



Achievement motivation among urban adolescents: Work hope, autonomy support, and achievement-related beliefs

Maureen E. Kenny^{a,*}, Lynn Y. Walsh-Blair^a, David L. Blustein^a,
Janine Bempechat^b, Joanne Seltzer^c

^a Boston College, USA

^b Wheelock College, USA

^c Curry College, USA

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ABSTRACT

Drawing upon expectancy value, hope, and self-determination theories, this study explores the contributions of work-based beliefs and autonomy support as predictors of adaptive achievement-related beliefs. Two hundred and one urban high school students who were enrolled in a work-based learning program completed measures of work hope, autonomy support, and achievement beliefs. Results from the full canonical correlation model revealed that work hope, career planning, and autonomy support shared 37.5% of the variance with achievement-related beliefs. Moreover, work hope and teacher autonomy support further contributed unique variance in explaining these beliefs. The findings contribute to the theoretical knowledge base concerning the value of work-based learning in fostering academic motivation among adolescents.

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The underachievement of youth living in poverty is a persistent issue for educators, researchers, and policy makers (Fine, Burns, Payne, & Torre, 2004; Kozol, 2005). While a great deal of research has been invested in understanding the factors associated with underachievement, including poverty, neighborhood violence, racial discrimination, and family stress (e.g., Constantine, Erickson, Banks, & Timberlake, 1998; Diemer & Blustein, 2007; Ogbu, 1989), some researchers are paying increased attention to individual and school-based factors that appear to foster academic achievement in students at risk for school failure (e.g., Lapan, 2004; Perry, 2008; Wentzel, 1997). Systemic inequities could negatively impact student learning by undermining motivation. That is, students who attend under-resourced schools and who experience inequality of educational and other opportunities (either for themselves or others close to them) may not believe that their academic efforts will pay off or that their school achievement matters to their teachers or to their own futures (Fine et al., 2004; Mickelson, 1990; Ogbu, 1989). Given the pernicious nature of the systemic obstacles low-income students face, the identification of individual and school-based factors that foster student motivation is particularly critical.

Given our interest in career development education and motivation, we have elected to study a sample that includes two important, but often overlooked, aspects of urban high school contexts—work-based learning and a Catholic school environment. Work-based learning is characterized by high school students working in jobs within the adult workplace (e.g., administrative offices, hospitals, etc.) that provide socialization, further educational opportunities, and an experiential means of connecting school to future work. The second contextual factor is represented by a Catholic school environment, which has been an important resource in urban education for many decades. Each of these attributes represents a potentially rich contextual factor that may play a role in facilitating student motivation and persistence. While other contextual factors no doubt contribute to student

* Corresponding author. Department of Counseling, Development and Educational Psychology, Boston College, Campion Hall, Room 101, 140 Commonwealth Avenue, Chestnut Hill, MA 02467, USA.

E-mail address: kennym@bc.edu (M.E. Kenny).

motivation, the specific features of a Catholic school with a work-based learning component provide an opportunity to frame the findings and to suggest further scholarly agendas.

Career development interventions have been identified as one potential means for promoting motivation and school engagement (Lapan, 2004). Documented gains in academic achievement among students enrolled in career education and guidance programs have been cited as evidence in support of career development intervention (Evans & Burck, 1992; Lapan, Gysbers, & Petroski, 2001). Additional research reveals that youth attending intentional school-to-work programs demonstrate modest gains in career development and do better in school than youth whose academic programs do not include work-based learning (Hughes, Bailey & Karp, 2002; Visher, Bhandari & Medrich, 2004). School-to-work programs include structured curricula that attempt to link educational material to the world of work in a rigorous and relevant fashion and often include work-based learning. Despite these promising findings, work-based learning has experienced inconsistent support among educators and policy makers, driven, in part, by concerns about loss of time in academic study (Zimmer-Gembeck & Mortimer, 2006). Nevertheless, work-based learning has been embraced in recent years by some Catholic high schools (“Cristo Rey Network”, 2010) as a means of providing critical financial support for low-income youth who cannot afford to pay tuition.

