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Engaging purpose in college: a person-centered approach to studying purpose in relation to college experiences

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ABSTRACT

Purpose is an indicator of healthy human development and believed by some theorists and educators to be an important outcome of college. The aim of this study was to test the potential for assessing purpose using a person-centered analysis, thereby providing more individual-specific understanding of students' purpose development, and second by analyzing the association between students' purpose and experiences they are having in college. Confirmatory factor analysis (CFA) and latent class analysis (LCA) were conducted with a purpose survey that was administered to 2,261 college students. The LCA resulted in a five-class model that provided more nuanced information about students' purpose than the CFA. Results of multinomial logistic regression of the five-class model on college experiences suggest associations between purpose and college experiences that should be investigated further.

In *Excellent Sheep*, William Deresiewicz (2014) posed the question "What is college for?" With this question, he asked us to consider the value of a college education beyond the financial return on a hefty tuition investment or decades of student loan payments. Are there benefits that accrue from that investment that are not quantifiable in monetary gain? Deresiewicz echoes fellow proponents of college—specifically liberal arts—in arguing that such an education provides the foundation for creating a meaningful life. Immersion in such a wide, deep, and perspective-challenging world of ideas broadens young peoples' vision of the future and develops the intellectual tools for solving complex problems in the world (Deresiewicz, 2014; Gutmann, 2015). College, according to this argument, provides young people the time and occasion to reflect deeply on their social responsibilities, the value system they want to live by, and the roles that they might play in contributing to society. It is an investment for which the expected return might be the foundation for not just a meaningful life, but a life of purpose.

The developmental path that purpose takes is determined in part by contextual factors and life circumstances, such as the family and community that individuals are raised in, the life stressors they cope with, the opportunities they are provided, and the experiences they have in educational settings (Kiang, 2012; Koshy & Mariano, 2011; Liang et al., 2017; Malin, Liauw, et al., 2019; Malin, Morton, et al., 2019; Moran et al., 2013). College provides a particularly rich environment to explore and develop purpose through exposure to new perspectives on the world and possibilities for the future, increased social resources, and opportunities to develop new skills and interests that could lead to purposeful pursuits. This developmental-contextual relationship is also bidirectional, in that students might select college experiences based on what gives them a sense of purpose. In this article, we explore the relationship between some of these college experiences and purpose among college students. In particular, we look at the types of college-based experiences that have been conceptually associated with purpose, such as interdisciplinary learning, meaningful advising relationships, deep reflection and discussion in seminar classes, and collaborative and authentic problem-solving, and how they relate to purpose as an integrated, multidimensional construct (Colby et al., 2011; Sullivan, 2016).

Definition of purpose

In the psychology literature, purpose is broadly defined as a higher-order aspiration (Damon, 2008;

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McKnight & Kashdan, 2009), or as an aspect of psychological well-being indicated by "a sense of directedness" in life and "aims and objectives for living" (Ryff & Keyes, 1995, p. 727). The study presented in this article uses an established line of theory and research that more specifically defines purpose as a "stable and generalized intention to accomplish something that is at once meaningful to the self and of consequence to the world beyond-the-self," (Damon et al., 2003, p. 121). Many important life aims and aspirations do not meet this definition of purpose because they are not motivated by a drive to be consequential beyond-the-self.

So defined, purpose is a multidimensional construct. Individuals will vary both in the extent and the contents of three dimensions that make up purpose: (1) the meaningful intention they aspire to, (2) the beyond-the-self motivation that drives them, and (3) the actions they take to commit to the intention. Therefore, individuals are not simply high or low on purpose, but have a unique purpose profile made up of the contents of their purpose intentions, the motivations driving their purpose intentions, and the extent to which they spend their time acting on their purpose intentions. One approach to creating purpose profiles is through purpose interviews, which can be coded according to these dimensions of purpose. Interviewees have been identified as having full purpose, no purpose, or partially realized purpose in a broad range of life domains, such as family and relationships, civic life, the arts, and career pursuits (Malin et al., 2014). In these interview-based studies, about 40–50% of young adults were identified as having full purpose (Moran, 2009).

The multidimensional nature of purpose has implications for how educators might support students to develop purpose. If people develop each dimension of purpose in different ways and at different rates according to the interaction of contextual and individual factors (as argued by relational developmental systems theorists, e.g., Lerner, 2006), college practitioners will benefit from understanding how college experiences relate to students' development in each dimension of purpose. For example, a student who is highly motivated by a desire to help people in need but lacks understanding of how to act on that desire will benefit from different educational experiences than a student who is action-oriented but struggles to identify and commit to a meaningful aspiration. Therefore, educators may benefit from having tools for identifying purpose profiles among students, which could facilitate shaping college programs for better purpose outcomes. This study aims to explore the potential of creating purpose profiles of college students using a survey measure.

Constructs related to purpose. Damon et al. (2003) define purpose as a psychological construct distinct from similar constructs, such as meaning, goal directedness, prosocial motivation, and agency. Meaning and purpose have sometimes been used interchangeably, following the example offered in Frankl's (1959) use of both terms to describe that which makes life worth living. Studies of purpose that aimed to distinguish purpose from meaning have sometimes focused on goal commitment or goal directedness, emphasizing purpose as a future-oriented and driving force in life (e.g., Hill et al., 2016). The effort to distinguish purpose as "beyond-the-self oriented" has led to some overlap with constructs such as prosociality (e.g., Moran, 2020) or prosocial motivation, defined as "the desire to benefit other people or groups," (Grant & Berg, 2012, p.29). Purpose also overlaps with agency, which like purpose, involves setting intentions and future-directed action plans toward desired outcomes (Bandura, 2006), and more specifically with social agency, which is personal agency combined with the recognition that one's actions impact, effect, or cause a reaction in other people (Silver et al., 2021). Although prosocial motivation and social agency are related to the beyond-the-self dimension of purpose, it is important to emphasize that purpose is broadly defined as being "of consequence to the world beyond-the-self," which is not limited to prosocial or social behaviors but can be enacted through any outward-directed activity, such as creative endeavors, supporting one's family, serving God, or making scientific discoveries.

Measuring purpose

Numerous efforts to operationalize and measure purpose have been developed over the past several decades, beginning with Viktor Frankl's (1960, as cited in Crumbaugh & Maholick, 1964) questionnaire that sought to assess his patients' level of purpose and the subsequent Purpose in Life survey, which measured the extent to which individuals felt that their life had purpose (Crumbaugh & Maholick, 1964). Following on this early work, researchers developed self-report surveys to measure purpose as an aspect of psychological well-being (Ryff & Keyes, 1995; Ryff & Singer, 2008), as a sense that one's activities are meaningful and important (Scheier et al., 2006), goal commitment

(Hill et al., 2016), and as meaning in life (MIL; Steger et al., 2006), among others.

