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WHAT DO YOU WANT TO BE WHEN YOU GROW UP? COGNITIVE FLEXIBILITY INFLUENCES CAREER DECISION- MAKING AND RELATED ANXIETY

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Abstract

Career indecision is a stage most individuals pass through during their lifetimes, but it is often accompanied by anxiety. Although anxiety can have a positive influence on decision-making by focusing attention and cognitive resources, excess anxiety can disrupt the career decision-making process. Existing literature links anxiety to cognitive flexibility, an individual's ability to efficiently switch between thoughts and ideas and to adapt to evolving situations, with young adults higher in cognitive flexibility typically experiencing less anxiety than their less-flexible peers. No studies to date have examined cognitive flexibility as it relates to career indecision or to career-indecision-related anxiety, however. This study examines the relationships between cognitive flexibility, career indecision, and anxiety in undergraduate students; 156 undergraduate students (72% female, 91% Caucasian, 63% juniors and seniors) completed an online Qualtrics survey assessing career indecision, career anxiety, cognitive flexibility, and general demographic information including academic trajectory, career confidence, and personal characteristics. The data support previously documented relationships between career indecision and anxiety and demonstrated that cognitive flexibility significantly relates to both of these factors. Our results suggest a model in which cognitive flexibility directly influences career decision-making, which in turn dictates levels of career-indecision-related anxiety; thus, individuals who are low in cognitive flexibility and high in career indecision may be excellent candidates for interventions designed to increase cognitive flexibility to promote career decision-making and to reduce career-indecision-related anxiety.

Career decisions are some of the most complex choices individuals must make, as the individual must consider a variety of factors—personal abilities, life and career goals, work preferences, and personal expectations—when selecting a

career path (Di Fabio, Palazzeschi, Asulin-Peretz, & Gati, 2013). The sheer number of factors to consider is often overwhelming. Although career indecision appears to be a normal stage that most individuals pass through during their lifetimes, decision-making confidence, perceived breadth of career options, and anxiety levels surrounding the decision can all influence the length and severity of the period of career indecision (Campagna & Curtis, 2007; Creed, Patton, & Prideaux, 2006; Osipow, 1999).

Even though career indecision is a common phenomenon, it is often accompanied by anxiety. Anxiety is a relatively frequent emotion that is influential in driving judgments and decisions, including those about careers (Campagna & Curtis, 2007; Fuqua, Newman, & Seaworth, 1988). Although anxiety can have a positive influence on judgment and decision-making by focusing attention and cognitive resources, excess anxiety can impede the career decision-making process (Campagna & Curtis, 2007; Fuqua et al., 1988). A variety of factors can drive the anxiety associated with career indecision, including a lack of information about self and careers, uncertainty about the appropriateness and degree of career fit, having multiple interests, and the existence of barriers associated with specific careers. Fuqua, Newman, and Seaworth (1988) investigated the relationships between these factors and anxiety in undergraduate students at a Midwestern university. They found that a lack of information about the self and about careers shared the strongest relationship with anxiety, but anxiety also significantly correlated with uncertainty of fit and the presence of barriers to intended career choice. Although these results suggest that anxiety is highly related to career indecision, they do not address the direct relationship between these two factors.

In an effort to better understand the links between career indecision and anxiety, several studies have investigated the specific roles of state anxiety and trait anxiety in career indecision and career certainty (Campagna & Curtis, 2007; Fuqua et al., 1988; Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). State anxiety consists of anxious feelings surrounding specific events or situations, whereas trait anxiety represents an individual's natural tendency to become anxious regardless of situational factors. To date, it is unclear whether state anxiety, trait anxiety, or a combination of the two best accounts for the anxiety associated with career indecision (Campagna & Curtis, 2007; Fuqua et al., 1988; Spielberger et al., 1983). Campagna and Curtis (2007) found that both state and trait anxiety positively correlated with career indecision, but state anxiety was the better predictor. In addition, only state anxiety was negatively correlated with career certainty, suggesting that increased career uncertainty may lead to higher levels of state

anxiety, rather than trait anxiety leading to career uncertainty. While it is still unclear exactly which type of anxiety is responsible for the negative feelings associated with career indecision and whether anxiety precedes or results from difficulties in selecting a career path, these findings suggest that state anxiety resulting from the stressful nature of selecting a career may be more influential in the experience of career-indecision-related anxiety than an individual's natural tendency to become anxious.

