The Journal of Experimental Education

ISSN: 0022-0973 (Print) 1940-0683 (Online) Journal homepage: https://www.tandfonline.com/loi/vjxe20

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To cite this article: Jessica J. Summers & Lia D. Falco (2019): The Development and Validation of a New Measure of Adolescent Purpose, The Journal of Experimental Education, DOI: 10.1080/00220973.2019.1575178

To link to this article: https://doi.org/10.1080/00220973.2019.1575178

Published online: 25 Mar 2019.

THE JOURNAL OF EXPERIMENTAL EDUCATION
https://doi.org/10.1080/00220973.2019.1575178

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The Development and Validation of a New Measure of Adolescent Purpose

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ABSTRACT

This goal of this study was to develop a quantitative measure that captures the dimensions of youth purpose (intention, engagement, and prosocial reasoning; Damon, Menon, and Bronk, 2003), focusing on students' life goals and aspirations. We tested the construct validity of our new measure using bifactor exploratory structural equation modeling (B ESEM), assuming that the construct of youth purpose may be best measured as a G factor that allows items to freely cross-load in the model (Morin, Arens, & Marsh, 2016). The G factor model was better fitting than a traditional confirmatory factor analysis or ESEM. Additionally the G factor was correlated with aspects of students' civic engagement and mastery components of academic achievement motivation. Suggestions for future research are discussed.

KEYWORDS

Cognitive processes/ development; factor analysis; goals; motivation; high school

PURPOSE AS A psychological construct emerged from the work of Victor Frankl (1959) and the "positive psychology" movement that views higher-level belief systems (e.g., "ultimate concerns") as being important sources of human motivation (Seligman & Csikszentmihalyi, 2000). Although there have been many definitions of purpose as a construct in theory and research over the years, four elements these definitions have in common are commitment, goal-directedness, personal meaningfulness, and a focus on impacting the world beyond the self (Bronk, 2013). A purpose in life is associated with optimal human development and functioning because it correlates strongly with happiness (French & Joseph, 1999), resiliency (Masten & Reed, 2002), psychological well-being (King, Hicks, Krull, & Del Gaiso, 2006), and life satisfactions (Bronk, Hill, Lapsley, Talib, & Finch, 2009).

Purpose is of significant developmental importance for adolescents (Damon, Menon, & Bronk, 2003). Youth purpose, defined as "a stable and generalized intention to accomplish something that is at once meaningful to the self and leads to productive engagement with some aspect of the world beyond the self" (Bronk, 2011, p. 2; Damon, 2009; Damon, Menon, & Bronk, 2003) is conceptualized according to three dimensions: intention, engagement, and prosocial reasoning. This conceptualization of purpose represents "the intersection of intention, engagement, and a motivation to act on behalf of others" and the motivational desire to act on behalf of others is a critical dimension of youth purpose because it distinguishes it from the related construct of "meaning" (Bronk et al., 2010, p. 134). This motivational desire also distinguishes youth purpose from a general "sense of purpose" (a phrase that is often used interchangeably to describe "purpose,") which may or may not include prosocial reasoning. With regard to adolescent identity development, this definition emphasizes the important role of commitment, goal-directedness,

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and personal meaningfulness and a focus on beyond-the-self concerns, As such, it has been widely adopted by researchers studying purpose in adolescence. Purpose is one aspect of how adolescents see themselves in the future, and the prosocial dimension of purpose may be particularly germane in educational contexts.

Moran (2009) described the prosocial reasoning dimension of purpose as tying "the intention and engagement to consequences that affect others" (p. 145). Malin and colleagues (Malin, Reilly, Quinn, & Moran, 2014) offered a similar explication when they described beyond the self as encompassing the degree to which the individual intends to influence those beyond the self through living out his or her purpose. Indeed, for the sake of clarity and for the purposes of the present study, we are focused on the beyond-the-self aspect of adolescent purpose as it relates to the prosocial dimension of the construct. Because a beyond-the-self orientation can be considered a particular way of thinking about one's goals, it provides an important, albeit nuanced, framework for operationalizing the prosocial dimension of the youth-purpose construct. In other words, the prosocial beyond-the-self dimension of youth purpose sets it apart from other motivations and life goals by linking them with the well-being of others. The presence of purpose hinges on the assumption that one's life goals are personally meaningful, which leads to engagement with related activities, and oriented toward having an impact on the world beyond the self. It is the qualities of the goals themselves and not the dispositions of the individual that we focused on as we developed this new measure of adolescent purpose.

While there is widespread agreement that developing purpose is a fundamental human drive and developmental asset, the methods used to study youth purpose and related constructs have varied considerably. Because most instruments have been designed with adult, not adolescent, subjects in mind, and also because most do not operationalize purpose consistent with Damon, Menon, and Bronk's (2003) theory of youth purpose, few of these measures capture the facets of purpose in a practical and parsimonious manner. A key component of the present study is the development of a utilitarian measure of youth (adolescent) purpose that (a) captures the three dimensions proposed by Damon et al. (2003) and (b) can be used by both researchers and practitioners in educational contexts to understand relationships between purposeful life goals and academic goals. Our research questions were as follows:

1. Are items designed to measure intention, engagement, and prosocial reasoning internally valid and reliable? What is the best fitting model?
2. Are these measures externally related to students' orientation toward purpose (as a dichotomous measure) and associated constructs (civic engagement, academic achievement motivation) as defined by other research?

Youth purpose as a developmental construct

A growing body of theoretical and empirical work suggests that adolescence is a formative period for developing purpose by providing young people a coherent, organized vision of their future that connects in a meaningful way to their present activities (Koshy & Menon Mariano, 2011) including a more meaningful academic experience (Yeager & Bundick, 2009). Adolescents who eventually develop a personally meaningful goal (intention) to pursue will have also developed the skills necessary to aid in this pursuit through goal setting, engagement, and a beyond-the-self future orientation in a variety of areas, including school (Quinn, 2016). Educators may be interested in learning how to support the development of adolescent purpose because it is psychologically advantageous (Bronk, 2011; Burrow & Hill, 2011) and may benefit students in academic areas, including achievement goals (Bundick & Tirri, 2014). Schools represent an important context for fostering the development of purpose. Students frequently speak about their school- and work-related goals when they are asked about their purposes in life (Bronk, 2008, 2012; Koshy &

Menon Mariano, 2011). In K–12 settings, academic subject matter and skills can be better integrated with actualizing one's purpose. Schools can't give students a sense of purpose, but they can provide opportunities for purposeful engagement and elucidate the connection between present and future work to help students think more intentionally about future goals. Certain educational programs and practices can help students see how the knowledge they gain in school aligns with their postsecondary goals and will be useful in the future to make an impact in the community and society (Bronk, 2005; Cury, Elliot, Da Fonseca, & Moller, 2006; Yeager & Bundick, 2009).

Damon (2009) argues that aspirations grounded by a desire to make a meaningful contribution to society give young people the belief that their schoolwork is done in service of a larger, long-term career goal that is meaningful to society. This perspective suggests that young people seek to understand not only how their future aspirations are integrated with important identity tasks but also how their work (current and future) will allow them to make a contribution to the communities and societies in which they live. A more complete understanding of the nature of the development of purpose in adolescence will help those who study and work with young people to create better opportunities for them to pursue goals and aspirations that are at once personally meaningful, of consequence to the communities in which they live, and beneficial to society at large.

Purpose can infuse adolescents' lives with a heightened sense of motivation, relevance, and direction if they are able to view school and community engagement as pathways to fulfilling occupational goals (Koshy & Menon Mariano, 2011). The "other-oriented" nature of purpose can help adolescents think beyond personal goals and help foster behaviors that benefit society. In short, having purpose helps adolescents understand how long-term goals contribute more broadly to the world beyond the self. Research on the development of youth purpose shows that student commitment to a meaningful activity, such as helping one's community by volunteering, grows slowly and steadily as a student receives positive feedback (Bronk, 2012). This sense of commitment to action, which represents a behavioral manifestation of purpose, is an example of how purpose is initiated and fostered in adolescence.

Measuring youth purpose

Leading scholars in adolescent development have suggested the need for further research that aids in clarifying youth purpose as a psychological construct and for more rigorous efforts to measure it (Benson, 2008; Damon, 2009; Hill, Burrow, & Sumner, 2013). One of the major impediments to determining the feasibility of investigating purpose as a meaningful construct is ongoing challenges related to measurement. Developing a survey instrument for youth purpose is critical to the field so that researchers and educators have an efficient and effective way to measure the construct that is consistent with theory.

