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Student Perceptions Of Race And Gender Representations Within College Textbooks

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STUDENT PERCEPTIONS OF RACE AND GENDER REPRESENTATIONS WITHIN
COLLEGE TEXTBOOKS

by

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M.A. University of Central Florida, 2007

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ABSTRACT

This study examines introductory textbooks images across a variety of disciplines, with particular focus on the ways in which race and gender are shown. This study goes beyond a basic analysis of textbooks, however, and also explores student perceptions of textbook images. My data show that compartmentalization of gender and race into certain themes still occurs within some textbooks. Specifically, white men were more likely to be depicted as hard workers and contributors to the field than any other race and gender. Despite these results, students seemed mixed on the importance of textbook images with many students focused on the extent their textbook was useful for class.

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CHAPTER ONE: INTRODUCTION

There are many explanations for why students who attend the same school or classes experience the education system differently. In addition to being of interest to SoTL researchers, the study of textbooks and their role in student learning is sociologically important. Exploring the effects of how students learn helps sociologists understand the processes that will define their entire cohort's experience in the education system. Also, observing trends in portrayals could inform sociologists about how race and gender structures shape textbook images, specifically, how textbook images have changed over time in conjunction with the changing social world.

Past research on student's perceptions of textbook images comes from three distinct areas. These areas include textbook content, student use of textbooks, and media perceptions in general (Clark and Nunes 2008; Clump, Bauer and Bradley 2004; Milkie 2002). While these three areas inform how students perceive textbook images researchers have yet to bring this literature together in one study. Thus, there is a gap in existing research between the type of images students are exposed to, their use of textbooks, and their perceptions of textbook images. To what extend do students "see" these images and do perceptions of textbook images differ based on group membership? Specifically, this dissertation investigates the link between a student's demographic background and how he or she views race and gender within textbook images. Do students fail to see the importance of textbook images and are they blind to the ways in which race and gender are depicted within them?

The current study analyzes the extent to which college textbooks reproduce gendered and racial images and also extends this literature by considering the ways in which students perceive these images. The purpose of this study is to go beyond an exploration of images in introductory

textbooks to also explore student perceptions of textbook images. Data collection includes a content analysis of textbook images in introductory textbooks within three disciplines, focusing on the ways in which race and gender are depicted; a student survey on textbook use; and focus groups with students. Student surveys and focus groups allow for students to discuss how they perceive textbook images and their attitudes towards the importance of diversity within these images.

CHAPTER TWO: LITERATURE REVIEW

How students learn is a major focus of the scholarship of teaching and learning (SoTL) and of particular concern to sociologists who conduct SoTL (Howard 2005; McKinney 2005; Plant et al. 2004). While there are many teaching strategies implemented to help students learn, well-written texts help students learn more than other educational materials (Guthrie and Alvermann 1999). Additionally, with a majority of instructors choosing a textbook to provide the bulk of information for their introductory courses, the importance of textbooks to the student experience cannot be understated (Fitzpatrick and McConnell 2008; Guthrie and Alvermann 1999). However, to the potential detriment of student learning, the images that appear within introductory textbooks often lack in diverse representations or compartmentalize individuals by race and gender into stereotypical roles (Alexanderson, Wingren, and Rosdahl 1998; Aerni and McGoldrick 1999; Babchuk and Keith 1995; Clark and Nunes 2008; Stone 1996).

The following literature review provides the empirical and theoretical foundation for this study. This literature review is informed by research conducted on the importance of textbook images and student perceptions (Currie 1997; Clark and Nunes 2008; Ferree and Hall 1996; McKinney 2005; Taub and Fanflick 2000; Wright1995). Additionally, this literature review is grounded in SoTL research, which has documented how prevalent and instrumental textbooks are to students who use them throughout their education (Rau and Durand 2000; Roberts and Roberts 2008; Svanum and Bigatti 2006). Because textbooks are so important to student learning I will review what we know about them in this chapter.

<u>The Importance of Textbooks</u>

Reading is one of the dominant ways of acquiring knowledge within the educational system and larger world (Arquette 2010). While different teaching strategies may help students learn, well-written texts help students learn more than other educational materials (Guthrie and Alvermann 1999). Because educators recognize the relationship between reading and student learning, a majority of educators choose a textbook that corresponds with the information they want students to learn (Gutherie and Alvermann 1999). "The text is also a source of examples, problems, discussion questions, and cases used for both in-class and out-of-class assignments. As such, the text serves a foundational purpose" (Fitzpatrick and McConnell 2008:2). Instructors expect students to use and read the textbook they have taken the time to choose for the class.