Recent efforts to measure purpose have built on the theoretical and qualitative work that defined purpose as a multidimensional construct. The Revised Youth Purpose Survey adapted the MIL measures of "presence of" and "search for" meaning into a measure of purpose and added scales that (1) measure the extent to which purpose was central to respondents' identity, (2) measure the extent to which respondents were acting on the things that gave them a sense of purpose, and (3) ask respondents about the content of their important life goals (Bundick et al., 2006). Subsequent efforts aimed at a more streamlined survey that could capture purpose content and the extent of the respondents' commitment to purpose in a single instrument. The Stanford Purpose Assessment refined the Revised Youth Purpose Survey into a short instrument that asks respondents to identify potential purpose goals, then rates those goals on three dimensions of purpose: meaningfulness of the goal, beyond-the-self orientation of the goal, and engagement in pursuing the goal (Bundick et al., 2021; referred to as the "Prosocial Youth Purpose Scale" in Malin et al., 2017). The Claremont Purpose Scale measures three dimensions of purpose using adapted versions of existing measures of meaningfulness, goal orientation, and beyond-the-self orientation, and averages them to attain a comprehensive purpose score (Bronk et al., 2018). The Sense of Purpose Scale (SOPS; Sharma et al., 2018) and the Revised version (SOPS-2; Yukhymenko-Lescroart & Sharma, 2020) measure purpose as a multidimensional construct based on the purpose interview, comprising the dimensions of awareness to purpose, awakening to purpose, and altruistic purpose. The Measure of Adolescent Purpose (MAP) similarly measures purpose as a multidimensional construct but identified these three dimensions of purpose: purpose intention, purpose engagement, and prosocial reasoning (Summers & Falco, 2020). Like the Stanford Purpose Assessment, the MAP anchors the scale to a life goal identified by the respondent, acknowledging that purpose develops in domains of life and has content that is unique to the individual.

The substantial effort to develop multidimensional measures of purpose enabled more nuanced purpose development research that is conceptually distinct from related constructs. These measures have been used to examine a number of associations between purpose development and education. For example, the SOPS was used to investigate the relationship between purpose and college degree commitment, finding that the "altruistic" (beyond-the-self) dimension of purpose was a greater predictor of degree commitment than the "awareness" (sense of purpose) dimension (Sharma & Yukhymenko-Lescroart, 2018). Another study used the Stanford Purpose Assessment to investigate the relationship between purpose development in middle school and goal-supportive aspects of the school setting. The authors found that the goal-engagement dimension of purpose was associated with school-based goal supports, but the beyond-the-self dimension was not (Malin, Liauw, et al., 2019). Finally, one study used a multi-dimensional survey measure to cluster Israeli and Singaporean high school students into other-focused purpose, self-focused purpose, and other- and self-focused purpose, and found that other-focused purpose was positively associated with life satisfaction for students in both countries (Heng et al., 2017).

The present study represents a next step in this line of work by introducing a next iteration of the Stanford Purpose Assessment and exploring the potential of person-centered analysis methods to identify purpose profiles among college students using a multidimensional survey instrument. Like the original Stanford Purpose Assessment, the instrument used in this study assesses three purpose dimensions: meaningfulness of an important life goal, beyond-the-self motivation driving the goal, and activity to engage in pursuing the goal. However, rather than averaging these dimensions of purpose into a purpose score, this study explores the potential of a person-centered analysis that uses the survey items to categorize respondents into qualitatively distinct purpose profiles. With the variable-centered analysis, we find quantitative differences between either the mean score on the whole purpose measure, or each dimension independently, in relation to other variables of interest (such as college experiences). With a person-centered analysis, we might find that people cluster into qualitatively distinct categories of purpose. Then we can examine whether people in different categories of purpose might need different educational experiences to support their continued purpose development.

Purpose and college experiences

Purpose is an individual achievement, but also an outcome of the individual's developmental context and circumstances. Among younger adolescents, some contextual supports associated with beyond-the-self purpose development include family support,

mentorship, role models, and opportunities to act on purpose goals (Liang et al., 2017; Moran et al., 2013). The school context might also be a contributing factor, based on the finding that students from different middle and high schools showed significant differences in beyond-the-self purpose (Bundick & Tirri, 2014; Malin, Liauw, et al., 2019).

Certain aspects of the college context have been examined for their potential to promote purpose development, in particular the types of learning experiences often associated with a liberal education, such as reflection on personal values and one's role in society, learning that is integrated and applied beyond the school context, and the capacity to see problems in the world through multiple perspectives (Clydesdale, 2016; Colby et al., 2011; Gutmann, 2015; Sullivan, 2016). This growing body of research and theory on the role that contextual factors play in purpose development provides a foundation for our investigation of the relationship between purpose and college experiences.

The empirical research to date does not clearly show that purpose in life is an *outcome* of college experiences. There is evidence in the other direction, that aspects of purpose can predict students' college decisions. For example, students who endorsed career-oriented goals in high school were more likely to apply for college than those who endorsed interpersonal, altruistic, or self-oriented goals (Sharma et al., 2017). On the other hand, there is a relationship between liberal arts experiences in college (measured as frequency of faculty contact, cooperative learning assignments, and academically meaningful out-of-class experiences) and purpose (measured by the Ryff Purpose in Life scale, Seifert et al., 2008), but that relationship might be confounded by students' level of purpose prior to selecting a liberal arts path. So, while there are theoretical reasons to believe purpose develops as an outcome of certain college experiences, more research is needed to clarify and build evidence for this theory.

The present study

Our team at the Stanford Center on Adolescence developed a survey instrument to assess the purpose dimensions—meaningful goal, beyond-the-self motivation, and goal action—both separately and integrated. This instrument was designed so that respondents' purpose could be described in terms of both their mean purpose scale score—a variable-centered approach—and in terms of how they are classified by their pattern of responses on the purpose indicators—a person-centered approach. Accordingly, there are three goals to this study, which was completed using the first wave of survey data collected from college students to assess purpose development as an outcome of their experiences at college: (1) conduct a CFA to examine the fit and psychometric properties of the purpose scale, (2) conduct an LCA to compare a person-centered approach with the variable-centered analysis applied in the previous step, and (3) analyze the relationship between purpose and some of the experiences students are having in college.

A variable-centered analysis describes respondents in terms of their averaged scale score on a set of indicators of a latent construct. The resulting average scores provide a way to measure the extent to which the latent construct increases or decreases under varying circumstances. A person-centered analysis sorts individuals into groups, identified by the patterns in their responses to selected variables (von Eye et al., 2015). Traditionally, much of the research on purpose uses variable-centered analysis. However, some interview-based research found that people can be categorized into qualitatively distinct forms of purpose (e.g., Damon, 2008; Moran, 2009). Based on those findings, we hypothesize that a person-centered model that identifies purpose profiles will be a better fit for our purpose construct than a traditional variable-centered model.