Various studies have examined youth purpose as it relates to cognitive, emotional, moral, and identity development in adolescence, but the measurement has been inconsistent (Bronk, 2011; Hill, Burrow, & Sumner, 2013; Yeager & Bundick, 2009). Though multiple methods have been offered for assessing one's purpose in life (e.g., Bundick et al., 2006; Crumbaugh & Maholick, 1964, 1969; Ryff, 1989), most of the strategies utilized thus far have focused solely on measuring the extent to which one feels a sense of purpose in life. Often the actual content of an individual's sense of purpose is neglected in the research. Valid measurement of the construct has been identified as a much needed area of research (Hill, Burrow, & Sumner, 2013). There is a need to measure purpose that is consistent with the theoretical framework and that can be used to understand sources of purpose, content of purpose, and development of purpose as students' experience these beyond-the-self goals in educational contexts.

We kept these dimensions in mind (intention, engagement, and prosocial reasoning) as we considered the development of a measure of adolescent purpose that can be captured in survey items for each dimension. In addition to these theoretical dimensions, research suggests that a better understanding of youth purpose should consider, in a complementary way, different psychological aspects of individuals' lives, such as the identification of life goals, the beyond-the-self or self-oriented purposes, and a meaningful engagement in purposeful activities (Araujo, Arantes, Klein, & Grandino, 2014). The goal of this study was to develop a new measure of purpose that taps the theoretical dimensions of the construct proposed by Damon and colleagues (2003) so that educators, policymakers, and researchers have a valid and practical tool for assessing students' purpose.

Qualitative measure of purpose

One measure that has been widely agreed upon as the most accurate existing measure of youth purpose is the Revised Youth Purpose Interview (Andrews et al., 2006), a semi-structured interview protocol derived from studies of self-understanding and identity development. The protocol consists of two parts. The first part features a line of questioning designed to determine what is particularly important to the individual. Questions in this section include more general, open-ended probes such as, "What are some of the things you really care about?" and "What matters to you most?" To encourage participants to think about concerns beyond themselves, questions also focus on issues that matter to participants in the broader world. A question along this line includes the following: "Imagine you've been given a magic wand and you can change anything you want in the world. What would you want to be different?"

Once interviewees have identified the aim or aims that matter most to them, the interviewer begins the inquiry focusing on gaining a deeper understanding of the role each aim/driver plays in the interviewee's life. So, for example, if the interviewee has said one of the most important aspirations in his or her life is to have a family or help others through a particular career, then the remainder of the interview would focus on understanding just how central this particular aim is, why it is as central as it is, and what steps the interviewee has taken or plans to take in order to make progress toward this aim. The interview takes about an hour to administer and has typically been used with adolescents and emerging adults (Bronk, 2005, 2008, 2011, 2012; Bronk et al., 2010; Damon, 2009; Moran, 2009; Yeager & Bundick, 2009). Findings from studies administering this protocol have revealed much about the prevalence of purpose among different samples of young people (Bronk et al., 2010; Damon, 2009; Moran, 2009), the role of purpose in healthy identity development (Bronk, 2011), and the role of meaning in school work and professional plans (Yeager & Bundick, 2009). This protocol has also been used to build a theory of the way purpose develops and changes over time (Bronk, 2012) and to highlight characteristics of youth with purpose (Bronk, 2008). Because the protocol measure takes an hour to administer, it may be considered too time intensive and expensive to use, as it has only been applied by a handful of researchers. The outcomes of this protocol typically put students into one of four categories: goals/efforts directed toward (a) self-oriented, intrinsic reasons; (b) beyond-the-self, intrinsic reasons (purposeful); (c) self-oriented, extrinsic reasons; and (d) beyond-the-self, extrinsic reasons. However, this limits interviewees to four distinct categories that describe the main reason why they pursue their life goal and does not honor the assumption that purpose falls on a developmental continuum (Mariano & Going, 2011) broader than these four categories. For this study, we asked students to name their life goal, then we presented them with these categories of orientation to judge whether the students are purposeful in their goals/efforts toward a life goal. This was the primary metric we used to establish external construct validity of our measure.

Quantitative measures of purpose

Much current research on youth purpose uses a measure developed by Bundick et al. (2006) entitled the Revised Youth Purpose Survey. In their instrument, Bundick et al. (2006) include subscales intended to measure seeking purpose, finding purpose, identified purpose, life goals, and activity involvement. This survey draws items from the Purpose in Life test (Crumbaugh & Maholick, 1969), the sense of purpose in life subscale (Ryff, 1989), and the Meaning in Life Questionnaire (Steger et al., 2006). The survey has several items rated on a seven-point Likert-type scale that focus on purpose among youth and college students. Some of the items are "I have discovered a satisfying life purpose" and "I have a purpose in my life that says a lot about who I am." This measure's intended subscales have been revised and used under several different construct names, such as *identified purpose* (Bronk et al., 2009; Jiang, Lin, & Menon Mariano, 2016; Yu, Glanzer, Sriram, Johnson, & Moore, 2017), *purpose commitment* (Burrow & Hill, 2011; Burrow, O'Dell, & Hill, 2010; Hill & Burrow, 2012; Blattner, Liang, Lund, & Spencer, 2013; Hill, Burrow, & Bronk, 2016; Hill, Sumner, & Burrow, 2013; Sumner, Burrow, & Hill, 2015; Osai, 2016; Madrazo, 2014; Young, 2014), *purpose exploration* (Burrow, O'Dell, Hill, 2010; Hill & Burrow, 2012; Blattner, Liang, Lund, & Spencer, 2013; Hill, Sumner, & Burrow, 2014; Sumner, Burrow, & Hill, 2015; Osai, 2016; Young, 2014), *purpose engagement* (Liang, Lund, Mousseau, & Spencer, 2016; Jiang, Lin, & Menon Mariano, 2016), and *career goals* (Jin, Gilmartin, Sheppard, & Chen, 2015; Lintl et al., 1999).

Though the Bundick et al. (2006) survey is based on a more comprehensive conceptualization of purpose, it lacks empirical evidence for psychometric soundness. It is also not time sensitive as it does not measure changes in one's purpose, which limits its use in experimental studies that aim to assess the effects of an intervention, or other variables, on individual's purpose (Scheier et al., 2006). Another limitation of this survey is its inability to effectively distinguish between the content of individuals' intended goals and their sense of felt purpose. For example, individuals with highly ignoble goals (i.e., dictators, fascists) often feel a clear sense of purpose to their lives. Such individuals would likely exhibit scores on measures of felt purpose equal to those with more-positive life purposes, and thus, such measures may mask important individual differences and fail to account for the prosocial dimension that characterizes purpose. This underscores the need to evaluate one's substantive purpose and one's orientation toward purpose (Hill et al., 2013). Furthermore, as mentioned above, research on goal content also clearly indicates the need to assess "what" the nature of one's purpose is rather than solely "how much" of it an individual possesses, as distinct purpose contents may differentially predict one's well-being.

Recently, the Sense of Purpose Scale (SOPS) was developed by Sharma, Yukhymenko-Lescroart, and Kang (2018) to measure individuals' sense of purpose using three distinct subscales. Their attempt to present a scale measuring the multidimensional nature of purpose using Damon et al.'s definition (2003) is very similar in intention and initial methodology (i.e., generation of pilot items based on theory, followed by an EFA and tests of validity) to the study presented here. The three subscales Sharma et al. were able to derive from their efforts were (a) awareness of purpose (extent to which people are aware and moving toward purpose), (b) awakening to purpose (active engagement and orientation toward awaking to purpose), and (c) altruistic purpose (desire to make a positive difference in the world). These subscales even contain items that are similar to the ones we generated (see Appendix A: SOPS altruistic purpose versus MAP prosocial reasoning—"I am striving to make a positive difference in society" versus "The work that I do will have a positive impact on others"; SOPS awareness of purpose versus MAP intention—"I am moving toward fulfillment of my life's purpose" versus "I believe I can fulfill my goals and aspirations"; SOPS awakening of purpose versus MAP engagement—"I have become interested in search for my purpose in life." versus "I spend a significant amount of time doing activities related to my life goal.")

