

PARENT CAREER MODELING:
KEEPING MIDDLE SCHOOL STUDENTS ON THE TRACK TO SUCCESSFUL CAREERS

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ABSTRACT

JANE E. MELI: Parent Career Modeling:
Keeping Middle School Students on the Track to Successful Careers
(Under the direction of Dr. Dennis Orthner)

This study reports the results of regression analyses that examined the contribution of parent career modeling to the outcomes of student engagement, school valuing, and future time perspective. The study was conducted with 6th grade students, who were surveyed at both the beginning of the school-year and at the end of the school-year using self-report scale items for the independent and dependent constructs. Baseline levels and demographic variables, such as gender, socioeconomic status, family structure, and race were controlled for in the regression analysis to determine the unique contribution by parent career modeling. It was found that parent career modeling contributes significantly to all three of the dependent variables. This study provides evidence for using parent career modeling in interventions aimed at increasing student engagement, student valuing of school, and future time perspective.

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CHAPTER I

INTRODUCTION

Only 75% of public-high-school students graduate on time, and approximately 4% of students enrolled will drop out of school over the course of a year (Laird, DeBell, Kienzl, & Chapman, 2007). Moreover, some populations suffer disproportionate dropout rates. During the transition from elementary to middle school, students may experience a loss in school engagement and motivation, leading to a decline in academic achievement. Ultimately, these factors are linked to higher rates of subsequent high-school dropout (Alexander, Entwisle, & Horsey, 1997; Alspaugh, 1998; Battin-Pearson & Newcomb, 2000). Enriching motivation and engagement can help combat these effects.

Positive parental influence helps students view school as important and valuable for their futures. According to the concept of vicarious learning and self-efficacy of Bandura (1977), the belief that one can accomplish a task will lead to increased effort and persistence. A student's self-efficacy for a task can be enhanced by his or her observing successful completion of the same task, especially by someone with whom the student identifies. When parents model career behavior, their children are expected to develop the belief that they too can have meaningful careers. Thus, students who believe it is possible to succeed in life and regard school as relevant to completing personally held career goals would exhibit increased motivation for school and higher levels of achievement. The present study examines this belief that direct

parent involvement, including discussions regarding the parent's own career, will lead to improved school valuing, engagement, and motivation.

This study shows that students who are exposed to more parent modeling of career behaviors tend to be more engaged in school, value school more, and have a greater tendency to make forward-looking career goals. The results provide evidence for incorporating parent career modeling in interventions to improve school outcomes and decrease dropout rates.

CHAPTER II

REVIEW OF THE LITERATURE

In this section, prior research that relates to the goals of this study is discussed. The literature includes research and theory on parent career modeling, parent educational attainment, parent employment status, parent involvement in school, student engagement, school valuing, future time perspective, and student career development. These variables are important because of their relationship to future high school dropout.

Parent Career Modeling

Turner, Alliman-Brissett, Lapan, Udipi, and Ergun (2003) applied parent career modeling as a construct related to student success through their Career-Related Parent Support scale. This scale is composed of four subscales based on the four sources of self-efficacy expectations identified by Bandura (1977). Parent career modeling is based on one of Bandura's sources, the concept of vicarious learning. Turner et al. (2003) determined a student's level of parent career modeling by having students indicate whether their parents talk about their jobs with them or do other modeling behaviors (e.g., bring them to their workplace). Parent modeling of career behaviors is expected to increase students' self-efficacy for their own careers. Observation of a model succeeding at a task, such as having a job, increases students' belief that they can do the

same and leads to increased effort toward that goal. Alliman-Brissett, Turner, and Skovholt (2004) used the career-related modeling scale in a study of middle-school low-income minority students and found that higher levels of career modeling increased students' efficacy in career planning and decision making and their outcome expectations.

There is prior research on the level of parent education and working status and their effects on student success in school (Alexander et al., 2001; Finn & Rock, 1997; Orthner & Randolph, 1999). Parents who have careers and are educated give students exposure to jobs and the world of work, even without directly modeling career behaviors. This may have the same effect on students as direct career modeling. Orthner and Randolph (1999) found that students with parents maintaining consistent employment and income are less likely to drop out of school than children of parents who tend to have infrequent jobs or be unemployed. Finn and Rock (1997) found that resilient students who perform well in school despite risk factors for dropout are more likely than dropouts to have working parents with higher levels of education. Similarly, Alexander et al. (2001) found that the working status of a student's mother is predictive of whether they will drop out of high school.

Parental school involvement is also related to parent career modeling, especially when that involvement is associated with goal aspiration and parent expectations for their children's success. A study by Keith et al. (1998) provided evidence that the level of parent involvement in school is predictive of future academic performance. The authors measured involvement through parents' communication about school and

activities, as well as their aspirations for their children's education. A meta-analysis by Fan and Chen (2001) showed that expression of aspirations and expectation is the best type of parental involvement to influence academic achievement. Connell, Spencer, and Aber (1994) validated a model that places perceived parental involvement as a student's context that influences the self, followed by action and outcomes. Self includes their perceived competence and efficacy, which influences actions (e.g., their emotional and behavioral engagement) that help determine academic outcomes. Therefore, increased parental involvement influences academic success, mediated by a student's efficacy and engagement. Oyserman, Brickman, and Rhodes (2007) found that students with low parental involvement had lower academic performance and teacher-rated behavior, and that interventions aimed at strategies for obtaining future goals can help to offset low parental involvement.

