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The Paradox of Self-Efficacy: Research With Diverse Populations

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Since its earliest applications to vocational psychology, self-efficacy has been recognized for its utility with diverse populations, attributable to its attention to environmental influences. Somewhat paradoxically, then, it has also been criticized as being limited in its applicability with people from other cultures, because of its focus on individual human agency. The current body of research on self-efficacy with diverse populations provides some insight into this paradox, although many questions remain unanswered. Self-efficacy literature with diverse populations is reviewed, theoretical questions are raised, and recommendations for future research are given.

Keywords: self-efficacy, social cognitive career theory, outcome expectations, diversity, cross-cultural, disabilities, lesbian/gay/bisexual

Self-efficacy research has enjoyed a rich and varied life since Bandura’s (1977) seminal introduction of the concept. In vocational psychology alone, the theory of self-efficacy has been applied to the Holland (1997) interest themes, math and science academic pursuits, career decision-making processes (see Betz, 2000), work-related performance (see Stajkovic & Luthans, 1998), and research skills (see Kahn, 2001). Self-efficacy has also been examined as a general tendency to feel confident across domains (Betz & Klein, 1996; Lindley & Borgen, 2002; see also Borgen & Lindley, 2003). Fundamental to the concept of self-efficacy is the importance of environmental or contextual inputs in its development; the four sources of self-efficacy information are mastery experiences, vicarious experiences, verbal persuasion, and physiological arousal (Bandura, 1977, 1999).

Because of systematic differences in exposure to positive experiences with different types of career-related activities, self-efficacy theory has particular potency for increasing the understanding of the career development of diverse and underserved populations (Betz, 2000). Social cognitive career theory (SCCT; Lent, Brown, & Hackett, 1994), the context in which self-efficacy is often viewed, places particular emphasis on the sociocultural impact of variables such as race and sex on the nature of individuals’ career-related experiences (Lent & Brown,
2002). When career-related experiences and opportunities are limited because of oppressive conditions, self-efficacy and outcome expectations exert an even greater direct influence on vocational choice (as opposed to an indirect effect via interests; Chartrand & Rose, 1996; Lent et al., 1994). In addition, SCCT has been identified as a theory that is potentially consistent with the increasing focus in vocational psychology on social justice and activism on an institutional level (Blustein, McWhirter, & Perry, 2005).

At the same time, the concept of self-efficacy is closely linked to individual human agency (Bandura, 1982, 1989, 2002), a focus on which has been identified with an individualistic as opposed to a collectivistic cultural perspective (Borgen, 2005). Indeed, self-efficacy typifies masculine, Western psychology in that it is individualistic, agentic, and highly cognitive. Thus, self-efficacy occupies a somewhat paradoxical location in vocational psychology in that it is also extremely relevant across cultures, often more so than other typically powerful variables such as interests (Tang, Fouad, & Smith, 1999) and ability (Church, Teresa, Rosebrook, & Szendre, 1992). Although the precise mechanisms underlying this paradox have yet to be identified, some possibilities have been offered. Bandura (2002) maintained that although there may be cultural variations in the ways in which self-efficacy is developed and experienced, personal efficacy is no less relevant to group pursuits than to individual pursuits. In addition, collective efficacy beliefs, or shared beliefs about the power of the group to effect change through collective action, may be tapped when self-efficacy is assessed in more collectivist cultures. Because self-efficacy is a concept that is both highly relevant and potentially quite variable across cultures, an understanding of its applications with diverse groups is crucial. This review synthesizes the growing body of vocational research on self-efficacy with diverse groups and identifies needs for further theoretical formulation and research.