Support for work-based learning programs and career development intervention would be strengthened by the presence of clear theoretical models and theory-based research to explain their potential for promoting academic achievement. In one effort to build a theoretically driven research base, Kenny, Blustein, Haase, Jackson and Perry (2006) drew upon life-span, life-space (Savickas, 2002; Super, 1990) and motivation theories (Pintrich, 2000; Ryan & Deci, 2000) to explore some initial relationships to guide further research and theory development efforts. The Kenny et al. (2006) study documented links between an adaptive vocational self-understanding (including vocational planfulness and positive career expectations) and school engagement (characterized by feelings of belonging in and valuing school) among youths attending urban public high schools. The current study seeks to extend understanding of theoretically based motivational processes that link career development and school achievement. Identifying motivational processes that underlie the career development/academic achievement nexus will provide practitioners and public policy analysts with an informed framework upon which to construct interventions and programs.

Motivational theorists and researchers (e.g., Ryan and Deci, 2000, Snyder, 2000, Wigfield & Eccles, 2000) have identified a number of processes that can foster or undermine motivation in educational and work-based contexts. According to expectancy value theory (Wigfield & Eccles, 2000), achievement beliefs (e.g., self-perceptions of competence) and behaviors (e.g., persistence) are determined jointly by the expectancy students have for success and the subjective value they place on succeeding. Students differentiate between three components of subjective task value—their interest in the task, its perceived importance, and its perceived utility. The challenge for educators lies in helping students understand that a given set of activities will yield valued outcomes that are attainable.

As applied to career education, work-based learning provides a unique context for helping young people to understand the value of school-based learning for their future vocational choices and opportunities to experience themselves as competent (Blustein, Juntunen & Worthington, 2000). This understanding may further serve to enhance motivation for studying what might otherwise be considered irrelevant academic subjects (Lapan, Kardash & Turner, 2002). According to this formulation, by helping students to gain success experiences and understand the connection between doing well in school and having opportunities later in life, work-based learning and career planning might enhance achievement motivation (Lapan, 2004). The relationships between vocational planfulness, positive career expectations, and school engagement observed in the Kenny et al. (2006) study are consistent with this understanding. Given the large body of research suggesting that interest and motivation in learning is critical to school engagement and learning (Covington, 2000; Wigfield & Eccles, 2000), the promise of work-based learning lies in its potential to promote student interest and readiness to learn (Blustein et al., 2000).

Recent work derived from the perspective of positive psychology (Juntunen & Wettersten, 2006; Snyder, 2000) also offers a theoretical explanation of the academic benefits of work-based learning and career experience for youth. From the positive psychology perspective, hope has a central role in fostering motivation and influencing human behavior. Snyder (2000) conceptualized hope as composed of three primary dimensions, including the presence of goals, thoughts about pathways or ways to achieve those goals, and the desire, confidence or agency in one's capacity to achieve these goals. Existing research has documented positive relationships between student hope and achievement (Covington, 2000). High-hope students, for example, have been found to set challenging school-related goals and are likely to attain those goals even when they do not experience immediate success (Snyder, Shorey, Cheavens, Pulvers, Adams & Wiklund, 2002). At the college level, students who express higher levels of hope obtain higher grades and are more likely to graduate, even after controlling for entrance examination scores, than low hope students (Covington, 2000; Snyder et al., 2002).

Juntunen and Wettersten (2006) recognized the relevance of the construct of hope to vocational issues and developed a measure to assess work hope. These researchers suggested that work hope may be particularly relevant in understanding the motivational state of economically disenfranchised groups, who may be challenged in sustaining hope in a context offering limited economic resources and an array of obstacles to school and work success. We propose that the construct of work hope may have heuristic value in explaining the relationship between career experience and achievement motivation. Work-based learning and career experiences may foster a sense of hope by helping youth to identify work goals, expand their understanding of how to reach those goals, and foster confidence in the likelihood of achieving those goals. Because an understanding of pathways to reach one's goals is a component of hope, the previously observed relationship between career planning and school engagement (Kenny et al., 2006) is also consistent with hope theory.