After determining the best approach to describe purpose in our data, we examine some potential predictors of purpose with three goals in mind. First, we explore the conceptual validity of our purpose measure by testing the associations between our measure and related measures, namely, *meaningfulness, social agency, prosocial motivation,* and *goal orientation*. Doing so, we make it possible to position our findings in the literature on college-aged purpose, which uses these different constructs to operationalize purpose. Second, we examine the demographic covariates of purpose to get an overview of how they might affect a college students' purpose. Finally, we explore the relationship between our purpose measure and college experiences such as those that were theorized above to be associated with purpose development. We hypothesize that college students with more fully developed purpose will be more likely to report college experiences such as advising on topics related to purpose, interdisciplinary coursework, opportunities to connect learning to authentic service and societal problem-solving, and collaboration with peers from different backgrounds. Moreover, because prior research found

that people in their early 20 s are more likely than people in their late teens to be fully purposeful (Damon, 2008; Malin et al., 2014), we hypothesize that students in their final year of college will show more fully developed purpose than those in their first year.

Method

Participants

Participants ($n = 2{,}261$) were recruited from eleven colleges in four different regions of the United States (44.1% California, 31.2% Michigan, 15.7% Massachusetts, 8.9% North Carolina). Sites were selected to represent a range of type of institution (four public universities, three private research universities, two community colleges, two small liberal arts colleges). Our recruiting targeted students in their first and final year of college, however some respondents were in different years (46.4% first year, 6.3% second year, 8.9% third year, 34.7% in their final year of college). Survey respondents were 67% female. The sample was 4.3% Black, 41.9% White, 13.9% Latinx/Hispanic, 27% Asian American, 12.5% Multi-racial/Other, and 29.5% self-identified as low socioeconomic status on the Macarthur Subjective Social Status Ladder. The mean age of respondents was 21 years and the mode was 18.56 years. The recruiting method varied by school site. At some sites, all students in the school were invited to participate, whereas at other sites we attempted to oversample for participants in special programs, such as honors college, service learning, or courses that targeted purpose development. Overall, 9.1% of survey respondents were participating in one of these special programs.

Procedures and measures

Invitations to participate in the survey were emailed to students by administrators at the college site or by our team after getting IRB approval to recruit students at the site. We incentivized students by offering them the opportunity to be entered into a drawing in which 50 respondents would receive a $100 gift card. An online Qualtrics survey link was emailed to students who responded to the invitation and respondents were able to complete the survey on any device of their choosing. A consent form was included at the beginning of the survey and respondents had to consent to participate before completing the survey. The survey asked respondents about their life goals, purpose, some indicators of psychological well-being, and their experiences in college.

Survey measures

Purpose. The Stanford Purpose Assessment, used in previous studies (Bundick et al., 2021; Malin et al., 2017) and based on the purpose interview (Andrews et al., 2006; Bronk, 2012; Damon, 2008; Malin et al., 2014; Morton et al., 2019), was revised for the present study. With the new instrument, respondents were first asked to briefly describe, in their own words, an important life goal, why the goal is important, and what, if anything, they are doing to pursue the goal. Immediately following the open-text questions, respondents completed a nine-item scale asking them to rate the extent to which they agreed with statements about their identification with (e.g., "This goal represents the kind of person I want to be now and in the future"), motivation for (e.g., "My strongest motivation for doing this is a desire to do something good for the world"), and engagement in (e.g., "In the past month, I have often taken action to accomplish this goal") pursuing the goal. Items were rated on a 5-point scale from "strongly disagree" to "strongly agree." See Appendix A for the full instrument.

Purpose-related constructs. Four constructs that overlap with purpose in some but not all ways were measured to examine the conceptual validity of our purpose instrument: meaning in life, prosocial motivation, future goal directedness, and social agency. All of the purpose-related measures that follow are rated on a 5-point scale from "strongly disagree" to "strongly agree."

Meaning. Adapted for an earlier version of the Meaning subscale of the Claremont Purpose Scale (Bronk et al., 2018) from the Steger et al. (2006) Meaning in Life Scale, this measure is made up of five items that ask respondents the extent to which they feel their life has meaning (e.g., "I know what gives my life meaning," $M = 3.48$, $SD = .71$, $\alpha = .92$).

Prosocial motivation. The Prosocial Motivation scale, adapted from Grant and Sumanth (2009), uses five items to measure the extent to which a respondent is motivated by a desire to contribute to the world beyond-the-self. Items include "I get energized by doing things that have the potential to benefit others" and "It is important to me to have the opportunity to use my abilities to benefit others" ($M = 4.22$, $SD = .67$, $\alpha = .89$).

Goal orientation. The Goal Orientation scale, adapted for an earlier version of the Claremont Purpose Scale

(Bronk et al., 2018) from the Ryff and Singer (2008) Purpose in Life scale, consists of five items that ask about respondents' commitment to future goal planning and action (e.g., "I am working to make my goals a reality," $M = 4.26$, $SD = .67$, $\alpha = .85$).

Social agency. A measure of social agency was adapted from measures of self-efficacy toward service (Weber et al., 2004), sociopolitical control for youth (Peterson et al., 2011), and individual community related empowerment (Kasmel & Tanggaard, 2011). The scale comprises five items that were selected because they broadly indicate respondents' sense of their own capacity to act in a way that effectively impacts others or their world, including "I can have a positive impact on problems in society," "I have confidence in my ability to help others," and "I know how to change specific things that I want to change in my life" ($M = 3.91$, $SD = .71$, $\alpha = .81$).

College experiences. The survey asked respondents to indicate whether or how often they had certain experiences in college, including advising experiences, participation in certain types of courses, and learning experiences that typify a liberal arts education. Respondents were also asked to indicate their current or intended major and their year in college.

Advising. We first asked respondents to indicate how often they met with different types of advisors at school, such as faculty advisors, coaches, and religious leaders. Respondents who indicated that they met with at least one advisor at least once per quarter/semester were asked a follow up question about topics they might have discussed with that advisor. Eight topics were listed, such as "Course selection," "Your life plans and goals," and "Personal or social problems you're having." For this analysis, we created a dummy variable for each advising topic, with '1′ indicating they talked with at least one advisor about the topic at least once per quarter/semester, and '0′ indicating they had not.

Course types. Respondents were asked how often they participated in four different types of courses in the past two years: seminar, capstone project, service learning, and field-based or experiential course. Response options for each item were "none," "one or two," or "more than two."

Learning experiences. We asked respondents to indicate how often they had certain learning experiences over the past two years. The Learning Experiences items were adapted from the National Survey of Student Engagement (NSSE; 2013) Engagement Indicators module. Items were selected and adapted to represent the types of experiences that are theoretically supportive of purpose, such as taking the perspective of others, connecting learning to greater meaning, integrating ideas from different courses, and authentic application of learning to real-world problem-solving (Colby et al., 2011; Sullivan, 2016). Example items include "Tried to better understand someone else's views by imagining how an issue looks from their perspective," "Connected your learning to societal problems or issues," and "Thought about how you can use your learning to contribute to making the world a better place." Items were rated on a 4-point frequency scale from "never" to "often."