WOMEN’S CAREER SELF-EFFICACY

Some of the earliest research on vocational self-efficacy focused on its applicability to women. Betz and Hackett (1981; Hackett & Betz, 1981) first recognized the promise that self-efficacy theory held for illuminating women’s career development processes and demonstrated that women exhibited significantly lower levels of self-efficacy for male-dominated occupations than men did. Betz and Hackett (1983) subsequently found that men exhibited much higher levels of math self-efficacy than women and that math self-efficacy is related to willingness to consider careers in the sciences; these findings have been repeatedly substantiated by later research (e.g., Gwilliam & Betz, 2001; Lapan, Shaughnessy, & Boggs, 1996; Lent, Lopez, & Bieschke, 1991; Post-Kammer & Smith, 1986). Other early research indicated that among junior high school students, girls had lower self-efficacy than boys for meeting the educational requirements and job duties of male-dominated careers such as engineer (Post-Kammer & Smith,
Today, women continue to be underrepresented in the sciences and engineering, particularly at higher levels of education (National Science Board, 2000; National Science Foundation, 1996).

SCCT has been found to be a useful framework for explaining college major choice among high school girls who express interest in science, math, and engineering (Nauta & Epperson, 2003), and mathematics and science self-efficacy are significantly and equivalently predictive of persistence in engineering majors for male and female undergraduates (Schaefers, Epperson, & Nauta, 1997). These validations are valuable because among individuals who in the eighth grade expressed intentions to pursue science and engineering careers, women are more likely than men to have changed career paths 2 years after high school (Mau, 2003). Furthermore, female engineering majors express lower outcome expectations than male engineering majors for engineering careers (Hackett, Betz, Casas, & Rocha-Singh, 1992), which is consistent with others’ assertions that in discriminatory or oppressive situations, outcome expectations may be lower than self-efficacy expectations (Chartrand & Rose, 1996; Morrow, Gore, & Campbell, 1996).

Most of the research on gender has examined mean differences, which in the case of self-efficacy are important because they may indicate systematic differences in access to source information as well as differences in the outcomes associated with self-efficacy. The most consistent and sizable sex difference in self-efficacy among the Holland themes is for the realistic theme (Lindley, 2005), which in combination with investigative interests and confidence is crucial for pursuit of engineering careers (Betz & Schifano, 2000). Although not as reliably as for the realistic theme, men are typically found to have higher investigative confidence than women (e.g., Betz & Gwilliam, 2002; Betz, Harmon, & Borgen, 1996; Lindley & Borgen, 2002). Research on the recently developed Expanded Skills Confidence Inventory (Betz et al., 2003) is consistent with this; in a general undergraduate sample, the largest sex differences (favoring males) were for the scales Using Technology and Mechanical, both with effect sizes above .60 (Rottinghaus, Betz, & Borgen, 2003). In addition, Rottinghaus and colleagues found that in stereotypically male domains, a mismatch of interests and self-efficacy, such that interests were higher in a given domain than self-efficacy, was more common among women than men. The authors concluded that although interests were present in these areas, the women’s range of experiences may have limited the development of confidence.

However, it is possible to overstate these differences. For example, an examination of Rottinghaus and colleagues’ (2003) data reveals that the numbers of women who expressed high confidence but low interest in using technology/computer services were equal to those who expressed low confidence but high interest in that domain. In addition, other researchers have found no gender differences in self-efficacy among engineering students (Hackett et al., 1992; Lent, Brown, & Larkin, 1984, 1986; Lent et al., 2005); these women presumably have already made a commitment to pursue a nontraditional career, perhaps because...
of their higher level of self-efficacy. Similarly, fewer sex differences are typically found when men and women employed in a particular occupational field are compared with one another, and the differences that are found tend to be for Holland themes that are unrelated to their vocation (Betz, Borgen, Kaplan, & Harmon, 1998; Betz et al., 1996).

Conflicting findings have been reported regarding sex differences in the relationships of generalized self-efficacy to Holland theme self-efficacy. Specifically, Betz and Klein (1996) found that self-efficacy for all six Holland themes was substantially related to generalized self-efficacy for men, but that for women realistic self-efficacy and artistic self-efficacy were unrelated to generalized self-efficacy. In contrast, Lindley and Borgen (2002) found that generalized self-efficacy was significantly related to self-efficacy for all six Holland themes for women but only to investigative, enterprising, and conventional self-efficacy for men. Multiple regression results in Lindley and Borgen’s study, however, revealed that contributions were made to the prediction of generalized self-efficacy by only investigative and conventional self-efficacy for men and by only investigative and enterprising self-efficacy for women. Clearly no consensus has yet been reached regarding these relationships, although it would be informative to know what career domains contribute most to women’s and men’s tendency to feel confident in general.

