Sensemaking, Metaphors and Higher Education: Understanding Students' Perspectives and Behaviors

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Abstract

In recent years, there has been much debate surrounding the purpose and desirable out comes for higher education. This debate is illustrated in the different metaphors academics use to describe and makes sense of higher education. The goal of this study was to gain more insight into how college students understand higher education, and if their perceptions of the goals and purpose of higher education aligns with the scholarly literature. The study did this by examining metaphors. Further, the study looked to see if any metaphors are associated with specific educational outcomes. Using a mixed-method approach the study concluded that students do not make sense of higher education in the same way academics do, and that some metaphors are associated with desirable behaviors and outcomes. The study concludes with a discussion of the implications of the findings.

INTRODUCTION

Education is a major American value that dates back to the Puritans and the nation's founders. The Puritans required school because they wanted their children to be literate enough to read and comprehend the laws of the land (Postman, 1995). Today, the goal of education is to help students learn and grow into competent adults who will function in society. Education still a central part of American culture and fundamental aspect of children's lives. Grade school is compulsory for children, but many Americans strive to extend their education beyond the mandatory time and enroll in higher education to pursue college degrees. In fact, the National Center for Education Statistics predicted 21.6 million students would attend American universities in the fall of 2012.

Despite the value placed on a college degree, in recent years a variety of critiques have been articulated about the state of higher education. This is significant because the way in which higher education is understood is changing. Traditionally, the purpose of higher education was to cultivate the minds of young adults by teaching skills like critical thinking, written communication, and complex reasoning. During the Colonial period, higher education grew based on the fact that the newly established United States needed to create educated citizens. At that point schooling was only open to males, and was usually too expensive for the general population. Higher education became more accessible after 1862 when the Morrill Acts were passed with the intention of creating an avenue to educate those in rural communities. Education access was expanded further after the GI Bill was established following the Second World War, allowing those who had served in the military to attend university. This bill challenged the social stratification at the time. On top of that, the developments of student loan programs and community colleges have also

opened the doors for thousands of other student to gain access to education as well (Noftsinger & Newbold, 2007).

Throughout the history of American higher education it was expected that curriculum would be academically challenging (Arum & Roska, 2011). Recently, claims have been made that universities are not challenging enough and are not properly preparing students for life after college. Delbanco (2012) argues that institutions of higher education elongate adolescence, are under-resourced, and that many students are not prepared coming into the school as a result of subpar secondary education. As a result, students do not thrive properly in college, nor are they prepared to succeed once they leave the institution. Arum and Roksa (2011) also suggest academic performance is decreasing. They point out that time spent on academic activities has fallen from forty hours per week in the 1960s to only twenty seven hours as of 2003, which implies that students are not working hard enough. Perhaps most disconcerting is the argument that although students attend university to learn, they do not sufficiently cultivate necessary skills like critical thinking, reasoning, and writing. According to Arum and Roksa, the reason for this is because the goal of higher education has shifted from learning these basic, necessary skills to a priority on socializing and preparing for a career. Obviously, skills are necessary to land a job, but Arum and Roksa argue learning is not prioritized as it used to be.

Arum and Roksa are not alone in this observation that the purpose of higher education has shifted. Star and Hammer (2008) agree there is an increased emphasis on future employability. Even students' attitudes support this shift as, Brites, Magalhaes, and Sa (2012) reported. Their study found that the most common reasons for students to choose their university was "to prepare for an attractive career," or "because it had the

program I wanted." Both of these responses suggest that future employability was a major motivating factor for obtaining an education, while individual moral, and skill development were less influential.

There is clearly a tension between the purpose of higher education as a place to cultivate intellectual skills and a place to prepare for a career. However, this lack of consensus is not necessarily negative. Rather, it illustrates that there are multiple ways of understanding and making sense of higher education. As Readings (1996) states, "the wider social role of the university as an institution is now up for grabs. It is no longer clear what the place of the university is within society" (p. 2). At a time when the role the university is debated, it is beneficial to understand the different ways people, and especially students enrolled in the universities, make sense of higher education. It is particularly useful to examine the impact of language and metaphors on the reality of higher education and student behaviors. Social realities are constructed, made sense of, and maintained through language (Lakoff & Johnson, 1980; Sambre, 2010; Snow, 2001). Examining the language used to describe higher education and the experiences of students will lead to a deeper understanding of how students make sense of their experiences, and illuminate which aspects of higher education are valued and privileged. In the end, such understandings will provide insight into how language may influence students in universities.

LITERATURE REVIEW AND RESEARCH QUESTIONS

The purpose of this study is to gain a deeper understanding of the language surrounding higher education, how students make sense of higher education, and the potential impacts language and metaphors might have on behavior. To do this, I first want

to gain insight into the metaphors students use to describe their experience in higher education and see how the responses relate to metaphors found in other literature. On top of that, the study will investigate students' opinions on ideal outcomes of higher education, and their behaviors relating to academic participation. Ultimately, the goal is to understand the implications of particular language use, and determine if certain metaphors are related to specific behaviors.

Ideal Outcomes of Higher Education

There is not a great deal of consensus about what the goals of higher education should be, however the literature suggests some ideals of what should be accomplished. Scholars highlight traditional values as important. Such skills include critical thinking, writing, and complex reasoning. In fact, 99 percent of college faculty claim that critical thinking is "essential" or "very important" to undergraduate education, while 87 percent would claim the same thing about writing skills (Arum & Roksa, 2011). These characteristics are measured by the College Learning Assessment (CLA). The goal of the measurement is to determine whether or not a student has improved at these skills (Arum & Roksa, 2011).

Desirable outcomes of higher education are not limited to traditionally valued skills. Arum and Roksa expand on the classic skills and point out that university is a place to learn and gain cultural capital. Although schools strive to make this happen, it still appears that learning gaps across race and socioeconomic class are maintained once the students enter the university. They claim that a reason for this may be that schools do not teach cultural competencies, which just means that less advantaged students are forced to adjust on their own, and they generally maintain their rank in the class. A way to counteract this could be

through extracurricular activities. Stuber (2009) found extra curricular activities are a way for students to build cultural competencies in college. Additionally, Stuart, Lido, Morgan, Solomon, and May (2011) found that extracurricular activities were seen as valuable from student's perspectives, as well as from employers' views. The study found alumni considered extracurricular activities to be influential in developing self-identity, social networks, and career connections, which are all seen to be important outcomes of the collegiate experience from the student's view. Employers were found to stress the value of extracurricular activities for building cultural competencies, cultivating leadership, and promoting commitment to an organization. On top of that, Terence Tai-Leung, Ka-Shing, and Pik-Hung (2009) determined that students who were active in extracurricular activities were more likely to attend class. This information implies that extracurricular activities are an important part of the collegiate experience because they relate to numerous desirable outcomes of higher education.

Besides extracurricular activities, another important aspect of higher education is class attendance. This is seen as such a necessary part of learning because class attendance is associated with grades. Generally, students who have better attendance seem to have better grades. Attendance is a better predictor of grades than standardized tests scores, motivation, or study habits (Credé, Roch, & Kieszczynka, 2010). While attendance is an integral part of the learning experience, so is class participation. McKeachie (1970) highlights a positive relationship between participation in the classroom and learning, motivation, and problem solving skills. Smith (1980) reinforces this, claiming that participation is positively related to critical thinking, as well as perceived value of the course material, and interest in the intellectual components of college. Despite this, Nunn

(1996) found that only about 2.28% of class was spent on classroom participation, and only about 25% of the students were actively participating. The study does not focus on class structure, teacher, or students' motivations as a correlation to grades. However, Sommer & Sommer (2007) found that offering credit for participation in classroom discussion improved the quality and level of the discussion. Dallimore, Hertenstein, and Platt (2004) agree with these findings, claiming that offering credit for participation can enhance the experience in the classroom.

