

The Relation of Acculturation, Problem-Solving Appraisal, and Career Decision-Making Self-Efficacy to Mexican American High School Students' Educational Goals

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This study examined the contributions of acculturation, problem-solving appraisal, and career decision-making self-efficacy on 105 Mexican American high school students' educational goals. A standard regression analysis indicated that Anglo-oriented acculturation and problem-solving appraisal accounted for significant variance in educational goals. Mexican-oriented acculturation and career decision-making self-efficacy did not contribute significant variance to students' educational goals. The regression model accounted for 19.5% of the variance in educational goals. Results of the structure coefficients for the predictor variables indicated that Anglo-oriented acculturation and career decision-making self-efficacy were the 2 most important predictors, followed by problem-solving appraisal and Mexican-oriented acculturation, respectively. Implications of the findings are discussed, and recommendations for interventions are provided for enhancing the educational and career development among Mexican American adolescents.

Keywords: Mexican American, educational goals, acculturation, problem solving, career decision-making self-efficacy

Latino/as graduate from high school (57%) and college (11%) at lower rates than their White, Asian, and Black peers (U.S. Census Bureau, 2000), and Mexican Americans have the lowest educational attainment in comparison to other Latino/a ethnic groups (Pew Hispanic Center/Kaiser Family Foundation, 2002). It is imperative that counseling psychologists have a better understanding of Mexican Americans' career development and that efforts are made to address the educational disparities between Latino/as and other racial and ethnic groups. Because Latinos' educational goals are a strong predictor of college attendance (Cardoza, 1991) and academic success (Kao & Tienda, 1998), more research is needed to understand determinants of their educational goals. Thus, the purpose of this study was to provide preliminary evidence on the role of selected variables in Mexican American students' educational goals.

In this exploratory study, we investigated the association of several person-level variables to educational goals. Acculturation

was included because it is a culturally related construct that is highly salient to Mexican Americans. Researchers have documented the importance of acculturation in understanding the psychosocial development of members from racial/ethnic groups (e.g., Kim & Abreau, 2001) and have suggested that acculturation research be expanded to examine its relation to academic success, particularly among Latinos (Chun & Akutsu, 2003). We also investigated the role of problem-solving appraisal. Recently, researchers have examined the relation between an individual's perceptions of his or her ability to solve problems and to make career decisions (M. J. Heppner et al., 2004); however, this construct has yet to be applied to Mexican Americans. This variable may be salient to Mexican Americans' career development because of the decisions and challenges encountered throughout the process that involve problem-solving skills. Finally, we explore the link between career decision-making self-efficacy and educational goals. We hope to build on prior research that has established an association between this construct and career-related outcomes to determine whether this relation can be extended to the educational domain of Mexican Americans. In the following sections, we provide an overview of research on each of these variables and their role in the educational and career process.

Acculturation

Acculturation theory has been a useful framework to explain how individuals change or adapt their beliefs, attitudes, and behaviors when living in a multicultural society. Acculturation theory has evolved from earlier perspectives that it was a linear

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process with two cultures at polar ends to recent views that this process is bi- or multidimensional, in which a person adapts in varying degrees to different cultures (Berry, 2003). According to Berry's (2003) multidimensional acculturation model, an individual's acculturation process can vary along four different acculturation strategies: integration (bicultural), assimilation (Anglo oriented), separation (Mexican oriented), and marginalization (disassociated from both cultures). These strategies, in turn, are linked to the attitudes and behaviors of the respective cultures and are believed to be manifested across several domains, including educational achievement. Given that Anglo cultural values dominate most U. S. educational settings, it is assumed that high educational goals are influenced by association with the Anglo culture. Affiliation with Mexican culture also may be associated with high goals because academic success reflects positively on the family and contributes to family pride, reflecting a core cultural value of familism. In addition, children can show *respeto* (respect) to their parents for their sacrifices by achieving academic success. Thus, affiliation with both Anglo and Mexican cultures may influence high educational goals.