Bandura’s (1999) four sources of efficacy information are easily manipulated in a controlled setting, providing opportunities to create interventions to increase (or decrease) self-efficacy beliefs. For example, Betz and Schifano (2000) found that women’s realistic self-efficacy could be significantly increased through use of a short-term intervention targeting these four sources. Campbell and Hackett (1986) found that gender differences in self-efficacy for a math-related task diminished when men and women were provided the same success experience. Interestingly, these authors also found that women’s self-efficacy was more strongly affected by both success and failure on the task than men’s, perhaps because these isolated experiences accounted for a larger portion of the women’s total life exposure to math. This suggests that interventions to increase self-efficacy may have particular potency for individuals who, because of life circumstances, have had less experience in that domain. Despite the relative ease of creating and evaluating such interventions, few empirical investigations are available, and much more research evaluating self-efficacy interventions is needed.

Gender differences have typically not been found on career decision self-efficacy (Betz & Klein, 1996; Betz, Klein, & Taylor, 1996; Betz & Voyten, 1997; Chung, 2002; Creed, Patton, & Watson, 2002; Luzzo, 1993; Taylor & Betz, 1983; Taylor & Popma, 1990). Mau (2000), however, found that among Taiwanese (but not American) undergraduates, women had lower career decision self-efficacy than men. Therefore, the interaction between gender and culture is important to consider with regard to this variable. Some research has suggested that occupational self-efficacy is more strongly related to generalized self-efficacy and unconditional self-regard for men than for women (Betz & Klein, 1996). Betz
and Klein speculated that this may be attributable to a greater emphasis placed on occupational success as central to self-worth for men than for women.

Only relatively recently have researchers begun to examine the career self-efficacy of women of color (Byars & Hackett, 1998; Hackett & Byars, 1996). Because of the influence of both racism and sexism on the socialization experiences of women of color and the potential impact of oppression on the sources of efficacy information, this is an important focus of study. Although there has been speculation about the likely influences of divergent socialization experiences on the career self-efficacy of women from various cultural backgrounds (Byars & Hackett, 1998; Simpson, 1996; Spanierman, 2002; Suarez-McCrink, 2002), little empirical evidence is currently available. The information that does exist, however, suggests that self-efficacy may be a particularly potent variable in the vocational behavior of women of color.

Gainor and Lent (1998) found Black women to have lower mathematics self-efficacy than Black men, a difference that was only partially explained by differential access to the sources of self-efficacy. Chronister and McWhirter (2004) found that among battered women, ethnic minorities have vocational skills self-efficacy comparable to that of White women and that self-efficacy is more strongly related to confidence for overcoming future career barriers for women of color than for White women. Gwilliam and Betz (2001) found that math and science self-efficacy is strongly predictive of choice of science-related majors and careers for African American women, perhaps to a greater degree than for men or for White women.

Finally, nontraditional career self-efficacy is predictive of career choice prestige, nontraditional career interests, and career choice traditionality (inversely) for Mexican American adolescent women (Flores & O’Brien, 2002). However, the proportion of variance accounted for by self-efficacy was modest, and it is also interesting to note that Flores and O’Brien did not find relationships between self-efficacy and many of the contextual factors predicted by SCCT and other research. For example, acculturation level and feminist attitudes, which have been found to be predictive of self-efficacy for Asian Americans (Tang et al., 1999) and White women (K. M. O’Brien & Fassinger, 1993), respectively, did not influence nontraditional career self-efficacy in Flores and O’Brien’s sample. They concluded that other, unidentified contextual factors may have a stronger impact on both self-efficacy and career choice for Mexican American women.