A variable that may affect the amount of anxiety an individual will experience is cognitive flexibility. Cognitive flexibility is the ability to efficiently switch between thoughts and ideas, to consider multiple perspectives or approaches simultaneously, or to easily adapt to specific or evolving situations (Kercood, Lineweaver, Frank, & Fromm, 2017; Scott, 1962). Though past research has not explicitly addressed the relationship between cognitive flexibility and the anxiety associated with career decision-making, studies outside the realm of career decision-making have documented links between cognitive flexibility and anxiety more generally. For example, higher anxiety levels are correlated with lower levels of cognitive flexibility in individuals with generalized anxiety disorder (Arlt, Yiu, Eneva, Dryman, Heimberg, & Chen, 2016) and eating disorders (Simon & Verboon, 2016). Given this relationship with anxiety in non-career-related settings, it is possible that cognitive flexibility may also be related to career-indecision-related anxiety. If the pattern is similar to that with other types of anxiety, individuals who are higher in cognitive flexibility may experience lower levels of career-related anxiety.

Cognitive flexibility may also relate to career indecision in undergraduate students, although this is a much less extensively studied area than is cognitive flexibility's relationship with anxiety. In a study of professional identity in first-year health- and social care students, students who were higher in cognitive flexibility reported a stronger professional identity (the extent to which they felt they belonged to a certain profession and identified with individuals in that line of work) than did students lower in cognitive flexibility (Adams, Hean, Sturgis, & Clark, 2006). Additionally, a different study asked undergraduate students with and without ADHD to rate their subjective cognitive flexibility, as part of a larger investigation of cognitive flexibility's impact on academic achievement and career choice. Interestingly, the relationship between cognitive flexibility and career confidence differed in these two populations. Students with ADHD who were higher in subjective cognitive flexibility showed less career confidence than their less-cognitively flexible peers, whereas non-ADHD students with higher subjective

cognitive flexibility showed increased confidence in their career choices than did those lower in cognitive flexibility (Kercood et al., 2017). Together, these two studies raise the possibility that in typical undergraduate populations, the ability to consider multiple options may influence decision-making about future career paths, although career indecision was not explicitly addressed in either investigation.

The current descriptive study fills two gaps in the literature by exploring the relationships between cognitive flexibility and career-indecision-related anxiety as well as between cognitive flexibility and career indecision. Although trait anxiety may contribute to career indecision, given the prior literature's indication that state anxiety relates more strongly to career certainty and indecision, the current study focuses only on career-indecision-related anxiety (a form of state anxiety). Given what is known about cognitive flexibility's relationships with anxiety and with professional identity and career confidence, we expected students with greater cognitive flexibility to experience less anxiety (hypothesis 1) and less indecision (hypothesis 2) about their future careers.

Although the previous literature does not specifically address the relationships between cognitive flexibility, anxiety, and career indecision, the relationships that exist between these variables independently (cognitive flexibility and anxiety; cognitive flexibility and professional identity/career confidence) suggest a promising area in which to expand the existing literature. Because of the strong relationships between cognitive flexibility and anxiety outside of the realm of career decision-making, our third hypothesis is that cognitive flexibility may influence anxiety differently in people who are undecided about their future careers than in those who are decided about their career paths. Cognitive flexibility may play little role in the anxiety experienced by individuals who are fairly decided in their careers, as their anxiety levels are likely to be minimal. In contrast, individuals who are undecided tend to experience much higher levels of anxiety, and in this group, those who are lower in cognitive flexibility may experience higher levels of anxiety, whereas those who are higher in cognitive flexibility may not suffer from anxiety to the same extent.

Given the importance of these three factors, a study integrating all three concepts has the potential to enhance our understanding of the complex relationships they may share and of their influence on the career decision-making process as a whole. Understanding factors that influence the anxiety associated with career decision-making could contribute to improving the experiences of individuals who are in the process of choosing career paths. The results of the current study could also point to interventions that target the negative feelings

associated with indecision, allowing individuals to redirect their cognitive resources back toward career-related decision-making. Finally, by demonstrating who is most vulnerable to career-indecision-related anxiety, the current study could help to identify those most likely to benefit from these or other types of interventions.