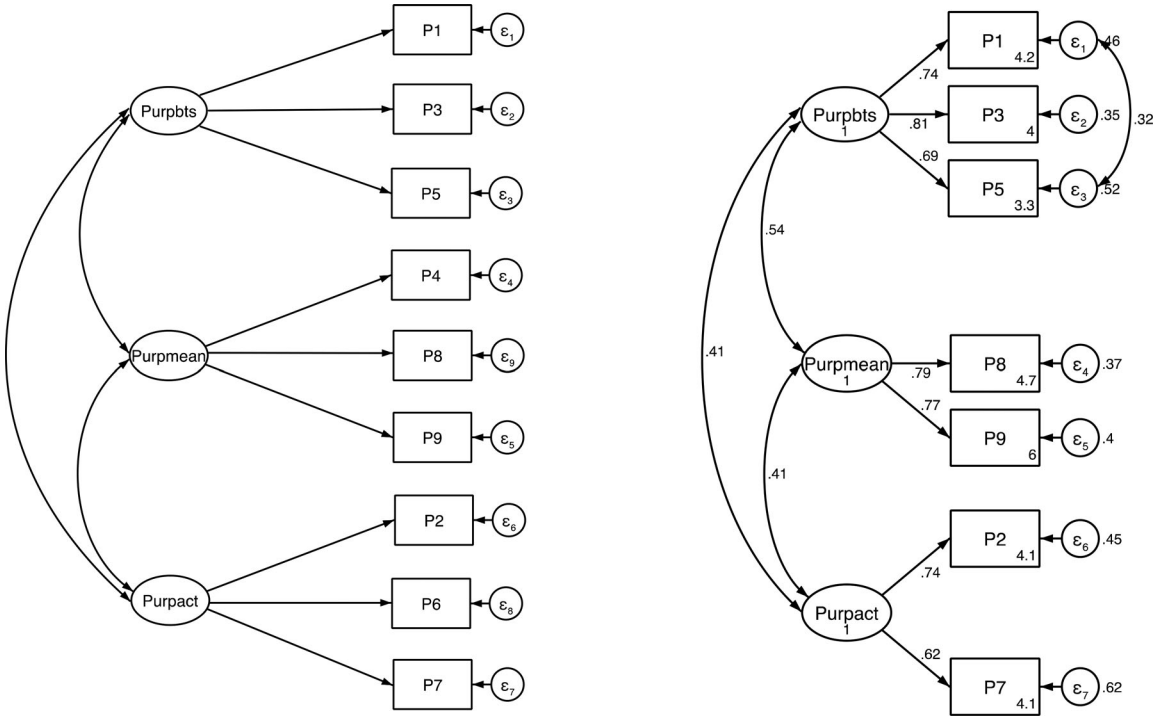
Analyses

Measurement models

In this study, we compare the results of two approaches to analyzing the nine observed indicator variables that make up the Purpose survey: a variable-centered analysis (CFA) and a person-centered analysis (LCA). For each indicator in the measurement models, approximately 2% of cases were missing data. Almost all missing data in the purpose indicators were cases that had values missing for all nine indicators, resulting in 45 cases being removed by listwise deletion. Maximum likelihood estimation was used for all analyses.

Confirmatory factor analysis. Based on prior research and theory, we hypothesized that the purpose survey items would factor into three subscales with three indicators per subscale. The hypothesized model, shown in Figure 1(a), was evaluated with CFA in Stata version 16 using maximum likelihood estimation. Standardized residuals were examined to interpret how well each variance-covariance structure was modeled. The CFA model was considered a good fit if the root mean square error of approximation (RMSEA) was less than or equal to 0.05, the standardized root mean square residual (SRMR) was less than or equal to 0.08, and the comparative fit index (CFI) was greater than or equal to 0.95 (Hu & Bentler, 1999). Modification indices (MI) were examined to identify modifications to the model that would improve fit, with MI values greater than 10 suggesting changes that would improve the model. MI values were used along with factor loadings and conceptual accuracy to inform changes to the model.

Latent class analysis. To test the person-centered approach, we conducted a latent class analysis with the



Figures 1(a,b). Hypothesized and final models for the CFA of the engaged purpose scale.

mixture analysis method in MPlus version 8.5 using maximum likelihood estimation with robust standard errors. The number of classes that best fit the data were identified based on Akaike Information Criteria (AIC), Bayes Information Criteria (BIC), the Lo–Mendell–Rubin likelihood ratio test (LMR-LRT), and theory. Lower values of AIC and BIC generally indicate a better fitting model and the LMR-LRT indicates whether adding an additional case significantly improves the model fit, with the understanding that parsimony (fewer classes) should be a consideration. Finally, the number of classes should be determined by theory, such that the resulting classes can be interpreted in a theoretical framework and offer meaningful explanation of the construct being assessed. We also examined entropy values to consider the model fit. Entropy indicates how distinct the resulting classes are from each other, with values .80 and above generally indicating that the resulting classes are clearly distinct. However, entropy is not used to determine the best fit model.

Covariates and predictors of purpose

We used the 3-step latent class analysis procedure in MPlus version 8.5 to examine the possible predictors of class membership. After the best fitting number of classes is determined, the 3-step LCA method can be used to assign individual cases to their most likely class (step two) and then conduct multinomial logistic regressions of class covariates and predictors (step three).

Table 1. Goodness of fit statistics and information criteria for the models estimated on the purpose assessment.

	Chi2	RMSEA	CFI	SRMR	AIC	BIC
Model 1	333.738***	0.076	0.946	0.057	48102.644	48273.708
Model 2	150.145***	0.053	0.978	0.032	47925.052	48113.221
Model 3	62.412***	0.049	0.989	0.021	37072.150	37214.714

***$p \leq .001$.

Results

Confirmatory factor analysis

In the first step of the CFA, we used the indicators for the three subscales to replicate the hypothesized three-factor model, shown in Figure 1(a). The three factors were allowed to correlate with one another. Each indicator was allowed to load onto only one factor, and estimates were standardized. The remaining factor loadings and residual variances were freely estimated. This model was not a good fit for the data based on goodness of fit statistics, shown in Table 1. The model was adjusted according to factor loadings and the modification indices, which suggested that errors should be correlated for the items in the Purpose Meaning factor and the items in the Purpose Action factor (Model 2 in Table 1). The modification indices from that model suggested that there were

Table 2. Information criteria for comparing the best fit number of classes for the engaged purpose scale.

# of Classes	AIC	SABIC	Entropy	Loglikelihood ratio
3 classes	45208.02	45485.91	.79	−22494.01
4 classes	44755.14	45126.51	.80	−22230.57
5 classes	44362.5	44827.3	.78	−21997.25
6 classes	44001.06	44559.38	.79	−21779.53

redundant items in the Purpose Meaning and Purpose Action factors, so the redundant items were removed from each of these two factors and the error terms for items in the Purpose BTS factor were set to covary, resulting in an improved fit (Model 3 in Table 1). The final model, diagramed in Figure 1(b), is overidentified, with 28 degrees of freedom available and 18 degrees of freedom used.