A third theoretical perspective informing the current study is self-determination theory, which recognizes the role of environmental conditions in either fostering or suppressing motivation. Ryan and Deci (2000) maintain that human beings have

fundamental needs for autonomy, as well as belonging, and believe that environments that offer both support and autonomy are most likely to foster motivation. Environments that provide both support and autonomy are considered particularly important during the adolescent years (Eccles & Midgley, 1989; Ryan, Deci & Grolnick, 1995; Deci & Ryan, 1985). Such environments are not without rules and structure but provide some level of choice in selecting goals and the means for achieving them (Newell & Van Ryzin, 2007). Mastery orientation, or an interest in gaining competence for its own sake, is believed to develop in environments that provide high levels of warmth and acceptance and where mistakes are viewed as an opportunity for learning, rather than an indicator of failure (Hofer, 2002; Wentzel, 1997; 2002). For example, Wentzel (1997) demonstrated that students who feel cared for and who have supportive teachers who mentor them tend to do better in school academically and socially. Furthermore, they tend to be supportive of their peers and more prosocial in and out of the classroom (Wentzel, 1997, 2002). Research linking career development with school engagement has documented the importance of teacher and peer support (Kenny & Bledsoe, 2005) but has not considered the contributions of teacher or work supervisor as facilitators of autonomy, as well as support. Adult mentors are considered an important element of successful work experience for adolescents but have been largely neglected in research (Zimmer-Gembeck & Mortimer, 2006). We include both teacher and work supervisor autonomy support in this study to assess whether the supervisor relationship contributes uniquely to student achievement-related beliefs.

When considered collectively, the three motivational perspectives used in this study (expectancy value, hope, and self-determination) suggest that individual motivation can be enhanced via contextual conditions that are internalized by individuals. These internalized achievement-related beliefs concerning expectancies for educational success and the value of education, hope for the future, and motivational supports provide individuals with resources that can be particularly instrumental in negotiating the sort of challenges that students face in urban schools. This study explores the contributions of work hope and career planning and conditions of support and autonomy in the school and workplace (teacher and work supervisor support and autonomy) to specific achievement-related beliefs, including the belief that school will pay off for future success, the desire to attain academic competence for its own sake, and the belief in one's competence to achieve academically. Consistent with hope (Juntunen & Wettersten, 2006; Snyder, 2000) and self-determination (Ryan & Deci, 2000) theories and prior research (Kenny et al., 2006), we expected that dimensions of work hope and career planning and conditions of support and autonomy in the school and workplace would be positively associated with adaptive achievement-related beliefs. Following from expectancy value theory (Wigfield & Eccles, 2000), we define adaptive achievement-related beliefs as having expectations for success (efficacy) and valuing success for its interest, importance and perceived utility.

1. Method

1.1. Participants

Participants consisted of 201 high school students (39.8% male and 60.2% female) in grades nine (33.3%), ten (21.9%), eleven (20.9%), and twelve (23.9%) enrolled in a Catholic high school in a Northeastern city. According to school data, approximately 56% of students report their religious affiliation as Catholic, and 44% of students report a non-Catholic religious affiliation. All students in the school participate in a work-based learning program, which places students in work sites for one day each week across the four years of high school, along with an academically rigorous schedule. Students self-identified race and/or ethnicity were 37.3% Black/African American, 37.3% Hispanic/Latino, 4.5% White, 2.0% Asian/Asian American, 11.9% Other, with 7.0% choosing not to identify their race or ethnicity. Although the vast majority of students (78.6%) reported they were born in the United States, their mothers (59.7%) and fathers (61.2%) were more likely to have been born outside of the United States.