Besides these aspects of the college experience, Arum and Roksa address the fact that college is an important social experience as well. Not only that, but social interactions with both faculty and peers can have a profound effect on the student's learning. Interactions with faculty can have a very positive influence on a student's experience. The research suggests that it is especially beneficial if there is some type of student-faculty mentorship (Limberg, 2007). Equally as influential are peer relationships. These can impact the amount of learning that takes place because these interactions can either create environments that promote learning, or ones that hinder it. Peer interaction is influential in issues such as choosing courses, and deciding what other activities the students will fill their time with, and it is associated with higher critical thinking scores, and other intellectual pursuits (Smith, 1980).

Most importantly, there should be improvement in skills that students are learning, and ultimately the students should graduate with a degree. Sadly, according to Arum and Roksa, incoming students are so ill prepared, and unable to thrive that on average, they improve their critical thinking and writing by only 7 percent within their first two years of college. This is especially interesting given that faculty rates these skills as so important.

Additionally, only 34 % of students finish a bachelors degree in four years (p. 54). So, students are slowly graduating, and the ones that finally do don't learn as much as they should. However, students themselves should be committed and invested in their learning, and in some sense they are. Although students spend less time studying (Arum & Roksa, 2011) they believe in preparing for a career (Star & Hammer, 2008). In the end, improvement and cultivation of academic and social skills, while also preparing for a career, appear to be final goals of higher education. Clearly, the ways in which scholars are talking about higher education underscore the importance of developing intellectual skills. This demonstrates the importance of language advancing particular values. Still, the power of language and its role in reality requires a deeper understanding.

Metaphors and Sensemaking

On the surface level, language is important, as it gives us the tools to theorize the world (Sambre, 2012). Symbolization highlights the processes through which events, artifacts, and people, become objects of orientation and elicit particular actions (Snow, 2001). While language is a fundamental aspect of understanding realities, humans engage in other processes, such as sensemaking. Weick (1995) explains, "It literally means the making of sense" (p. 4). People use words in sensemaking to construct settings that have real consequences, which allows them to have some control over their situation (Weick, 1995). Sensemaking can take place at the individual level, or it can be a social activity (Weick, 1995). This is particularly interesting for the scope of this study because of the current state of higher education. On one level, society is struggling with how to make sense of the university and its role, but on another level, no research has been done to

investigate the ways in which university students individually make sense of their experiences.

Weick (1995) outlines seven characteristics of sensemaking that all have relevance to this study. First, sensemaking is grounded in identity construction. Weick illustrates this by using the concepts of self. He says "the sensemaker is an ongoing puzzle undergoing continual redefinition, coincident with trying to find which self is appropriate" (pg. 20). This concept has importance to university students as they try to make sense of their college experience, as well as their own identity in relation to the school. Next, Weick that claims sensemaking is retrospective, meaning that people reflect on previous experiences to make sense of situations. However, because this is retrospective, it may happen that the meaning of the events has changed for the participants from the original time of the event. Sensemaking is also enactive. By this, Weick means people often produce the parts of their environment. Students can create an environment at the university based on how they construct frameworks and make sense of learning. The point of this study is to understand how students construct frameworks for school, and determine what aspects of education students value. Weick also emphasizes that sensemaking can be done on an individual level, but it is really more of a social process. Again, this is relevant to the scope of this study because the way in which students collectively conceptualize higher education can have a profound impact on the overall reality of the school. Especially important to sensemaking is the fact that it is ongoing- it never begins or stops (Weick 1995). This is clear based on the state of higher education and the way in which it is made sense of is constantly changing. Perhaps this change is a bit more drastic at the present moment than it historically was. Weick also stresses that sensemaking is based on extracted cues, which

means people recognize parts of their world that imply particular outcomes and then incorporate these into their understandings. This is currently happening in discourses about higher education. Scholars are looking at parts of education, like the fact that there seems to be a decrease in learning, and adjusting the concepts of what higher education is to include these cues. Finally, Weick points out that sensemaking is created on the basis of plausibility rather than what is realistic. This is important in the scope of this study because it implies that just because students make sense of education in one way, does not mean it is based upon accurate ways of the world.

While sensemaking is a natural process, it is tricky because it involves elements of agency and invention to create and structure the frameworks (Weick, 1995). However, Shotter (1993) suggests that rather than generate new frameworks or referencing scholarly theories, people utilize metaphors to create frameworks for sensemaking. So, while sensemaking itself is not a metaphor, metaphors can be used as a tool to make sense of the world. Lakoff and Johnson (1980) point out that metaphors are far more than just a poetic device. Rather, our entire conceptual systems are metaphorically based. Metaphors structure how we perceive, think, and what we do. They are useful because they allow us to understand one concept in terms of another, and are useful in the process of sensemaking. Additionally, they are constructed in a way that make particular aspects of the situation more salient while minimizing the aspects that do not fit in with what the metaphor is attempting to express. "Metaphors connect realms of human experience and imagination. They guide our perceptions and interpretations of reality and help us formulate our visions and goals. In doing these things, metaphors facilitate and further our understanding of the world" (Cornelissen, Oswick, Christensen, & Phillips, 2008, p. 8). All language helps to

create reality, and metaphors are a language tool that can do this in a more vivid or creative way.

Lakoff and Johnson illustrate this using the metaphor "argument is war." They claim that when we focus on the battle aspects, like winning the argument or defending our case, we lose sight of other components of argument that can be important, like the opportunity for cooperation (p.10). This further exemplifies how metaphors are able to guide thoughts and actions. Illes (1999) expands on this idea, claiming that metaphors are useful for understanding the world because they can help us transform ideas, create visions, build uniqueness, foster social relationships, and align values. Lakoff and Johnson take this concept farther and claim that metaphors will create and reflect cultural values. They state that values advanced by metaphors are partly based on subculture and individual beliefs, but ultimately, "our values are not independent, but must form a coherent system with the metaphorical concepts we live by" (p. 22). Essentially, we can use metaphors to help us create systems in which our values make sense.

Metaphors obviously guide thinking, values, and actions, and they are imperative to human sense making in that way. However, Lakoff (2004) argues that metaphors can also be used to promote social change. Frames and metaphors structure perceptions, and if the frames can be changed, then so can the perceptions. Lakoff claims that the way to do this is through language, because language activates ideas. Similarly, metaphors can be used to unite large groups towards a common goal (Boyd, 2003). The issue is, that in order to activate new frames it is crucial that new language is also used. As Lakoff puts it, "Thinking differently requires speaking differently" (p. xv). As Weick argues, sensemaking is an ongoing process; therefore it is reasonable to assume the world can be reconstructed using

language. If metaphors and frameworks can be reconstructed to create social movements, then it would be logical to conclude that metaphors surrounding higher education could be redesigned to promote ideal outcomes and synthesize goals of higher education. Interestingly, metaphors of higher education have received attention from scholars.

Education Metaphors

As already mentioned, metaphors are useful in making sense of nearly anything, including higher education. In fact, scholars have already outlined a variety of metaphors describing higher education. Intriguingly, these metaphors do not seem to be particularly cohesive; they all promote and value different aspects of the higher education experience. The first category of metaphor that appears in the literature are those that relate to a corporation or a business. One example is the university as an economic enterprise (Ritchie, 2002). In this metaphor, customers (the students) pay for goods and services, which are degrees and classes, and their work has economic value. Readings (1996) says that this is understandable because "everything in the lives of students encouraged them to think of themselves as consumers" (p. 11). Hoffman and Kretovics (2004) offer four other types of corporate metaphors. The first is the "student as a product." This holds that the student is an entity that the university produces once it graduates from the school. Even Readings (1996) experienced this phenomenon as an employee at Syracuse University. He discusses how the university developed a "corporate" logo that was saved for official, academic documents. He claims that the logo was a symptom of "the reconception of the University as a corporation, one of whose (products) is the granting of degrees" (p. 11). Next is "students as employees." In this metaphor, the students are seen as working for the school because as students they are fulfilling a role in the university. Another metaphor

they offer is similar to Ritchie's enterprise metaphor, and that is "students as customers." Again, in this model, the students are viewed as paying for a service. Then, they identify "students as partial employees" as the most accurate description for higher education. They claim this is so because the student is paying for a service, but at the same time he or she is participating in the production of knowledge and the education process. These corporate metaphors can be seen as a problematic way of conceptualizing education, because they don't highlight desirable aspects of education like hard work, learning, and skill development. When students are treated as part of a corporation, the emphasis on hard work is minimized. Many of the metaphors suggest that a student can pay the price, and receive the degree without much in the way of hard work.