Research pertaining to the relationship between acculturation and educational or career outcomes among Mexican American samples has produced mixed findings. Some researchers have found significant relations between acculturation to the Anglo culture and educational outcomes (Flores, Navarro, & DeWitz, 2004; Hurtado & Gauvain, 1997; McWhirter, Hackett, & Bandalos, 1998; Ramos & Sanchez, 1995) and between Mexican-oriented acculturation and career choice prestige and traditionality (Flores & O'Brien, 2002). Both Anglo and Hispanic acculturation had an effect on Latinas' achieving styles (Gomez & Fassinger, 1994). However, several studies reported no association between Anglo acculturation and Mexican American students' career and educational self-efficacy and goals (Flores & O'Brien, 2002; Flores et al., 2004; Hurtado & Gauvain, 1997; McWhirter et al., 1998).

The conflicting findings regarding the link between acculturation and career-related variables may be attributed to inconsistent approaches to measuring acculturation and to sample characteristics. In these studies, at least five different acculturation measures were used, samples were drawn from different regions of the United States, and samples represented different age and ethnic groups. In addition, a limitation with these studies, with the exception of Gomez and Fassinger's (1994) study, is that all conceptualized acculturation along a single dimension (Berry, 2003; Chun & Akutsu, 2003). Therefore, in the present study, we test Berry's (2003) theory to determine whether acculturation toward both cultures is related to educational goals. Given the relevance of this variable to the understanding of within-group differences, more research is needed to illuminate the role of acculturation toward both Anglo and Mexican cultures in their career development.

Problem-Solving Appraisal

Problem-solving appraisal has been linked to career planning, career decision making, and career maturity. Specifically, research demonstrates that positive problem-solving appraisal was related to career-planning behaviors (P. P. Heppner, Cook, Strozier, & Heppner, 1991; McCracken & Weizman, 1997) and to the likeli-

hood of seeking career services (P. P. Heppner & Krieschok, 1983). Furthermore, positive problem-solving appraisal was related to higher vocational identity for college students (P. P. Heppner & Krieschok, 1983) and clearer career decisions at the completion of career counseling for adult career clients (M. J. Heppner et al., 2004). Finally, Larson and Heppner (1985) found that individuals with higher appraisals of their problem-solving abilities were more confident in their decision-making ability and career potential and more certain of their educational and career choice than negatively appraised problem solvers.

Although the association of perceived problem-solving appraisal to career behaviors has been well established, we came across no studies that applied this construct to the vocational development of Mexican Americans. In response to P. P. Heppner, Witty, and Dixon's (2004) call for more research that examines the role of problem-solving appraisal in the career development of racial/ethnic minorities, we explore whether previous findings on perceived problem-solving appraisal can be extended to Mexican Americans' career development.

Career Decision-Making Self-Efficacy

Career decision-making self-efficacy, an individual's belief that she or he can complete specific tasks related to making a career decision, has been examined to understand its relation to career behaviors. Researchers have reported that high perceived career decision-making self-efficacy was related to low levels of career indecision (Gloria & Hird, 1999; Osipow, 1998) and career decidedness (Robbins, 1985). In addition, career decision-making self-efficacy was related to career exploration behavior (Blustein, 1989), academic integration (Peterson, 1993), and career maturity (Creed & Patton, 2003; Luzzo, 1995). Research demonstrates that students of color exhibited lower career decision-making self-efficacy than their White peers (Gloria & Hird, 1999). Findings from other studies suggest that intervention programs were effective in increasing students' career decision-making self-efficacy (McWhirter, Rasheed, & Crothers, 2000; O'Brien et al., 2000; O'Brien, Dukstein, Jackson, Tomlinson, & Kamatuka, 1999). In general, career decision-making self-efficacy research demonstrates that high levels of confidence are related to positive career behaviors and outcomes and that interventions focused on the enhancement of students' career decision-making self-efficacy are successful.

Relatively fewer studies, however, have attended to the association between career decision-making self-efficacy and educational outcomes. In these studies, researchers found that career decision-making self-efficacy was moderately related to educational indecision (Bergeron & Romano, 1994) with a sample of undergraduate students and negatively related to high school students' perceived barriers to postsecondary education and training (McWhirter et al., 2000). Decisions about careers are highly connected to education and training, and, in turn, educational training influences the career options that are available for an individual. Hence, it is important to build on the prior career decision-making self-efficacy research and to extend understanding of its relation to educational outcomes, particularly among Mexican Americans.