There are several differences between the SOPS and the MAP that are worth noting. First, our items are grounded by two questions asking if students had a life goal and what their life goal is. Purpose is described as a far-reaching goal directed at an accomplishment toward which one can make progress by Damon et al.; therefore, there must be an object of purpose in order to be purposeful. Second, our items focus on one's intention for having the qualities of personally meaningful, leading to productive, engagement and being oriented toward the world beyond the self (prosocial reasoning). SOPS neither grounds their items to an object or goal of purposeful beliefs nor does it address one's intention for personal meaning; rather, SOPS assesses dispositional qualities of the person as opposed to their intentions.

Hill, Edmonds, Peterson, Luyckx, and Andrews (2015) also developed a brief survey measure of purpose in emerging adulthood. They argue that purpose is distinguishable but not completely independent of personality and identity development and, as such, can be assessed within an identity development framework. The Hill et al. (2015) measure focuses on conceptual correlates of purpose such as hope, personal agency, and consideration of personal consequences that are associated with adaptive personality profiles. Items for this measure were developed from a measure of identity development (Luyckx et al., 2008) and assume a close association between identity and purpose development during adolescence and emerging adulthood. Additional items are intended to reflect the notion of having a direction and foundation for goals. The measure comprises four items ("There is a direction in my life," "My plans for the future match with my true interests and values," "I know which direction I am going to follow in my life," and, "My life is guided by a set of clear commitments"). While these items appear to capture the future-oriented and goal-directed nature of purpose, along with a sense of felt purpose, they do not tap the critical beyond-the-self facet of purpose. Furthermore, this measure does not appear to account for the important distinctions between identity and purpose development wherein identity refers to the development of who one is and purpose refers to the development of what one hopes to accomplish in his or her life. To more accurately capture the construct, we would argue that the content of one's purpose must be included in the assessment.

The Claremont Purpose Scale (Bronk, Riches, & Mangan, 2018) is a 12-item survey that aims to assess the youth-purpose construct according to goal-directedness, personal meaning, and a beyond-the-self orientation. Items for this measure were adapted from existing measures of identified purpose, psychological well-being, and values. Examples of such items include, "How clear is your sense of purpose in your life?"; "How often do you find yourself hoping that you will make a meaningful contribution to the broader world?"; and "How much effort are you putting into making your goals a reality?" While there is some overlap between how youth purpose was conceptualized in this measure and ours, there remain important differences. By using items from existing measures, which generally tap the broader constructs of meaning and psychological well-being, the Claremont Youth Purpose Scale operationalizes the youth purpose construct in a way that diverges quite significantly from our measure. Like the aforementioned Hill et al. (2015) scale, the Claremont Purpose Scale appears to capture respondents' sense of "felt purpose" but does not take into account the specificity of the content of one's purpose. Thus, instead of focusing on the qualities of individuals' goals, it conceives of purpose as a personal disposition.

We argue that accepting Damon, Menon, and Cotton Bronk's definition of youth purpose necessitates the creation of a measure that taps the construct in terms of future orientation, goals beyond the self, and a motivational desire to make a meaningful contribution to society along a continuum while operationalizing it according to the dimensions put forth in that definition: intention, engagement, and prosocial reasoning (see Bronk, 2012, for a detailed explanation of the nature of purposes). This was a deliberate measurement decision. By focusing on these dimensions of the Damon (2009) definition in developing items for our survey, we were striving to capture the facets of youth purpose that, we believed, would be most closely associated with motivation. In developing our measure, we also assessed purpose orientation (i.e., purposeful

versus nonpurposeful pursuit of goals) using four categories proposed by Yeager and Bundick's (2009) reasons for work goals (intrinsic/beyond-the-self (purposeful), intrinsic/self-oriented, extrinsic/beyond-the-self, extrinsic/self-oriented). Because a measure like this did not yet exist, we felt it important not only to establish the structural validity of our new instrument but to also establish its' predictive validity by exploring the relationship of purpose to related constructs. Theoretically, we posit that youth purpose should be related to civic engagement and achievement motivation.

Constructs related to youth purpose

Youth purpose and civic engagement

A number of variables are indicators of young people's connection to the community and their role as citizens including volunteerism, activism, and other service-related activities (Furrow & Wagener, 2003; Magen, 1998; Scales & Benson, 2003). Developmental scholars argue that the reciprocal relationship between young people's shaping of society through civic engagement and the shaping of young people by society is an essential criterion for youth to be considered thriving and not merely developing adequately (Lerner, Brentano, Dowling, & Anderson, 2002). It is important to bear in mind that adolescents are not only contributing to society currently but will continue to do so through their later adult civic involvements and modeling to the next generations (Scales & Benson, 2003).

Civic engagement is associated with several important student outcomes including political efficacy, academic engagement, peer relationships, and resiliency (Morgan & Streb, 2001; Rosenberg, McKeon, & Dinero, 1999; Scales, Blyth, Berkas, & Kielsmeier, 2000; Spring, Dietz, & Grimm, 2007). Youth-purpose scholars argue that having a purpose exists in some individuals as a source of motivation for future goals, particularly as they relate to prosocial endeavors including commitment to civic engagement (Barber, Mueller, & Ogata, 2013; Bronk, Finch, & Talib, 2010). Malin, Ballard, and Damon (2015) have argued that youth purpose and civic engagement can even be combined as a single construct, civic purpose, defined as "a sustained intention to contribute to the world beyond the self through civic or political action (p. 109)." Using youth purpose as a conceptual framework, we believe that young people who become civically engaged do so because they place importance on the need to serve the communities in which they reside in an effort to contribute to the greater good. Similar to Barber et al. (2013), we are conceptualizing civic engagement as an outcome of "purpose," in order to examine how adolescents come to see such activities as an integral part of one's life, current and future.

Youth purpose and achievement motivation

Having purpose goes beyond a feeling or orientation toward the future. Leading youth-purpose scholars distinguish the construct from related constructs, such as meaning, based on the notion that it requires individuals to have a goal or "ultimate concern" that propels them forward (Damon, Menon, & Bronk, 2003). When conceptualized this way, youth purpose imbues young people with a sense of mattering (Zaff, Malanchuk, & Eccles, 2008), and arguably, it is the connection between these intrapersonal processes that may result in important motivational outcomes. Recent research suggests that developing an awareness of purpose may increase adolescents' motivation to learn by helping them to see that the knowledge they gain in school will be useful in the future to make an impact (Bronk, 2005; Cury, Elliot, Da Fonseca, & Moller, 2006; Yaeger & Bundick, 2009). In other words, aspirations that are motivated by a desire to make a meaningful contribution to society give young people the belief that their schoolwork is done in service of a larger, long-term career goal that is meaningful to society. Research shows that goals related to school are operationalized as "purposeful" when participants have a reason

for their goal that is intended to benefit some part of the world beyond the self (Yeager, Bundick, & Johnson, 2012). Interventions designed to influence schoolwork goals have shown that manipulation of students' sense of purpose (or meaningfulness beyond the self) increased deeper learning behavior and self-regulation for boring tasks (Yeager et al., 2014) and increased their GPAs (Pizzolato, Brown, & Kenny, 2012). However, these intervention studies did not conceptualize purpose in the same way as Damon et al. (2003), which opens the door for model testing with an instrument that does measure intention, engagement, and purposeful life goals with achievement motivation constructs.

Achievement goals are best construed in terms of purposeful commitments that guide future behavior (Dweck & Elliott, 1983; Maehr, 1989) that are determined by one's achievement values and expectations for success in school (Eccles & Wigfield, 2002). Motivation to achieve in school can be aligned with academic goals that are mastery oriented (focused on learning and understanding as an outcome) and/or performance oriented (focused on learning more compared to others as an outcome; Pintrich, 2000). Research indicates that there may be different types of mastery and performance goals that can be characterized as either "approach" or "avoid" (Elliot & Harackiewicz, 1996) and that students may have multiple goals operating simultaneously to reach their objective (Barron & Harackiewicz, 2001; Pintrich, 2000). The most adaptive goals structures for students to simultaneously learn and perform well in school are a combination of mastery-approach and performance-approach orientations (see for examples, Midgley, Kaplan, & Middleton, 2001; Linnenbrink, 2005; Pintrich, 2000; Wolters, 2004). Therefore, these goals were included in our hypothesized model as a possible correlate of our measure of purpose.