The next group of metaphors offers a perspective that is geared towards mentoring. Fluermerfelt, Ingram, Brockberg, Smith (2007) hold that a mentor/novice structure will more effectively facilitate growth, and allow for more individualized attention, which will help the student to better understand and make connections between the university and the outside world. Ritchie (2002) also agrees that a mentoring structure would be ideal and claims that a monastery is an accurate metaphor for higher education. This metaphor is in contrast to the corporate metaphors because it does highlight some ideal outcomes of higher education. As mentioned earlier, a relationship with a professor through discussion and office hours (Limberg, 2007) is beneficial to the student's learning.

Then there are some other miscellaneous metaphors that don't quite belong in either of the categories. One is the university as a village (Illes, 1999). This metaphor assumes that all those in the university can see their own individual role. Because of this, it will lead to more innovative curriculum rather than the highly specialized and curriculum

that is becoming prevalent today. Illes also compares the university to medicine. In the medical field there are specialized doctors who look out for the health of everyone, and this same thing is happening with professors in higher education. Illes argues that this is not ideal- all parts of the organization should be working together. While this community metaphor does promote the social interactions that are desirable in the university, it still fails to privilege skills like critical thinking and written communication. Finally, Guzmen and Trivelatio (2011) explain the acquisition metaphor and the participation metaphor. The first is the idea that students attend university to gain or acquire something, while the second supports that students should go to college and actively participate in constructing and gaining their knowledge. Of all the metaphors I have discussed, these emphasize cultivation skills and active participation through activities like discussion and extra-curricular activities. That being said, the metaphor is rather ambiguous as to what students are obtaining, thus it is up for interpretation.

It is important to note that these are simply the metaphors discussed in scholarly literature and they do not account for other metaphors that may crop up in day-to-day discourses. Other examples of metaphors that scholars have not mentioned include: college is a journey, college is a bubble, college is a party, or college is rollercoaster. There will never be one correct metaphor for higher education, but because metaphors make specific aspects of a scenario salient, it is reasonable to suggest that certain metaphors may promote more ideal behaviors in students than others. At a time when the institution of higher education is at a crossroads, this study seeks to understand the ways in which students make sense of higher education. It specifically seeks to understand if students make sense of higher education in the same ways that academics do. Further, it will

investigate a relationship between metaphors students identify with and intellectual outcomes and desirable behaviors associated with higher education.

RQ1 Do the metaphors college students use to describe higher education align with metaphors the research outlines, such as corporate metaphors, or college as a village or community?

RQ2 How do metaphors students identify with relate to student's perceptions of how skilled they are in critical thinking, complex reasoning, and written communication?

RQ3. How do the metaphors students identify with relate to their participation in office hours, class discussion, and class attendance?

H1a Students who identify with industrial metaphors will not value intellectual outcomes of higher education like critical thinking, complex reasoning, and written communication.

H1b Students who identify with future orientation metaphors will value intellectual values of higher education.

H3a. Students who study business will identify with industrial metaphors

H3b. Students who study business and STEM will identify with industrial majors

H3c. Students who study humanities will identify with social and communal metaphors

H3d. Students who study social sciences will identify with communal metaphors

METHODS

The study took a mixed method approach, which combined qualitative and quantitative analysis. After approval from the Institutional Review Board, data was collected through an online survey comprised of open-ended and Likert- type questions. The survey was designed to examine the ways in which college students and recent college graduates think about their personal experiences, learning goals, perceptions about the

purpose of higher education, and intellectual abilities. To do this the survey asked students to describe their college experience by generating a metaphor, and answered a series of close-ended questions. Once the data was collected the open ended-questions were analyzed qualitatively and the other responses were used for quantitative analysis.

Sample

108 participants were recruited through a convenience snowball sample – specifically through Facebook and announcements in lecture halls. The sample was composed 0f 33 males and 75 females. 71 of the participants attended schools in their home states while 36 attended schools outside of their home states. The vast majority of participants, 91, attended public colleges while only 17 attended private. Additionally, most of participants were not the first in their families to attend college. In fact, only 14 participants were first generation students. The sample consisted of predominately undergraduate students, with 11 first years, 18-second years, 23 third years, 33 fourth years, and 4 fifth year students. 6 respondents were graduate students, and 13 respondents graduated college within the last three years. Of those who were not in graduate school, 74 participants said they plan to attend graduate school while 27 said they had no plans to continue higher education past an undergraduate degree. There were also a wide variety of majors reported, spanning the fields of science, math, engineering, social sciences, humanities, and business.

Data Collection

Each participant agreed to an informed consent and voluntarily agreed to take the 43-question survey online, which they accessed through email or a link on a Facebook

group. All participants completed the survey at their convenience. The survey took approximately 20 minutes to complete. In order to protect the respondent's privacy, no name or identifying information was collected, and the questionnaire results were kept in a password protected Internet site.

The questionnaire was written specifically for this study, though parts of it were modeled from components of the CLA (Klein et. al., 2007) and a study of metaphors and teachers (Saban, Kocbecker, & Saban 2006; Klein et. al., 2007). My instrument consisted of four sections.

The first section of the questionnaire invited the participants to generate their own metaphor for higher education. The question provided a description and example of what a metaphor is. In an attempt to produce metaphors and a short explanation for why participants chose their metaphor, respondents were asked to fill in the sentence "College is _____because_____. This question was modeled off a question from a study examining metaphors for teachers (Saban, Kocbecker, & Saban, 2006). The second section asked participants to rate the degree to which they identified with a list of metaphors. The third section asked about participants' opinions and behaviors in college, and the final section asked for demographic information like major, year in school, gender, grade -point average, whether the student attended a private or public institution, an in-state institution, and whether or not they were first generation student.

Qualitative Analysis

The responses from the first section were analyzed qualitatively. 20 responses were omitted from the qualitative portion of analysis because respondents did not provide a metaphor. While these responses were not used in the qualitative portion, their responses

on the subsequent quantitative measures were used in the quantitative analysis. The

qualitative analysis was comprised of two steps. First, only the actual metaphors, or the

"college is" portion of the responses were coded based upon the type of metaphor

respondents provided. Many of the metaphors, like book, journey, and rollercoaster were

recurrent. Others, like river and swimming pool were similar in that they are both water, so

they were coded the same way, as "water". A complete list of the metaphors can be found

on the first column of Table 1. After the metaphor was coded, the entire statement "college

is____because_____" was coded and for a meta-theme. Grounded Theory as explained by

Taylor and Lindof (2002) guided analysis and coding of this portion. The process began

with open coding, and then the categories were collapsed based on similarities.

For example, one metaphor read, "College is a third date with life, because we are finally

becoming more acquainted." The first step of the process was to code just the metaphor "a

third date with life." Because the metaphor was a date, it fell into the sex/relationship

category. Then, to assign it a meta-theme, I examined the entire statement. The second part

of the statement "becoming more acquainted," implies change. Additionally, because it is "a

date with life" it implies the person is learning more about life itself. Therefore, it was

ultimately coded as a growth meta-

theme. In the end seven meta-themes emerged, and a complete list can be found in the

second column of Table 1.