The body of research that has accumulated since 1981 strongly suggests that women’s tendency to exhibit lower self-efficacy for a variety of career-related variables serves as a significant cognitive barrier to career development (Betz, 2000). As such, an important component of career counseling with women is to assess career-related self-efficacy beliefs and then implement interventions designed to increase self-efficacy in targeted domains, thereby expanding the range of career options (Betz & Hackett, 1997). However, more research could aid the development of optimally effective intervention programs.
CAREER SELF-EFFICACY OF ETHNIC MINORITIES IN THE UNITED STATES

Given distinct cultural and economic circumstances, it is necessary to distinguish research conducted with people of color in the United States from that using international samples. Typically in this section, the term ethnic minority will be used to connote people of color of U.S. nationality; in the subsequent section on international research, participants will typically be referred to by nationality and additionally ethnicity in some cases. Generally, ethnicity labels used by the researchers themselves will be maintained. In addition, in much of the existing research, ethnicity and socioeconomic status (SES) are confounded or at least examined conjointly. Although it is important to clearly distinguish the effects of ethnicity and SES from one another, they are both discussed in this section to provide a more coherent depiction of the literature currently available.

The relevance of self-efficacy variables for the career development of racial and ethnic minorities has been substantiated in the empirical literature, as demonstrated by the following examples. A model of career intentions predicted by SCCT (Lent et al., 1994) has been supported for groups of African American, Hispanic, and White middle school students of low SES (Fouad & Smith, 1996). Lent and colleagues (2005) found SCCT to be equally predictive of engineering major choice for women and men at one predominantly White and two historically Black universities. Among Black undergraduates, the relationship between mathematics ability and interests has been found to be fully mediated by self-efficacy (Gainor & Lent, 1998). In addition, self-efficacy is an important predictor of range of perceived career options for American Indian and Hispanic rural high school students (Lauver & Jones, 1991) and American Indian and Hispanic migrant farm workers in high school equivalency programs (Bores-Rangel, Church, Szendre, & Reeves, 1990; Church et al., 1992). Interestingly, Church and colleagues found that measured aptitude was unrelated either to self-efficacy or to the occupations students were willing to consider. This finding lends additional support for the idea that self-efficacy is a particularly relevant construct for understanding the vocational behavior of individuals who face many barriers to their career pursuits.

In addition to the substantiation of self-efficacy as a relevant construct for ethnic minority individuals, three types of differences across ethnic groups are important to examine: (a) mean differences in self-efficacy levels, (b) differences in the impact of source variables on self-efficacy levels, and (c) differences in the predictive ability of self-efficacy with regard to career development outcome variables.

Lauver and Jones (1991) found American Indian and Hispanic rural high school students to have lower levels of self-efficacy than White students for a variety of occupations, particularly medicine-related fields. In this study, there were no occupations for which White students exhibited lower self-efficacy than either...
of the other two ethnic groups. In addition, Lauver and Jones found SES to be an important predictor of self-efficacy for the Hispanic students. In contrast, Ali, McWhirter, and Chronister (2005) found that SES did not contribute additional variance in vocational/educational self-efficacy beyond the effects of sibling and peer support in a semirural high school sample in the Pacific Northwest, and Tang et al. (1999) found neither SES nor family involvement to be related to self-efficacy among Asian American undergraduates.

Little consistency has been found across studies with undergraduates. Among engineering students, Mexican Americans have been found to have lower levels of both engineering occupational self-efficacy and self-efficacy for requirements in their academic program than European Americans (Hackett et al., 1992). Lent and colleagues (2005) found engineering students at both a private and a public historically Black university to have higher academic self-efficacy than those at a predominantly White public university. However, this study examined differences by university rather than by ethnicity, and within-university differences among ethnic groups were not reported. Among a cross-section of undergraduates, African Americans have demonstrated higher levels of self-efficacy than European Americans for artistic, social, and enterprising theme activities and school subjects using two separate assessment instruments (Betz & Gwilliam, 2002). Finally, no differences have been found between White and African American students on mathematics and investigative self-efficacy and no interaction with gender differences (Betz & Gwilliam, 2002; Gwilliam & Betz, 2001).