Latent class analysis

Although the final CFA model had adequate ancillary goodness of fit statistics, the likelihood ratio chi-square value was significant ($p < .001$), suggesting that the model was not an ideal fit to the data. Moreover, in line with theory and prior qualitative research, we wanted to test the possibility that a person-centered approach, by way of latent class analysis, would provide a more nuanced and conceptually valid fit to the purpose construct. In this case, a better fit would be demonstrated by resulting classes that were not only quantitatively distinct, but also qualitatively distinct, seen in variations in the pattern of purpose indicator means for each class.

The first step of the LCA was to determine the best fit number of classes. Conceptually, we expected that the best fit would be five classes, which would fit findings from previous research (Damon, 2008; Moran, 2009). We tested models with three to six classes and compared information criteria statistics for each model. Table 2 shows the fit statistics for each model. The model with six classes had a slightly better fit than the model with five classes according to AIC and Sample-size Adjusted BIC (SABIC), however, the LMR-LRT (433.917, $p = .80$) suggested that the model with six classes was not a significantly better fit than the model with five classes. Therefore, based on parsimony and theory, we selected the model with five classes.

Plotting the mean values of each indicator for each of the five classes shows that the classes are qualitatively distinct, in that the patterns for each class are not parallel. Based on these patterns, we can approximately align the five classes with the categories of purpose identified in prior qualitative research. Namely, there is a High Purpose class with high scores in all indicators, a Self-Oriented Goal class with low scores in the BTS indicators but high scores in all other indicators, a Moderate Purpose class with moderate scores across all indicators, a Dreaming class with low scores in the action indicators but high scores in all other indicators, and a Drifting class with low scores in all indicators. See Figures 2(a–e) for graphs of mean indicator values for each class. Table 3 shows the probability of membership for each class.

Predictors of class membership

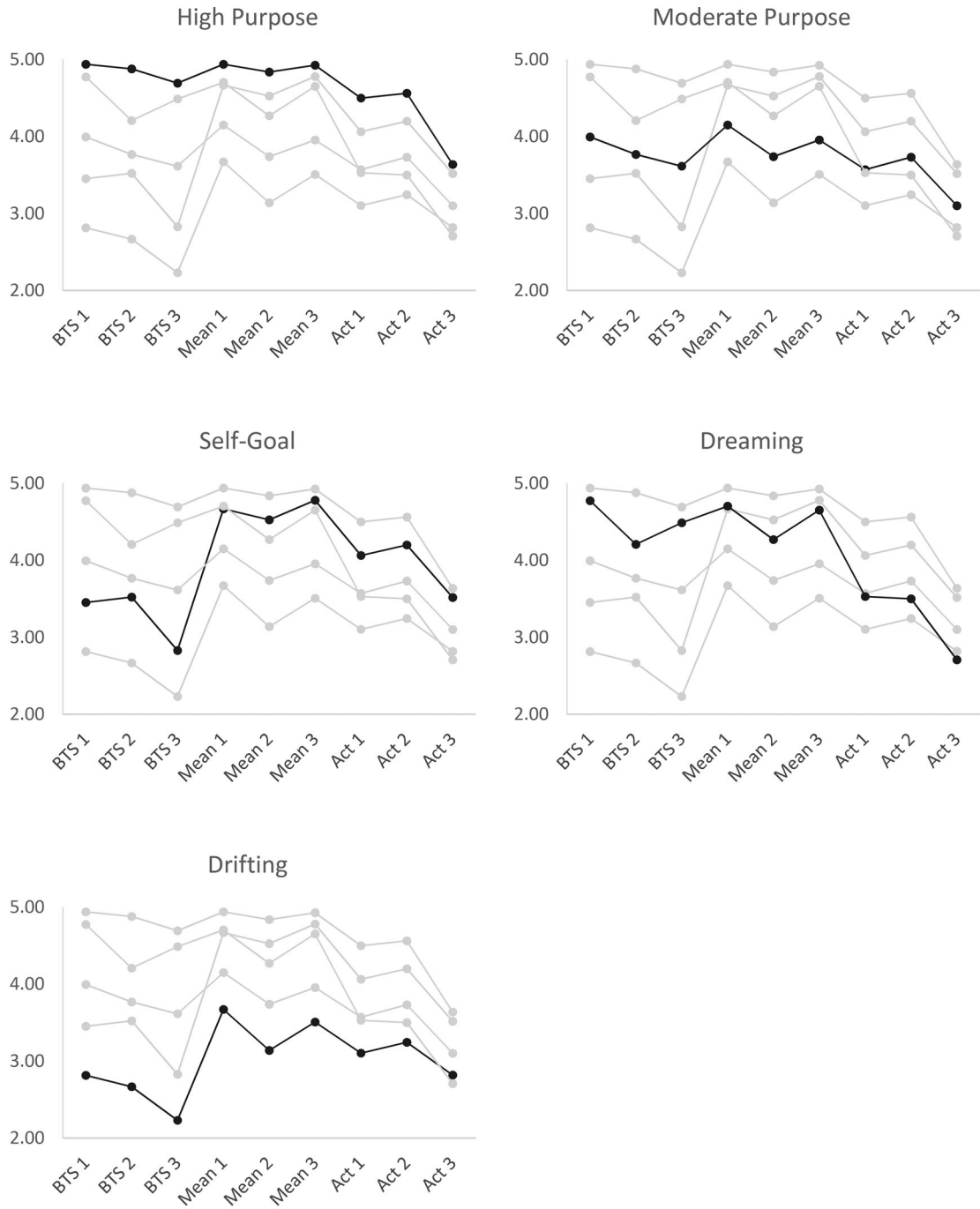
Because the LCA demonstrated qualitatively distinct categories of purpose and provided a more nuanced description of each individual's purpose than a quantitative score, we retained the LCA model for further analysis.

Convergent constructs

The first set of predictors were analyzed to assess the conceptual validity of the latent class model. The categorical latent class variable was regressed on measures of goal orientation, prosocial motivation, social agency, and meaning, with High Purpose as the reference class. The results show that a higher social agency score increased the likelihood of being assigned to High Purpose compared to any other class; a higher goal orientation score increased the likelihood of being assigned to High Purpose compared to any class except Self-Oriented Goal; a higher prosocial motivation score increased the likelihood of being assigned to High Purpose compared to any class except Dreaming; and a higher meaning score increased the likelihood of being assigned to High Purpose compared to Drifting but not to other classes. Table 4 shows the odds of being in each class compared to the reference class of High Purpose by convergent construct.

Demographic and college variables predicting class membership

Gender, subjective SES, college type, major, and whether the student was in their first year of college or not were examined as predictors of class membership. Year in college was the only significant and consistent predictor of purpose class membership and was therefore retained as a control variable in subsequent analyses of college experiences as purpose class predictors. As hypothesized, first year students were less likely than more advanced students to be in the High Purpose class. Major was also an important predictor of membership in the High Purpose class.



