

Fixed and Growth Beliefs about Different Ability Domains among College Students

Autumn Martin – Undergraduate Researcher, Dr. Tom Brinthaupt – Psychology Department, Dr. Ryan Korstange - University

Studies Department
Middle Tennessee State University

Abstract

Mindset is a psychological theory that differentiates between two fundamental beliefs about how individuals perceive their basic abilities. There are two types of mindsets that an individual could present with. Individuals who are perceived to have a *fixed* mindset view their abilities as something that is innate and unchangeable, while those who are perceived to have a *growth* mindset view their abilities as having the possibility for growth. In this research, I conducted two studies that examined beliefs about different skill and ability domains.

Introduction

Fixed and growth mindset is a growing scholarly topic that relate to college success, since the transition to college can be a challenge in multiple aspects. Intelligence is not the only domain that should be considered when looking at overall college success. This project expanded the idea of mindset over multiple domains that could potentially impact a college student's ability to achieve and succeed. Along with intelligence and social skills, I examined three other domains: artistic abilities, athletic abilities, and leadership skills. The specific research questions included (1) whether there is differentiation in mindset depending upon specific domains or if mindsets can be considered a general trait, (2) any potential gender differences in the domains (particularly leadership skills, athletic abilities, and intelligence), and (3) if mindset is domain specific, whether there are specific domains that show a higher fixedness over the others (specifically in intelligence, leadership, and artistic abilities).

Method

Study 1

Participants

Participants were college students at Middle Tennessee State University ($N = 211$, 110 women, 99 men, 1 no answer, 1 were other). A requirement to participate in this survey was to be at least 18 years of age. These participants were recruited through MTSU's psychology research pool. Most of the participants were lower-division students, with the highest percentage being freshman (55.9%) and sophomore (29.4%). Ethnicity reflected the general composition of MTSU undergraduates, with most participants identifying as African-American (16.6%) or White (63.0%).

Materials

Data were collected relating to a multitude of ability domains relevant to college students. These domains included: intelligence, artistic ability, athletic ability, social skills, and leadership skills. Based on Dweck's mindset instrument (DMI) (P'Pool, 2012), I created a parallel mindset measure for each domain with eight items per domain. Four statements are worded toward a fixed mindset and the other four items worded toward growth mindset. An example of a fixed parallel item for social skills is, "You can learn to get along with other people, but you can't really change your basic social skills." Respondents rated the items using a 5-point Likert scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*). Higher scores reflected a greater "growth" orientation. Along with the mindset measure, I created a 3-item self-assessment that measured students' overall beliefs within the different domains and to assess their experience (or training) within those domains. The three questions (for the leadership domain) were "Do you consider yourself to be a leader?" "Do you have experience with being a leader?" and "Have you had any specific training for being a leader?" The survey ended with a short demographic section which included age, gender, ethnicity, and academic year (freshman, sophomore, junior, senior).

Procedure

I used a Qualtrics online survey in order to administer the survey. All participants completed an informed consent page before beginning. Participants who consented were given the mindset survey, self-assessment questionnaire, and demographics. Qualtrics randomized the mindset domains within the survey, with demographics always at the end. The entire procedure took participants approximately 10-15 minutes to complete.

Study 2

Participants

Participants in this project were MTSU college students ($N = 191$, 129 women, 59 male, 3 other) recruited through the Psychology Department's mass testing. In order for students to participate they had to be at least 18 years of age and an MTSU student. Most of the students who participated were lower-division students with the highest percentage being freshmen (65.4%), and sophomores (22%). Ethnicity being what made up a large general portion of these MTSU undergraduate students. For this study most of these undergraduate students identified as White (61.8%) and African-American students (33%).

Materials

Data were collected regarding the multiple domains from Study 1, with participants rating whether they viewed each domain as an "ability" or a "skill." The lay definitions are that an "ability" is something that an individual is born with, whereas a "skill" is something that an individual is said to be able to develop with time and practice. We created a 10-item measure based on the 5 Study 1 domains. After reading the definitions, participants rated whether each domain was an ability or a skill, using a 7-point scale (0 = *Completely an Ability*, 6 = *Completely a Skill*). Then, participants rated each domain with respect to how likely "a person can become really good in that domain (e.g., through work, practice, learning, etc.)," using a 5-point scale (0 = *Not at all Likely*, 4 = *Very Likely*).