Present study

In response to the measurement shortcomings present in existing quantitative measures and the length of time required to administer the qualitative measure (Andrews et al., 2006), a new measure of purpose was created by the authors for high school students based on the three dimensions proposed by Damon, Menon, and Bronk (2003) that are used to code "purposeful" students in the qualitative research: intention, engagement, and prosocial reasoning (rating high on all three indicates "purposeful" life goals and/or career pursuits; Malin et al., 2008). According to the way purpose is described in the qualitative research, students' likely fall on a continuum of purpose that allows for categorization of purposeful "exemplars"; students who embody purpose and communicate their life goals and aspirations are already committed to civic activities outside of school (Bronk, 2008) and/or are committed to academic achievement goals that will allow them to pursue purposeful goals beyond school (Bronk, Finch, & Talib, 2010). Because these exemplars may possess an overarching purpose that includes these three dimensions, we decided to test different models of purpose that represent differentiated factor structures of the construct. Specifically, we tested the best fitting models using the following analyses: (a) confirmatory factor analysis (CFA) with discrete measures of intention, engagement, and prosocial reasoning; (b) exploratory structural equation modeling (ESEM) with shared item variance (cross-loadings) freely estimated between measures; and (c) bifactor exploratory structural equation modeling (B ESEM) estimating a single global factor using residual variance estimates from each measure.

Method

Participants

Bifactor exploratory structural equation modeling (BESEM) requires separate samples for a series of analyses to decide on the best fitting model for the data: (a) a sample for exploratory factor analyses (sample A) and (b) a sample for comparing traditional confirmatory analysis (CFA)

Table 1. Demographic characteristics of each sample by frequency.

School District		District X	District Y	District Z	
School Sample		Sample A (n = 142)	Sample B (n = 208)	**Sample C (n = 281)**	Total
Ethnicity	White	32	80	97	209
	African American	4	9	12	25
	Hispanic	77	113	164	354
	Asian American	2	1	2	5
	Native American	2	4	4	10
	Other	1	1	1	3
Gender	Male	58	108	146	312
	Female	61	100	135	296
Grade	Junior	51	89	109	249
	Senior	67	113	166	346

models, exploratory structural equation models (ESEM), and BESEM models (sample B). A third sample was used for external validity testing with civic engagement and model testing with academic achievement motivation. All data were collected from juniors and seniors attending public high schools in a mid-sized southwestern city. Sample A included 142 students from five public high schools in district X; Sample B included 208 from a single high school in district Y; and Sample C included 271 students from two public high schools in district Z. Because validity and model testing had the most estimable parameters, we used our largest sample for these analyses. Surveys were administered to students using paper and pencil during homeroom. Table 1 reports demographic characteristics of the participating students with complete data ($n = 621$).

Measures

Youth purpose has three critical dimensions for late adolescence: intention (what one wants to accomplish in life), engagement (sustained behavioral involvement), and prosocial reasoning (responsibility for or concern about the welfare of others; see Bronk et al., 2009, Bronk, Finch, & Talib, 2010, and Damon, Menon, & Bronk, 2003, for a review). Because measures have not previously examined youth purpose in this way, we generated a scale consisting of 21 new items using the subscale definitions of purpose provided by Damon et al.: intention, engagement, and prosocial reasoning, each of which have been measured discretely as separate constructs but not combined into an omnibus measure. Items written to measure intention were designed to represent behavioral intentions, defined as the degree to which a person has formulated conscious plans to perform some specified future behavior (Warshaw & Davis, 1985). These items typically have a stem such as, "I plan to …," followed by the behavior we expect them to engage in, and should be reflective of how hard a person is willing to try to perform the behavior (Armitage & Conner, 2001; Fishbein & Ajzen, 1975). Items written to measure engagement were designed to reflect a person's active involvement in a task or activity. Items were worded to contain a positive affective component, such as passion or emotional investment in current activities (Appleton, Christenson, Kim, & Reschly, 2006; Skinner, Furrer, Marchand, & Kindermann, 2008). Examples of items to measure engagement include, "I am currently involved in activities related to my goals and aspirations" and "I feel emotionally invested in my goals and aspirations." Items written to measure prosocial reasoning were designed to capture concern for others and sense of social responsibility, similar to other measures of prosocial reasoning and behavior (Carlo & Randall, 2002). Examples of items to measure prosocial reasoning include, "My life goal represents a personal commitment to make a meaningful contribution to society" and "I feel a sense of personal responsibility to help others and/or improve society through the work that I will do." All items were presented on a five-point Likert scale ranging from "*strongly disagree*" to "*strongly agree*." See Appendix A for the survey.

Civic engagement items comprised five subscales from Flanagan, Syvertsen, and Stout's (2007) civic measurement models. These measures tap self-reported aspects of adolescent civic behaviors and are appropriate for use with students aged 12 to 18 years. Specifically, the following five subscales were used to measure civic engagement (reliability estimates were reported by Flanagan et al.): Competence for Civic Action (e.g., "Express your views in front of a group of people," 9 items, α = .92); Expectations for Engagement in Community Issues (e.g., "Work with a group to solve a problem in the community where you live," 3 items, α = .80); Personally Responsible Citizen (e.g., "I am willing to help others without being paid," 6 items, α = .89); Concern About the Future ("I worry that many people in my generation will not have steady jobs," 5 items, α = .83); and Student Ownership (e.g., "Students feel they're an important part of this school," 6 items, α = .77). Items contain either a Likert-type response scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) or 1(*not at all likely*) to 5 (*extremely likely*), depending on the stem. Using data collected from district Z ($n = 281$), our sample reliabilities were comparable to that of Flanagan et al.: Civic Action, α = .92; Community Issues, α = .87; Responsible Citizen, α = .77; Future Concern, α = .71; Student Ownership, α = .83.

Achievement motivation was measured using three mastery-approach items (e.g., "I am striving to understand the content of my coursework as thoroughly as possible," α = .84); three mastery-avoid items (e.g., "In school, my aim is to avoid learning less than I possibly could," α = .88); three performance-approach items (e.g., "In school, my aim is to perform well relative to others," α = .92); and three performance-avoid items (e.g., "I am striving to avoid performing worse than others," α = .94) from the Revised Achievement Goal Questionnaire (AGQ-R; Elliot & Murayama, 2008). All items were presented on a five-point Likert scale ranging from "*strongly disagree*" to "*strongly agree*." Using data collected from district Z ($n = 281$), our sample reliabilities were comparable to that of Elliot and Murayama: mastery-approach, α = .88; mastery-avoid, α = .92; performance-approach, .91; performance avoid, α = .96.

Orientation for purpose was measured using four choices to gauge the reason for fulfilling one's life goal as it relates to being purposeful. The response options for this item were generated from the Yeager and Bundick (2009) study that coded student interview responses according to four categories to represent what we termed "orientation for purpose" (Yeager & Bundick; intrinsic/self, intrinsic/beyond the self (defined as purposeful), extrinsic/self, and extrinsic/beyond the self). Students could chose only the main reason for fulfilling their life goal, thus the variable was coded as either having a purposeful orientation (1) or having an alternate, nonpurposeful orientation (0) and applied as a dichotomous variable (Marsh et al., 2009). It should be noted that this item was not intended to approximate the full interview and coding strategy of the Revised Youth Purpose Interview but rather to give an approximation of one's primary reason or motivation for fulfilling a life goal.

Analysis

To test the factor structure of the measure of adolescent purpose (MAP) scale, we conducted exploratory structural equation modeling (ESEM) using Mplus 8.0 (Muthén & Muthén, 2017). This recent statistical technique incorporates features of both confirmatory factor analysis (CFA) and exploratory factor analysis (EFA; see Figure 1). Like CFA, ESEM tests whether the scale comprises three distinct factors and provides fit indices, standard errors, and tests of significance. However, it is less restrictive than CFA, relaxing the restrictive assumption that items should load only on their respective factors (i.e., main loading) without any cross-loading (Marsh, Morin, Parker, & Kaur, 2014, Marsh et al., 2009; Marsh, Nagengast, & Morin, 2013). A measurement instrument may have many cross-loadings (albeit much weaker than their main loadings) that are consistent with the underlying theory, as is the case for the multidimensional nature of youth purpose. Moreover, when true cross-loadings (i.e., present in the population model) are forced