1.2. Measures

1.2.1. Work Hope

We measured work hope using the 24-item Work Hope Scale (WHS) (Juntunen & Wettersten, 2006) and the 20-item Career Planning (CP) scale of the School Form of the Career Development Inventory (CDI) (Super, Thompson, Lindeman, Jordaan & Myers, 1981). We used the CP scale in addition to the WHS because the WHS is a relatively new measure, and the use of the CP would provide an opportunity to assess whether the broad construct of work hope contributes more to the explanation of academic motivation than career planning alone. The WHS measures three components of work hope: *goals* (e.g., “when I look into the future, I have a clear picture of what my work life will be like”), *pathways* (e.g., “I have a plan for getting or maintaining a good job or career”), and *agency* (e.g., “I am confident that things will work out for me in the future”). For this sample, we modified the response options from the original 7-point Likert scale to a 5-point scale ranging from 1 (*strongly agree*) to 5 (*strongly disagree*). This modification was made to facilitate student completion of the questionnaire by making the number of response options consistent across measures used in the study. Juntunen and Wettersten (2006) report a Cronbach's α of .93 for the total scale. Confirmatory factor analysis (CFA) revealed that the WHS would be best used as a single scale rather than as three subscales. For this sample, Cronbach's α was .88 for the total scale. A 2-week, test-retest reliability with a smaller sample produced a Cronbach's α of .90. With regard to validity, Juntunen and Wettersten (2006) found the WHS was positively correlated with career self-efficacy (.62) and vocational identity (.65) for a sample varied in terms of age, education, employment status, and ethnicity.

The CP measures student's career-planning activities (e.g., “I have or am planning to talk about career plans with an adult who knows something about me”) and knowledge about future career (e.g., thinking of the job you might have after schooling, rate the amount of knowledge you have about “different ways of getting into that occupation”). Items were scored on a 5-point Likert scale

from 1 (*strongly disagree*) to 5 (*strongly agree*). Super et al. (1981) report a Cronbach's α of .89 for ninth grade students drawn from different regions of the United States. For an ethnically diverse sample of students from the ages of 14–23, Lightfoot and Healy (2001) report a Cronbach's α of .96. The CP has been related to future optimism and an integration of past, present and future goals among college students (Hernandez & DiClemente, 1992; Savickas, Silling & Schwartz, 1984). The sample for the current study yielded a Cronbach's α of .88.

1.2.2. Perceived Autonomy Support

Perceived Autonomy Support was assessed using two scales (Learning Climate and Work Climate) from The Climate Questionnaires (Black & Deci, 2000; Deci, Connell & Ryan, 1989). Perceived Autonomy Support from teachers was assessed using the 6-item version of the Learning Climate Questionnaire (LCQ) and from work supervisors using the 6-item version of the Work Climate Survey (WCS).

For both scales, we again modified the response options from the original 7-point Likert scale to a 5-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) to make consistent the number of response options across the measures used in the study. Higher scores correspond to higher degree of perceived supportive autonomy as opposed to control from teachers and supervisors. Although item stems differed with reference to teacher or supervisor, item content was otherwise identical for the two scales. For the teacher scale, students were asked to consider the teachers at their school, and, for the supervisor scale, students were asked to respond in reference to their primary supervisor at their Work Study site. Item examples include “My supervisor [my teachers] listens to how I would like to do things,” and “I feel my teachers [supervisor] provide[s] me with choices and options”. Reported internal consistency reliability for the Climate Questionnaires was .92 for a study of patients' reports of health care providers (Williams, Grow, Freedman, Ryan & Deci, 1996) and .96 for a study of medical students' descriptions of their medical professors (Williams & Deci, 1996). The Cronbach's α with the current sample was .84 for perceived teacher autonomy support and .91 for the supervisor autonomy support. The Climate Questionnaires have been related to needs satisfaction variables (Baard, Deci & Ryan, 2004).

1.2.3. Achievement-Related Beliefs

Three scales from the Patterns of Adaptive Learning Scales (PALS) (Midgley, Maehr, Hruza, Anderman, Anderman, Freeman et al., 2000) were used to assess achievement-related beliefs. *Skepticism about the relevance of school for future success* measures students' self-reported doubt about the connection of school and future accomplishments (e.g., “even if I do well in school, it will not help me have the kind of life I want when I grow up”). The scale consists of 6 items scored on a Likert-type scale ranging from 1 (*not true at all*) to 5 (*very true*). Higher scores on this scale indicated higher skepticism about the future, while lower scores indicate less skepticism. The Cronbach's α reported in the initial validation of this scale was .83 (Midgley et al., 2000). For this sample, the Cronbach's α was .82.