Note. BTS = Beyond-the-self indicator. Mean = Meaningful indicator. Act = Action indicator.

Figures 2(a–e). Means of each purpose indicator plotted for each purpose class.
Note. BTS = Beyond-the-self indicator. Mean = Meaningful indicator. Act = Action indicator.

Table 3. Latent class probabilities expressed as the proportion of the full sample assigned to each class.

Latent Class	Class *n*	Proportions
1 High Purpose	420	0.20
2 Self-Oriented Goal	359	0.16
3 Drifting	312	0.14
4 Moderate Purpose	542	0.24
5 Dreaming	583	0.26

Notably, students in STEM and Business/Communications majors were more likely to be in the Self-Oriented Goal or Drifting class than High Purpose compared to those in Arts & Science majors, and those in Social Professions majors were more likely to be High Purpose than Drifting compared to those in Arts & Science majors. Table 5 shows the

Table 4. Convergent measures of purpose predicting odds of being in the high purpose class. Odds ratio (95% confidence interval).

Predictor	Classes			
	SO Goal	Drifting	Mod Purpose	Dreaming
Goal Directedness	1.42(.73-2.75)	**.18(.10-.34)*****	**.21(.13-.36)*****	**.21(.12-.37)*****
Prosocial Motivation	**.04(.02-.07)*****	**.03(.02-.06)*****	**.08(.05-.14)*****	.59(.31-1.10)
Meaningfulness	.86(.62-1.18)	**.59(.42-.81)*****	.95(.72-1.25)	.80(.61-1.05)
Social Agency	**.45(.30-.69)*****	**.43(.28-.65)*****	**.55(.38-.79)*****	**.46(.32-.67)*****

Note. Reference class is High Purpose. Odds ratio greater than 1 indicates greater likelihood of being in the listed class compared to the High Purpose class.
***$p \leq .001$.

Table 5. Demographic and college variables predicting purpose class membership. Odds ratio (95% confidence interval).

Predictor	Purpose Classes			
	Self-Goal	Drifting	Moderate Purpose	Dreaming
Gender (Base Category = Male)				
Female	1.15(.83-1.60)	**.70(.50-.98)***	1.01(.75-1.35)	1.13(.84-1.51)
Other	1.03(.30-3.56)	1.94(.63-5.95)	.78(.24-2.55)	1.02(.33-3.11)
SES	.92(.82-1.03)	.96(.84-1.10)	.94(.84-1.05)	.96(.86-1.08)
First Year in College	1.02(.75-1.38)	**1.50(1.09-2.07)***	**1.51(1.15-1.98)****	**1.43(1.10-1.87)****
College Type (Base Category = Liberal Arts College)				
Private Research	.69(.37-1.29)	.85(.43-1.70)	1.20(.66-2.19)	1.21(.69-2.14)
Public Research	**.49(.29-.82)****	.87(.49-1.55)	1.00(.61-1.66)	.79(.48-1.29)
Community College	**.46(.26-.83)****	.85(.45-1.62)	.89(.51-1.57)	.61(.35-1.06)
Major Category (Base Category = Arts & Sciences)				
STEM	**2.08(1.39-3.12)*****	**2.54(1.70-3.80)*****	1.32(.91-1.92)	1.34(.93-1.93)
Social Professions	.74(.46-1.19)	**.41(.23-.76)****	.89(.61-1.31)	.87(.59-1.27)
Business/Comm	**3.31(1.90-5.76)*****	**2.57(1.42-4.66)*****	1.50(.86-2.61)	**1.77(1.02-3.06)***
Other/Self-Design	1.63(.48-5.50))	2.05(.56-7.31)	1.54(.50-4.71)	2.46(.87-6.96)
Undecided	2.36(.93-5.98)	**4.29(1.83-10.04)*****	1.62(.69-3.83)	1.86(.80-4.32)

Note. Reference class is High Purpose. Odds ratio higher than 1 indicates increased likelihood of being in the listed class instead of the High Purpose class.
*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$.

odds of being assigned to the High Purpose class compared to other groups for each predictor variable.

College experiences as predictors of purpose

We examined the relationship between certain college experiences and the latent purpose classes. Three types of college experience were run in separate 3-step latent class analyses: advising experiences, instructional methods experienced, and learning experiences. Because our dataset is cross-sectional, these experiences are analyzed as predictors of class assignment only and cannot be interpreted as contributing to or causing an individual's purpose.

Advising experiences. A dummy variable was created for each advising topic, indicating whether or not the individual had discussed the topic with a college-based advisor at least once per quarter/semester. Students who discussed life plans and goals, opportunities that were new to them, and ideas for connecting their strengths to needs in the world showed greater likelihood of being in the High Purpose class compared to some other purpose classes. Table 6 shows the results for each advising topic.

Instructional methods experienced. We examined whether more frequent exposure to the types of courses that involved deep discussion or real-world application would predict purpose class membership. Only service learning and field experience courses significantly predicted being assigned to High Purpose compared to other purpose classes. Table 7 shows the odds of being assigned to High Purpose compared to other classes by course type.

Learning experiences. We examined whether increased exposure to certain learning experiences in college could predict purpose class membership. The types of experiences we analyzed were those that have been theoretically associated with purpose development, such as making connections across disciplines, using course learning in real-world problem-solving, and collaborating with others to gain new perspectives on the world. Table 8 shows the odds of being assigned to High Purpose compared to other purpose classes by frequency of each type of learning experience.

Discussion

This study explored the potential of using a survey instrument to analyze purpose as a person-centered

Table 6 . Advising topics predicting purpose class membership. Odds ratio (95% confidence interval).

Advising Topic	Purpose Classes			
	Self-Goal	Drifting	Moderate Purpose	Dreaming
Course Selection	.89(.54-1.47)	1.00(.60-1.67)	1.26(.79-2.01)	1.04(.62-1.73)
Life Plans and Goals	**.58(.36-.95)***	**.45(.28-.72)****	**.61(.40-.95)***	.69(.43-1.11)
Philosophy/Spiritual	1.15(.76-1.75)	1.07(.67-1.74)	.93(.62-1.38)	.93(.61-1.41)
Personal Interests	.91(.59-1.40)	.73(.47-1.11)	.77(.53-1.12)	.91(.60-1.40)
Current Events	.78(.52-1.16)	1.15(.75-1.78)	.92(.64-1.33)	1.11(.74-1.65)
New Opportunities	1.35(.90-2.04)	**.65(.42-1.01)****	**.61(.42-.89)****	.85(.57-1.28)
Connect to Need	**.54(.35-.83)****	**.39(.24-.65)*****	**.60(.41-.88)****	.84(.57-1.24)
Personal Problems	1.49(.98-2.25)	1.26(.82-1.93)	.94(.66-1.35)	1.12(.74-1.70)
First Year Student	1.17(.82-1.67)	**1.84(1.29-2.63)*****	**1.81(1.32-2.48)*****	**1.72(1.23-2.42)****

Note. Advising = true if student reported talking about the topic with any type of college-based advisor (e.g., faculty, coach, clergy, resident advisor) at least once per quarter/semester. Reference class is High Purpose. Odds ratio greater than 1 indicates greater likelihood of being in the listed class instead of the High Purpose class.
*$p \leq .05$; **$p \leq .01$; ***$p \leq .001$.