Method

Participants

Participants included 156 undergraduate students (91% Caucasian) aged 18–23 ($M = 20.05$, $SD = 1.28$) from a variety of educational backgrounds. Age did not share a significant relationship with any of the three main outcome variables (all $ps > .247$). The sample included a greater proportion of juniors and seniors (63%) than of first- and second-year students (37%). Additionally, more women ($n = 113$, 72%) participated in the study than men ($n = 43$, 28%). Women and men did not differ in career indecision ($t(154) = .21$, $p = .831$) or cognitive flexibility ($t(154) = -1.08$, $p = .283$), but women scored significantly higher than men on the career anxiety measure, $t(154) = -2.29$, $p = .023$. To assure that gender did not influence the results of any of the primary analyses, we initially included it as a covariate. Covarying gender did not change any of the results. Therefore, for simplicity, the primary analyses do not include gender.

Materials

Each participant completed a 29-question online Qualtrics survey consisting of a series of questionnaires related to career indecision, anxiety, and cognitive flexibility. We adapted existing questionnaires assessing these three factors to fit the Qualtrics format.

Demographic Questionnaire

This questionnaire gathered participant demographics such as age, gender, year in school, and race. Additionally, it evaluated students' self-perceptions of the number of times they are asked about their career plans, their number of majors and/or minors, and their career confidence.

Career Anxiety Scale (Thai, 2014)

This 12-item scale assessed career-related anxiety using a 6-point Likert scale (1 = strongly disagree, 6 = strongly agree). Some example items included “Thinking about my future career is scary”; “I feel nervous about choosing a career”; and “I feel nervous when others ask me about my career plans.” Scores on this measure ranged from 12 to 72, with higher scores indicating more career-related anxiety.

My Vocational Situation (Holland, Daiger, & Power, 1980)

This questionnaire assessed individuals’ current perceptions of their potential career paths and provided an objective measure of career indecision. This study utilized only one of three subscales from the larger questionnaire: the vocational identity subscale, which consists of 18 true/false items that evaluate career indecision. Example items included: “If I had to make an occupational choice right now, I’m afraid I would make a bad choice”; “I am uncertain about which occupation I would enjoy”; and “I am uncertain about the occupations I could perform well.” Participants indicated whether each statement was more true or more false for them. Scores on the subscale ranged from 0 to 18, with higher scores indicating greater levels of career indecision.

Cognitive Flexibility Scale (Martin & Rubin, 1995)

This 12-item self-report questionnaire measured aspects of cognitive flexibility on a 6-point Likert-type scale (1 = strongly disagree, 6 = strongly agree). It assessed flexibility in interactions and communication style, willingness to adapt to changing circumstances, and self-efficacy about flexibility. Example items included “I can communicate an idea in many different ways”; “My behavior is a result of conscious decisions that I make”; and “I am willing to work at creative solutions to problems.” Scores on this measure ranged from 12 to 72, with higher scores indicating greater cognitive flexibility.

Procedure

This descriptive study involved an online Qualtrics survey constructed from the measures presented above. First, participants completed the Demographic Questionnaire, followed by the Career Anxiety Scale, the My Vocational Situation questionnaire, and the Cognitive Flexibility Scale. All participants completed these

questionnaires in a fixed order. The survey ran for a month-long period (September–October 2018) and was advertised via an online participant-management system posting, the Honors program listserv, and our personal connections. Students answered the survey questions at their leisure, averaging 12 minutes to complete the survey. Upon full completion of the survey, students received either extra credit in a psychology-related course or a link to a \$5 Amazon gift card.

Results

Relationships among Key Variables

We ran standard correlation analyses in IBM SPSS Statistics to explore the relationships between the primary study variables. Not surprisingly, and in accordance with the prior literature, students who were highly undecided in relation to their future careers reported more anxiety than students with less career indecision, $r = .809, p < .001$. Consistent with our first hypothesis, students who were higher in cognitive flexibility experienced less career-indecision-related anxiety than did their less-cognitively flexible peers, $r = -.199, p = .013$. Students who were more cognitively flexible also experienced less career indecision ($r = -.280, p < .001$), supporting our second hypothesis and suggesting that individuals who are better able to consider multiple options are more decisive in their career planning.