The second PALS scale was *mastery goal orientation (revised)*, which measures students' self-reported interest and task orientation as a motive for engaging in academic behavior (e.g., “one of my goals is to master a lot of skills this year”). The 5-item scale is scored on a Likert-type scale ranging from 1 (*not true at all*) to 5 (*very true*). Higher scores indicate higher goal mastery, while lower scores indicate less goal mastery. The Cronbach's α reported in the initial validation of this scale was .85 (Midgley et al., 2000). For this sample, the Cronbach's α was .81.

The third PALS scale was *academic efficacy* which measures students' perception of their academic competence and expectations for learning (e.g., “I'm certain I can master the skills taught in class this year”). This 5-item scale is also scored on a Likert-type scale from 1 (*not true at all*) to 5 (*very true*). Higher scores on this scale indicate higher levels of academic self-confidence, while lower scores indicated less academic self-confidence. The Cronbach's α reported in the initial validation of this scale was .78 (Midgley et al., 2000). For this sample the Cronbach's α was .74.

2. Procedure

This study was approved by the high school administration and the human subjects review board at the university. Parental consent forms were distributed through homeroom classes to all students in the school. Data collection was scheduled during an extended homeroom period so as not to disturb students' daily schedule. Questionnaires were administered in each classroom by one to two university research team members, which included graduate students and faculty. After parental consents were collected, students completed assent forms and administrators read directions as students followed silently. Students completed the questionnaire at their own pace with researchers responding to questions as needed.

3. Results

Means, standard deviations, and correlations for all measures are presented in Table 1. Following from some prior research suggesting gender and grade differences in achievement motivation (Allen & Mitchell, 1998; Voelkl, 1996) and relational support (Josselson, 1992), MANOVAs were completed to assess gender and age differences. The MANOVA assessing gender differences for achievement-related beliefs was significant, Hotelling's $T = .103$; $F(3, 185) = 6.38$, $p < .001$, with univariate F 's indicating that boys' described more skepticism about the relevance of school for future success compared to their female counterparts, $F(1, 186) = 10.44$, $p < .05$. There were no other significant gender differences for achievement-related beliefs, autonomy support, or work hope. The MANOVA assessing grade differences for autonomy support was significant, Hotelling's $T = .095$; $F(6, 370) = 2.93$, $p < .05$, with

Table 1

Means, standard deviations, and zero-order correlations for work hope, relational autonomy support, and achievement motivation.

Measure	1	2	3	4	5	6	Mean	SD
Work Hope								
Dimensions								
1. Work Hope	–						92.26	12.27
2. Career Planning	.627**	–					75.73	11.46
Autonomy Support								
3. Teacher Autonomy Support	.393**	.384**	–				22.18	4.60
4. Supervisor Autonomy Support	.364**	.398**	.188**	–			23.81	5.54
Achievement-Related Beliefs								
5. Academic Efficacy	.415**	.355**	.375**	.190**	–		19.81	3.30
6. Skepticism	-.487**	-.345**	-.322**	-.104	-.385**	–	11.56	4.78
7. Mastery Goal Orientation	.399**	.323**	.404**	.122	.540**	.454**	20.83	3.50

* $p < .05$.** $p < .01$.

univariate F s indicating that grade 11 students report higher levels of teacher autonomy support than grade 10 students, $F(3, 187) = 3.75, p < .05$. No other significant grade differences were found for work hope and motivational beliefs.

Canonical correlation analysis was selected as a method of overall analysis to assess the nature and degree of association or shared variability between the sets of variables in this study. Canonical correlation was also used to assess the unique contributions of each of the predictor and criterion variables to the shared variance observed in the full model, thereby providing an evaluation of the relative contribution of each of the variables to the other set of factors (Thompson, 2000).