Parent involvement can also be measured through differing types of supportive behaviors. Substantial research examines parent support that specifically relates to career development in middle-school students. According to Woolley and Bowen (2007), social capital, defined as the number of supportive and caring adults at home, in school, and in the neighborhood, can increase student engagement and mitigate risk factors for school dropout. Kenny, Blustein, Chaves, Grossman, and Gallagher (2003) determined that a high level of parent support, such as being able to ask for advice and receive help from one another, was related to higher levels of commitment to school, aspirations for success, and expectations for attaining career goals. Turner, Steward, and Lapan (2004) examined the amount of self-efficacy and interest students have for

math and science, depending on the level of support they believe their parents provide in pursuing a career in those subject areas. Those students who thought their parents encouraged them more to do well in math and science had higher levels of self-efficacy and interest.

Diemer (2007) studied students facing racial and socioeconomic barriers from twelfth grade to two years after high school. The author examined both instrumental parent support, which includes parent communication with the student's school, attendance at programs, and discussing jobs and career plans, and relational parent support, which is a general measure of parent presence. Both types of parental support were found to increase work salience, the degree of importance students attach to success in a job, and vocational expectations. Keller and Whiston (2008) separated parent career behaviors into general support and specific career support. General support consisted of actions such as parents telling their children that they are proud of them, trying to understand them, and encouraging them. Specific career support included talking to their children, giving them material about jobs and colleges, and participating in career development workshops with them. Both general and specific supportive behaviors helped to increase career efficacy and career maturity.

Turner and Lapan (2002) studied middle-school students to examine the importance of parent support on career efficacy and career development. Students were presented with an occupation and were asked whether they were interested in the job, were confident they could do the job, and regarded men or women as more likely to have this job and how much support they expected from their parents in

pursuing this job. Although both career efficacy and gender typing influenced a student's interest in a particular occupation, the amount of career-efficacy was highly influenced by the amount of parental support.

School Engagement and Valuing

Engagement in school can be seen as an emotional, behavioral, and psychological process (Finn & Rock, 1997; Finn & Voelkl, 1993; Marks, 2000). Marks (2000) examined student engagement patterns through elementary, middle, and high school. Greater engagement was found among girls than boys, those with higher socioeconomic status, and those who are academically successful. Woolley and Bowen (2007) found in a study of high-risk middle-school students that girls tend to be more engaged in school than boys and that White students tend to be more engaged in school than Hispanic or Black students. Marks (2000) determined that minority status alone did not affect engagement. However, those minority students who also were of low socioeconomic status tended to have lower engagement. Those students who had supportive connections from peer groups, the classroom, or family tended to have higher levels of engagement. Students' engagement tended to decrease if they felt that the work done in school was not meaningful or challenging or if their relationships with teachers were impersonal. Marks (2000) showed that engagement decreases as students proceed through higher grade levels. High school students exhibited lower achievement, higher student alienation, and lower engagement than any other period of schooling.

Student engagement has been found to be one of the highest predictors of school dropout (Alexander et al., 1997), and it is a better predictor than achievement, starting as early as first grade. According to Finn and Rock (1997), engagement was responsible for putting at-risk students on the path to finish school. Resilient school completers who finished school with good grades despite minority and low-income status tended to come to class on time, be prepared, complete assignments, and participate in other high-engagement activities. They were also more likely than those students who dropped out of school to have higher self-esteem. Connell et al. (1994) studied middle-school students and found that emotional and behavioral engagement directly impacted school outcomes such as attendance, test scores, grades, suspensions, and retention, and that a student's level of engagement could be predicted by parental involvement and self-efficacy. This research showed that loss of engagement in school can decrease parent involvement in school, further perpetuating the cycle of decrease in self-efficacy, engagement, and academic outcomes. Suh, Suh, and Houston (2007) found that engagement variables such as days absent and behavior problems leading to suspension were significant factors leading to dropout. Finn and Rock (1997) asserted a relationship between suspensions and likelihood to drop out of school. According to Finn and Voelkl (1993), engagement in school, defined by both participation and identification with school, is affected by school size, the racial composition of the school, and the rigidity of school procedures. Smaller school environments tend to yield increased student engagement. Schools with higher percentages of minority students are characterized by greater absenteeism and lack of preparedness for class. Schools

with strict disciplinary systems may also experience decreased student engagement.

Voelkl (1996) characterized school valuing as follows.

“[School valuing] is represented by students’ assessment of the general importance of school and of the utility of everyday schooling for one’s future successes...valuing denotes that the youngster regards school as an important institution in society, feels that the importance of what is learned in class is important in its own right, and feels that school is important in obtaining future employment.” (p. 761)

Voelkl (1996) developed the Identification with School scale, which measures school valuing as one of two subscales. The author found that White males tended to have the lowest identification with school. This research also showed that students who had low school valuing also had lower school participation, motivation, and attention and higher absenteeism and disruptive behavior. In this way, a high valuing of school is linked to a lower likelihood of dropping out of school. Many of the ideas in Voelkl (1996) came from research done by Finn (1989) on the Participation-Identification Model, which includes a sense of both belongingness in school and valuing of school. Finn believed that participation in school activities will lead to successful performance outcomes, which lead to identification with school, and that participation in school activities is influenced by a student’s level of identification with school.

Career Development and Future Time Perspective

Several studies have indicated that career development begins early in a child’s schooling and that it is necessary to begin addressing this at middle-school age rather than after students have entered high school (Akos, Konald, & Niles, 2004; Alliman-Brissett, Turner, & Skovholt, 2004; Schultheiss & Stead, 2004). Career development for

middle-school students can be measured by several constructs, including career self-efficacy, career maturity, vocational expectations, work salience, career planning, decision making, and future time perspective (Alliman-Brissett et al., 2004; Diemer, 2007; Keller & Whiston, 2008; Turner & Lapan, 2002). For middle-school students, career development is strongly based in the concept of future time perspective, which means looking toward the future and making plans and goals. Future time perspective also assumes a level of valuing of school, as students should feel that school is important to helping them attain their career goals.