Procedure

This survey was administered on campus in a paper format during the semester's Department of Psychology mass testing. All participants filled out a consent form before beginning the survey. Participants who consented to the mass testing survey had to answer questions from multiple research studies as well as a variety of demographic questions. The entire survey took approximately 15-20 minutes to complete.

Results

Study 1

I examined the correlations among the mindset domains. A bivariate correlation test showed that each domain was positively correlated with each other (Table 1). These relationships suggested that there is at least some general overlap of mindset perceptions across multiple domains.

Table 1. Correlations between Mindset Domains

		Intelligence	Social	Leadership	Athletic	Artistic
Intelligence	Pearson Correlation Sig. (2-tailed) N	1 211				
Social Skills	Pearson Correlation Sig. (2-tailed) N	.354** .000 211	1 211			
Leadership Ability	Pearson Correlation Sig. (2-tailed) N	.362** .000 211	.467** .000 211	1 211		
Athletic Ability	Pearson Correlation Sig. (2-tailed) N	.424** .000 210	.261** .000 210	.353** .000 210	1 210	
Artistic Ability	Pearson Correlation Sig. (2-tailed) N	.252** .000 210	.294** .000 210	.436** .000 210	.408** .000 209	1 210

Results

Study 1

Table 2. Gender Differences in Domains

I am....	N	Mean	Std. Deviation	Std. Error Mean
Intelligent Female	110	35.67	7.149	.682
Male	99	35.01	9.268	.931
Social Female	110	33.72	6.661	.635
Male	99	34.36	7.863	.790
Leader Female	110	33.92	6.783	.647
Male	99	34.03	8.237	.828
Athletic Female	109	32.74	8.629	.826
Male	99	34.58	8.276	.832
Artistic Female	110	31.30	8.505	.811
Male	98	33.14	8.523	.861

To compare the domains for gender differences, I used an independent *t*-test. Table 2 shows the results from this test. There were some minor variations, but none of these differences reached statistical significance. These results did not support my hypothesis on gender differences in skill or ability self-perceptions.

I also examined the correlations between participants' ratings of the self-assessment questions and the mindset items. The only significance I found was with social skills and artistic ability. Social skills ratings showed significance in two out of the three self-assessment questions while all three of the self-assessment questions showed significance with the artistic ability domain. This showed that with social skills, students believed themselves to be sociable and having experience with being sociable, but not saying that they have had any formal training for social skills. With artistic ability, students who believed themselves to be artistic also reported having experience in art, and having had some type of specific or formal training in art.

In summary, the data showed variation over the multiple domains. This pattern of results suggests that mindset beliefs may be domain specific rather than a general assessment that is cross-domains.

Study 2

Table 3. Skill vs. Ability

Skill or Ability	N	Mean	Std. Deviation
Athletic	191	4.45	1.367
Art	191	4.09	1.691
Leader	191	4.24	1.661
Intelligence	191	4.21	1.626
Social	141	3.93	1.681

To look at Study 2 I looked at the means and standard deviations to see if these college students viewed the multiple domains as a skill or an ability. Table 3 shows the data for study 2. I was able to see that overall most of the students viewed each of these domains more as a skill set.

Discussion

This research project expanded the concept of mindset theory by examining multiple domains that college students may encounter during their college careers and comparing scores on those domains. Student transition to college is difficult and understanding the way they perceive themselves in multiple domains can be an asset.

This research found that students show similarities in whether they are growth or fixed with respect to a wide range of skill or ability domains. There is slight differentiation in the different domains which supports the idea that mindset might be somewhat domain specific. When the domains were compared by gender, the data showed that there was little difference. The self-assessment items showed significant relationships for social skills and artistic ability. These results also support my hypothesis that some facets of mindset might be domain specific.

For Study 2, we wanted to look at if students viewed the different domains from the main study, as either a skill set, or an ability. As well as seeing if they believed the specific domains from the main study have the potential to be developed or not. This study showed that most students view the multiple domains as a skill set. There were slight variations between the domains but they all were viewed more as skill sets. This study also showed that these college students viewed each domain as being able to be developed with some form of practice.

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