The first canonical analysis assessed the full model to determine the degree to which the work and autonomy support variables and student gender and grade shared variability with the full set of motivational variables. We included student gender (male = 1, female = 2) in the analysis based upon the MANOVA findings of a relatively small, yet statistically significant, gender difference in skepticism about the relevance of school and prior research, suggesting that males are at increased risk for school failure and drop-out in comparison with females, especially in urban public schools (Allen & Mitchell, 1998). We also included grade in the analysis based on the MANOVA findings of small but significant grade differences relative to our autonomy support variables. The full canonical model revealed a significant relationship between the two sets of variables, Pillai's $V = .48, F(18, 564) = 5.97, p < .001$, with a multivariate effect size of .160. The results reveal additionally that the set of work hope and autonomy support predictors contributed significant variance to the achievement-related beliefs [academic efficacy ($R^2 = .24$), $F(6, 188) = 9.89, p < .001$, goal mastery ($R^2 = .25$), $F(6, 188) = 10.35, p < .001$, and skepticism about the relevance of school ($R^2 = .29$), $F(6, 188) = 12.61, p < .001$].

For the full model analysis, two significant roots were obtained. The first root, (Wilks' $L = .56$), $F(18, 526) = 6.66, p < .001$, $R = .61$, accounts for 37.5% of the variance between the canonical composites of the set of work, autonomy support and achievement-related beliefs. The second root accounts for only 9.6% of the shared variance; following the guiding principle of Tabachnick and Fidell (1996), this root was not interpreted as it accounts for less than 10% of the variance and thus is not meaningfully interpretable. The structure coefficients for Root 1 are presented in Table 2. With .30 as an accepted criterion for interpretation (Tabachnick & Fidell, 1996), all of the variables except sex and grade contribute to the interpretation of the root. The structure coefficients are interpreted similar to factor loadings. Accordingly, coefficients above .8 are considered to be high, those ranging from .6 to .8 are considered moderate to high, those between .4 and .6 are considered moderate, those between .2 and .4

Table 2Structure coefficient (ω) for full model relating sex, grade, work hope and relational autonomy support with achievement motivation.

Variable	Root 1 ω
Gender	.173
Grade	.034
Work Hope Dimensions	
Work Hope	.868
Career Planning	.708
Autonomy Support	
Teacher Autonomy Support	.738
Supervisor Autonomy Support	.299
Achievement Motivational Beliefs	
Mastery Goal	.801
Academic Efficacy	.739
Skepticism about the Relevance of School	-.834

are considered moderate to low and below .2 are considered low (Glasnapp & Poggio, 1985). The coefficients for this analysis reveal among the set of predictor variables a low positive loading on sex and grade, a low to moderate positive loading on supervisor autonomy support, a moderate to high positive loadings on teacher autonomy support and career planning, and high positive loadings on the work hope scale. Among the criterion or motivational belief variables, a moderate to high positive loading was observed for academic efficacy, a high positive loading for mastery goal, with a high negative loading on skepticism about the relevance of school. In other words, students who report higher levels of work hope, career planning, teacher autonomy support and supervisor autonomy support also report higher levels of goal mastery and academic efficacy, but report less skepticism about the relevance of school.

We next completed a series of partial analyses to observe the unique contribution of the set of work and autonomy support variables. After controlling for the effects of the other predictors, teacher autonomy support, Pillai's $V = .10$, $F(3, 188) = 6.80$, multivariate effect size = .097, and work hope, Pillai's $V = .12$, $F(3, 188) = 8.46$, $p < .001$, multivariate effect size = .119, were significant as unique contributors. The unique contributions of supervisor autonomy support, Pillai's $V = .01$, $F(3, 188) = .57$, $p > .05$, and career planning, Pillai's $V = .02$, $F(3, 188) = 1.11$, $p > .05$, were not significant.