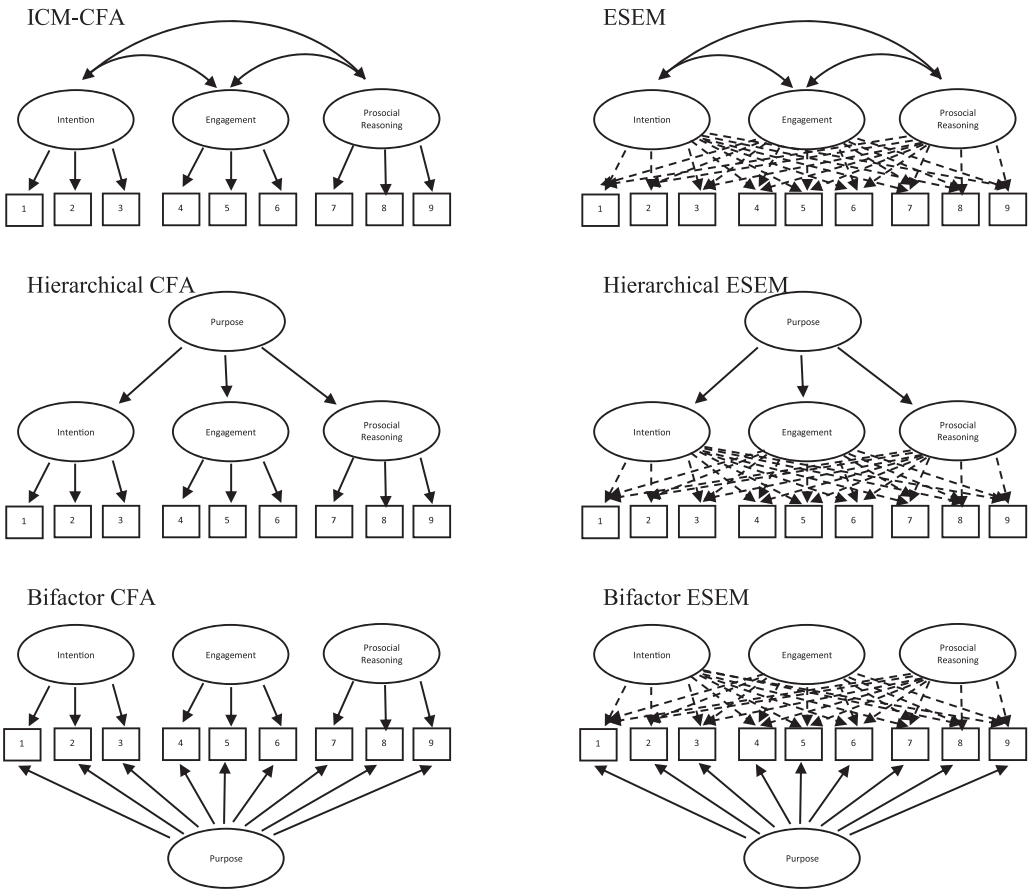

Figure 1. Graphical representation of the alternative models considered in this study. *Note.* CFA = confirmatory factor analyses; ICM = independent cluster model; ESEM = exploratory structural equation modeling; 1–9 = items. Ovals represent latent factors and squares represent observed variables. Full unidirectional arrows linking ovals and squares represent the main factor loadings. Dotted unidirectional arrows linking ovals and squares represent the cross-loadings. Bidirectional full arrows linking the ovals represent factor covariances and correlations.

to be zero in CFA, latent factor correlations tend to be overestimated, as the only way for the cross-loadings to be expressed is through the inflation of these correlations (e.g., Asparouhov & Muthén, 2009, Marsh et al., 2009, Morin, Arens, & Marsh, 2016; Morin et al., 2013).

By incorporating cross-loadings in a model, an ESEM approach overcomes these limitations. It also provides some control over the fact that items are imperfect indicators of a construct and thus presents some degree of irrelevant association with other constructs (i.e., systematic measurement error; see Morin et al., 2016). ESEM thus appeared particularly relevant for investigating the psychometric properties of the Measure of Adolescent Purpose (MAP) scale in order to estimate purer correlations among the latent variables and to determine whether a higher order or bifactor model fit the scale best. In other words, assuming that our items are multidimensional in nature, is there a higher order factor of purpose that is predicted by three unique subscales (intention, engagement, and prosocial reasoning) or do our items really measure overlapping, conceptually related domains in a single global factor?

To test the higher order structure with ESEM, we used the ESEM-within-CFA (H ESEM) and bifactor model approach (Morin et al., 2013; Morin et al., 2016). Bifactor models provide an alternative to hierarchical models (Chen, West, & Sousa, 2006; Holzinger & Swineford, 1937; Reise, Moore, & Haviland, 2010). A bifactor model (BESEM) is based on the assumption that an F

factor solution exists for a set of n items with one global (G) factor and $f - 1$ specific (S) factors (also called group factors). The items' loadings on the G factor and on one of the $f - 1$ substantive S factors are estimated while other loadings are constrained to be zero, although these models could also incorporate additional method factors. All factors are set to be oblique (i.e., the correlations between the S factors and between the S factors and the G factor are estimated). This model partitions the total covariance (using polychoric estimates in our case, since we assumed data were ordinal) among the items into a G component underlying all items, and $f - 1$ S components explaining the residual covariance (or thresholds for ordinal data) not explained by the G factor Morin et al., 2016).

All analyses were performed using the Mplus 8.0 (Muthén & Muthén, 2017) weighted-least-squares means and variance-adjusted (WLSMV) estimation method. This robust estimation method is appropriately used with nonnormally distributed data and when the data are ordinal rather than interval: experts in psychometrics recommend that Likert-type data be treated as ordinal (Norman, 2010) for validity analyses (Beauducel & Herzberg, 2006; Flora & Curran, 2004; Lei, 2009), particularly if the scale is less than 11 points (Leung, 2011). The models were estimated based on the full information that was available using algorithms implemented in Mplus in conjunction with the WLSMV estimator (Asparouhov & Muthén, 2010) and assumed all observed variables were categorical. Missing data were handled using a listwise approach. To assess model fit, we used the comparative fit index (CFI), the Tucker–Lewis index (TLI), the root mean square error of approximation (RMSEA), the chi-square test statistic, and the weighted root mean square residual (WRMSR). Criteria for good fit are that CFI and TFI be as high as .95, a value close to .06 for RMSEA (Hu & Bentler, 1999), that chi square be nonsignificant, and that WRMSR be 1.0 or lower (DiStefano, Liu, Jiang, & Shi, 2018). Following recommendations (Marsh et al., 2009; Marsh et al., 2010; Morin et al., 2013), we used an oblique target rotation for exploratory models.

Scale score reliability estimates were computed from the standardized parameter estimates of the models using McDonald's (1970) omega, $\omega = (\Sigma|\lambda i|)^2/([\Sigma|\lambda i|]^2 + \Sigma\delta ii)$, where λi are the standardized factor loadings and δii is the standardized item uniquenesses. Compared with traditional scale score reliability estimates (e.g., alpha; see Sijtsma, 2009), ω has the advantage of taking into account the strength of association between items and constructs (λi) and item-specific measurement errors (δii) (see Dunn, Baguley, & Brunsden, 2014, for a review).

Once the best fitting measurement model was established for the Measure of Adolescent Purpose (MAP), we correlated this with students' reports of purposeful orientation as a dummy coded covariate (i.e., those who reported their primary reason for fulfilling their life goal was, "I want to help others and make the world a better place" were coded "1"; all other responses were coded "0"). This correlation was conducted as a type of check for consistency across variables intended to measure purpose or be directly related to purpose. We then proposed to establish concurrent predictive validity of the new measure with an established measure of civic engagement (Bronk, 2008). Furthermore, we hypothesized that the best fitting measurement model for MAP should significantly predict students' academic-achievement goals (Bronk et al., 2010; Yeager & Bundick, 2009)

Results

Construct validity of the measure of adolescent purpose (MAP)

We conducted an initial exploratory factor analysis with Sample A using oblique Geomin rotation (epsilon = .5) yielding a five-factor solution with eigenvalues over 1.00 (see initial instrument in Appendix A). We retained 11 out of the initial 19 items for factors that had at least three item loadings over .350 (criteria proposed by Worthington & Whittaker, 2006). Following the EFA, a

Table 2. Goodness-of-fit statistics and information criteria for the models estimated on the measure of adolescent purpose (MAP).