Purpose of the Present Study

Few studies have examined variables associated with the educational outcomes of Mexican Americans, yet such knowledge can supply professionals with the tools necessary to enhance their educational attainment. Thus, the purpose of this study was to test a conceptual framework on the basis of theoretical and empirical research that explores the effects of sociocultural (i.e., acculturation), psychosocial (i.e., problem-solving appraisal), and social-cognitive (i.e., career decision-making self-efficacy) variables on Mexican Americans' educational goals. In accordance with acculturation theory, we hypothesized that Anglo-oriented acculturation and Mexican-oriented acculturation would be related to high levels of educational goals. In addition, based on prior research, we hypothesized that high levels of problem-solving appraisal and confidence for making career decisions would be associated with high educational goals.

Method

Participants

The sample consisted of 105 (51% women; 49% men) Mexican American high school students from two public schools located near the Texas–Mexico border. Most participants were 10th graders (60%; $n = 63$), followed by 11th graders (22%; $n = 23$), 12th graders (12%; $n = 13$), 9th graders (4%, $n = 4$), and 2 (2%) who were missing data. Students' age ranged from 15 to 18 years ($M = 16.25$ years, $SD = .91$). Twenty (19%) identified as first generation (i.e., student born in Mexico), 35 (33%) as second generation, 13 (12%) as third generation, 26 (25%) as fourth generation, 7 (7%) as fifth generation, and 4 (4%) had missing information.

Instruments

Demographic questionnaire. A demographic survey was included to gather information about participants' age, gender, grade level, race, and generational status. Participants were asked on one item to indicate their racial-ethnic group classification. Possible responses included Mexican American; other Latino subgroup; White, non-Latino; African American or Black; Asian American; Native American; biracial/multiracial; and "other." Those participants who classified themselves as Mexican American were included in the study.

Acculturation. The revised version of the Acculturation Rating Scale for Mexican Americans (ARSMA-II; Cuellar, Arnold, & Maldonado, 1995) was used to assess an individual's cultural orientation with Mexican and Anglo cultures. The ARSMA-II has been one of the most widely used acculturation scales developed specifically for Mexican Americans. This scale has stimulated the development of other acculturation measures and has been recommended as the scale of choice for Mexican Americans because it assesses acculturation to both cultures along independent scales (Dana, 1996). The original ARSMA was a unidimensional measure, whereas the ARSMA-II uses a multidimensional approach.

The ARSMA-II consists of 30 items along two subscales: Anglo Orientation subscale (AOS; 13 items) and Mexican Orientation subscale (MOS; 17 items). The subscales assess behavioral and affective dimensions of acculturation. Items were developed to assess language use, ethnic identity, and ethnic interaction. Sample AOS items include, "I associate with Anglos" and "My thinking is done in the English language." Representative MOS items include, "I like to identify myself as a Mexican American" and "I speak Spanish." Participants respond to items on a 5-point scale ranging from 1 (*not at all*) to 5 (*extremely often or almost always*). Item responses were averaged to obtain a subscale mean, and high

AOS or MOS scores represent a strong orientation toward the Anglo or Mexican cultures, respectively.

Scale scores from prior studies have yielded Cronbach's alphas ranging from .79 to .83 for the AOS and from .87 to .91 for the MOS (Cuellar et al., 1995; Cuellar & Roberts, 1997; Lessenger, 1997). The ARSMA-II was highly correlated with scores on the original ARSMA ($r = .89$; Cuellar et al., 1995). Concurrent validity was further supported when the two subscale scores correlated in the expected direction with the dominant group and ethnic group subscales of another acculturation measure (Stephenson, 2000). AOS and MOS scores in the present study had Cronbach's alphas of .78 and .92, respectively.

Career decision-making self-efficacy. Jones (1992) adapted the Career Decision-Making Self-Efficacy Scale (CDMSE; Taylor & Betz, 1983) for use with high school students to assess confidence in abilities to engage in career decision-making tasks. The CDMSE was revised by inserting "high school" for "college" to develop the high school version (CDMSE-HS; Jones, 1992). For example, "Select one major from a list of potential majors you are considering" was changed to "Select one high school program or group of courses from a list of potential programs or groups of courses you are considering." For the present study, we used a 25-item abbreviated version of the 50-item CDMSE-HS, which contained the parallel items used in the CDMSE-Short Form (Betz, Klein, & Taylor, 1996). Using a 5-point scale ranging from 1 (*no confidence at all*) to 5 (*complete confidence*), participants rated their confidence level in their ability to accomplish each of the 25 career decision-making tasks listed on the measure. Responses are averaged to obtain a scale score, and high scores indicate strong career decision-making confidence.