In order to further discern how each of the significant autonomy support and work variables contributed to each of the achievement-related beliefs, after removing the variance shared with the other career adaptability dimensions, Roy–Bargmann step-down analyses (Tabachnick & Fidell, 1996) were also completed. The step-down analysis reports the contribution of the predictor variable to the criterion variable, adjusted for all other criterion variables in the model. The results revealed that teacher autonomy support contributes significant unique variance to academic efficacy, stepdown $F(1, 190) = 12.33$, $p < .001$, and skepticism about school, stepdown $F(1, 190) = 4.89$, $p < .05$. As unique predictors, work hope contributed significant variance to academic efficacy, stepdown $F(1, 190) = 6.66$, $p < .05$, skepticism about school, stepdown $F(1, 190) = 22.00$, $p < .001$, and mastery goal, stepdown $F(1, 190) = 7.39$, $p < .01$.

4. Discussion

Drawing upon expectancy value theory (Wigfield & Eccles, 2000), hope theory (Snyder, 2000), and self-determination theory (Ryan & Deci, 2000), the findings of this study contribute to a multi-faceted theoretical understanding of the motivational processes that link career development constructs and school achievement-related beliefs. Consistent with expectancy value theory, the full canonical correlation model confirms the expected relationship between positive, hopeful and planful views towards one's vocational future and a valuing of current educational experiences and feelings of competence in those activities. With regard to hope theory, work hope evidenced a robust relationship with achievement-related beliefs and learning environments characterized by support and autonomy. The contribution of career planning to achievement beliefs is also consistent with hope theory, as the pathways dimension of hope relates to planfulness. According to self-determination theory, the environmental characteristics of autonomy and support are expected to be facilitative of motivation, with the results of the full model in this study showing the expected positive relationship between autonomy support and a range of achievement beliefs.

Subsequent analyses provide a more detailed understanding of the pattern of relationships. Partial analyses reveal, for example, that work hope and teacher autonomy support were the most powerful predictors of achievement-related beliefs, contributing unique variance to the model. That is, after accounting for the effects of work hope and teacher autonomy support, career planning and supervisor autonomy support did not add significant variance. Because the construct of work hope encompasses planfulness as one of its components and is reflected in the measure, this finding is not surprising. Our findings suggest that the measure of work hope offers unique explanatory power in understanding achievement-related beliefs beyond the contribution of career planfulness alone. Work hope is a relatively new construct and measure (Juntunen & Wettersten, 2006), with limited examination in education or career literature. The robust nature of the observed relationship between work hope and achievement beliefs points to the heuristic and explanatory potential of this construct in further research examining educational and career development processes. Consistent with the position set forth by Juntunen and Wettersten (2006), work hope appears to be a meaningful construct in understanding the school motivation of low-income youth of color, whose hopes for the future are challenged by a variety of economic and social barriers (Constantine et al., 1998; Ogbu, 1989). Participation in a work-based learning program, as was the case for the students in this study, may have contributed to the salience of work hope as a predictor of adaptive achievement beliefs. Work-based learning and work hope deserve further investigation as antidotes to the academic disinterest and discouragement sometimes experienced by youth in low resource environments (Fine et al., 2004; Mickelson, 1990; Ogbu, 1989).

Teacher autonomy support emerged as a strong and unique predictor of achievement-related beliefs. Given that motivational beliefs were related to the academic context, the role of the teacher as a unique contributor to academic motivation makes sense. This finding is consistent not only with self-determination theory (Ryan & Deci, 2000), but also with the substantive literature documenting the importance of teacher support for school engagement and academic achievement (Kenny & Bledsoe, 2005; Wentzel, 1997; 2002). The presence of a supportive caring school environment has been identified as one factor explaining higher levels of academic achievement of low-income students of color attending Catholic schools than those attending public schools (Bempechat, Boulay, Piergross and Wenk, 2008). The current findings add to the teacher support literature by explicating, consistent with self-determination theory, the role of autonomy facilitation or choice as a dimension of teacher support. As with early adolescents (Eccles & Midgley, 1989), a combination of teacher support and autonomy appears to offer a good fit in fostering the positive achievement beliefs among urban high school students. Although the relationship with the work supervisor is a central component of the adolescent work experience (Zimmer-Gembeck & Mortimer, 2006), supervisor autonomy support did not emerge as a strong or unique predictor of achievement-related beliefs in this study. It appears that the supervisor relationship has limited carry over to student beliefs about school achievement. Although the reasons for this are not clear, the work supervisor typically spends less time with the student than the teacher, and occupies a role that is less salient to performance in the academic

classroom. The observed correlations between supervisor autonomy support and work hope and career planning suggest that the supervisor relationship may more directly relate to hope and planfulness about one's vocational future.