White students have been found to have higher self-efficacy for coping with career-related barriers than ethnic minority students (Luzzo & McWhirter, 2001). This is a little-studied but important type of self-efficacy with regard to diverse populations, because of career-related barriers that are more likely to exist for ethnic minorities. Taken together, these findings suggest a troubling disadvantage for ethnic minority students: They may have lower self-efficacy for certain occupational fields leading them to restrict their career options at the same time that they perceive greater barriers to their career pursuits, with which they feel less capable of coping.

Research has yielded conflicting results regarding ethnic differences in career decision self-efficacy, with some findings indicating higher levels for African Americans in comparison to Whites (Chung, 2002) and other results suggesting higher levels for White students than for ethnic minorities (Gloria & Hird, 1999). The antecedents of career decision self-efficacy may have subtle variations across ethnic groups; Gloria and Hird found that for both White students and ethnic minority students, positive attitudes toward members of other cultural groups, but not ethnic identity status, were predictive of career decision self-efficacy. However, this effect was stronger for ethnic minority students.

Therefore, unlike research on gender, no clear trend can be identified regarding mean differences in self-efficacy levels across ethnic groups. Other research has examined variations across cultural groups in the impact of the four sources of self-efficacy. Although performance accomplishments are typically the most
powerful source of efficacy information (Bandura, 1977), Gainor and Lent (1998) found persuasion to be comparable in strength to performance experiences as a predictor of mathematics self-efficacy in Black undergraduates. Among lower SES high school students, support of siblings and peers, but not parents, has been found to be a particularly influential predictor of vocational/educational self-efficacy (Ali et al., 2005). Ali and colleagues concluded that in their sample, siblings and peers may be more accessible sources of verbal persuasion as a source of self-efficacy, as well as more influential role models, because the majority of the participants’ parents had not graduated from college.

Conflicting results have been found with regard to the impact of ethnic identity development on self-efficacy and as a mediator or moderator of the relationship of self-efficacy to career outcome variables. Ethnic identity development has been found to predict mathematics self-efficacy in an ethnically diverse sample of urban high school students (V. O’Brien, Martinez-Pons, & Kopal, 1999) but to be unrelated to mathematics self-efficacy among Black undergraduates (Gainor & Lent, 1998) or to career decision self-efficacy among both White and ethnic minority undergraduates (Gloria & Hird, 1999). Furthermore, Gainor and Lent found the relationship of self-efficacy to vocational interests and behavior to be the same across levels of racial identity development. However, acculturation level is related to the extent to which Asian American undergraduates’ self-efficacy levels are consistent with career domains thought of as “typical” for Asian Americans (i.e., investigative and realistic occupations; Tang et al., 1999). It is important to note that in this study, Holland theme self-efficacy was predictive of both vocational interests and career choice, but interests were not predictive of career choice. This suggests that for Asian Americans, self-efficacy seems to be more relevant for career choices than are occupational interests.

Some research, however, has suggested that outcome expectations may be even more important than self-efficacy in predicting career intentions among individuals with low SES. In a test of SCCT with inner-city middle school students, Fouad and Smith (1996) found that although a direct relationship between self-efficacy and career intentions was significant, an indirect path via outcome expectations was considerably stronger. This is important to consider taken together with the suggestion that outcome expectations may be lower than self-efficacy expectations under discriminatory or oppressive conditions (Chartrand & Rose, 1996; Morrow et al., 1996).

INTERNATIONAL RESEARCH

In addition to examining the self-efficacy construct with ethnic minorities in the United States, it is important to investigate its international utility. Although even more limited than self-efficacy research with American ethnic minorities, research with international samples indicates the importance of the self-efficacy construct across cultural groups as well. For example, support for the predictions
made by SCCT regarding the relationships of self-efficacy to interest and occupational considerations has been found with Italian high school students (Lent, Brown, Nota, & Soresi, 2003). Indeed, in this study, self-efficacy was found to be particularly important in that it mediated the relationships of perceived environmental supports and barriers to choice considerations.