According to Akos et al. (2004), career development and future aspirations are affected by how much a student values school. Those students who have more absenteeism and more disruptive behaviors have less desire to seek information about themselves, such as their goals and what they want to be in the future, or about careers. Kenny, Blustein, Haase, Jackson, and Perry (2006) found that students who have a higher level of career planning and expectations tended to have higher levels of student engagement. However, engagement does not necessarily lead to career development. According to Leondari (2007), "Future time perspective is understood as the mental representation of the future, constructed by individuals at certain points in their lives, and reflecting personal and social contextual influences....[I]t provides a basis for setting personal goals and life plans, exploring future options, and carrying out major decisions" (p. 17). Leondari found that students with a strong orientation toward the future have greater motivation, use more effective learning strategies, and perform better at school.

The Childhood Career Development scale (Schultheiss & Stead, 2004) measures time perspective by asking students questions about how much they think about their futures and about what they will be when they grow up. This work involved research on children in grades four through six and was based on the dimensions of career development defined by Super (1990). Career-development interventions can stimulate future time perspective for students. Solberg, Howard, Blustein, and Close (2002) used the establishment of goals and a career search for jobs that match personality characteristics, to increase self-efficacy and school engagement by making “youth become actively invested in their own academic and life success” (p. 712). Also, O’Brien and Dukstein (1999) used a career exploration intervention to broaden students’ horizons for their career choices as well as increase competence in selecting a career.

Building on the work that has already been done in this field, the present study examined further the relationship between parent involvement in student career development through the use of modeling career behaviors and student engagement, school valuing, and future time perspective. It was hypothesized that, as in previous work, increased student outcomes will result from more involvement by parents. However, this work examined directly the modeling of career-related behaviors by parents, and how this makes students more likely to think about their own future career choices.

CHAPTER III

METHODOLOGY

This study investigated the relationship between parent career modeling and the outcome variables of student engagement, school valuing, and future time perspective for career aspirations. Demographic information on the students, such as gender, race, socioeconomic status, and family structure, was also considered. Parent career modeling may be an avenue for students to have increased valuing of school, display greater engagement, and develop more career-oriented goals and thoughts about their futures. This study addressed three research questions.

Research Questions

1. Does reporting a higher level of parent career modeling during the sixth grade year predict higher student engagement?
2. Does reporting a higher level of parent career modeling during the sixth grade year predict more valuing of school?
3. Does reporting a higher level of parent career modeling during the sixth grade year predict more student career development and thoughts about the future?

Data Collection

Data collection for this study was part of an ongoing evaluation of the CareerStart program.¹ CareerStart is a middle-school teaching strategy that attempts to increase the relevance of core curriculum courses in sixth, seventh, and eighth grades (Orthner et al., 2009), thereby increasing students' attention to math, language arts, social studies, and science. Teachers augment their instruction by giving examples of how the subject matter is related to the careers and job skills of people in their communities. This is believed to stimulate students to attend more to the lesson, see their education as important to them, get in trouble less often, increase their academic achievement, and stay in school to graduate. Because middle-school attachment is key to later success and graduation from high school, CareerStart aims to promote better transitions into high school and improved labor-force capacity building for our state and nation.

During the 2005-2006 school-year, a survey titled "School and Career for Me" was administered to sixth-grade students in 14 middle schools (seven of which were involved in the CareerStart intervention; seven of which were used as control schools). In September 2005, there were 3,210 students entering sixth grade who completed the two-page survey. In May 2006, 3,028 surveys were completed. The total sample consisted of 2,641 students who completed surveys both at baseline and at the end of

¹ The CareerStart program was developed and is directed by Dr. Dennis Orthner of the University of North Carolina at Chapel Hill School of Social Work, and is co-directed by Dr. Patrick Akos of the University of North Carolina at Chapel Hill School of Education. For more information on the CareerStart program, please contact Dr. Orthner at orthner@email.unc.edu.

the school-year. Statistical analyses were performed on these previously collected data to examine the relationships between parent career modeling and student outcomes.

Participating Schools and Participants

The data were collected from 14 middle schools in a comprehensive North Carolina county school district. Seven of these schools were participating in the CareerStart intervention program, and the other seven were used as controls. Of the 2,641 students in the sample, 1,291 were male (48.9%) and 1,348 female (51.1%), 1,354 were White (51.3%), 805 were African-American (30.5%), 340 were Hispanic (12.9%), and 140 were classified as Other (5.3%). There were 977 students receiving free lunch (37%), 195 receiving reduced lunch (7.4%), and 1,467 with no poverty-based free/reduced lunch status (55.6%). Gender, ethnicity, and socioeconomic status were all reported from school administrative data. There were only two cases missing values for these variables, yielding a final sample size of 2,639 students. Family structure was self-reported by 2,155 students at time 1, with 486 missing cases (81.6% response rate). There were 529 students who reported living in a one-adult household (24.5%), and 1,626 students who reported living in a household with more than one adult (75.5%).

Measures

School Engagement. To measure school engagement, three questions were taken from the School Success Profile (Bowen & Richman, 1995). This construct indicates the extent to which students look forward to learning new things and find

school exciting. A five-point Likert-type scale was used, with the choices “strongly disagree,” “disagree,” “uncertain,” “agree,” and “strongly agree.” The scale developers reported a Cronbach’s alpha of .80 from analysis done with 805 students. Using this sample’s data, the scale indicated an alpha of .761. A student’s score for school engagement was determined at both time 1 and time 2 by taking the sum of the scores for the three items and dividing by the total number of items.