For the full model, all three dimensions of achievement beliefs (academic efficacy, mastery goal, and skepticism about school) were related to work hope and autonomy/support. Step-down analyses indicate that work hope as a unique predictor contributes significantly to all three achievement beliefs and that teacher autonomy supports contributes significantly to academic efficacy and skepticism about school. The contribution of work hope to all three dimensions is illuminating. That is, having hope regarding one's vocational future appears to have benefits not only because students understand the relevance of school to their futures, but because students also express a desire to gain academic competence and believe that they are capable of doing so. Work hope is valuable, therefore, not only for its association with students' awareness of and desire to attain external rewards through future career attainment, but also because it is related to confidence in learning and the desire to attain academic competence. This is desirable because students who express competence and intrinsic interest in gaining competence have been found to exhibit greater persistence when confronted with challenges than students motivated only by external rewards (Hofer, 2002). Both expectancy value (Wigfield & Eccles, 2000) and self-determination (Ryan & Deci, 2000) theories emphasize the importance of intrinsic interest, beyond the lure of external rewards, in fostering effort and motivation.

Teacher autonomy support contributed unique variance to academic efficacy and skepticism about school. Although we expected that teacher autonomy support would contribute to students' perceptions of their academic competence and their understanding of the relevance of school, it is not clear why teachers would not also contribute to an intrinsic interest in learning and in developing competence. Research suggests, however, that student enjoyment of learning and concern about developing competence are promoted by teacher goals and classroom structure that focus on these outcomes, rather than emphasizing student grades or getting the correct answers. Teacher autonomy support may be insufficient in order for students to value learning and the acquisition of competence (Midgley et al., 2000).

Overall the findings have implications for the development of educational and career programs supporting positive youth development for urban school populations. Interventions that enable youth to establish goals, develop clear plans or pathways for attaining those goals, and gain confidence and competence for achieving those goals are likely to be beneficial and related to positive achievement-related beliefs. Work-based learning may be one such program. Fostering a positive future orientation has been recognized in prior research as an important component of effective intervention and prevention programs for youth (Catalano, Berglund, Ryan, Lonczak & Hawkins, 2004; Gillham, Reivich & Shatté, 2002). Within the school context, teachers who provide support coupled with opportunities for student choice and decision-making are also likely to foster positive academic motivation. Given the existing literature on career development education, the findings suggest that integrative programs that build on teacher support may be useful for students, particularly those in work-based learning. Whereas prior research suggested that teacher support is an important component of the learning environment provided by successful Catholic High Schools (Bempechat, Boulay, Piergross, & Wenk, 2008), the current study suggests that promoting work hope also contributes to adaptive achievement-related beliefs in that context.

Despite the strength of the findings in furthering understanding of theoretical constructs associated with future orientation and academic motivation, they must be considered in light of study limitations. Although we propose that work-based learning may be one type of intervention that promotes work hope and positive academic motivational beliefs, this study did not assess the effects of work-based learning. In fact, all students were participants in a work-based learning program in a Catholic school context, which may limit the generalizability of the findings. All of the findings are based on self-report measures, so are thus limited by students' self-awareness and social desirability. The extent to which any of the study variables will contribute to increased academic achievement in the present or the future is unknown. The relationship among the study variables is correlational so that causality cannot be assumed.

The limitations of the current study suggest directions for further research. Longitudinal research that directly assesses the impact of work-based learning and the role of work hope and achievement-related beliefs as mediators of academic outcomes is needed to further assess the relationships proposed in this article. In addition to academic indicators, such as grades, school persistence, and post high school education, reports of student progress from teachers and from work supervisors would add validity and would further extend understanding of the outcomes of work-based learning and the mechanisms that explain those outcomes.

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