Because of the multilayer effects of racism, U.S. minorities do not have educational and vocational experiences that are comparable to those of their White counterparts, but there are many similarities, whereas individuals in other nations face widely varying educational systems and have diverse economic and geographic factors affecting their vocational options (Hesketh & Rounds, 1995). For example, Patton, Creed, and Watson (2003) found a negative relationship between perceived career barriers and career decision self-efficacy for South African adolescents but not for Australian adolescents (in predominantly White samples). This difference can be understood in light of a context of recession and higher levels of unemployment for the South Africans than for the Australians. Among male Asian students studying in Australia, self-efficacy expectations are a significant determinant of their desire either to return to their home country to start their career or to remain in Australia (Singer, 1993). Interestingly, however, desire to return home was most strongly influenced by self-efficacy for ease of career success in their home country, whereas desire to remain in Australia was most strongly influenced by self-efficacy for functioning in that cultural context.

In addition, Hesketh and Rounds (1995) noted that certain aspects of self-efficacy in collectivist cultures may arise more from a sense of confidence in the family’s or group’s efficaciousness than from confidence in individual ability. These authors hypothesized further that processes, such as the mechanisms by which self-efficacy develops, are more likely to generalize across nations than findings that include values attached to behaviors in certain contexts. An example of this distinction is provided by Hesketh, Feiler, and Kanavaros (1994), who noted that Australian workers in a manufacturing (realistic) environment have considerably higher social self-efficacy than would be expected, attributable to the group-based nature of such work environments in Australia. In other international research, American undergraduates have been found to have higher career decision self-efficacy than Taiwanese undergraduates (Mau, 2000). In addition, Mau found differences between American and Taiwanese students in the relationship between career decision self-efficacy and decision-making style. Specifically, a dependent decision-making style was most closely associated with low self-efficacy for American students, whereas a rational decision-making style was most closely associated with high self-efficacy for Taiwanese students. Mau noted that this finding supports the notion that a dependent approach is not as detrimental in the Taiwanese cultural environment as it is for Americans.

In combination, these issues should alert researchers to refrain from unwarranted assumptions about the cross-cultural utility of assessment instruments, although few studies have examined the validity of self-efficacy measures with international samples. With predominantly White samples of high school stu-
students in Australia and South Africa, Creed and colleagues (2002) found two differing factor structures underlying the short form of the Career Decision-Making Self-Efficacy Scale (Betz, Klein, & Taylor, 1996), neither of which approximated the structure found with U.S. college students in the development of the scale. Hampton (2005) recovered yet a different factor structure in this scale with Chinese college students. Although versions of the scale were found to have practical utility in both studies, the content of the subscales varied and did not reflect the original theoretical basis of the scale taken from Crites (1961).

LESBIAN, GAY, AND BISEXUAL POPULATIONS

Lesbian, gay, and bisexual (LGB) individuals face unique issues in their career development for a number of reasons. One reason is that career development often occurs simultaneously with sexual identity development, which in a heterosexist society occurs naturally and invisibly for heterosexual individuals but often quite arduously for nonheterosexual people (Morrow et al., 1996). As a result, LGB individuals may delay career development processes as they focus on integration of their self-concept (Boatwright, Gilbert, Forrest, & Ketzenberger, 1996; Croteau, Anderson, DiStefano, & Kampa-Kokesch, 2000; Fassinger, 1995, 1996). Additionally, LGB individuals often face considerable discrimination and homophobia in educational and work environments that may influence their career development (Chung, 1995; Croteau et al., 2000). Beyond the direct negative consequences of discrimination, LGB individuals must devote considerable energy to issues not faced by heterosexuals, such as how to manage their sexual identity at work and how to react to societal messages regarding what are and are not “acceptable” occupations for lesbians or gay men.