In terms of career confidence, students experiencing more career indecision reported that they were less confident in their proposed career paths than did students who were more decided, $r = -.596, p < .001$. Individuals with greater career confidence also reported less anxiety about their future career plans, $r = -.595, p < .001$. Finally, career confidence, unlike career indecision, did not share a significant relationship with cognitive flexibility, $r = .103, p = .200$.

When we examined relationships among other variables, we found that students' perceptions of the number of times others have asked them about their future career plans were influenced by their career indecision, with students higher in indecision reporting that they were asked more often about their careers than were students lower in indecision, $r = .206, p = .010$. Interestingly, career-indecision-related anxiety did not share a significant relationship with students' perceptions of the number of times they were asked about their plans, $r = .097, p = .227$.

Mediating Effects of Cognitive Flexibility

To test our third hypothesis and the potential differential influence of cognitive flexibility on the career-indecision-related anxiety of career-decided versus career-undecided students, we first ran a series of regression analyses to test the potential mediating effect of cognitive flexibility using the statistical approach recommended by Baron and Kenny (1986). In partial support of the hypothesized model (Figure 1a), career indecision significantly predicted career-indecision-related anxiety ($R^2 = .654$, $F(1,154) = 290.92$, $p < .001$), and career indecision significantly predicted cognitive flexibility, $R^2 = .078$, $F(1,154) = 13.08$, $p < .001$. When both career indecision and cognitive flexibility were included as predictors of career-indecision-related anxiety, however, instead of cognitive flexibility remaining significant and indecision being rendered insignificant as hypothesized, career indecision significantly predicted anxiety ($t(153) = 16.51$, $p < .001$) while cognitive flexibility did not, $t(153) = .59$, $p = .555$. Cognitive flexibility thus appears to share only an indirect relationship with career-indecision-related anxiety, specifically through its relationship with career indecision.



a.



b.

Figure 1. Two potential models explaining the relationships between cognitive flexibility, career indecision, and career-indecision-related anxiety: (a) hypothesized model and (b) data-supported model.

To examine the possibility that the relationship between cognitive flexibility and career indecision is nonlinear, we examined a scatterplot of these two variables. Because the scatterplot suggested a possible curvilinear relationship, we divided participants into three groups based on their cognitive flexibility: low ($n = 48$), medium ($n = 54$), and high ($n = 54$) and then used a median split to create low-indecision ($n = 85$) and high-indecision ($n = 71$) groups. We conducted a 2 (Career Indecision: Low versus High) x 3 (Cognitive Flexibility: Low, Medium, High) ANOVA, with career anxiety as the dependent variable. We expected that in the low-indecision group, career-indecision-related anxiety would not vary based on cognitive flexibility levels because the anxiety levels of these students would generally be low; however, we expected that cognitive flexibility would play a significant role in the more substantial anxiety levels experienced by those in the high-indecision group.

As shown in Figure 2, there was a significant main effect of career indecision ($F(1,150) = 94.112, p = .000$), but not of cognitive flexibility, $F(2,150) = 0.164, p = .849$. Contrary to our expectations, the interaction effect between cognitive flexibility and career indecision did not reach significance, $F(2,150) = .540, p = .584$. That is, cognitive flexibility did not differentially influence the career-indecision-related anxiety of students who were decided or undecided about their future career paths. These results further support the lack of mediation found in the regression analyses. Together, these findings suggest that the relationships between these three variables do not fit the hypothesized model (Figure 1a). Instead, career indecision seems to mediate the relationship between cognitive flexibility and anxiety, pointing to a new model of the relationships between these three factors (Figure 1b).