Table 1	
Metaphors	Meta-themes
Book	Growth
Game	Individual responsibility
Unreal	Lack of Control
Journey	Community
Adventure	Goal Orientation
Negative Non-Metaphor	Unknown
Positive Non-Metaphor	Liminality
Neutral Non Metaphor	
Contest	
Roller Coaster	
Water	
Plant	
Culture	
Maze	
Prime of life	
Landscape	
Sex/Relationship	
Jail	
Tunnel	
Miscellaneous	

Quantitative Analysis

Independent Measures. The second section of the questionnaire was designed to measure the independent variable, which were the metaphors students identify with. Participants were given a list of 16 metaphors like "College is a Garden" or "College is an Investment" and asked to rate on a six-point Likert -type scale the degree to which they identified with each one. In order to appeal to the college students taking the survey, the scale was labeled from "lame" to "totally identify". Anecdotal feedback from respondents suggested using casual language was successful. I generated a handful of metaphors on the list, but many were taken from previous literature (Ritchie, 2002; Hoffman & Kretovics, 2004; Readings, 1996; Flumerfelt et. al, 2007; Illes, 1999; Guzman & Trivelatio, 2011). These 16 metaphors were analyzed using factor analysis, (specifically Principle Component Analysis and Varimax with Kaiser Normalization). From the 16 metaphors, five

components emerged; accounting for 62% of the variance based on the criteria of

Eigenvalues greater than 1 and communalities above 0.4. Based on the groupings of

metaphors from factor analysis I chose the following labels to describe the components :

Future Orientation Metaphors, Industrial Metaphors, Communal Metaphors, Containment

Metaphors, and Obstacles metaphors. Table 2 lists of the components and it is constituent

metaphors, with communalities, Eigenvalues, and the percent of variance accounted for by

each component.

Table 2: Factor Analysis of Metaphors

Item	Future Orientation	Industrial	Communal	Containment	Obstacle
Journey	.795				
Path	.762				
Rollercoaster	.590				
Challenge	.509				
Investment	.506				
Factory		.850			
Enterprise		.815			
Machine		.662			
Partnership			.789		
Community			.778		
Party			.786		
Bubble				.832	
Tunnel				.666	
Garden					.785
Mountain					.565
Roadblock					.498
Eigenvalue	3.428	2.336	1.631	1.391	1.173
% of Variance	21.364	14.597	10.1961	8.695	7.30

Extraction method: Principle Component Analysis.

Dependent measures. The third section of the questionnaire was intended to

measure the dependent variables, and was also answered on a six-point scale. The section

consisted of questions revolving around four aspects: importance of cultivation of

intellectual skills in the student's personal higher education goals, perceived ability in the

intellectual skills, perceived purpose of higher education, and behaviors surrounding

learning and campus engagement. These aspects were included because previous research

suggests these items play an important role in the experience of higher education. For

example, it has been proposed that students are not focused enough on the cultivation of

intellectual skills (Arum & Roska) and students see college as an instrumental step in

starting a career, rather than a time for personal development (Brites et al., 2012).

Furthermore, research has demonstrated that class attendance and participation, and

engagement in office hours positively enhance learning (Credé, et al., 2010; Limberg, 2007;

McKeachie, 1970). An important part of this section involved students expressing their

attitudes about intellectual skills, like critical thinking and written communication.

Questions targeting these attitudes were guided by skills the CLA measures. The CLA is an

online, open-ended test which measures how much college students improve desirable

skills like critical thinking, analytical thinking, written communication skills, and problem

solving skills (Arum & Roska, 2011; Klein, Benjamin, Shavelson, & Bolus 2007).

Unfortunately, administering the CLA was outside the scope of this study, so instead I used

it as a guide for developing my instrument. Rather than measuring how much each

participant has improved at each of these skills, I chose to focus on the participant's

attitudes regarding these skills. Specifically, I wanted to know how important cultivation of

these skills is to each participant, and how strong they believe their abilities in these areas

are.

This section also consisted of questions asking participants what they believe the

purpose of college is. Examples of these questions are, "The purpose of college is to help

you get a job" or "The purpose of college is to help you grow as a person." In addition,

participants were asked about the degree to which they felt they have grown as a person, and if they believe the skills they have learned in college would help them obtain a job and begin a career. I chose to focus on these two purposes because the literature seems to suggest there is a tension between the historical purpose of personal growth, and the more contemporary idea that college is instrumental in creating a successful future and career (Star & Hammer, 2008). Lastly, in this section students were asked to report how frequently they attended classes in and outside of their major, how often they attend office hours for help, and, when in smaller classes, how frequently they participate in discussions. Once again, self-reporting was used because I did not have the resources to track each student's attendance, participation in office hours, or discussion participation. The final section of the questionnaire asked for demographic information.

In addition to the factor analysis, I ran ANOVA, Correlation Tests, and Regressions. The ANOVA test was used to determine if there was any meaningful differences between the student's majors and the metaphors they identified with. I ran an ANOVA test comparing majors to the metaphorical factors, and comparing majors to each individual metaphor. No statistically significant results emerged That is, there were no meaningful differences between what students studied and the metaphors they identified with. I also used Pearson Correlation tests to determine if there were meaningful linear relationships between metaphorical components and items in section three. I tested the relationship between each metaphorical factor and each item in section three. Further, I used regression models to see if any of the behaviors could be predicted. The metaphorical factors were treated as predictor variables and the items in section three were treated as outcome variables

FINDINGS

Qualitative Findings

The open-ended question in the first part of the survey was used to answer RQ1, which asked about the relationship between metaphors students generate and those the academic literature has already outlined. While there was a vast variety of metaphors some appeared repeatedly, even though they were independently generated. Such metaphors included rollercoaster, tunnel, book, journey, maze, and adventure. The remainder of the metaphors fell in to a number of patterns. For example, water metaphors surfaced when multiple students used different types of water to describe their experiences, such as rivers, waterfalls, oceans, and swimming pools. Similarly, numerous students generated metaphors reflecting plant growth, like fertilizer, flower, or tree. Another category that emerged was sex and relationships. These metaphors referenced losing virginity or going on a date. While most of the metaphors fell into some type of pattern, some were so original and random they did not fit with any of the others. While the actual metaphors themselves did not necessarily follow a pattern, the entire statement was used to help extract meta-themes.

From the array of generated metaphors and the rationales, a series of seven meta-themes emerged. Three meta-themes, growth, individual responsibility, and lack of control were overwhelmingly the most common meta-themes. 22 respondents provided metaphors indicating a growth theme, 14 highlighted individual responsibility, and 17 alluded to a theme of lacking control over their experiences. In addition, four more themes emerged, but to a far lesser degree. Four metaphors expressed community, four metaphors

expressed liminality, five outlined a theme of goal orientation, and five conveyed a sense of the unknown. Next I will discuss these meta-themes and their significance in greater detail.

Growth. Many participants indicated higher education is a period of new experiences, self-evolution, and personal growth. This theme was predominantly exemplified though plant, relationship, and journey metaphors. However, the metaphors students provided described growth in different ways. When the theme was manifested through plant metaphors the message was fairly simple- college is a time to grow. As one participant put it, "College is a tree because you're always growing." In contrast, when growth was with sex and relationship metaphors it addressed a transformation from feeling inexperienced and unacquainted, to feeling comfortable and competent. One participant explained, "College is losing your world virginity because you come in inexperienced and a little scared and finish a more experienced, better person." This quote shows the change from naive and confused to confident and experienced. Further, growth was exhibited differently when was expressed through journey metaphors. These metaphors implied the participant gained or discovered something on their journey through higher education. Some participants highlighted self- discovery, saying things like, "College is a journey into myself, I discovered what I want out of life." Others highlighted the importance experiences, or the fact that they had gained knowledge. Essentially, under this theme students expressed they had matured or changed.

The emergence of this theme is particularly interesting because it contradicts previous studies. Literature suggests college has become too focused on the outcome of a job and neglects to encourage student's personal development (Brites et. al 2012; Star & Hammer, 2008). Interestingly, these students all chose to highlight their personal growth in

the metaphor rather than the outcome. This suggests that perhaps there has not been such a profound shift away from the process of personal development. In fact, these findings imply that personal growth is a major part of the college experience. Even if universities aren't consciously promoting student's personal development, students feel as though they are growing in college.

Lack of Control. College is a time when students are expected to begin setting up their futures, but this finding shows students feel as though they don't have much control over their experience. This is evidenced in the "lack of control" theme. One metaphor that characterized this theme was a rollercoaster. A rollercoaster in itself implies a letting go of control because it involves embarking on an adrenaline filled ride and permitting gravity, the machine, and the ride operator to have total control of the experience. The passenger is simply there for the ride. This feeling was captured in a student's response, which read, "College is a roller coaster because it has its ups and downs, but overall it's thrilling and before you know it, its over." Effectively, these metaphors highlighted the excitement and rush of college, while also describing it as tumultuous.