Slowly, resources for psychological practice with LGB clients are accumulating. Now available are formal guidelines for psychotherapy with LGB clients (American Psychological Association, 2000), specific LGB counseling competencies (Israel, Ketz, Detrie, Burke, & Shulman, 2003), and recommendations for career counseling and assessment (Chung, 2003; Croteau et al., 2000; Prince, 1997). Still, little research has examined the applicability of career development constructs to the experiences of LGB individuals. With regard to self-efficacy, the first step was taken by Morrow and colleagues (1996) in addressing the application of SCCT to the career development of lesbian women and gay men. Unfortunately, researchers have not followed the lead of Morrow and colleagues in testing the ideas they put forth.

Morrow et al. (1996) argued that basic self-efficacy beliefs generally form prior to awareness of sexual orientation. However, they suggest that children who have interests that are nontraditional for their gender, as is often reported by lesbians and gay men (e.g., Chung & Harmon, 1994), typically receive less encouragement for those activities and have fewer role models in those activities, circumstances that also lead to fewer opportunities for performance accomplishments.
Possible mismatch between levels of interests and self-efficacy in gender nontraditional domains, as has been reported in a general college sample by Rottinghaus et al. (2003), should be examined with LGB samples. The impact of gender role stereotyping should be investigated with LGB samples specifically, because it is unwarranted to assume that such influences would affect nonheterosexual individuals in the same way as they affect heterosexual individuals. For example, Fassinger (1996) noted that lesbians’ vocational development may be less influenced by traditional gender role expectations than heterosexual women’s, allowing lesbians greater flexibility in career choice.

In absence of research on self-efficacy with LGB individuals, some information can be gleaned from examining research on elements that are also sources of self-efficacy information. For example, one source is persuasion, which can also be interpreted as encouragement; in comparison to heterosexual undergraduates, LGB students perceive less support and guidance for their career planning efforts (Nauta, Saucier, & Woodard, 2001). Working lesbian women, however, have reported receiving considerable support for their career pursuits from the lesbian community (Boatwright et al., 1996). Vicarious learning is another source of efficacy information; Nauta and colleagues found that LGB students feel a greater need for role models who share their sexual orientation and also have significantly more career role models than heterosexual students do. Thus, LGB students seem to be compensating for a lack of one source of efficacy information by increasing another.

Morrow et al. (1996) suggested that for lesbians and gay men, outcome expectations may be more salient than self-efficacy in the development of interests, particularly in environments where discrimination based on sexual orientation is expected. In other words, decisions may be based more on anticipated consequences for pursuing areas of interest than on beliefs about ability. Morrow et al. provided the example of careers working with children, for which an individual may have high interest and high self-efficacy but may avoid because of fears of discrimination in those careers. Conversely, careers that are populated by a disproportionately large number of lesbians or gay men may be chosen because of outcome expectations of finding a supportive environment there.

**PEOPLE WITH DISABILITIES**

Self-efficacy has been identified as a particularly useful career development construct for people with disabilities, whether the disabilities are congenital or acquired (Klein, Wheaton, & Wilson, 1997). Individuals with congenital disabilities may have had restricted opportunities to explore various career domains because of limited mobility, isolated educational environments, discrimination, or extended periods of medical treatment, which in turn may have limited their success experiences, a primary source of self-efficacy information. Acquired disabilities, on the other hand, may arrest or alter a career path already in motion;
negative vocational experiences attributable to discrimination in the workplace and/or loss of abilities may erode existing self-efficacy beliefs.

Assessment of self-efficacy beliefs is an integral part of comprehensive career assessment with individuals with disabilities (Klein et al., 1997), and self-efficacy theory has been proposed as a useful framework for rehabilitation counseling with college students with disabilities (Conyers, Enright, & Strauser, 1998). This is supported by the finding that college students with disabilities may experience a mismatch in career plans; specifically, they may have high career aspirations but low expectations regarding their future achievements (Babbitt & Burbach, 1990). Group interventions have been found to be one useful means of increasing the career-related self-efficacy of undergraduates with disabilities (Corrigan, Jones, & McWhirter, 2001).