School Valuing. Seven questions from the Valuing subscale of the Student Identification with School scale (Voelkl, 1996) were used to measure the importance students place on school and their belief that learning is valuable for their futures. Items were rated on a five-point Likert-type scale with the choices “strongly disagree,” “disagree,” “uncertain,” “agree,” and “strongly agree.” The items were tested by the scale developer using a sample of 3,539 eighth graders. The alpha reported from scale development was .73. This sample produced an alpha of .680 for the valuing subscale. A valuing score was assigned to each student at both time 1 and time 2 by reverse coding the two negatively worded items, taking the sum of these two scores and the scores on the other five items, and dividing by the total number of items.

Future Time Perspective. This subscale is from the Childhood Career Development scale of Schultheiss and Stead (2004). The developers used a sample of 447 students in fourth through sixth grade to determine the psychometric properties of the subscales. The Time Perspective subscale included three items and asked questions about students’ planning and thinking about their future jobs. An alpha of .645 was produced for this subscale with this sample. The original scale had four items, and the

scale developers reported an alpha of .69. Students rated themselves using a five-point Likert-type scale consisting of “strongly disagree,” “disagree,” “uncertain,” “agree,” and “strongly agree.” Each student was given a time-perspective score at each of time 1 and time 2 by taking the sum of the scores on each of the three items and dividing by the total number of items.

Career-Related Modeling. This scale measures students’ self-report of parent educational support through the modeling of career-related activities. It consists of seven items from the Career-Related Modeling subscale of the Career-Related Parent Support scale (Turner, Alliman-Brissett, et al., 2003), about whether parents talk to their children about their jobs and what the work is like. Students rated the items on a five-point Likert-type scale, with choices of “strongly disagree,” “disagree,” “uncertain,” “agree,” or “strongly agree.” Using a sample of 293 disadvantaged seventh and eighth grade students, Turner, Alliman-Brissett, et al. (2003) found this scale to have an internal consistency of .82 and a test-retest reliability of .87. The current sample produced an alpha of .843. Career modeling scores were determined at both time 1 and time 2 by taking the sum of the scores on each of the seven items and dividing by the total number of items. A composite career modeling score was created by adding the scores from the two time-points, creating an overall measure of how much this construct was present throughout the year.

The questions used for the four subscales described above can be found in the Appendix.

Family Structure. This is measured by self-report from the students, who were

asked with whom they were currently living at the beginning of sixth grade. Students were asked to check all that apply of the following answers: (a) my mother, (b) my father, (c) my stepmother, (d) my stepfather, (e) another adult (relative), or (f) another adult (non-relative). Students are coded as either living in a “one-adult household” or “more-than-one-adult household.”

Socioeconomic Status. Administrative data from the schools were collected that identified students receiving free or reduced lunch. Students in this category were coded as “low income.” All other students were coded as “no poverty.”

Gender. Students’ gender was collected through administrative data from the school. Students were coded as male or female.

Race. Administrative data from the schools contained race information about the students. From these, students were coded as “Black,” “White,” “Hispanic,” or “Other.”

Data Analysis

The main purpose of this study was to determine whether parent career modeling is associated with higher levels of the study variables that might lead to school success. The dataset, including the previously defined subscales and demographic variables, was analyzed using SPSS 16.0. Initial analyses were done to determine the overall demographics of the sample. Descriptive statistics and correlations were run for each of the variables of interest. Hierarchical regression was done to address each of the questions of the current study. The amount of variance that is explained by

demographics, baseline levels, and parent career modeling within the variables of school engagement, school valuing, and future time perspective were determined through these regression models. The same analyses were repeated for each of the three outcome variables.

Research Question: Does having a higher level of parent career modeling during the sixth grade predict higher student engagement, higher school valuing, and higher future time perspective?

Parents who model career behavior to their children convey that having a career is attainable for them also. As a result, students would be expected to place higher importance on doing well in school, such that they can achieve their career goals and succeed as their parents have.

Therefore, it was hypothesized that students with higher levels of parent career modeling during sixth grade would at the end of the year report the following: (1) higher school valuing, (2) higher student engagement, and (3) greater likelihood to think about their futures and to make plans for their careers.

Students whose parents do not discuss their jobs with them may not think about their own careers as much as those whose parents do. These students also may have lower levels of future time perspective because they lack the career self-efficacy that is brought about by seeing their parents as role models for jobs. Therefore, it was hypothesized that for all three of these variables, having a higher level of parent career modeling during the course of the year will positively affect outcomes.

Demographic variables such as socioeconomic status, family structure, gender, and race may also play a part in the outcomes, so these variables were controlled. Baseline levels are expected to also strongly predict outcomes. For example, having relatively high student engagement at time 1 will be associated with relatively high student engagement at time 2. The same will be true for school valuing and future time perspective.

The hierarchical regression model consisted of three stages. In the first step, demographics were entered as predictor variables. This included gender, a variable for family structure coded as “one-adult household” and “more-than-one-adult household,” a variable for socioeconomic status coded as “on free or reduced lunch” or “not on free or reduced lunch,” and race dummy coded with variables for Black, Hispanic, and Other, using White as the reference group.

In the second step, the time-1 score (for student engagement in the first analysis, school valuing in the second, and future time perspective in the third) was entered as an independent variable.

Finally, in the third step, the composite score for parent career modeling was entered, which is the sum of the time 1 and time 2 scores. The dependent variable for each model was the time-2 score for each outcome variable in its respective model. Using these models, it was determined to what degree parent career modeling contributes to student engagement, school valuing, and future time perspective, above and beyond that of demographics and baseline levels.

CHAPTER IV

RESULTS

This chapter presents the results of the statistical analyses performed to test the hypotheses that parent career modeling has a positive effect on children's student engagement, school valuing, and future time perspective. The analyses were conducted separately for each outcome variable.