Besides the rollercoaster metaphors, water metaphors were also linked to lack of control. Bodies of water imply fluidity that has a power all its own, such as the ocean or a river. Participants indicated that they generally felt in control, but occasionally encountered challenges, which made them feel out of control. One respondent encapsulated this explaining, "College is a river because it was a smooth ride with some small but sketchy bumps." In addition, this theme was characterized by some miscellaneous metaphors, which insinuate someone else or society dictates how college experiences should be, rather than the students constructing the experience. For example,

one student said "College is gender normativity because we act how society has dictated we are SUPPOSED to act". This participant does not sound empowered because she feels as though she is acting only how someone else has told them they should, rather than how they wish they could. In summary, "ups and downs," a feeling of difficulty, and a feeling of someone or something else influencing the student's experience depicted the lack of control theme.

This theme did not show up in any of my previous research, perhaps because it is more personal than some of the other themes. It is possible many students don't like to mention they feel out of control because they feel as though they ought to be in control. Regardless, these findings may suggest a couple of things about college institutions. First, it could suggest there should be more guidance between students and faculty, as Ritchie (2002) and Flumerfelt et. al. (2007) advocate. Emergence of this theme is also interesting because it could tie into the personal growth or job orientation view of college. It could be that students don't relate to either view of college and they feel they don't have control over what they want to gain from college. This theme illustrates that the way in which we talk about college could be constructing it in a way that is not empowering students.

Individual Responsibility. Much like education, individualism and hard work are American values, and metaphors respondents generated reflect this. Interestingly, there wasn't substantial overlap in the types of metaphors expressing this theme. Metaphors ranged from mazes, books, maps, physical workouts, and a few random metaphors like "College is your oyster." Though there was a diverse smattering of metaphors illustrating this theme, all of them probed at two main ideas- it is the individual's responsibility to make appropriate choices and develop a strategy for success in college, or the individual

"will get out what he or she puts it to it." While there were not many patterns of metaphors expressing this theme, two students used maze metaphors to illustrate the individual's responsibility in decision-making. One student explains, "College is a labyrinth because you have to find your own way through." This statement succinctly captures the idea of the individual's responsibility in navigating college and decision-making. Likewise, competition metaphors highlighted the importance of responsibility. For instance, one student writes "College is the enactment of war, because all of us are fighting and strategizing for a common goal." On the same token another student says, "College is an uphill battle because you have to fight your way to the top." The competition metaphors highlight the individual's responsibility in moving forward and creating a strategy.

As mentioned above, the other aspect metaphors emphasized was "you get out of college what you put into it". Basically, these metaphors suggested that what students gain from their experience is totally reliant on how much time and commitment they are willing to dedicate to different parts of their experience. Remarkably, this premise popped up though a number of metaphors, but there was not a consistent pattern. As one student put it, "College is the difference in pie made from scratch and pie sold at Burger King, because your college experience is completely dependent on what you put into it." This metaphor says it all. If students party and consistently miss class they will fail to get academic value from their experience. If, on the other hand, they choose to attend class, join clubs, and build relationships with their professors, they will gain more from their education in terms of academics, beneficial experiences, and professional connections. In short, the individual responsibility theme emphasizes individuals making sensible decisions, and putting in the optimal amount of effort.

It was interesting this theme appeared because previous literature (Arum & Roska, 2011) claims students aren't working hard enough in college. In contrast, this theme highlights that students realize college requires work, and it is an opportunity for extremely beneficial experiences. This theme ties in to the personal growth idea as well. It furthers the concept that college is a time for individual improvement because it highlights the individual's responsibility in making the time useful and relevant to the student.

Goal Orientation. Many people enter college with various goals, whether it is to learn, or prepare for a career. As such, it is logical this theme of goal orientation emerged. However, there were different types of goals and outcomes that students focused on. Some students didn't articulate a specific goal. For example, one student said, "College is a road trip because though there is one goal in mind, there are many experiences along the way". Other students focused specifically on graduation or diplomas. One student reported "College was a piece of paper because that's all I got out of it." Indeed, a diploma and a degree is the most tangible outcome of higher education. Along the same lines, one student claimed, "College is a game because the graduates are winners." So, even just finishing college is desirable goal. Two students explicitly named careers as the goal of college. One student said, "College is a rainbow because the job at the end is the pot of gold". This metaphor shows the importance of a job.

It is no surprise this theme emerged. There is substantial emphasis on the idea that college is instrumental in the success of a person's life, and literature (Brites et. al, 2012; Star & Hammer 2008) implies that higher education is geared toward an end goal. What is surprising about this finding is the fact that it wasn't more prevalent. Previous research implies most of the emphasis is on the outcome, but only 5 students of my sample actually

highlighted this. This implies that maybe there isn't as much emphasis on the outcome of higher education, or even if there is, students aren't highlighting it as the most important part of their experience.

Unknown. For many students, college is the beginning of a new chapter in their lives, one where they are permitted to go out on their own, make decisions for themselves, and have new experiences. Understandably, many students feel as though they are stepping into the unknown place and don't know what to expect. Student's metaphors illustrated this feeling of the unknown. Once again, there weren't a whole lot of patterns regarding specific metaphors that lead to this theme. Still, about half the students who expressed this theme used book metaphors. These metaphors referred to unopened books, because they didn't know what was in store; they just knew it had to be something important. In fact, this seemed to be a recurring pattern surrounding this theme. That is to say, many students felt that they were going somewhere noteworthy, but were not sure where they were headed or what the end result would be. One student used a tunnel to express this, saying, "College is a tunnel because it's difficult to see what happens at the end". Likewise, another student said, "College is an adventure, because you never really know what to expect." So, it seems like these students have some idea where they are going, but don't know what to anticipate. This theme isn't much of a surprise either, simply because it is a completely new experience for most first year students. However, it might overlap a bit with the growth metaphor, because they are expecting new experiences.

Community. College has often been framed as a community or family, or partnership (Illes 1999; Ritchie, 2002) and it appears some students from this sample would identify with such metaphors, although it should be noted only four students who

provided proper metaphors expressed this theme. All of them pinpointed the idea that

college experiences are influenced by the people the students interacted with on campus.

As one student describes, "College is like going to the airport, some people you recognize

and some you're like, WTF." This metaphor underscores the idea that college is a place

where one is forced to interact with people. Another student wrote, "College is a world of

culture because of the diverse student body and faculty." As these illustrate, the social

atmosphere of a college is significant in the experience.

     Liminality. Liminality is Latin for threshold, and has to do with the space between

two stages. Often, this term is used in reference to a ritual, but in the case of this study it

describes college, which can be seen as the time between childhood, and complete adult

independence. This makes sense, because while college students are technically adults and

live on their own, many still rely on parents financially or do not have the same work

obligations as many adults do. Respondents demonstrated this idea with metaphors of a

vacation, a playground, and a dream. The vacation metaphor most concisely depicts

liminality. It reads, "College is a temporary vacation from the real world because it is the

stepping stone between childhood and adulthood.". Though this theme does not directly tie

in with the others, it could fall along the same lines of the journey, and figuring out what

one's purpose or goals in life are.

     The metaphors respondents generated both align with and stray from the

metaphors academics have articulated. From my findings, it is clear that the actual

metaphors students' used were different than those academics use. Students tended to use

simpler, concrete metaphors, like "book" or "river" while academics used more complex

and abstract metaphors, like "Student as a partial- employee" (Hoffman & Kretovics, 2004).

Additionally, the academic literature was geared to the corporate metaphors, and no students independently generated them. It is interesting that students emphasized growth and responsibility and down played the corporate model and focus on an outcome.