However, as with LGB individuals, research on career-related self-efficacy with individuals with disabilities is quite limited. Basic information about the applicability of self-efficacy theory with high school students with learning disabilities is provided by Panagos and DuBois (2000). They found that self-efficacy was a better predictor of career interests than were outcome expectations or measured aptitude. In addition, they found support for three of the four sources of efficacy information: Performance accomplishments, vicarious learning, and verbal persuasion were related to self-efficacy but emotional arousal was not. There is also some evidence that situational vocational assessments, which provide a type of simulated success experience, may help increase the career-related self-efficacy of adults with disabilities (Scroggin, Kosciulek, Sweiven, & Enright, 1999). Finally, research on career decision self-efficacy has indicated that both high school (Ochs & Roessler, 2001) and college students (Luzzo, Hitchings, Retish, & Shoemaker, 1999) with learning disabilities and other types of disabilities exhibit lower levels of career decision self-efficacy than students without disabilities. Luzzo and colleagues suggested that parents of students with disabilities may be more likely to make educational and vocational decisions for their children, thereby limiting their children’s opportunities for success experiences with making career decisions autonomously.

CONCLUSIONS AND RECOMMENDATIONS

Clearly, self-efficacy is a concept that provides myriad opportunities to broaden the understanding of the career development of diverse individuals, many of which have not yet been tapped. As a construct that incorporates contextual information, is quite malleable, and is a powerful predictor of outcomes, its potential is substantial. However, basic conceptual and empirical questions about self-efficacy remain, which inform the following recommendations.

Further exploration of the paradoxical location of self-efficacy as both culture-bound and universally relevant is needed. The widely found applicability of a
A construct that is so clearly individualistic, agentic, and cognitive is fascinating and requires deeper understanding. Examination of the cross-cultural validity of established assessment instruments could provide information about the extent to which self-efficacy is being interpreted in a slightly different way by individuals from cultures with a more collectivist orientation. Collective efficacy beliefs, or shared confidence about the effectiveness of the group as a whole, have also been identified as a potent concept (Bandura, 2002); a focus on this concept in research with members of collectivist cultures may yield even more predictive value than attempting to apply the traditional concept of self-efficacy.

At the same time, there are severely understudied populations for which self-efficacy clearly has the potential to be a valuable source of understanding and intervention. Specifically, because of the often circumscribed career development experiences of LGB individuals and people with disabilities, self-efficacy is a theoretically potent concept with these populations, but the research in this area is extremely limited. More research is needed at all levels of investigation, including differences in access to sources of self-efficacy, the mediating and moderating influences of contextual variables, the impact of the various sources on self-efficacy levels, and the relationships of self-efficacy to vocational outcomes. In addition, preliminary findings have suggested that outcome expectations may be even more influential than self-efficacy under oppressive conditions and in situations in which true opportunities are limited; this possibility requires further investigation. Furthermore, one of the pragmatic strengths of self-efficacy as a vocational concept, its malleability, is also understudied. Self-efficacy theory contains clear information about how self-efficacy is formed and altered (Bandura, 1999), but this information could be put to much better use in research and practice. A productive focus of future research would be creation and evaluation of interventions to try to broaden the options of disadvantaged individuals (Chartrand & Rose, 1996), as well as increasing their self-efficacy for availing themselves of those options. Chartrand and Rose’s career development program for incarcerated women based on SCCT is a good example of such an intervention; more research should be directed at evaluation of such programs.

Finally, it is important to note that although self-efficacy research with some of the diverse populations discussed in this article is sparse, research at the intersection of diverse identities is practically nonexistent. The only exception is the few studies reviewed on women of color; ethnic minority and international samples are heterosexual and nondisabled; samples of individuals with disabilities are White and heterosexual; LGB samples are White and nondisabled. This reflects the trajectory of research in most domains of psychology but is especially important to remedy in the self-efficacy literature, because of the stated value of self-efficacy for informing the career development of individuals from diverse backgrounds. Research at the intersection of diverse identities would provide extremely valuable additions to the literature at this point as well as increase the applicability of the construct in practice.
REFERENCES