The demographic makeup of the sample is shown in Table 1. The sample consisted of 2,641 sixth-grade students who completed the surveys at both the beginning and the end of the school-year. The table indicates the percentages of the sample by gender, socioeconomic status (measured by being on free or reduced lunch), family structure (living in a one-adult household or a more than one-adult household), and race.

Table 1.
Sample Demographics

Total Sample	Female	Free or Reduced Lunch	Lives in a 1 Adult Household	Race			
				White	Black	Hispanic	Other
n = 2,641	1,348 (51.1%)	1,172 (44.4%)	529 (24.5%)	1,354 (51.3%)	805 (30.5%)	340 (12.9%)	140 (5.3%)

Note. For gender, lunch status, and race, valid n = 2,639; for one-adult household status, valid n = 2,155.

In Table 2, the independent and dependent variables are listed with the correlations between them, as well as means and standard deviations. Student

engagement, school valuing, future time perspective, and parent career modeling were measured at both time 1 and time 2. The parent career modeling composite variable was created by combining the parent career modeling score at time 1 with that at time 2. There are strong correlations from time 1 to time 2 for these variables. These correlations are .559 for engagement, .485 for school valuing, and .379 for future time perspective. This calls for using the baseline measures in the regression analysis as a control, because time 1 scores are highly predictive of the outcome scores. Parent career modeling has a correlation of .490 from time 1 to time 2. The composite parent career modeling variable correlates with the time-1 measure at .852 and the time-2 measure at .874. This correlation matrix also shows the many correlations of the dependent variables with each other and with the independent variable.

Table 2.
Variable Correlations, Means, and Standard Deviations

	1	2	3	4	5	6	7	8	9
Dependent Variables									
Time 1									
1. Student Engagement	--								
2. School Valuing	.497**	--							
3. Future Time Perspective	.328**	.319**	--						
Time 2									
4. Student Engagement	.559**	.314**	.242**	--					
5. School Valuing	.356**	.485**	.201**	.536**	--				
6. Future Time Perspective	.221**	.219**	.379**	.346**	.375**	--			
Predictor Variable									
7. Time 1 Parent Career Modeling	.259**	.314**	.306**	.147**	.183**	.196**	--		
8. Time 2 Parent Career Modeling	.173**	.224**	.139**	.258**	.297**	.369**	.490**	--	
9. Parent Career Modeling Composite	.242**	.305**	.251**	.240**	.278**	.333**	.852**	.874**	--
M	2.813	3.256	3.016	2.558	3.209	3.037	3.169	3.152	6.335
SD	.858	.564	.784	.931	.616	.791	.693	.747	1.233

Note. Means and Standard deviations refer to the survey scale results for each variable. Means range from 0 to 4 for engagement, valuing, time perspective, and time 1 and time 2 parent career modeling and from 0 to 8 for parent career modeling composite.

**p ≤ 0.01

The research question asked whether having a higher degree of parent career modeling over the course of sixth grade would predict higher student engagement, school valuing, and future time perspective at the end of the year. The results of the hierarchical regression can be seen in Table 3 for student engagement, Table 4 for school valuing, and Table 5 for future time perspective. The first step of the regression analysis took into account only the demographic variables, including gender, family structure, socioeconomic status, and race. For all three outcome variables, this model was significant. The R^2 value for student engagement was .092 ($F(6, 2039) = 34.627, p \leq .001$), for school valuing was .024 ($F(6, 2040) = 8.316, p \leq .001$), and for future time perspective was .033 ($F(6, 2023) = 11.523, p \leq .001$). These R^2 values indicate that the variance in the time 2 scores attributable to demographics was 9.2% for student engagement, 2.4% for school valuing, and 3.3% for future time perspective. These significant contributions provide evidence that it is necessary to control for demographic variables in this analysis. This is done by including these variables in the first step of the regression model.

Table 3.
Student Engagement Regression Analysis

	R	R ²	R ² - Change	b ^a	Beta ^b	p-value
Model 1: Demographics	.310	.096	.096			.001***
Lives w/1 Adult				-.075	-.035	.136
Black				.358	.175	.001***
Hispanic				.309	.109	.001***
Other				.007	.002	.936
Female				.267	.144	.001***
Free/Reduced Lunch				.248	.132	.001***
Model 2: Demographics + Baseline	.586	.343	.247			.001***
Lives w/1 Adult				-.024	-.011	.570
Black				.194	.094	.001***
Hispanic				.184	.065	.003**
Other				-.100	-.024	.206
Female				.131	.071	.001***
Free/Reduced Lunch				.124	.066	.006**
Student Engagement Baseline				.559	.518	.001***
Model 3: Demographics, Baseline + Parent Career Modeling	.602	.363	.020			.001***
Lives w/1 Adult				-.010	.005	.818
Black				.191	.093	.001***
Hispanic				.238	.084	.001***
Other				-.094	-.022	.230
Female				.122	.066	.001***
Free/Reduced Lunch				.152	.081	.001***
Student Engagement Baseline				.514	.476	.001***
Parent Career Modeling				.110	.148	.001***

Note. ^aUnstandardized regression coefficient, ^bStandardized regression coefficient
 ***p ≤ .001, **p ≤ .01, *p ≤ .1

Step 2 of the regression adds baseline levels of student engagement, school valuing, and future time perspective as an additional predictor variable in each respective regression analysis. The hypothesis states that the time 1 score should be highly predictive of the time 2 score. This step was significant for all three analyses. For student engagement, the model was significant ($F(7, 2025) = 148.655, p \leq .001$). Time 1 engagement levels explain 24.7% of the variance in time 2 engagement levels, above and beyond the approximately 10% that demographics explain, and this additional variance explained is also significant ($F(1, 2025) = 756.737, p \leq .001, R^2\text{-change} = .247$).