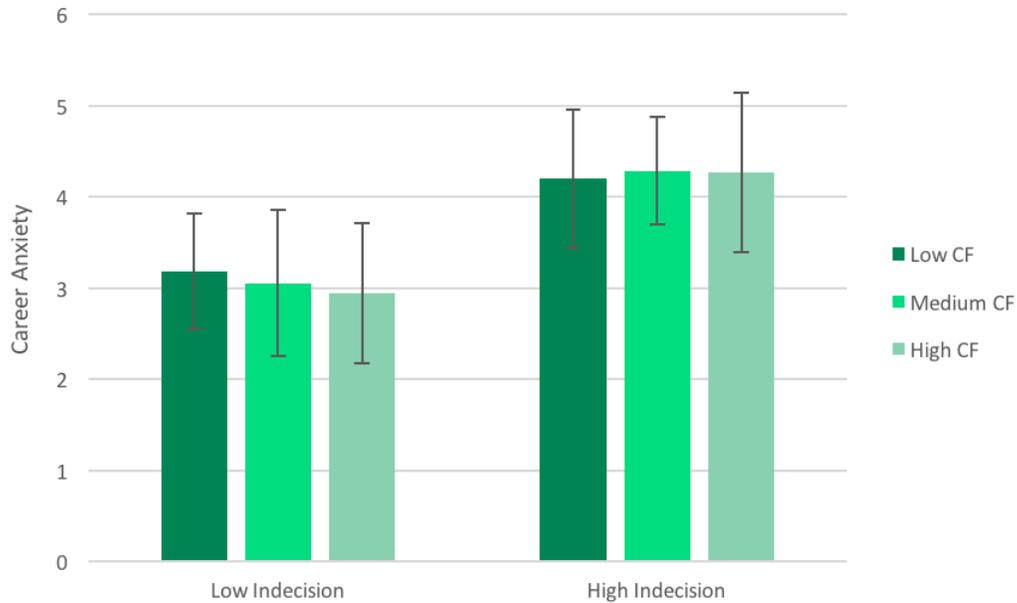


Figure 2. Differences in career anxiety of undergraduate students based on levels of career indecision (undecided vs. decided) and levels of cognitive flexibility (low CF, medium CF, high CF). The main effect of Career Indecision was significant ($p = .000$), while the main effect of Cognitive Flexibility ($p = .849$) and the interaction of Career Indecision \times Cognitive Flexibility ($p = .584$) were not significant. Error bars represent 1 standard deviation.

Discussion

This study strongly supports the previously documented relationship between career indecision and anxiety but augments prior research through an exploration of cognitive flexibility in the context of career decision-making. The strong positive relationship between career indecision and career-indecision-related anxiety seen in this study is consistent with prior findings that suggest that individuals who are more undecided about their future careers experience more anxiety (Campagna & Curtis, 2007; Fuqua et al., 1988). More importantly, the current study expands on prior literature that has documented relationships between cognitive flexibility and anxiety disorders by showing that cognitive flexibility also predicts anxiety in a career-decision-making context. Consistent with our first hypothesis, individuals who were more cognitively flexible experienced less career-indecision-related anxiety. Additionally, in support of our second hypothesis, we found that individuals with higher cognitive flexibility reported less

career indecision, suggesting that those with the ability to consider more career options may be more decided in the careers they choose to pursue. This relationship is a novel finding given that no other studies have explicitly looked at these two variables as they pertain to career choice, but it supports existing research on cognitive flexibility and other career-related variables such as professional identity (Adams et al., 2006).

Despite cognitive flexibility's established relationships with both career indecision and career-indecision-related anxiety, our results do not support the anticipated mediating effect among these three variables. We hypothesized that cognitive flexibility would play a different role in students' anxiety levels based on the students' levels of career indecision. Specifically, we anticipated that cognitive flexibility would have a greater potential to influence anxiety in students experiencing more indecision than in their more-decided peers. This was not the case, however. Although cognitive flexibility did not mediate the relationship between career-indecision-related anxiety and career indecision, it did significantly relate to both variables, suggesting an alternative model of cognitive flexibility's role in the career-decision-making process. Instead of acting as a mediator, cognitive flexibility appears to act directly on career indecision and through career indecision to influence career-indecision-related anxiety.

This new model, depicted in Figure 1b, points to reducing indecision by increasing cognitive flexibility as a promising initial target for intervention. For example, career counselors or other advisors could promote a broader exploration of career options, giving students a wider variety of careers to consider and allowing them to feel more informed when making selections. With this approach, advisors inherently model and encourage cognitive flexibility. Additionally, advisors' mindful selection of language surrounding the career-decision-making process could help students develop more-flexible mind-sets. For example, framing a student's first job as an opportunity to explore an interest rather than as a final irreversible choice may establish the idea of a flexible career journey instead of a set career path. These proposed flexibility-based strategies should be simple to implement and have the potential to effectively assist students with their career decision-making and to reduce their elevated anxiety levels.