A prior study using a high school student sample indicated a Cronbach's alpha of .97 for scores from the CDMSE-HS (Carns et al., 1995). Concurrent validity estimates indicate that career decision-making self-efficacy scores were moderately related to scores on measures of self-esteem, career decidedness, and vocational identity (Robbins, 1985). Also, many studies have shown that career decision-making self-efficacy scores were related to scores on behavioral indicators of educational and career adjustment (Blustein, 1989; Mathieu, Sowa, & Niles, 1993; Peterson, 1993; Taylor & Pompa, 1990). A coefficient alpha of .96 was obtained for scores in the present study.

Problem-solving appraisal. The Problem Solving Inventory (PSI; P. P. Heppner, 1988) is a measure of perceived problem-solving abilities and consists of 35 items. Participants respond to items using a 6-point Likert scale ranging from 1 (*strongly agree*) to 6 (*strongly disagree*). The PSI can be used as a single measure of problem-solving appraisal or by its subscales. A scale score was calculated by averaging item responses. High scores indicate high levels of self-reported ineffective problem-solving strategies.

Cronbach's coefficient alphas ranging from .72 to .90 have been reported for PSI scores among independent samples and cultural groups (P. P. Heppner, 1988; P. P. Heppner, Pretorius, Wei, Lee, & Wang, 2002). Validity estimates indicate that problem-solving appraisal scores were positively related to scores on measures of subjective career distress, active problem solving, and academic self-efficacy (Larson, Toulouse, Ngumba, Fitzpatrick, & Heppner, 1994). In addition, PSI scores were related to affective, cognitive, and behavioral variables (Larson, Potenza, Wennstedt, & Sailors, 1995) and were predictive of psychological distress (P. P. Heppner, Lee, Wei, Anderson, & Wang, 2001). In the present study, PSI scores yielded a Cronbach's coefficient of .85.

Educational goals. Indexes of educational goals were derived from the work of Farmer et al. (1981; see also Farmer, 1985) and have been used in earlier studies (McWhirter et al., 1998; McWhirter, Larson, & Daniels, 1996). Educational expectations and educational aspiration each were assessed by an item that asked students to indicate the highest level of education they *expected* and *hoped* to complete, respectively. Possible responses ranged from 1 (*some high school*) to 9 (*doctoral, professional degree*). In the present study, the two items were averaged to obtain an

indicator of students' ambitions for their educational training. A coefficient alpha of .88 was obtained for the scores related with these two indexes for the present sample.

Procedure

This study was introduced to students during their science classes during the spring semester of the academic year. Students were invited to participate in the study and were allowed class time to complete the surveys; no student declined the invitation. Participants completed the research packet during class. Proper informed consent procedures were followed. Participants were entered into a raffle for various prizes, and all participants received a new pencil.

Results

Data were examined for accuracy of data entry, missing values, and fit between their distributions and the assumptions of multivariate analysis. From the original 113 cases of data collected, 4 cases were dropped because of incomplete data, and 4 cases were dropped because they were univariate outliers for age. We determined that the measured variables met the assumptions for normality. Next, we examined gender and age differences with regard to the criterion variable in this study. Two separate analyses of variance were performed, and results indicated no significant gender, $F(1, 103) = 0.36, p = .55$, or age, $F(3, 101) = 1.60, p = .19$, differences. Therefore, the main analyses were run on the entire sample. See Table 1 for the means, standard deviations, and bivariate correlations for the study's variables.

Multiple Regression

We conducted a standard regression analysis to determine whether Anglo-oriented acculturation, Mexican-oriented acculturation, problem-solving appraisal, and career decision-making self-efficacy contributed significant variance to educational goals. The linear combination of the independent variables significantly predicted educational goals, $F(4, 104) = 6.06, p < .01$. The sample multiple correlation coefficient was .442, indicating that 19.5% (16% adjusted) of the variability in educational goals was predicted by the independent variables. Standardized regression coefficients of the individual predictors indicated that high levels of Anglo-oriented acculturation ($\beta = .21, p < .05$) and strong per-

ceptions of effective problem-solving abilities ($\beta = -.22, p < .05$) significantly predicted high educational goals. However, Mexican-oriented acculturation ($\beta = -.13, p = .16$) and career decision-making self-efficacy ($\beta = .11, p = .32$) were not significant predictors.