For school valuing, there was an R^2 -change of .235, which was a significant difference in variance explained over the prior model ($F(1, 2032) = 644.729, p \leq .001$). The model was also significant ($F(7, 2032) = 101.218, p \leq .001$). This indicates that baseline school valuing explains 23.5% of the variance in time 2 valuing levels, after controlling for the approximately two percent of variance that is already explained by demographics. For future time perspective, the model adding baseline levels is also significant ($F(7, 1980) = 50.855, p \leq .001$), with an R^2 -change of .119. The change over the previous model is also significant ($F(1, 1980) = 277.615, p \leq .001$). Time perspective at time 1 explains approximately 12% of the variance in time perspective at time 2, after controlling for the three percent of the variance that demographics explain.

Table 4.
School Valuing Regression Analysis

	R	R ²	R ² - Change	b ^a	Beta ^b	p-value
Model 1: Demographics	.156	.024	.024			.001***
Lives w/1 Adult				-.082	-.057	.018*
Black				.136	.101	.001***
Hispanic				-.003	-.002	.951
Other				-.029	-.010	.653
Female				.143	.117	.001***
Free/Reduced Lunch				.024	.019	.503
Model 2: Demographics + Baseline	.504	.254	.230			.001***
Lives w/1 Adult				-.080	-.056	.008**
Black				.097	.071	.003**
Hispanic				.037	.020	.401
Other				-.039	-.014	.486
Female				.084	.068	.001***
Free/Reduced Lunch				.032	.025	.315
School Valuing Baseline				.530	.484	.001***
Model 3: Demographics, Baseline + Parent Career Modeling	.526	.277	.022			.001***
Lives w/1 Adult				-.067	-.047	.025*
Black				.089	.066	.006**
Hispanic				.064	.034	.144
Other				-.039	-.014	.474
Female				.075	.061	.002**
Free/Reduced Lunch				.044	.036	.153
School Valuing Baseline				.477	.435	.001***
Parent Career Modeling				.079	.159	.001***

Note. ^aUnstandardized regression coefficient, ^bStandardized regression coefficient
 ***p ≤ .001, **p ≤ .01, *p ≤ .1

Step 3 added the composite parent career modeling variable as a predictor to the regression model. Again, this step was significant for all three analyses. For student engagement, Model 3 produced an R² value of .363 and R²-change of .020. The full model was significant (F(8, 1963) = 139.566, p ≤ .001). This model explained 36.3% of the variance in outcome student engagement levels. The unique contribution of the composite variable for parent career modeling was 2%, which although small, is statistically significant (F(1, 1963) = 60.310, p ≤ .001).

For school valuing, Model 3 yielded an R^2 value of .277 and R^2 -change of .022. The model was significant ($F(8, 1970) = 94.254, p \leq .001$). This model explained 27.7% of the variance in outcome school valuing. Approximately 2% of the variance explained in school valuing was due to parent career modeling. This is a statistically significant contribution of parent career modeling over the previous models ($F(1, 1970) = 60.878, p \leq .001$).

For future time perspective, Model 3 is also significant ($F(8, 1956) = 66.460, p \leq .001$) and produced an R^2 value of .214 and R^2 -change of .064. This regression model accounts for 21.4% of the variance in future time perspective. This R^2 -change indicates that 6.4% of the variance in future time perspective is uniquely due to parent career modeling. This is a statistically significant contribution ($F(1, 1956) = 159.039, p \leq .001$).

Table 5.
Future Time Perspective Regression Analysis

	R	R ²	R ² - Change	b ^a	Beta ^b	p-value
Model 1: Demographics	.185	.034	.034			.001***
Lives w/1 Adult				-.047	-.025	.291
Black				.277	.160	.001***
Hispanic				.040	.017	.535
Other				.044	.012	.586
Female				.121	.077	.001**
Free/Reduced Lunch				.062	.039	.175
Model 2: Demographics + Baseline	.387	.150	.115			.001***
Lives w/1 Adult				-.029	-.016	.476
Black				.175	.101	.001***
Hispanic				.057	.024	.342
Other				.059	.017	.437
Female				.076	.048	.021*
Free/Reduced Lunch				.027	.017	.532
Time Perspective Baseline				.351	.348	.001***
Model 3: Demographics, Baseline + Parent Career Modeling	.462	.214	.064			.001***
Lives w/1 Adult				-.005	-.003	.896
Black				.173	.100	.001***
Hispanic				.118	.050	.042*
Other				.053	.015	.468
Female				.055	.035	.084*
Free/Reduced Lunch				.062	.039	.140
Time Perspective Baseline				.283	.280	.001***
Parent Career Modeling				.166	.265	.001***

Note. ^aUnstandardized regression coefficient, ^bStandardized regression coefficient
 ***p ≤ .001, **p ≤ .01, *p ≤ .1

For the full model for student engagement, the variables that contributed to student engagement were Black ($p \leq .001$, $\beta = .093$), Hispanic ($p \leq .001$, $\beta = .084$), female ($p \leq .001$, $\beta = .066$), socioeconomic status ($p \leq .001$, $\beta = .081$), time 1 student engagement ($p \leq .001$, $\beta = .476$), and parent career modeling ($p \leq .001$, $\beta = .148$). The standardized beta weights for these variables indicated that Black and Hispanic students reported slightly higher scores on student engagement than did White students, females had slightly higher scores than males, being on free or reduced lunch resulted in slightly better scores than non-poverty students(based on free/reduced lunch status),

those who performed higher on student engagement at time 1 will perform higher on student engagement at time 2, and those who have more parent career modeling will have higher student engagement at time 2. The variables in the regression model that did not have a significant contribution to the outcome of student engagement are family structure ($p = .818$) and Other Race ($p = .230$). This indicates that those in a one-adult household versus those in a more than one-adult household did not differ on their level of student engagement at time 2, and those students classified as “Other” for race did not have a different level of student engagement at time 2 when compared to White students.