The findings from this section also have practical use because they could be helpful in developing ways to relate to students. All of these metaphors illustrate the aspects of school that students relate to, and the concerns they may have. Based on this information it is possible to adjust talk about universities in ways that students might better relate to. This could be useful in a variety of contexts, from class to promotional materials. For example, if a teacher knew her students valued individual responsibility she could adjust her communication to emphasize this point and motivate students to put forth effort. Likewise, if a school knew students relate to the idea of growing they could use metaphors depicting growth in brochures or on the website. Understanding students' metaphors and the implications can be useful in relating to students.

Quantitative Results

Though much of RQ1 was answered through the fill in the blank questions, the results of the factor analysis are also a valuable contribution in understanding how students think about metaphors. As we've seen from the sixteen metaphors I originally asked students to identify with, I was able to reduce it down into five factors and account for 62% of the variance. This is meaningful information because it shows there are underlying factors behind most of the various metaphors used to describe college. In particular, I found five factors, which are labeled Future Orientation, Industrial, Communal, Containment, and Obstacle. Based on the components that comprise each of these factors, there are patterns of metaphors that describe how students think about college.

RQ 2 asked about the relationships between metaphors students identify with intellectual outcomes of higher education. To answer this question I first used correlation analysis. I found no significant relationships between Industrial and Future Orientation and intellectual outcomes. In contrast, I did find some significant relationships between Communal, Containment, and Obstacle metaphors. Specifically, I found a statistically significant relationship at the .05 level between Communal metaphors and perceived complex reasoning, r= .194., n=103. Though the results were significant, the effect size was low, which indicates the findings aren't practically significant. Further, there was a statistically significant correlation between Containment metaphors and perceived complex reasoning. It was significant at the .05 level and r=-.225, n=103. Containment metaphors were also correlated with perceived written communication skills at the .01 level and r= -.286, n=103. Both of these findings indicate a negative relationship between the two variables. While this test does not illustrate causality, it does show that as there is an increase in identification with Containment metaphors there is a decrease in perceived strong complex reasoning skills. The same goes for Containment metaphors and perceived strong written communication skills. This could suggest that a more open or unrestricted way of thinking is needed for complex reasoning and written communication. It could also suggest that notions of containment may limit complex reasoning and writing abilities, or that a lack of skill in these areas lead to a narrower view of higher education. Again, these effect sizes were small, so though the results were statistically significant, they aren't practically significant.

To further these findings, I conducted a regression to see if any factors could be predictors of the intellectual outcomes. A regression model composed of Future

Orientation, Industrial, Communal, and Containment metaphors, where Containment is the strongest predictor, can predict the perceived strong written communication outcome. This regression model accounted for 8 % of the variance, R= .33. I used an ANOVA test to check the overall significance of the regression model, and although the ANOVA test revealed the overall regression was significant, the modest effect size and low percentage of variance accounted for suggest limited practical significance and the need for further research. In addition, the perceived strong complex reasoning outcome can be predicted by a regression model composed of Future Orientation, Industrial, Communal, and Containment factors, with Communal and Containment factors being the strongest predictors. This model could also account for 8% of the variance, and R= .31. So, while I did find some significant relationships, they do not have a substantial practical significance and reiterate the need for further research.

RQ3 explored the relationship between metaphors and other educational behaviors like attendance and participation in office hours and class discussions. Using correlation tests, I did not find much in the way of significant results. Only the Obstacle metaphors had a relationship with the behaviors. Specifically, it correlated with attending office hours at the .05 significance level and r= .243, n=103. Obstacle metaphors also correlated with participation in discussion at the .05 significance level and r=. 242, n= 103. So, this shows that there is a significant correlation between students who identify with Obstacle metaphors and attendance to office hours and participation in class discussion. This suggests that there is a relationship between the ways we think and talk about higher education and the behaviors people engage in. Again, these findings imply a need for more research.

H1a posited students who identify with industrial metaphors would not value intellectual skills. From the results of the correlation, I found there was no statistically significant relationship between the variables in either direction. H1b suggested students who identify with future orientation metaphors would also identify with intellectual outcomes of higher education. Once again, I found no significant results with the correlations. H1c postulated that students who identify with Communal metaphors would believe the purpose of college is to grow as a person. While there was no statistical relationship between these two variables, I did find that Communal metaphors were significantly correlated with the feeling the students had grown as a person in college. These results illustrate a tension. On one hand, they show there isn't much of a significant relationship between metaphors and actual behaviors, but some of the other findings from RQ 2 suggest the opposite. To determine if there is a relationship further research could be done.

All of the hypotheses under H3 proposed student's majors would have an influence on they metaphors students identified with. However, from our ANOVA test I found there were no statistically significant results with any of these hypotheses. This is intriguing because each discipline has a different worldview. However, these results illustrate there is no relationship between what field of study students engage in and the metaphors they identify with. This is particularly surprising given that some fields, like business and engineering, tend to be more professionally oriented than other fields, like humanities.

Table 2 Correlations of Metaphors to Educational Goals and Behaviors

	Future Orientation	Industrial	Communal	Containment	Obstacle
Critical thinking	.151	-.015	.040	-.134	.029
Complex reasoning	-.089	.021	.086	-.171	-.020
Written Communication	.133	.094	-.088	-.087	.035
Math Reasoning	-.069	.013	.035	-.130	.172
Growth as a purpose	.175	-.161	.156	.016	.041
Obtaining a job as a purpose	-.359**	.064	.163	-.058	-.213*
Perceive strong critical thinking	.023	-.041	.047	-.225*	-.076
Perceived written comm	.152	.001	-.073	-.286**	-.055
Perceived complex reasoning	-.049	.013	.194*	-.242	.026
Perceived Math reasoning	-.011	-.033	.105	-.161	.184
I've grown as a person	.460**	-.143	.209*	-.032	.093
Skills and career	.352**	.032	.174	-.147	.087
Skip class in major	-.066	.005	-.141	-.034	-.032
Skip Class outside major	.026	.021	-.034	-.028	.120
Attend Office Hours	.080	.148	.126	-.038	.243*
Discussion	-.041	-.056	-.076	-.187	.242*

**Correlation is significant at the 0.01 level
* Correlation is significant at the .0.05 level

DISCUSSION

This study provides deeper understanding into the ways university students make sense of and think about their experiences, goals, and behaviors in higher education. Through the mixed-method approach I was able to gain insight through student's direct words and original metaphors, and through mathematical relationships. Specifically, the study has two main accomplishments. First, it illustrates that students think about college

differently than scholars. Second, it suggests there some relationships between the ways in which students think about education, and their actual behaviors. In the following section I will discuss the theoretical and practical implications of my research.

The results of the student-generated metaphors for RQ1 show an interesting relationship with the scholarly literature. None of the actual metaphors students provided overlapped with the metaphors scholars provided, but some of the themes did. One major difference was students used metaphors of landscapes, water, games, mazes, and journeys. None of the scholarly literature mentioned any of these metaphors. Another prominent difference was no students generated corporate or industrial metaphors on their own. This was especially surprising because so much of the academic literature focused on different types of corporate metaphors, and many scholars argue that there is a corporatization of higher education (Ritchie, 2002; Hoffman & Kretovics, 2004). What is also interesting is even no student explicitly provided their own corporate metaphor, I did find Industrial metaphors, like enterprise, factory, and machine to emerge as a factor, which does parallel the corporate metaphors provided by previous research. The literature also outlined metaphors dealing with partnering/mentorship, like villages and monasteries (Fluermerfelt et. al, 2007; Illes, 1999; Ritchie, 2002). Again, students did not generate these metaphors. That being said, the meta-themes did overlap with the ideas previous research alluded to.

Additionally, the factor analysis suggested community and social based metaphors are a way students make sense of higher education. Other metaphors the literature outlined were community and acquisition metaphors. While students didn't use these words, they suggested these ideas. Illes (1999) argued college is a community and

everyone has something to contribute. Students didn't explicitly say this, but for a few, the people they encountered in their college experience made an important difference. Similarly, while no students used the words "acquisition metaphor" many explained they had learned something in college, or had life-changing or beneficial experiences. Besides these differences, factor analysis also pinpointed Containment and Obstacle, and Future Orientation metaphors, which the literature did not outline.