Interestingly, cognitive flexibility did not relate to career confidence. This finding is contrary to the results of Kercood et al. (2017), who found that higher levels of cognitive flexibility corresponded with higher levels of career confidence in undergraduate students. This finding was also surprising because cognitive flexibility seemed to influence career indecision but did not influence how

confident individuals were in their career choices. These opposing results suggest that career confidence and career decision-making may be independent constructs.

Despite this study's promising findings about cognitive flexibility and the career-decision-making process, its results should be interpreted within the context of its limitations. First, the participants of this study attend an expensive private university in the Midwest and may not be demographically representative of undergraduate students at other institutions. Most students at this university are Caucasian, and many come from upper-middle-class households with two working parents. Given these demographic characteristics, these students could experience different levels of pressure to have successful careers in the future than when compared to undergraduate students from lower-income households. For example, higher-income students may experience more pressure in their career-decision-making processes as they try to live up to familial expectations. Alternately, these students may feel less pressure because prior advantages and associated successes resulting from their higher socioeconomic status may lead them to assume this trend will continue in the future as they pursue careers.

Second, because of its online nature, this study contained only a subjective measure of cognitive flexibility, the Cognitive Flexibility Scale (Martin & Rubin, 1995). The verbiage of some of this scale's statements (e.g., "I can communicate an idea in many different ways") may have led students to self-report in a socially desirable way, as flexible communication, efficient problem solving, and diversity of thought are typically viewed favorably in academic settings. Future studies may want to utilize an objective neuropsychological measure of cognitive flexibility, such as the Wisconsin Card Sorting Test (Grant & Berg, 1948), to counteract possible biases due to social-desirability effects.

Third, all participants filled out the survey questionnaires in the same order, which may have resulted in order effects. The administration of the measures in a fixed order was purposeful, however. The Career Anxiety Scale preceded the My Vocational Situation questionnaire to get a baseline of career anxiety before participants were prompted to think about career indecision, which has been shown in prior literature to increase anxiety (Campagna & Curtis, 2007; Fuqua et al., 1988). Furthermore, because cognitive flexibility affects both anxiety (Arlt et al., 2016; Simon & Verboon, 2016) and indecision (Adams et al., 2006; Kercood et al., 2017), the Cognitive Flexibility Scale was administered after the assessments of anxiety and indecision to prevent any carryover effects on these other measures.

Fourth, this study focused on state anxiety surrounding the career-decision-making process (how an individual feels in a specific situation) rather than on

individuals' general trait anxiety (how someone feels a majority of the time). Prior literature has suggested that state anxiety is more influential in the process of selecting a career (Campagna & Curtis, 2007), but this does not mean that trait anxiety does not play a role in these relationships. Because we did not include a measure of trait anxiety, we could not examine this role in the context of the current study.

Lastly, because our study was cross-sectional in nature, we were able to capture only a snapshot of our variables at one point in time. This limited the complexity of the relationships we were able to examine. It is possible that career-indecision-related anxiety, cognitive flexibility, and career indecision share a cyclical rather than linear relationship. For example, the high anxiety levels that were associated with low cognitive flexibility and high career indecision in our study could in turn decrease students' cognitive flexibility and thus interfere with their career decision-making, further contributing to their career-indecision-related anxiety. Although we were unable to explore this possibility, future longitudinal studies could examine interactive relationships between these factors.

Despite these limitations, we found support for two of our three original hypotheses: higher levels of cognitive flexibility are associated with lower levels of both career-indecision-related anxiety and career indecision. Although cognitive flexibility did not mediate the relationship between these two variables, its effect on career indecision suggests it could serve as a mechanism to promote career decision-making, a promising new direction for the development of interventions aimed at reducing career anxiety in undergraduate students. In addition, the findings of this study could be used to help identify students who would most benefit from interventions—those who are undecided and those who are low in cognitive flexibility. Furthermore, the current study significantly contributes to the existing body of research by being one of the first to look directly at cognitive flexibility as it relates specifically to career decision-making and career-related anxiety. As such, this study provides valuable information that begins to elucidate the complex interplay among cognitive flexibility, indecision, and career anxiety, not only providing a foundation for new avenues of research but also identifying a potential mechanism that advisors and other higher education professionals can utilize to promote students' decision-making and reduce their career-related anxiety.

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