Model	χ^2	*df*	CFI	TLI	RMSEA	RMSEA 90% CI	WRMR
ICM CFA	420.800*	41	0.899	0.865	0.211	[0.193, 0.229]	1.849
H CFA	390.254*	41	0.911	0.881	0.202	[0.184, 0.221]	1.871
B CFA	284.637*	33	0.936	0.893	0.191	[0.171, 0.212]	1.339
ESEM	88.920*	25	0.983	0.963	0.111	[0.086, 0.136]	0.519
H ESEM	93.149*	26	0.982	0.962	0.111	[0.087, 0.136]	0.566
B ESEM	51.181*	17	0.991	0.972	0.098	[0.068, 0.130]	0.377
B ESEM (10 items)	34.101*	11	0.993	0.972	0.100	[0.063, 0.139]	0.293

Note. CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation; CI = confidence interval; WRMR = weighted root mean square residual; CFA = confirmatory factor analysis; H = hierarchical model; B = bifactor model; ESEM = exploratory structural equation modeling; *df* = degrees of freedom. ESEM were estimated with target oblique rotation.
*$p < .01$

series of measurement models were tested using the protocol suggested by Morin et al. (2013) using Sample B. Table 2 presents the goodness-of-fit indexes and information criteria associated with the models. The ICM CFA solution (CFI = .904, TLI = .871, RMSEA = .210, WRMR = 1.886) provides poor degree of fit to the data, and both the H CFA and the B CFA appear to be suboptimal in terms of fit (CFI and TLI < .95 and higher values on the information criteria). The ESEM solution provides good degree of fit to the data (CFI = .984, TLI = .965, RMSEA = .110,[1] WRMR = .532) and an apparently better representation of the data than the ICM CFA model. The B ESEM model also provides a good degree of fit to the data according to all indexes (CFI = .991, TLI = .955, RMSEA = .098, WRMR = .377) and a slightly better level of fit to the data and lower values for the information criteria than all other models. Although all of our model tests yielded significant chi-square values, chi square is known to be sensitive to larger correlations when applied as a goodness-of-fit test (Kline, 2011; Tanaka, 1993).

Based on this information, the B ESEM model appears to provide the best representation of the data. However, before moving to a description of the B ESEM model, we first start with a comparison of ICM CFA and ESEM to investigate the presence of construct-relevant psychometric multidimensionality due to the fallible nature of indicators and the presence of conceptually related constructs. We then contrast ESEM and B ESEM to investigate construct-relevant psychometric multidimensionality due to hierarchically superior constructs.

ESEM versus CFA

The ICM CFA and ESEM solutions differ with much lower factor correlations for ESEM ($|r|$ = .678, r = .450, and r = .280) than ICM CFA ($|r|$ = .754, r = .611, *and* r = .611). ESEM thus results in a clearer differentiation between the youth purpose factors than ICM CFA. Similarly, simulation studies showed that ESEM tends to provide a better representation of the true correlations between factors (Asparouhov & Muthén, 2009). Here, the highest correlation involves intention and engagement, supporting the need for a bifactor representation, or associations between conceptually close constructs (e.g., what one wants to accomplish in life versus sustained behavioral involvement), apparently supporting the theoretical adequacy of ESEM. Parameter estimates from these models are reported in Table 3.

An examination of the ESEM parameter estimates reveals well-defined factors due to substantial target factor loadings (varying from $|\lambda|$ = .699 to .967). Similarly, as expected, multiple nontarget cross-loadings are also present, providing additional support for the ESEM solution. These results provide clear evidence that both sources of construct-relevant psychometric multidimensionality are present in the MAP, supporting the need to rely on ESEM and suggesting the appropriateness of exploring B ESEM.

Table 3. Standardized factor loadings for the measure of adolescent purpose using first-order ESEM and CFA solutions.

	First-Order ESEM Solution				First-Order CFA Solution	
Items	Intention	Engagement	Prosocial Reasoning	Uniqueness	Factor Loadings	CFA Solution Uniqueness
1. I believe I can fulfill my goals and aspirations.	0.926***	−0.214**	−0.026	0.654	0.739***	0.546
2. I have taken active steps to fulfill my life goal.	0.860***	0.128*	−0.152**	0.800	0.862***	0.742
3. I plan for the future.	0.899***	0.049	−0.012	0.860	0.921***	0.849
4. I think about the possible outcomes of my decisions before deciding.	0.481***	.174**	0.213***	0.604	0.807***	0.651
9. I am currently involved in activities related to my goals and inspirations.	−0.006	0.954***	−0.394***	0.849	0.700***	0.490
10. I am passionate about my goals and inspirations.	0.214**	0.687***	0.187***	0.862	0.941***	0.885
11. I spend a significant amount of time doing activities related to my life goal.	−0.054	0.901***	−0.113	0.709	0.794***	0.630
12. I feel emotionally invested in my goals and aspirations.	−0.054	0.692***	0.515***	0.872	0.922***	0.850
17. The work that I do will have a positive impact on others.	0.163	0.055	0.816***	0.853	0.970***	0.942
18. My life goal represents a personal commitment to make a meaningful contribution to society.	0.036	0.007	0.948***	0.934	0.905***	0.819
19. I feel a sense of personal responsibility to help others and/or improve society through the work that I will do.	0.093	0.115	0.744***	0.700	0.857***	0.735

Note. ESEM = exploratory structural equation modeling; CFA = confirmatory factor analysis. Target factor loadings are shaded.
*$p < .05$
**$p < .01$
***$p < .001$

ESEM versus B ESEM

As previously noted, B ESEM provides a slightly better fit to the data (according to fit indexes and lower values for the information criteria) than ESEM. The parameter estimates from this model are reported in Table 5. The B ESEM solution shows that the G factor is well defined by the presence of strong and significant target loadings from all but one (item 9) of the MAP items ($|\lambda|$ = .481 to .954). Over and above this G factor, the S factors related to the MAP subscales are also well defined through substantial target loadings ($|\lambda|$ = .481 to .954), suggesting that they do indeed tap into relevant specificity and add information to the youth purpose G factor. Further examination of the B ESEM solution reveals that few items present meaningful nontarget cross-loadings unless they are negative loadings. Because item 9 ("I am currently involved in activities related to my goals and aspirations") did not load significantly on the G factor, it was not included in additional analyses.

Latent variable correlation check with orientation for purpose

We correlated the B ESEM global factor of purpose with orientation for purpose, which yielded a significant correlation ($|r|$ = .304, $p < .001$).

Table 4. Standardized factor loadings for the Measure of Adolescent Purpose using B ESEM.

Items	Intention	Engagement	Prosocial Reasoning	G Factor	Uniqueness
1. I believe I can fulfill my goals and aspirations.	.706/.610***	-.177-.130*	-.095/-.008	.511/.561***	.635/.628
2. I have taken active steps to fulfill my life goal.	.874/.634***	.096/-.020*	.181/-.197**	.286/.600**	.995/.818
3. I plan for the future.	.737/.679***	.033/.077	-.173/.003	.594/.595***	.903/.873
4. I think about the possible outcomes of my decisions before deciding.	.352/.481***	.133/.114*	.078/.329***	.622/.562***	.600/.689
9. I am currently involved in activities related to my goals and inspirations.	.030	.974***	.049	-.043	.992
10. I am passionate about my goals and inspirations.	.173/.108**	.587/.468***	.139/-.170	.572/.751***	.854/.869
11. I spend a significant amount of time doing activities related to my life goal.	-.036/.044	.811/.955***	-.253/-.010	.349/.212**	.792/1.00
12. I feel emotionally invested in my goals and aspirations.	-.124/-.128**	.556/558***	.075/.088	.833/792***	.948/.901
17. The work that I do will have a positive impact on others.	-.068/.034	-.009/.024	.484/.359***	.781/845***	.861/.843
18. My life goal represents a personal commitment to make a meaningful contribution to society.	-.054/.007	-.068-.076	.536/.610***	.806/793***	.933/1.00
19. I feel a sense of personal responsibility to help others and/or improve society through the work that I will do.	-.012/-.030	-.030/.018	.390/.279***	.738/794***	.701/.711

Note. B ESEM = bifactor exploratory structural equation modeling; Target factor loadings are shaded. Because item 9, "I am currently involved in activities related to my goals and aspirations," did not load significantly on the G factor, it was excluded from further analyses. Estimates on the left of slash are with 11 items, estimates on the right are with 10 (excluding item 9).
*$p < .05$
**$p < .01$
***$p < .001$

Table 5. Latent correlations with G factor and omega reliability estimates.