Students and academics had quite different ways for explaining metaphors for higher education, which is interesting because both are involved in university life. Despite this common ground, there are some potential reasons why the two groups have different interpretations of the whole idea. First of all, students were asked to think about their own personal experience, which is what Weick (1995) would refer to as sensemaking at the individual level. In contrast, academics may try to make more of a generalization. Another reason is academics writing on the subject have more background knowledge on the issue where students are thinking primarily of their own experiences. Similarly, students are at a different time in their lives than academics. Sensemaking is retrospective (Weick, 1995). Students are still living the undergraduate experience while academics have likely completed the process and moved on to teaching or research, so they have had more time to reflect upon and make sense of their time, and potentially the meaning of their college experiences have changed. Sensemaking is also based on extracted cues, and the cues that students have may be different than the cues academics have experienced. Finally, academics are probably older than many undergraduate and graduate students, so they may have more perspective on how education has changed overtime.

The themes that have emerged from this research also relate to academic conversation. First, individual responsibility has an intriguing relationship with the larger discourses higher education. There's been some criticism that students aren't learning enough and curriculum isn't rigorous enough (Arum & Roska, 2011). This begs the question, whose responsibility is it to ensure students are working at the appropriate level. According to many students on this survey, it is the job of the student to make appropriate decisions and put in as much as they plan to get out of higher education. This study suggests students believe they have a responsibility, so the question is, are students aware they are slacking and accepting it, or are schools actually failing them by lacking appropriate curriculum. This could potentially be an area for further research. Some studies (Arum & Roska, 2011) argue students aren't learning enough, but it would be meaningful to get students' perspective on the topic. Another criticism of higher education that there is too much focus on the end result of college and not enough focus on personal and moral growth. My results reflected this debate. A number of students indicated they felt college is a time of personal growth and discovery, though none of them specifically indicated that it is a time of moral or civic growth. Conversely, other students described college as a means to a career, which some scholar's claim is the new trend (Star & Hammer, 2008). This tension between preparing for a career and personal development seems to be an ongoing theme in the literature and student's lives.

The themes of Goal Orientation and Community clearly paralleled academic discourses, while Individual Responsibility contradicted previous opinions. However, Lack of Control, the Unknown, and Liminality barely fit in at all. It is interesting these themes were not mentioned in previous research, but perhaps it is because these are grounded in

personal experiences, while other metaphors are more general and tend to describe the university as a whole, and not what it means to the individual. For example, referring to college as a corporation or a village describes the context at more of a societal level (Weick, 1995). In this study students were asked to describe their personal experiences, which previous research hasn't done. Therefore, it makes sense that I found more personal themes than other research. In addition, these results could go back to the fact that most of these students are still in the midst of their education and haven't had a chance to reflect and make sense of their experience in different ways.

The biggest disconnect between previous studies and my findings is corporate metaphors. As I mentioned, students did not liken their experiences to a corporate environment. This has a variety of implications. First, it does not mean previous research is wrong, it merely demonstrates that students don't think of college in the same way. Further, it illustrates students may be out of touch with the broader trends in higher education, which could be problematic. If students' are unaware of the ways society is constructing higher education and its purposes, they may not realize why their experience is the way that it is. In fact, this could tie in with the feeling of lack of control. Clearly, the broader discourses imply corporatization in higher education, but the students aren't relating to this. As a result, they may feel as though they don't have control over their experiences. Interestingly, it might be that students cannot articulate the corporatization on their own, but identify it when prompted. From the factor analysis I found that Industrial metaphors like factory, machine, and enterprise all became one factor. However, the main significance is students are not relating to the broader trends of higher education discourse.

The results of RQ2 show a relationship between metaphors and how students think about their skills. This reinforces the concept that metaphors and language shape our realities (Lakoff & Johnson, 1980). While I was able to account for a slight bit of causation, the effect size was so small further research ought to be done to determine if more relationships can be found. It is possible that with a greater sample size and more randomization, more practical results may emerge, and potentially there could be correlations with intellectual skills and outcomes I neglected to measure in this study.

RQ 3 investigated the relationship between metaphors and attendance and participation in office hours and class discussion. It is interesting, but not surprising that I found a correlation between Obstacle metaphors and two of the behaviors. This outcome makes sense, because students who view college as an obstacle to overcome may be more likely to actively participate in their educational experience and ask for help. Again, these results produced a small effect size, so they aren't that practically useful. However, this does show some evidence that particular ways of talking and thinking correlate, but it would be beneficial to see if future research could further the idea that metaphors shape reality and determine if certain metaphors can predict these desirable behaviors.

Finally, H1 and each of parts predicted a relationship between majors and the types of metaphors students would identify with. After testing, there was no significant relationship between these variables. These results seemed surprising because different disciplines have a variety of paradigms to operate off of. As such, it could be expected that different disciplines make sense of academics differently, and privilege different behaviors. In part, these results could be due to the relatively small sample size, although there could

just be no relationship. If further research were to be done investigating higher education and metaphors, perhaps this relationship would be something to re-investigate.

Limitations and Further Research

This research, while it has some valuable results, was not without limitations. To an extent, the study illustrates there is a relationship between metaphors and people's actual behavior. However, further research could make this concept more compelling by finding a way to illustrate an increased effect size. An aspect this study struggled with was sample, both size and randomization. Perhaps with future research, a more perfect sample could more powerfully identify this effect size. In terms of the qualitative analysis, this study could have gone deeper in investigating the motivations behind the students' reasoning for providing their metaphors. I was able to find patterns in the responses, but further research could do a deeper investigation asking why students feel the way they do, and ask for more stories and examples of why they generated the metaphor. This survey only required a brief explanation, which meant I had to infer quite a bit. Another limitation is that student's may not actually think of college in terms of the metaphors they provided in the survey- there's a chance they just wrote something down just to fill in the blanks. There may be no perfect way to analyze metaphors, but an ideal observation would be able to observe metaphors that arise organically, and aren't necessarily prompted by the researcher.

A challenge in studying metaphors is prompting people to talk, without biasing them toward a specific idea. A goal of this study was to avoid that, although it was difficult to prevent it, given that I had to get students to write a metaphor in order to study it. Even though there was some prompting involved, by asking participants to generate their own

metaphor before allowing them to see a list of other metaphors yielded an interesting disconnect between the individually written metaphors and those participants rated on a scale. Regardless, metaphors are a major part of sensemaking, so it is beneficial to understand the impact they can have on students.

Conclusion

Education has always been an American value, and in the past century it has become more accessible to the average citizen. At the same time, discourses surrounding higher education have changed, and illustrate a tension in ideals.. Literature suggests there has been a shift from the goal of higher education being for personal growth to the idea that the final goal should be to land a career. Further, studies suggest the entire university system has shifted to a corporate model. Evidence of this shift toward corporatization can be seen in metaphors scholars have generated for higher education. Today, there are more metaphors comparing students to employees, or colleges to factories. However, metaphors students generate do not reflect the corporatization of higher education. There will never be a consensus on the purpose or best way to run universities, but an understanding of how metaphors of education operate can guide understanding of education and potentially encourage desirable outcomes. Sensemaking is an ongoing process, which means the way that we make sense of institutions, like higher education, will always be changing. However, the language used to talk about education can give insight into sensemaking, and the impact on behaviors. Research has shown that language, and metaphors in particular, shape reality. The ways in which people discuss higher education will perpetuate certain scripts, and privilege specific behaviors. At a time when higher education is seemingly at a crossroads it is in our interest to understand and explore the different ways higher

education is understood though metaphors, and the values they perpetuate, and the influence on students. In the end, we may even be able to conclude that certain metaphors are consistently predictors of desirable behaviors. Language is a powerful tool, but only through further research will we know its true potential.

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APPENDIX

Metaphors, Sensemaking, and Higher Education Survey

Metaphors and Higher Education

Participation in Honors Thesis Research Study

This research study is being conducted for an undergraduate honors thesis at the University of Colorado in the department of Communication. The study is investigating the relationship between metaphors, and value placed on particular aspects of higher education. In order to participate in the study, you must be an undergraduate student, graduate student, or have graduated college within the last three years. Participation in the study is voluntary, and will take 10-20 minutes of your time. For more information on the study please email Mariah.larue@colorado.edu

CONSENT TO PARTICIPATE IN A RESEARCH STUDY
(Sorry this is long, but we have to include it).