Table 7. Frequency of instructional methods experienced predicting of purpose class membership. Odds ratio (95% confidence interval).

Course Type	Purpose Classes			
	Self-Goal	Drifting	Moderate Purpose	Dreaming
Seminar	1.09(.86-1.39)	.86(.67-1.11)	.89(.72-1.11)	1.03(.81-1.30)
Service Learning	**.64(.46-.89)****	.73(.52-1.02)	.79(.61-1.04)	.83(.62-1.12)
Capstone Project	.91(.65-1.29)	.90(.61-1.31)	1.00(.75-1.34)	.89(.47-.86)
Field Experience	.76(.55-1.03)	.74(.54-1.01)	.79(.61-1.01)	**.63(.47-.86)****
First Year Student	.95(.65-1.41)	1.39(.95-2.03)	**1.43(1.03-1.97)***	1.36(.95-1.95)

Note. Reference class is High Purpose. Odds ratio higher than 1 indicates increased likelihood of being in the listed class instead of the High Purpose class. *$p \leq .05$; **$p \leq .01$.

Table 8. Frequency of learning experiences predicting purpose class membership. Odds ratio (95% confidence interval).

Learning Experience	Purpose Classes			
	Self-Goal	Drifting	Mod. Purpose	Dreaming
Connect Learning to Social Issue	.98(.73-1.32)	.89(.66-1.20)	.93(.73-1.19)	.84(.65-1.10)
Saw Issue from Other's Perspective	.74(.50-1.08)	**.67(.45-1.00)***	**.62(.44-.86)****	.76(.51-1.12)
Learning Changed Understanding of Issue	1.35(.93-1.97)	1.06(.74-1.52)	.82(.61-1.12)	.82(.57-1.17)
Debated Social or Political Issue	.96(.73-1.25)	1.03(.79-1.34)	.98(.79-1.22)	1.08(.84-1.40)
Worked with People from Different Background	**1.45(1.09-2.06)***	1.03(.79-1.34)	.94(.74-1.20)	1.05(.80-1.38)
Discussed Problems for Better Solution	.80(.58-1.11)	**.61(.44-.84)****	1.02(.77-1.34)	.77(.57-1.04)
Thought about New Ideas to Improve Things	.75(.53-1.06)	.78(.56-1.07)	**.70(.53-.93)***	.73(.54-1.01)
Combined Ideas from Different Courses	.99(.72-1.35)	.83(.62-1.12)	.92(.71-1.18)	.89(.67-1.18)
Connected Learning to Personal Values	1.02(.70-1.48)	.71(.48-1.04)	**.69(.50-.96)***	1.01(.69-1.48)
Connect Learning to Contribute to World	**.26(.18-.37)*****	**.22(.16-.32)*****	**.42(.31-.58)*****	**.68(.47-.97)***
Considered Issue Through Different Lenses	.92(.67-1.27)	1.17(.86-1.59)	1.07(.82-1.39)	.92(.69-1.23)
First Year Student	.90(.62-1.30)	1.31(.89-1.92)	1.37(.99-1.89)	1.38(.97-1.95)

Note. Reference class is High Purpose. Odds ratio higher than 1 indicates increased likelihood of being in the listed class instead of the High Purpose class.
*$p \leq .05$; **$p \leq .01$.

construct. Building on a recent body of purpose research, we conducted latent class analysis with a survey instrument specifically designed to assess and integrate three dimensions of purpose. By using LCA, we were able to integrate the three dimensions in a way that resulted in qualitatively distinct classes, or profiles, of purpose that distinguish individuals not only by how much purpose they have, but by the aspects of purpose they lack and might need external support to develop. Accordingly, we used the resulting purpose profiles to examine the associations between students' purpose classifications and some of the experiences they are having at college. This analysis provides a foundation for understanding which

experiences might be relevant to purpose development and paves the way for longitudinal research that can investigate how students might move from one purpose profile to another based on the experiences they have or do not have in college.

Measuring purpose: Variable-centered and person-centered methods

A CFA of the purpose survey items resulted in an adequate fit model, though modifications were required, including dropping items. In future studies, researchers could consider using this instrument as a variable-centered, quantitative measure of purpose, but might first explore whether fewer items would be more appropriate for their study population.

Following the CFA, we tested a person-centered approach using LCA. A variable-centered approach, applied in this study using CFA, defines students as being high, moderate, or low in purpose. As described by Von Eye et al. (2015), this approach aggregates the characteristics represented by the observed indicator variables in such a way that results in a loss of meaningful individual differences. The only difference we find with a variable-centered approach is a matter of degree, yet purpose is not a one-dimensional characteristic. Fully developed purpose requires the integration of several aspects, including beyond-the-self motivation, self-awareness for setting personally meaningful goals, future-minded commitment, and agency to act on meaningful goals. The variable-centered approach assumes that these aspects of purpose develop together, or at the same pace in all individuals, and that the differences in when, how, and under what conditions they each develop are irrelevant to an individual's purpose development. A person-centered approach helps us disaggregate those aspects of purpose so that we can get a more individualized portrait of those who attain moderate purpose scores. We found through a latent class analysis that those with moderate scores do not simply differ by degree of purpose, but also differ in the extent to which they are exhibiting each of the dimensions or aspects of purpose.

The LCA resulted in a model with five classes that were both qualitatively and quantitatively distinct and conceptually aligned with the categories of purpose identified in previous interview-based studies. According to these results of the LCA, there are distinctions among students who are on their way to developing purpose but not fully there yet, and these distinctions reveal how they might be able to attain a fuller purpose. Specifically, some students with a moderate purpose score are *Dreaming*, in that they have a higher-order, beyond-the-self aspiration but are not yet doing anything to pursue it. Another group that attained a moderate purpose score are those actively pursuing important *Self-oriented Goals*.

College experiences predicting purpose class membership

In this preliminary analysis of the association between purpose and college experiences, we found that some experiences may predict students' purpose class. Some of these findings were unsurprising, and as we discuss below, are more validating of our methods than informative for education practice. Other findings, however, are worthy of further investigation for understanding how educators can support students' purpose development. For example, students who talk with advisors about their future plans and about ways they can connect their personal strengths to something the world might need from them are more likely to be in the *High Purpose* class than any other class except *Dreaming* (likely because the "first year" control variable has a strong influence on distinguishing these two groups). It might be that highly purposeful students pursue these topics with mentors and advisors, but future longitudinal and experimental investigations should examine whether these advising experiences can change a student's purpose profile. Similarly, it appears that certain learning experiences, such as seeing issues from others' perspective and connecting learning to ways to contribute to the world, are associated with greater likelihood of being in the *high purpose* class compared to other purpose classes. It will be useful to educators to examine whether these types of experiences can be applied to support students' purpose development.