Unstandardized regression coefficients for student engagement can be seen in Table 3. These values reflect the actual change in the mean score on the student engagement measure. For Model 1, this is the mean change as a result of endorsing that demographic category. For Model 2 and Model 3, this unstandardized coefficient is the mean change in student engagement for every one unit of change in the predictor variable scores.

For school valuing, the variables that contribute significantly in the full model include Black ($p = .006$, $\beta = .066$), female ($p = .002$, $\beta = .061$), time 1 school valuing ($p \leq .001$, $\beta = .435$), and parent career modeling ($p \leq .001$, $\beta = .159$). According to these significant standardized beta weights, Black students perform slightly better than White students on a measure of school valuing, females will have slightly higher school valuing than males, those who had higher valuing at time 1 will have higher school valuing at time 2, and those with more parent career modeling will perform better on school

valuing. Family structure ($p = .025$), Hispanic ($p = .144$), Other Race ($p = .474$), and free/reduced lunch status ($p = .153$) did not make a significant contribution to the outcome of school valuing. The unstandardized regression coefficients that reflect mean change for valuing score based on the predictors can be seen in Table 4.

Finally, the full model for future time perspective indicates that the only variables that significantly contribute to future time perspective (with $p \leq .01$) are being Black ($p \leq .001$, $\beta = .100$), time 1 future time perspective ($p \leq .001$, $\beta = .280$), and parent career modeling ($p \leq .001$, $\beta = .265$). This shows that Black students perform slightly better than White students on future time perspective, and that those students who performed higher on future time perspective at time 1 will perform higher on future time perspective at time 2, and those who have more parent career modeling will have higher future time perspective at time 2. The variables in the regression model that do not have a significant contribution to the outcome of future time perspective are family structure ($p = .896$), Hispanic ($p = .042$), Other Race ($p = .468$), female ($p = .084$), and socioeconomic status ($p = .140$). For these variables, there will not be a significant difference in the mean level of future time perspective between groups. Again, the unstandardized regression coefficients can also be seen in Table 5 for future time perspective.

CHAPTER V

DISCUSSION

Parent career modeling should be incorporated into school interventions aimed at increasing student motivation and decreasing school dropout. In the present study, students who were exposed to more parent career modeling behaviors by their parents talking about their jobs or taking the students to their workplaces were more likely to demonstrate better outcomes related to student engagement, school valuing, and future time perspective. From previous research, it has been shown that students who have working parents are more likely to do better in school and have a lower likelihood of dropping out (Alexander et al., 2001; Finn & Rock, 1997; Orthner & Randolph, 1999). Therefore, the current study builds on those findings by showing that direct modeling of career behaviors is advantageous to students. This finding is especially important during the middle-school years, when student engagement typically declines. Also, looking toward the future and developing career goals, as well as having the inner conviction that school is valuable and worthwhile, can help secure students' success. This study has shown that regardless of race, gender, socioeconomic status, being in a one-adult household, or baseline levels, having more parent career modeling during the sixth grade is positively associated with outcomes that are linked to school success.

The regression model for student engagement, containing demographic variables, baseline student engagement, and parent career modeling, explained 36.6%

of the variance in outcome student engagement. The majority of this variance was due to baseline student engagement, with about 10% due to demographics, and 2% due to parent career modeling. However, parent career modeling had a higher contribution on its own than any single demographic variable alone, and its contribution was significant. Also, the results gave evidence that regardless of a student's demographic category or baseline engagement level, parent career modeling was positively associated with student engagement. White students were affected the most, followed by Black and Hispanic students. Also, parent career modeling affected non-poverty students slightly more than students on free or reduced lunch. Parent career modeling increased student engagement scores for all of these populations significantly, but was found to have even more impact on White students and non-poverty students.

For school valuing, 27.7% of the variance in outcomes was explained through the regression model. Baseline school valuing accounted for most of this, with demographics and parent career modeling each explaining about 2% and found significant. Parent career modeling contributed a greater amount on its own than any single demographic variable. School valuing was affected by parent career modeling relatively equally in all subpopulations. Nevertheless, the impact on White students was higher than the impact on Hispanic students.

Future time perspective was affected even more by parent career modeling than were school valuing or student engagement. In the analysis for time perspective, 21.4% of its variance was explained by demographics, baseline time perspective, and parent career modeling. Of this, 12% was due to baseline, only 3% to demographics, and 6% to

parent career modeling. Parent career modeling had significant impact on outcome levels of time perspective irrespective of race, socioeconomic status, or baseline level of time perspective. This impact was greater for students on free or reduced lunch than for non-poverty students, for those in the high-baseline group than the low-baseline group, and for White and Black students than Hispanic students.

Surprisingly, for student engagement, school valuing, and future time perspective, the at-risk students (those of minority status and on free or reduced lunch) actually scored higher than non-poverty, White students. Generally, one would hypothesize that minority and low-income students would have lower engagement, lower school valuing, and lower future time perspective. It is unclear what caused this unusual effect in this population. Regardless, the demographic variables were controlled for in the regression analyses, so this does not change the results that parent career modeling had a significant positive impact on student engagement, school valuing, and future time perspective.

This study shows that it is advantageous to use modeling of career behavior by parents to their children in the designing of interventions aimed at increasing student school engagement, valuing of school, and future time perspective. This is consistent with Bandura's theory of self-efficacy through vicarious learning (Bandura, 1977). This theory explains that individuals will be more motivated to try at a task for which they have observed another individual succeed, especially when that person is someone who they find themselves to be similar to, or with whom they identify. A parent is a perfect role model for this theory, as students should see their parents' successes as indications

of what they themselves will be able to achieve. When this type of a parental model is combined with an intervention aimed at students making the connection that school is the path to a successful career, students will then put in additional effort in school in order to be able to have a job like their parents.

