, ethnicity, or marital status of their parents.

Procedure

Students completed a self-administered questionnaire containing ten items assessing gender, background information of their mother's and father's college degree completion, the student's self-report of current GPA, average weekly hours of study, aspirations of their ultimate degree completion, and attitudes of self-efficacy toward their skills and abilities. A member of the research

team was available to answer questions throughout. The questionnaire took approximately 15 minutes to administer.

Measures

Parent education

To assess their parent's education, the student was asked to mark which degree the mother and father independently obtained: some primary grades, high school graduate or General Educational Development (GED), associate's degree or technical training, bachelor's degree, master's degree, a doctorate degree or equivalent.

Academic performance and educational aspirations

Each student was asked to indicate their self-reported current GPA. The Likert scale was utilized in measurement: 0-1.49; 1.50-1.99; 2.0-2.49; 2.5-2.99; 3.0-3.49; 3.50-3.99; 4.0+. There may be a concern that students might be biased in reporting their GPA. Dornbusch, Ritter, Leiderman, Roberts, and Fraleigh (1987) reported the correlation of .76 (n=1146) between grade point average and self-reported grades. The results of their study indicated a slight tendency for students to overestimate grades near the bottom of the distribution, i.e., grades of C or below, but the average and above average student did not overinflate their assessment. Therefore, the use of self-reported grades was justified in this survey questionnaire. Educational aspirations were assessed by asking: "What degree are you planning on receiving when you complete your academic career?" The options given were: 1-year certificate, associates, bachelors, masters, and doctorate. The next survey question asked students to report their outside-of-class hours of dedicated study. I projected a potential for inflated hours of reported study if the students were asked to average an entire week's worth of studying. To strengthen the validity to the self-report method, the question was designed to have the students consider each day, Sunday through Saturday, of the prior week.

The survey asked the students to estimate each daily number of study hours, and then to total the week's number.

Educational self-efficacy

The last four questions were self-evaluations on specific key skills and abilities connected to individual success in college. Items were rated on a five-point Likert scale from "strongly agree," "agree," somewhat agree," "disagree" to "strongly disagree." The questions were as follows: "Generally, I find I can be successful at anything I put my mind to." "I believe that I am a creative, original person with unique ways of problem solving." "Generally, I am skilled and capable at many things." "Generally, I am disciplined when I decide to prioritize work and studies.

Results

Table 1 outlines the frequency and percentage results of the survey questionnaire. Males and females were generally equally represented in the sample. Fathers' degree was highest (25.2%) for a bachelor; mothers' degrees were more evenly spread, with an associates being slightly higher than a high school degree (32.7%) for the most reported degree. The university students reported fairly high current GPAs, with almost half reporting between 3.50-3.99. A little over half aspired to complete a bachelor's degree as their final certification. Average hours of dedicated study outside of class were 13.2 per week. When self-reporting academic self-efficacy on all four questions, students were fairly generous. The majority marked "strongly agree" on all measures, with highest percentages from 30.2%-57%.

Table 1: Frequency and Percentage Results

	Frequency	**Percentage**
Gender		
Male	104	51.5%
Female	98	48.5%
Father's highest degree		
Completed some primary grades	9	4.5%
High school graduate or GED	53	26.2%
Associate's degree or technical training	33	16.3%
Bachelor's degree	51	25.2%
Master's degree	40	19.8%
Doctorate degree or equivalent	14	6.9%
Mother's highest degree		
Completed some primary grades	7	3.5%
High school graduate or GED	63	31.2%
Associate's degree or technical training	66	32.7%
Bachelor's degree	44	21.8%
Master's degree	16	7.9%
Doctorate degree or equivalent	5	2.5%
Current GPA		
0 - 1.49	1	0.5%
1.50 - 1.99	5	2.5%
2.00 - 2.49	7	3.5%
2.50 - 2.99	31	15.3%
3.00 - 3.49	61	30.2%
3.50 - 3.99	92	45.5%
4.0 +	5	2.5%
Academic goal		
1 year certificate	2	1.0%
Associate's	7	3.5%
Bachelor's	106	52.5%
Master's	58	28.7%
Doctorate's	26	12.9%
Average hours of study/week	13.12	