The college experiences that have been, in theory, associated with purpose development are strongly aligned with the experiences that typify a liberal education. Deep and reflective discussions, cross-disciplinary learning, authentic application of learning to real-world problem-solving, and opportunities to take the perspective of others are both believed to support purpose development and associated with a liberal arts education (Colby et al., 2011; Sullivan, 2016). There appears to be some evidence of this in our findings, as just described. Likewise, we found evidence that students in Arts & Science majors were more likely than STEM and Business majors to be in the *High Purpose* class, suggesting an association

between beyond-the-self purpose and a liberal arts program of study. However, we also found that students at small liberal arts colleges (SLAC) were not more likely to be highly purposeful compared to students at other types of colleges. Specifically, SLAC students were more likely to be in the *Self-Goal* class than students at other types of colleges. This finding warrants a more nuanced investigation of the types of goals SLAC students are pursuing.

The findings in this study about purpose and college experiences are preliminary and correlational only, given that they are from a survey taken at a single timepoint. However, they are useful for adding some validity to the purpose survey and the person-centered approach to investigating purpose. It is validating, for example, to find that students who participate in service learning are more likely to have highly developed beyond-the-self purpose than be strongly pursuing a self-oriented goal. Similarly, it makes sense that those taking field experience courses are more likely to be in the *High Purpose* class than in the *Dreaming* class.

Purpose and related constructs

Using the purpose classes identified in the LCA, we tested whether constructs related to purpose and the dimensions of purpose would predict purpose class membership. We measured meaning, social agency, goal orientation, and prosocial motivation. The results of this analysis helped to affirm that the purpose class assignments were meaningful. Higher scores on all these measures predicted a higher likelihood of membership in the *High Purpose* class than the *Drifting* class. Higher scores on measures of prosocial motivation and social agency—the beyond-the-self oriented constructs—predicted a higher likelihood of being in the *High Purpose* class than the *Self-oriented Goal* class. Measures of goal orientation and social agency—constructs related to goal commitment and action—predicted a higher likelihood of being in the *High Purpose* class than the *Dreaming* class. It is worth noting that the measure of meaning differentiated the *High Purpose* and *Drifting* classes but did not significantly predict *High Purpose* over any other purpose class. Therefore, while there are reasons to study sense of purpose—meaning the internal feeling that one has purpose—and reasons to study engaged, beyond-the-self purpose, it is important to note that these two different ways of measuring purpose might not produce the same results.

Limitations and future applications

This analysis was intended to be exploratory and is therefore limited both as a measurement study and as a hypothesis testing study. Although both the CFA and LCA provide some preliminary indication of the validity of the Stanford Purpose Assessment, a more thorough validation should be conducted to confirm that the instrument is appropriate for identifying and classifying individuals' purpose. Likewise, further investigation should be done to assess its reliability with different populations. It might be, for example, that the purpose profiles identified in this analysis would not apply to other age groups. Related, our sample was skewed to include more female students than seen in the college student population. Although we found little difference in purpose by gender among our sample, further research should investigate whether gender effects the associations we found between college experiences and purpose.

As a cross-sectional analysis, our findings about the relationship between purpose and college experiences call for further study of at least two types. Longitudinal study is needed to better understand the direction of the associations between college experiences and purpose, i.e., do highly purposeful students select certain experiences or do certain experiences promote purpose development? This question should also be further examined through quasi-experimental study to test the potential of college experiences to support purpose development. However, the person-centered approach introduced here provides a promising path for pursuing these further investigations. Based on our findings here, we argue that education practitioners will benefit from knowing how to differentiate students' purpose development needs as indicated by their purpose profile.

Future research should employ longitudinal methods, including latent transition analysis, to investigate how purpose develops in the context of different experiences offered in the college environment. With such research, we can better understand the conditions that lead students to select certain college offerings to promote their purpose development, and which experiences colleges can provide to support students' purpose development. Further research with the person-centered approach should also aim to test survey instruments that can evaluate change in purpose class over time or in response to interventions, and that can be practically applied in education settings. Further, experimental research is needed that can control for ecological and experiential differences students are exposed to in different college programs and that

might result in change from one purpose class to another (Lerner & Callina, 2013).

The results of this cross-sectional study, though preliminary, suggest that the person-centered approach may be a promising direction for future purpose development research. As we continue to make connections between these profiles of purpose and educational experiences, developmental scientists can use this method to inform practitioners about supporting students' purpose development based on their particular needs rather than applying a one-size fits all approach.

Conclusion

College holds the promise of altering life outcomes for students, not only in terms of their earning potential, but also in terms of students' capacity for purpose. In this study, we explored a new approach to analyzing purpose that identifies qualitatively distinct profiles of purpose. This approach holds potential for research that can help colleges target learning experiences to support an individual student's unique path of purpose development. Our cross-sectional results suggest that students' expression of purpose is related to some experiences they are having in college; however, longitudinal research will be needed to draw conclusions about whether or how college experiences can be shaped to support purpose development. This line of research holds promise for understanding purpose as a valuable outcome of college and improving educators' capacity to help students shape a college experience that will support them in pursuing a life of purpose.

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Conflict of interest statement

We have no conflicts of interest to disclose.

Human subjects review

This study was approved by the Stanford University Institutional Review Board, Protocol #40602,

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Data availability statement

The data used in this study are currently not available because they represent the first wave of a two-wave longitudinal analysis and the second wave of data has not yet been collected. Data from this study will be made available upon reasonable request when all data collection is complete.

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Appendix A

Stanford Purpose Assessment

(Malin et al., 2018)

Prior to the Purpose Assessment, respondents are asked to rate 20 possible life goals (e.g., Have a satisfying marriage/relationship, Live an adventurous life, Help people in need, Be very well off financially; items adapted from Roberts & Robins, 2000). Then they are asked the following series of open-text response questions and scale items:

1. Now think about the important things you want to do in your own life. In a few words, describe a goal you aspire to accomplish that is personally very meaningful to you.
2. You said one life goal you aspire to is: (piped text). Briefly describe WHY you want to accomplish that goal:
3. If you are currently doing things to accomplish that goal, briefly describe what you are doing to accomplish that goal.

Thinking about ONLY that goal, please indicate how much you agree or disagree with the following statements: (*Response Scale 1–5: Strongly Disagree → Strongly Agree)*

1. An important reason I want to do this is so my life contributes something positive to the world.
2. In my free time, I am often doing something that will help me accomplish this goal
3. I want to do this because it matches my strengths with something that is needed in the world.
4. Doing this will give me a sense that my life has purpose.
5. My strongest motivation for doing this is a desire to do something good for the world.
6. I am not yet sure what steps I will take to accomplish this goal.*
7. In the past month, I have often taken action to accomplish this goal.
8. This goal tells you a lot about what my strongest values are.
9. This goal represents the kind of person I want to be now and in the future.

*Reversed item