Time perspective is a construct that is especially changeable through an intervention. Future time perspective had more variance explained by parent career modeling and less explained by demographics or baseline time perspective, than did school valuing or student engagement. From time 1 to time 2, the correlation of future time perspective is lower than that for school valuing and student engagement also. In this way, it is possible that future time perspective has the opportunity to be manipulated by an intervention. Students are highly changeable from the beginning of the year to the end of the year on this construct, and parent career modeling has the potential to influence this. Focusing in on this in particular in an intervention would be advantageous. Student engagement and school valuing were also both significantly influenced by parent career modeling, but only two percent of the variance was explained by this variable. However, this is a statistically significant result. For both of these variables, a higher percentage was accounted for by baseline levels, and students were less changeable on these attributes. Demographics also had a much higher influence for student engagement outcomes. But, future time perspective was highly correlated with both of these other variables, so by attempting to change this through an intervention, the other two would in turn be influenced. This is consistent with research done by Akos et al. (2004) and Kenny et al. (2006) on career development,

finding that student engagement and school valuing are strongly linked with future aspirations and goals for the future.

Using a structured intervention with these results as the motivating factor would lead to an even greater impact on student engagement, future time perspective, and school valuing. The data for this study were collected with students simply rating whether or not their parents performed the parent career modeling behaviors listed. Parents were not trained to talk to their children about their jobs, and they were not trained to make the links for the students about how this relates to their own schooling and their futures. If the knowledge gained from this study was used to structure an intervention, the variance explained would most likely increase. This study included parents modeling career behaviors to their children as part of normal parental behavior. They may not have been conducting this modeling in the most positive way, and were certainly not trained on how best to conduct modeling of career behaviors by incorporating the importance of school for a career. Even so, two percent of variance for student engagement, two percent for school valuing, and six percent for future time perspective were explained by these parent career modeling behaviors. An intervention tapping into parent career modeling to increase time perspective, school valuing, and student engagement, would include mentors, possibly parents if this is feasible in the particular environment. The mentors would be trained to discuss careers with students in the best way possible so that the mentored students could make the links they need to make to become more motivated, look to the future, and value school. This has been successful in the CareerStart intervention, through teachers discussing these issues in

their lessons. However, this study suggests incorporation of parents in the intervention. Students are likely to respond to parents in a more personal way than to their teachers. The results on engagement, school valuing, and time perspective may have increased gains by adding a direct parent component to an intervention.

Limitations of the Current Study

This study has several limitations. The analysis did not consider how students are clustered within schools and within classrooms, or distinguish schools treated as experimental from those serving as controls. To eliminate the effects of similarity within a school or a classroom, hierarchical linear modeling (HLM) could have been performed, but this was beyond the scope of this study. Also, in future analyses it may be productive to examine these data through a structural equation model. The three dependent variables were examined individually, even though there are correlations between them and possibly causal relationships.

All the data collected were self-reported. Although the survey measures have good reliability estimates, more confidence could be placed in the information if data were also collected from teachers and possibly parents. This would be helpful to verify student attitudes and parent career modeling behaviors.

A limitation that is often present when collecting data in a school environment is that interventions may be going on at the same time and influence the data without the investigator's being aware. Because of this possibility, some relevant control variables may have been excluded.

Last, the assumptions necessary to carry out statistical tests were examined. The test that was used in this analysis was linear regression. The data were tested for linear relationships, normality, multicollinearity, and homoscedasticity. Examining scatter plots, as well as a plot of predicted values against residuals, indicated that the regression analyses satisfy the assumption of linear relationships. The predicted versus residual plots showed that constant variance is satisfied. By examining tolerance and variable inflation factor (VIF), all values for the regression analyses are below a value of 2, therefore the assumption of no multicollinearity is satisfied. However, the assumption that residuals should be distributed normally and that the underlying distributions of the independent and dependent variables should be normal is violated. This is based on the Shapiro-Wilk test, as well as the skewness values for these variables, and examination of the Q-Q plots for observed versus expected normal values. However, regression is robust to violations of its assumptions, especially with a large sample. It is concluded that this has little bearing on the results of the analysis.

Conclusion

Academic achievement is tied to engagement and motivation. Positive parental influence, especially through modeling of career behaviors, can help students view school as vital to personally held career aspirations, thus increasing engagement, motivation, and ultimately, academic success. By showing parent career modeling to be a significant predictor of school engagement, valuing, and future time perspective, this study suggests interventions that incorporate mentor-student career discussions.

Appendix:

School and Career for Me Survey Subscales

Engagement = E, Valuing = V, Time Perspective of Childhood Career Development = TP,
Career Related Modeling = M

	STRONGLY DISAGREE (I disagree a lot)	DISAGREE	UNCERTAIN (I am not sure)	AGREE	STRONGLY AGREE (I agree a lot)
I find school fun and exciting. (E)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I look forward to learning new things at school. (E)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I look forward to going to school. (E)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School is one of the most important things in my life. (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Many of the things we learn in class are useless. (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Most of what I learn in school will be useful when I get a job. (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School is often a waste of time. (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dropping out of school would be a huge mistake for me. (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School is more important than most people think. (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
School is important to getting a good job. (V)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think about the job I might have after I finish high school. (TP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think about where I will work when I'm grown up. (TP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is important to plan now for what I will be when I grow up. (TP)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents tell me about the kind of work they do. (M)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents have had me meet someone they work with. (M)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents show me the kind of things they do at work. (M)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents tell me about their jobs. (M)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents have shown me where they work. (M)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents tell me about things that happen to them at work. (M)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
My parents have taken me to their work. (M)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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