Study Title: Metaphors, Higher Education and Student Educational Values
Principal Investigator: Mariah La Rue

Your participation in this research study is voluntary. Please think about the information below carefully. Feel free to ask questions before making your decision whether or not to participate.

1. Purpose and Background
This study is being conducted for an undergraduate thesis at The University of Colorado. The purpose of the study is to examine the relationships between metaphors of higher education and student behaviors and outcomes of traditionally valued aspects of the university. You have been asked to participate in the study because you are either a college student, or have recently graduated. Approximately 100 participants will be enrolled in the study.

2. Study Tasks and Procedures
To participate in this study, you are only asked to complete a questionnaire that includes both open ended and close ended questions.

3. Duration
Completion of the questionnaire should take 10-20 minutes.

4. Study Withdrawal
You may withdraw from the study at any point, or decline to answer any question that you are not comfortable with.

5. Risks and Discomforts
Risks are minimal. You will have to sacrifice some time to participate, and you will be asked to reflect on your experience of higher education, which may cause slight emotional distress. You may decline to answer any question that you are not comfortable with.

6. Benefits
As are participant, there are no guaranteed benefits from participating in the study. However, you may gain a deeper insight of your college experience by reflecting on it.

7. Confidentiality
All of your results shall remain anonymous and will be kept in a locked drawer or password-protected file. All data will be destroyed upon completion of the study. Nothing will be shared unless it falls into a category that requires they be shared.
These are some reasons that we may need to share the information you give us with others:
• If it is required by law.
• If we think you or someone else could be harmed.
• Sponsors, government agencies or research staff sometimes looks at forms like this and other study records. They do this to make sure the research is done safely and legally. Organizations that may look at study records include:
i.Office for Human Research Protections or other federal, state, or international regulatory agencies

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ii.The University of Colorado Boulder Institutional Review Board

8. Compensation
There is no compensation for participation in this study.

9. Participant Rights
Taking part in this study is your choice. You may choose either to take part or not take part in the study. If you decide to take part in this study, you may leave the study at any time. No matter what decision you make, there will be no penalty to you in any way. You will not lose any of your regular benefits. We will tell you if we learn any new information that could change your mind about being in this research study. For example, we will tell you about information that could affect your health or well-being.

10. Contacts and Questions
For questions, concerns, or complaints about this study, call 719-460-2306
If you have questions about your rights as a research study participant, you can call the Institutional Review Board (IRB). The IRB is independent from the research team. You can contact the IRB if you have concerns or complaints that you do not want to talk to the study team about. The IRB phone number is (303) 735-3702.

11. Signing the Consent Form
I have read (or someone has read to me) this form. I am aware that I am being asked to be in a research study. I have had a chance to ask all the questions I have at this time. I have had my questions answered in a way that is clear. I voluntarily agree to be in this study .I am not giving up

1. A metaphor is a way to describe something in terms of something else. For example, "All the world's a stage, because all the people are merely players" is a metaphor written by William Shakespeare.

First, what metaphor would you use to describe your college experiences (no wrong answers!)

College is/was:

because:

2. Any more information you can share to help us understand your choice?

Now... how much do you identify with these college metaphors

3. College is a Garden

Lame   Totally identify

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4. College is a Journey

Lame   Totally Identify
○   ○   ○   ○   ○   ○

5. College is a Path

Lame   Totally identify
○   ○   ○   ○   ○   ○

6. College is an Investment

Lame   Totally identify
○   ○   ○   ○   ○   ○

7. College is a Factory

Lame   Totally identify
○   ○   ○   ○   ○   ○

8. College is an Enterprise

Lame   Totally identify
○   ○   ○   ○   ○   ○

9. Colleges are Machines

Lame   Totally identify
○   ○   ○   ○   ○   ○

10. College is a Mountain

Lame   Totally identify
○   ○   ○   ○   ○   ○

11. College is a Road block

Lame   Totally identify
○   ○   ○   ○   ○   ○

12. College is a Challenge

Lame   Totally identify
○   ○   ○   ○   ○   ○

13. College is a Community

Lame   Totally identify
○   ○   ○   ○   ○   ○

14. College is a Party

Lame   Totally identify
○   ○   ○   ○   ○   ○

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15. College is a Partnership

Lame   Totally identify

○   ○   ○   ○   ○   ○

16. College is a Bubble

Lame   Totally identify

○   ○   ○   ○   ○   ○

17. College is a Rollercoaster

Lame   Totally identify

○   ○   ○   ○   ○   ○

18. College is a Tunnel

Lame   Totally identify

○   ○   ○   ○   ○   ○

For these questions let me know what you think about the following issues
(this is the last page of questions before the demographic information!)

19. Critical thinking is an important part of MY higher education goals

No way   Totally Agree

○   ○   ○   ○   ○   ○

20. Complex reasoning is an important part of MY higher education goals

No way   Totally Agree

○   ○   ○   ○   ○   ○

21. Written communication is an important part of MY higher education goals

No way   Totally Agree

○   ○   ○   ○   ○   ○

22. Math reasoning is an important part of MY higher education goals

No way   Totally Agree

○   ○   ○   ○   ○   ○

23. The purpose of higher education is to help you grow as a person

No way   Totally Agree

○   ○   ○   ○   ○   ○

24. The purpose of higher education is to help you get a job

No way   Totally Agree

○   ○   ○   ○   ○   ○

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25. I think I have strong critical thinking skills

No way ⚬ ⚬ ⚬ ⚬ ⚬ ⚬ Totally Agree

26. I think I have strong written communication skills

No way ⚬ ⚬ ⚬ ⚬ ⚬ ⚬ Totally Agree

27. I think have strong complex reasoning skills

No way ⚬ ⚬ ⚬ ⚬ ⚬ ⚬ Totally Agree

28. I think I have strong math reasoning skills

No way ⚬ ⚬ ⚬ ⚬ ⚬ ⚬ Totally Agree

29. I think I have grown as a person in college

No way ⚬ ⚬ ⚬ ⚬ ⚬ ⚬ Totally Agree

30. I think the skills I have cultivated in college will help me succeed in a career

No way ⚬ ⚬ ⚬ ⚬ ⚬ ⚬ Totally Agree

31. In general, how often do you skip classes IN YOUR MAJOR?

Often ⚬ ⚬ ⚬ ⚬ ⚬ ⚬ Never

32. Now, what about classes OUTSIDE your major? How often do you skip?

Often ⚬ ⚬ ⚬ ⚬ ⚬ ⚬ Never

33. When I am struggling in a class or having trouble on an assignment I will go to office hours (professor or T.A.)

No way ⚬ ⚬ ⚬ ⚬ ⚬ ⚬ Consistently

34. When I'm in smaller classes I contribute to class discussion

No way ⚬ ⚬ ⚬ ⚬ ⚬ ⚬ Consistently

Demographics

Here we are at the last section of the survey! Just finish the demographic information, and you're done!

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35. I identify as

○ Male

○ Female

○ Other

36. My current (or graduation) GPA is,

○ 1.0-1.9

○ 2.0-2.9

○ 3.0-4.0

37. What's your major?

[   ]

38. I am

○ An in-state student

○ An out of state student

39. What kind of school do you go to?

○ Public institution

○ Private institution

40. Are you a first generation student?

○ Yes

○ No

41. Do you plan on attending graduate school?

○ Yes

○ No

○ I am in graduate school

○ I attended graduate school

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42. Are you involved in any on campus extracurricular activities? If you have already graduated, were you
involved in any on campus extracurricular activities? (Ex: honor societies, Greek life, student government, intramural sports, club sports, clubs.)

☐ Yes

☐ No

If yes please specify

_____

43. My year in school is

○ First

○ Second

○ Third

○ Fourth

○ Fifth or higher

○ Graduate student

○ College graduate, but not currently a graduate student

Thanks for your participation in this study!! Its good karma!