Successful		
Strongly agree	117	57.0%
Agree	66	32.7%
Somewhat agree	18	8.9%
Disagree	1	0.5%
Strongly disagree	0	0%
Creative and original		
Strongly agree	76	37.6%
Agree	102	50.5%
Somewhat agree	19	9.4%
Disagree	5	2.5%
Strongly disagree	0	0%
Skilled and capable		
Strongly agree	77	38.1%
Agree	100	49.5%
Somewhat agree	22	10.9%
Disagree	1	0.5%
Strongly disagree	1	0.5%
Prioritize work and studies		
Strongly agree	61	30.2%
Agree	81	40.1%
Somewhat agree	43	21.3%
Disagree	11	5.4%
Strongly disagree	5	2.5%

Effect of father's education

The correlation coefficient matrix is presented in Table 2. Fathers' and mothers' degrees have a strong degree of convergence ($r=.46$, $p<.01$) as found in the study by Garg, Melanson, and Levin (2007) as well as multiple other studies. The principle direct impact parent's educational attainment had on student success was a positive correlation between father's degree and student's GPA ($r=.14$, $p<.05$). All other effects were indirectly related. The resulting data show that parent education mediates, but generally does not directly influence all dependant variables of student success. Consequently, student GPA was strongly related to degree aspiration ($r=.24$, $p<.01$), hours of study ($r=.19$, $p<.01$), feelings of success ($r=.32$, $p<.01$), capability ($r=.31$, $p<.01$), and self-discipline ($r=.40$, $p<.01$). Self-reports of high capability was positively correlated to the dependant variables of feeling creative ($r=.54$, $p<.01$), successful ($r=.45$, $p<.01$), and degree aspiration ($r=.24$, $p<.01$). Student reports of feeling disciplined correlated with perceptions of high capability ($r=.34$, $p<.01$), creative ($r=.15$, $p<.05$), successful ($r=.37$, $p<.01$), hours of study per week ($r=.20$, $p<.01$) and degree aspiration ($r=.14$, $p<.05$). Orientation to success was correlated to degree aspiration ($r=.24$, $p<.01$), and to creativity ($r=.38$, $p<.01$).

Effect of mother's education

The zero-order correlation shows the independent variable of degree attained by mothers was not positively correlated with any dependant variable. This finding contrasted Chiu and Khoo's (2005) study showing mothers' not fathers' years of schooling affected their child's school performance. Although this result did not confirm my hypothesis on mothers, it validated the normative social function of mothers' expressive role and fathers' instrumental role in relationship to their children. Non-significant correlations among dependant variable were current GPA and creativity ($r=.12$), degree aspiration and study hours per week ($r=.14$), degree aspiration and

creativity (r=.13), study hours per week and feeling successful (r=.02), study hours per week and feeling creative (r=.03), and study hours per week and feeling capable (r=.08).

Effect of gender

Gender was isolated as a variable and outcomes suggest male students have lower GPAs (r=-.16, p<.05) than females, although males have higher degree aspirations (r=.34, p<.01) than female students. All other dependant variables were not highly correlated to gender. Educational self-efficacy and study habits seem to be equally reported by both male and female students.