Researchers have suggested that structure coefficients should be reported in addition to beta weights in regression studies (Courville & Thompson, 2001), particularly when the scores of two of the predictor variables are highly correlated, as misinterpretations of the data may result when solely relying on standardized regression coefficients (Thompson & Borrello, 1985). Structure coefficient values (see Table 1) indicated that Anglo-oriented acculturation ($r_s = .77$) and career decision-making self-efficacy ($r_s = .70$) were the best predictors of educational goals, followed by problem-solving appraisal ($r_s = .66$) and Mexican-oriented acculturation ($r_s = .41$).

Discussion

The findings of this study need to be understood in the context in which the sample was drawn. Participants lived in a rural community near the Texas–Mexican border. It is a culturally rich environment in which both Mexican and Anglo culture and values are prevalent. Thus, the socialization experiences these students encounter may be different from those of their Mexican American counterparts living in other areas of the country. This study contributes to the vocational research base by examining personal variables related to educational goals with a sample of Mexican American students. Standardized regression coefficients indicate that Anglo-oriented acculturation and effective problem-solving abilities made significant contributions to high educational goals, whereas Mexican-oriented acculturation and career decision-making self-efficacy did not contribute significant variance to students' educational goals. However, examination of the structure coefficients indicate that in addition to Anglo-oriented acculturation and problem-solving appraisal, career decision-making self-efficacy is significantly related to Mexican American students' educational goals. In the latter case, career decision-making self-efficacy is a stronger predictor than is problem-solving appraisal.

Our findings suggest that Mexican American students who were more acculturated to the Anglo culture were more likely to set

Table 1
Means, Standard Deviations, Ranges, and Bivariate Correlations Among the Measured Variables and Structure Coefficients for the Predictor Variables

Variable	<i>M</i>	<i>SD</i>	Range	1	2	3	4	5	Structure coefficients
1. ARSMA AOS	3.81	0.55	2–5	—					.77
2. ARSMA MOS	3.55	0.85	2–5	-.26*	—				.41
3. PSI total	2.93	0.51	1.57–3.74	-.20*	-.09	—			.66
4. CDMSE total	3.86	0.72	1.6–5	.47**	-.12	-.40**	—		.70
5. Educational goals	5.87	2.35	2–9	.34**	-.18	-.29**	.31**	—	

Note. $N = 105$. A structure coefficient is calculated using the following formula: bivariate correlation between the predictor and criterion variable $\div$ multiple correlation coefficient (Thompson & Borrello, 1985; Courville & Thompson, 2001). ARSMA = Acculturation Rating Scale for Mexican Americans, revised version; AOS = Anglo Orientation subscale; MOS = Mexican Orientation subscale; PSI = Problem Solving Inventory; CDMSE = Career Decision-Making Self-Efficacy Scale.

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

higher level educational goals than their less Anglo-acculturated peers. Previous research also has supported the link between acculturation to the Anglo culture and high educational goals (Flores et al., 2004; McWhirter et al., 1998; Ramos & Sanchez, 1995) and college attendance (Hurtado & Gauvain, 1997). However, Hurtado and Gauvain (1997) reported that Anglo acculturation was not related to Mexican American students' desire to attend college or engagement in college planning behaviors. The latter findings suggest that Anglo acculturation may be associated with certain dimensions of educational choices and not others. Given the shortcomings of the acculturation literature that examines educational outcomes, more research is needed to understand the role of Anglo-oriented acculturation in Mexican Americans' educational planning.

Conversely, we found that Mexican-oriented acculturation was not related to educational goals. Taken in consideration with our findings associated with Anglo-orientated acculturation, results of this study suggest that regardless of their orientation to Mexican culture, students with strong connections to the dominant culture are more likely to set high educational goals. It is possible that because the values, beliefs, and practices of the Anglo culture are most often reflected in the educational and work institutions in the United States, those students who feel connected with these standards may feel more comfortable in these settings. As a result, these students may feel more efficacious in their educational planning and in choosing to pursue higher education. These findings have important implications regarding the role of acculturation in the lives of recent Mexican immigrants to the United States. Specifically, it highlights that degree of affiliation with the Mexican culture has no association with students' goals. However, the same cannot be said with regard to students' affiliation with the Anglo culture, as low association with the Anglo culture may have detrimental effects on students' career development. The longitudinal effects of Anglo acculturation on students' career development should be investigated in future research.