Latent Subscales	Correlation to G Factor	Reliability ω
Purpose		
1. Intention		0.901
2. Engagement		0.867
3. Prosocial Reasoning		0.937
Civic Engagement		
1. Civic Action	0.573***	0.956
2. Community Issues	0.826***	0.932
3. Responsible Citizen	0.796***	0.857
4. Future Concern	−0.271***	0.804
5. Student Ownership	0.395***	0.873
Achievement Motivation		
1. Mastery Approach	0.545***	0.930
2. Mastery Avoid	0.316*	0.926
3. Performance Approach	−0.045	0.950
4. Performance Avoid	−0.233***	0.980

Predictive concurrent validity of the measure of adolescent purpose

After conducting CFAs on the civic engagement with sample with C from district Z (χ^2 (648) = 2,059.690, $p < .001$, CFI = .878, TLI = .861, RMSEA = .088 (90% CI: .084–.092), WRMR = 1.936),[2] we found that all but one (future concern) of the civic engagement subscales was significantly and positively correlated with the G factor (see Table 5). Future concern correlated negatively with the G factor.

Relationship between purpose and achievement goals

Our second research question asked if students who are purposeful with respect to their life goals and aspirations are also oriented to achieve academic goals. The CFA test of the motivation subscales yielded good fit (χ^2 (48) = 214.622, $p < .001$, CFI = .991, TLI = .988, RMSEA = .111 (90% CI: .096–.127), WRMR = .877). Similar to the analysis we conducted to establish predictive validity of MAP with civic engagement, we correlated the bifactor ESEM of MAP with latent variables of academic achievement goals using the motivation measure by Elliot and Murayama (2008). Results indicated that there was a significant positive correlation between the G factor of MAP and both types of mastery goals (approach and avoid) and a significant negative correlation between the G factor and performance avoid goals. There was not a significant correlation between the G factor and performance approach goals.

Discussion

The theoretical application of youth purpose to education is nascent, but it offers a useful framework for understanding and supporting student outcomes through its natural alignment with goal setting and postsecondary planning. By developing a purpose in school, students may be better positioned to identify and commit to short- and long-term postsecondary goals. Purpose provides a unique mechanism for developing self-regulation and coping strategies that enable students to persist with challenging tasks (Yeager et al., 2014). A student who does not understand or appreciate the importance of schoolwork might, through developing purpose, begin to view academic achievement as a pathway to fulfilling postsecondary goals. Furthermore, having purpose goes beyond personal benefits. The beyond-the-self quality of purpose can help promote prosocial endeavors that are essential for societal progress.

For educators interested in supporting the development of adolescent purpose, having an efficient and valid way to assess the construct is important. A key component of the present study was the development of a utilitarian measure of youth (adolescent) purpose that captures the three dimensions proposed by Damon, Menon, and Bronk (2003) and can be used by both researchers and practitioners in a variety of settings. This study built on existing youth-purpose theory and research by developing a new measure of youth purpose and validating the measure with bifactor exploratory structural equation modeling and predictive validity techniques. Additionally, we have taken steps to show that purpose is related to academic-achievement goals because both are goal-oriented constructs. We operationalized the dimensions of youth purpose as originally proposed by Damon, Menon, and Bronk (2003) to better capture purpose content in a way that distinguishes it from self-oriented life goals, and results provide evidence that our instrument measures a valid construct comprising intention, engagement, and prosocial reasoning for juniors and seniors in high school.

Our final measure of youth purpose contained 10 items, therefore, making it accessible to researchers and practitioners alike, as long as they take multidimensionality of the instrument into account. Our scale was developed with the assumption that the three dimensions (intention, engagement, prosocial reasoning) of youth purpose are central to one's sense of accomplishing something meaningful beyond the self, and we were able to differentiate between these theoretical tenets of youth purpose and one's orientation toward accomplishing a life goal (as categorized by interviews conducted with the revised youth-purpose scale developed by Bundick et al., 2006).

Results using bifactor exploratory structural equation modeling (BESEM) clearly indicate that our measure of youth purpose is an omnibus construct consisting of three S factors and one G factor. Thus, the multidimensionality of youth purpose necessitates a metric that takes into account the hierarchical nature of the construct and the possibility that indicators are likely to cross-load on different S factors (Morin et al., 2016). In other words, although each of the S

factors (intention, engagement and prosocial reasoning) are important with regards to their contribution to understanding purpose, they do not measure the same construct separately as they do together with the G factor.

Our results provided clear evidence that three dimensions (intention, engagement, and prosocial reasoning) were present in the Measure of Adolescent Purpose (MAP). Indeed, MAP items were found to reflect a combination of one global overarching construct, coupled with a variety of more specific dimensions themselves characterized by cross-loadings. Our results show that part of the variance not explained by the G factor is still meaningful from a substantive point of view. In other words, this shows that, over and above a global construct of youth purpose, specific components remain strong and relevant in their own right. For example, item 9, "I am currently involved in activities related to my goals and aspirations," loaded significantly on the engagement F and S factors for all models, but did not load on the G factor of the B ESEM. This item is highly representative of engagement as it is defined by the literature on youth purpose, but it does not cross-load with intention or prosocial reasoning at all. It is possible that the type of engagement captured by this item (i.e., being involved in goal-directed activities) can occur independently of one's intentions (i.e., planning for the future) and prosocial reasoning (i.e., feeling a sense of personal responsibility).

In a bifactor (CFA or ESEM) model, it is important to keep in mind that the G factor captures the variance that is shared across all items present in the questionnaire and, thus, provides a direct estimate of participants' global levels of youth purpose. In contrast, the S factors reflect the variance left unexplained by this global construct that is shared among the various indicators associated with the specific dimensions. In the present study, these S factors can be interpreted to reflect specific features associated with participants' personal intention, engagement, and prosocial reasoning that remain independent from their more global, or "holistic," levels of youth purpose, because these items still had significant loadings within their S factors. Taken together, these outcomes suggest that youth purpose is a multidimensional construct characterized by a global component but also some specific aspects, which can be both captured and measured by the MAP.

To better document the meaningfulness of the various factors retained in our final bifactor-ESEM solution, we examined the criterion-related validity of the MAP. We were able to correlate a dichotomous indicator of orientation for purpose, derived from categories normally generated by interview data, with global youth purpose. Additionally, the global youth-purpose construct was found to significantly and positively relate to four out of five subscales of civic engagement. Therefore, as shown in previous studies, a person with a purposeful life goal is likely to pursue civic interests beyond the self. The fifth subscale, future concern, was correlated negatively with global youth purpose but was also uncorrelated with the other subscales of civic engagement. Perhaps this is because items of the future concern subscale are more focused on general issues (e.g., concern about the direction of society) and the more future-oriented items on the MAP (mostly among the intention items) are primarily focused on one's own plans and thinking. Future research may want to apply other measures to capture future orientation as a validity check, such as the Future Orientation Scale (Steinberg et al., 2009) or the Seginer (2009) Prospective Life Course Questionnaire. Additional research may also explore correspondence between interview data and MAP data for the same sample to determine how they differentially contribute to our determination of whether students can be categorized as purposeful/not purposeful or if a survey is more appropriate for understanding youth purpose as a developmental continuum that evolves over time. Similarly, other measures besides civic engagement should be tested as valid outcomes to global youth purpose.

In the model testing the proposed relationship between youth purpose and achievement motivation, global youth purpose was significantly related to all four measures of the AGQ-R: positive correlations for youth purpose with mastery subscales (approach and avoid) and negative correlations for the performance avoid subscale. Since having a purposeful life goal is seen as adaptive

both in and out of school, one might expect that youth purpose would be associated with adaptive achievement beliefs such as mastery-approach and performance-approach goals. However, the way the mastery items are conceptualized in the Elliot and Murayama scale (2008) is task specific, as opposed to intrapersonal, and mastery-avoid items have failed to show reliability in other studies of high school students (Madjar, Kaplan, & Weinstock, 2011). Since these items appeared reliable in our sample, it's possible that the omnibus measure of youth purpose makes students more conscious of task objectives rather than goals of peer comparison, since our scale contains items specific to students' purposeful goals. Therefore, our findings indicate that students with strong ratings of purpose are task and learning oriented as opposed to having concern about performance relative to their peers. More research needs to be conducted to tease out whether these differences are due to measurement error or are meaningful ways students perceive "purpose" as a goal. Until these issues are investigated, researchers who want to measure youth purpose using the MAP may want to explore relationships with other motivation variables that have different types of goal content.