Table 2: Correlation Coefficient Matrix

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	Mean	S.D.
1. Gender	1.00 20										.51	.5
2. Father's Education	.13 .07 20	1.00 20									3.5	1.4
3. Mother's Education	.04 .54 20	.46** .00 20	1.00 20								3.0	1.1
4. Current GPA	-.16* .03 20	.14* .04 20	.03 .70 20	1.00 20							5.2	1.1
5. Degree Aspiration	.34** .00 20	.16 .10 20	.13 .06 20	.24** .00 20	1.00 20						3.5	.84
6. Study Hours/Week	.04 .56 20	.05 .52 20	-.02 .81 20	.19** .01 20	.14 .06 20	1.00 20					13.1	8.2
7. Success Oriented	.05 .47 20	.06 .41 20	-.01 .87 20	.32** .00 20	.24** .00 20	.02 .82 20	1.00 20				4.4	.69
8. Creative	.05 .46 20	.10 .17 20	.02 .81 20	.12 .09 20	.13 .07 20	.03 .65 20	.38** .00 20	1.00 20			4.2	.72
9. Capable	.03 .67 20	.12 .09 20	.07 .33 20	.31** .00 20	.24** .00 20	.08 .27 20	.45** .00 20	.54** .00 20	1.00 20		4.2	.71
10. Disciplined	-.11 .11 20	.10 .16 20	.07 .35 20	.40** .00 20	.14* .05 20	.20** .01 20	.37** .00 20	.15* .03 20	.34** .00 20	1.00 20	3.9	.97

Note: *: p<.05; **: p<.01. ***: p<.001 (two-tailed tests).

Discussion and Conclusions

Prior research acknowledges that complex, multidimensional constructs such as socioeconomic status (SES), parent education, and peer influence can have a direct or indirect effect on student success. The results of this study highlight the ongoing relevance of achieved parent education on their child's self-schema as they transition to higher education. Garg et al. (2002) found that personal factors (grades, parent's academic expectations and self-efficacy) had a strong direct influence on educational aspirations and effects of background and family involvement on educational aspirations were mediated through personal factors. The present study follows the logic of Garg et al. (2002) as multiple systemic levels of parental influence compounded all measureable variables. The independent and dependant correlations coefficients in this study were generally not statically significant as expected, but have highly related non-significant correlations. Beginning with father's education impacting GPA, the student's GPA indirectly influenced many other dependant variables, and each of those had dynamic, interrelated effects. Mother's education alone did not manifest a significant effect on any variable. However, other domains over which mothers may preside, such as school involvement, support with homework, relationship with child, and choice of friends, have been shown to influence student success. As educators understand the conditions under which student achieve, they can foster better objectives for intervention programs to enhance educational success and family values in a contemporary competitive employment marketplace.

There is a sizable amount of research confirming that parents' direct involvement in communicating their educational expectations mediates adolescent scholastic goals (e.g. Perna & Titus, 2005). Parental involvement is an intergenerational process across many factors and many years. If the child grows up in a single-parent family, the departure of one parent deprives the child

of opportunities that may restrict their vocational plans, particularly those related to post-secondary education. When there is less opportunity for an absent parent's direct influence on the adolescent's forming aspirations and self-efficacy, the student reports lower academic goals (Garg, Melanson, & Levin, 2007). Another factor in single-parent families found by Garg, Melanson and Levin (2007) was single mothers as heads of households had fewer years of post-secondary education than mothers of intact families. A follow-up recommendation would be to include parent marital status and evaluate the effect of a single-parent in contrast to two-parent households.

A salient factor in determining the longevity of a parent's influence in their student's life is measuring educational outcomes. High school graduates enter college with lofty ambitions, many aspiring to ultimately graduate with a master's or doctoral degree. However, as they progress through the realities of college rigor, they adjust their personal expectations. In addition, first and second-year students taking general requirements in lower division classes meet with lesser challenges than upper-division major coursework. The students in this study were not grouped according to class; instead, they were randomly chosen. Therefore, it is not possible to determine the makeup of classmen completing the survey. Had the majority of them been in lower-division classes, they might have still held to unrealistic expectations. It would be efficacious to include in a follow-up study only graduating seniors with bachelor's degrees. Their cumulative GPA would reflect four-year's worth of study habits, and self-reports on the highest level of degree completion would reflect more realistic values.

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