Interventions that target Mexican American youth who are less Anglo oriented may be warranted. Professionals may intervene by educating students on postsecondary and career options as well as orienting students to the culture in higher educational settings. Exposing low-Anglo-acculturated students to the customs, traditions, and practices commonly experienced at U.S. college and university campuses and familiarizing them with the roles and expectations of students and faculty may help to increase their comfort level in pursuing higher education and to navigate effectively through the world of work. Interventions also can be designed for parents of low-Anglo-oriented students so that they may assist their children through the decision-making, planning, and goal-setting process. Future research could assess the effectiveness of these types of interventions on low-Anglo-oriented students' educational planning. In addition, research should examine potential intervening variables that may mediate the relation between Anglo-oriented acculturation and educational goals, such as role models and access to resources.

We also found that positive perceptions of problem-solving appraisal contributed significantly to Mexican American students' educational goals. Previous research suggests that perceived problem-solving abilities are amenable to interventions (M. J. Heppner et al., 2004; P. P. Heppner, Baumgardner, Larson, & Petty, 1988). This suggests that Mexican American students' ca-

reer development may benefit from career interventions and activities in school that focus on developing students' skills in solving problems. Indeed, given the important role that problem-solving appraisal plays in career development, researchers have suggested that problem-solving skill building should be incorporated into career intervention programs (Larson & Heppner, 1985), and our findings support this recommendation with Mexican American youth.

Bandura's (1989) self-efficacy theory may serve as a useful theoretical foundation for developing strategies to enhance students' problem-solving abilities. Specifically, building on the four sources of self-efficacy outlined by Bandura, it is recommended that Mexican American students are provided with opportunities to practice and successfully apply their problem-solving abilities to career and educational situations; observe adults and peers in their communities who demonstrate good problem-solving skills; receive encouragement from teachers, counselors, and other adults for using effective problem-solving skills; and learn relaxation strategies that they can use when making difficult, yet important, decisions about their education and career.

Previous research supports a link between career decision-making self-efficacy and various career outcomes. Our regression results failed to establish a connection between career decision-making self-efficacy and our educational-related variable, educational goals. However, because of concerns of collinearity between this variable and other predictor variables, structure coefficients were examined, and these results suggest that career decision-making self-efficacy is as important a predictor as problem-solving appraisal. These findings suggest that improving Mexican American students' career decision-making skills may boost their educational goals. Strategies for enhancing students' career decision-making self-efficacy can be developed from Bandura's theory, and interventions that integrate activities to enhance students' career decision-making skills are suggested. Additional studies that examine the association between career decision-making self-efficacy and educational goals warrant further consideration because several of the skills needed to make career decisions overlap with educational planning and decisions. Future researchers also should explore the association between educational goals and academic-related self-efficacy with samples of Mexican American students.

Some considerations need to be taken into account for the present study. First, results suggested that only 19.5% of the variance in educational goals were accounted for in regression models. Future research should investigate the influence of other psychosocial and sociocultural variables to the prediction of educational goals. Future research should consider examining Mexican American youth from urban and suburban areas across the country to better understand their career development process. The cross-sectional nature of our study prevents us from making interpretations regarding causality. Researchers are encouraged to consider conducting longitudinal studies with Mexican American students throughout high school to better understand the relations of these variables over time. Finally, our results regarding the relation of Mexican-oriented acculturation and career decision-making self-efficacy should be viewed tentatively. The high Cronbach's alphas obtained for scores on these respective scales may result in lower correlations among scale scores if the alpha coefficients reflect item redundancy (Boyle, 1991). Future researchers may

consider using alternative measures to explore the link between these variables and educational goals. Given the rise of Latino/as in the United States, and the striking academic achievement gap between Latino/as and other racial-ethnic groups, it is critical that vocational researchers continue to investigate the factors that may positively influence the educational decision making and goals of Mexican American youth.

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