Limitations and directions for future research

One limitation of this study is that our conceptualization of purpose was focused on one's degree of noble purpose, with a distinct need to engage in the world for reasons that are prosocial, and not sensitive to goals that are neutral or antisocial, as they are Bundick et al.'s measure (2006). Future researchers may wish to compare and contrast measures of ignoble, neutral, and noble purpose and examine these in the context of how all life goals (in the presence or absence of prosocial reasoning) affect emotional, cognitive, and identity development over the lifespan.

Another limitation of the present study was the decision to test for concurrent predictive validity using civic engagement. Civic engagement is only one form of potential beyond-the-self engagement and depending on the content of one's purpose may not reflect an aligned behavioral outlet for many other non–civic-related, beyond-the-self purposes (such as artistic or spiritual purposes). Similarly, model testing the MAP as a correlate of achievement motivation—particularly as measured by the AGQ-R—is only conceptually similar insofar as the survey respondent's purpose content aligns with school-related goals. To address these limitations and build on this work, future studies might consider coding students' life goals according to categories related to school, civic involvement, or other types of purposes (such as artistic or spiritual) and examining the correlations between the MAP and civic engagement for those with civic-related purposes and between the MAP and achievement motivation for those with school-related purposes. It would also be helpful to test for measurement invariance of purpose between boys and girls and between middle school students, high school students, and college-aged students. Our limited sample prevented us from conducting these analyses, and although our sample was very representative of the southwestern United States, our findings may only be generalizable for students attending schools with high Latinx enrollment.

Researchers and practitioners who wish to use this instrument for further application may want to test additional models of the youth-purpose measure using B ESEM methods against other relevant educational constructs to establish further validity evidence or to consider using this measure to test the efficacy of interventions designed to improve/increase a students' sense of purpose in school contexts. Our aim is for future research to utilize the instrument to predict cognitive and/or behavioral outcomes of youth purpose for all students, not just those who have high commitment and exploration goals. Additionally, practitioners can use the instrument to assess the efficacy of interventions designed to capitalize on students' development of youth purpose, such as career development and service learning programs. Future researchers may wish to compare the validity of our measure with other existing quantitative (e.g., Bundick et al., 2006) and qualitative measures (Andrews et al., 2006) of youth purpose. Because our sample size was

small, additional research may want to investigate the generalizability of our model to larger and more diverse samples.

While the Measure of Adolescent Purpose (MAP) provides a solid foundation for operationalizing the full Damon et al. (2003) definition of purpose, additional work is required to flesh out statistical, measurement, and contextual issues that could not be addressed in the parameters of this study. For example, our fit statistics (such as higher than normal RMSEAs) for some models were limited by sample size and the number of parameters tested. Also, other measures may be used to check for validity to account for shortcomings in the civic engagement scale (i.e., future orientation). Additionally, because our sample was limited to students residing in one area of the southwestern United States, a nationally representative sample should be tested, perhaps with enough representative groups to test for measurement invariance between gender and ethnicity. Finally, we believe that in conjunction with other measures, youth purpose is an important construct for intervention research that focuses on developmental models of change both in and out of school contexts. These are just some of the next steps to consider toward revising and further advancing the MAP.

Conclusion

For more than a decade, research on the development of youth purpose has indicated the need for more-rigorous measurement of the construct. The findings from our study yielded a valid instrument that captures the theoretical dimensions of youth purpose as originally described by Damon et al. (2003). The 10-item instrument can be used by both researchers and practitioners to assess youth purpose and study the efficacy of interventions or instructional practices designed to enhance purpose-related outcomes. Our findings specifically suggest that civic engagement and achievement motivation goals are theoretically and empirically linked with youth purpose and could therefore be the target of interventions meant to improve youth purpose and vice versa. The findings from our study also suggest that these relationships are significant even when orientation for purpose is taken into account.

Notes

1. Although the desired value of RMSEA should be .06 or below according to Hu and Bentler (1999), more recent research indicates a lack of empirical support for the use of .06 as a universal cutoff value to determine adequate model fit; RMSEA as an index of fit is rather dependent on model specifications, degrees of freedom, and sample size (Chen, Curran, Bollen, Kirby, & Paxton, 2008). Specifically, models with any misspecifications, large degrees of freedom, and/or a sample size smaller than 800 will likely yield a higher percentage of rejected models on RMSEA values alone. Therefore, multiple indices should be us used to reach decisions of model fit (Bentler, 2007, Bollen & Long, 1993, Tanaka, 1993).
2. The fit of all five subscales of civic engagement was poor and improved somewhat when we eliminated future concern from the model, which did not correlate with the other subscales (χ^2 (246) = 877.636, $p < .001$, CFI = .934, TLI = .926, RMSEA = .096 (90% CI: .089 - .103), WRMR = 1.682. Our fit was still limited likely due to the number of parameters in the model relative to sample size.

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Appendix

MAP Questionnaire

I was born in:_____ (yyyy)

My ethnicity is (check all that apply):

- Caucasian
- African American
- Hispanic or Latino
- Asian American
- Native American
- Other or not listed

My sex is: M F

I am in grade: 11 12

My current GPA is:

3.5-4.0
3.0-3.49
2.5-2.99
2.0-2.49
<2.0

Directions: Please read each statement carefully and answer honestly – and to the best of your ability – how strongly you agree or disagree by circling the option that best describes how you feel right now, using the scale below.

Many of the statements use the terms "life goal," "aspiration," or "goals and aspirations." These terms refer to your future occupation such as a college major, a career, or any ambition you have that extends beyond high school. Another way to think about your life goal or aspiration is as your life's work

	1	2	3	4	5
I have a clearly defined life goal	StronglyDisagree	Agree	Uncertain	Agree	Strongly Disagree

I aspire to become:_____

My ***primary*** reason or motivation for fulfilling my life goal is:

- It is interesting to me; I think I will be good at it [Intrinsic, Self-Oriented]
- I want to help others and make the world a better place [Intrinsic, Other-Oriented]
- I want to have a secure job/comfortable income [Extrinsic, Self-Oriented]
- I want to make a positive contribution to my community and/or society [Extrinsic, Other-Oriented]

Item	Stem	Exploratory Factor Analysis Loadings				
		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1	I believe I can fulfill my goals and aspirations. (I)	0.506*	−0.028	0.088	0.122	−0.024
2	I have taken active steps to fulfill my life goal. (I)	0.713*	0.147	−0.053	0.093	−0.038
3	I plan for the future. (I)	0.622*	0.101	0.093	−0.088	0.196*
4	I think about the possible outcomes of my decisions before deciding. (I)	0.434*	0.053	0.203*	−0.053	0.208*
5	My goal is a reflection of who I am. (I)	0.343*	0.345*	−0.102	0.016	0.360*
6	I desire to make a meaningful contribution to society through the work that I will do. (I)	0.121	−0.054	0.366*	0.336*	0.199*
7	My schoolwork is preparing me to fulfill my goals and aspirations. (I)	0.296*	0.025	0.222*	0.110	0.099
8	It is important to me to use my abilities and talents their fullest potential. (E)	0.265*	0.291*	0.295*	0.139	−0.100
9	I am currently involved in activities related to my goals and aspirations. (E)	0.153	0.720*	−0.016	0.048	−0.138
10	I am passionate about my goals and aspirations. (E)	0.213*	0.507*	0.021	0.268*	0.151
11	I spend a significant amount of time doing activities related to my life goal. (E)	−0.094	0.808*	0.160*	−0.032	0.013
12	I feel emotionally invested in my goals and aspirations. (E)	0.084	0.373*	0.118	0.218*	0.212*
13	I currently volunteer for an activity or organization that helps other people and/or society.(E)	−0.103	0.076	0.754*	−0.054	−0.014*
14	I am willing to volunteer for an activity or organization that helps other people and or society. (E)	0.075	0.039	0.548*	0.282*	0.051
15	I believe that it is possible to help others and/or improve society through the work that I will do. (PR)	−0.080*	0.020	0.018	0.994*	−0.016
16	It is important to give joy to my family or those around me through the work that I will do. (PR)	0.113	−0.048	0.160	0.172	0.323*
17	The work that I do will have a positive impact on others. (PR)	0.110	−0.059	−0.138*	0.335*	0.643*
18	My life goal represents a personal commitment to make a meaningful contribution to society. (PR)	−0.034	0.014	0.169*	0.007	0.842*
19	I feel a sense of personal responsibility to help others and/or improve society through the work that I will do. (PR)	0.033	0.000	0.259*	0.226*	0.443*

Note: I = Intention, E = Engagement, PR = Prosocial Reasoning