With instructors expecting students to read for class, it is not surprising that in order to do well a student typically needs to complete the assigned readings. Around 45 percent of students surveyed agreed that not reading assignments would negatively affect their grade (Arquette 2010). Research has supported this claim, showing higher test scores are associated with reading (Astin 1993). Reading for class is also associated with higher grade point average (GPA) among college students (Phillips and Phillips 2007; Stinebrickner and Stinebrickner 2004; Svanum and Bigatti 2006). Overall, reading assigned materials is associated with academic success in college. This is because instructors test over the information that is present within the textbook they have required for the class. However, there is self-selection bias because better students reported reading their textbooks more often than poor performing students (Howard 2005).

Additionally, with course exams or papers that cover material presented within a textbook, students view a textbook as an authority on the subject (Manza and Schyndel 2000).

Also, if instructors ask exam questions from required textbook readings, the implication is that the textbook is important. If students are tested on the ideas presented within that textbook, even if they disagree with them, perhaps those students are going be passive rather than actively resisting their messages (Milkie 1999). For example, students could decide not to create conflict with the instructor by expressing their disagreement with images within a textbook they are tested on. Students rely on textbooks to act as a reference for the course that required it, and they could also use the textbook to help in other or future classes. Therefore the textbook a student reads has an impact beyond earning a grade for the course that required the student to read it.

Overall, current literature suggests that students rely on textbooks as important tools for success in college (Howard 2005; Phillips and Phillips 2007; Svanum and Bigatti 2006). By using textbooks as tools students are exposed to the images within them. Students who use textbooks spend a quarter or a semester reading them, which results in a greater amount of exposure time in comparison to other time spent with media, such as flipping through a magazine (Arnot 2002). Exposures to messages within textbooks are more long term in comparison to the brief exposure to a television show, a magazine advertisement, or a movie. However, the actual impact textbook images have on students is lacking in current research (Pomerenke, Varner, and Mallar 1996). Thus, talking directly with students to capture their perceptions is an important aspect of understanding the relationship between educational materials and how students are affected (McKinney 2007).

Currently, much of the literature on textbooks focuses on if students read textbooks or what types of information and images appear in textbooks but these topics are rarely discussed together (Arquette 2010; Clark and Nunes 2008; Gurung and Martin 2011; Lucal 1994; Phillips

and Phillips 2007; Van Etten, Freebern, and Pressley 1997). The limited research that did include

how students used textbooks and has shown a student's gender, the quality of the images within

a textbook, and course design, influenced if students read the textbook (Gurung and Martin

2011). Based on Gurung and Martin's (2011) research, which showed images do influence if a

student reads his or her textbook, the current study expands on current research of the link

between students' perceptions and textbook images.

It is important to explore students' perceptions of textbook images because student

perceptions are related to student behavior (Gurung and Martin 2011; Mayhew, Grunwald, and

Dey 2005). In addition to the influence of students' perceptions on textbook reading, students

who feel unwelcome or alienated from their college are unlikely to remain (Mayhew et al. 2005).

Specifically, an inclusive college environment is important for students to feel invested in their

school and care about their learning. Hence, "if the institution wants to be perceived by students

as a community that welcomes diversity, it needs to include diversity within its curriculum"

(Mayhew et al. 2005:408).

Conversely, students may not feel that it is important for diversity to be included in the

college curriculum. Specifically, students may ignore depictions of individuals' race and gender

within textbook images because they do not view portrayals of diversity as important. Ignoring

race and gender portrayals could support Bonilla-Silva's (2010) color-blind racism perspective.

Students could view race and gender as declining in significance. Students turning a blind-eye

towards the race and gender of others help them ignore the present discrimination of minorities

and safeguards privilege (Bonilla-Silva 2010).

Support for color-blind racism comes from accepting the status quo of race and gender as natural, rather than recognizing gender and racial preferences are produced through social processes (Bonilla-Silva 2010). For example, if textbook images never showed different race groups interacting, and students claimed these images represented the real world because those groups prefer to socialize amongst themselves, then their comments would support the naturalization component of color-blind racism.

Based on the possible outcomes for how students experience their textbooks it is important to listen to how students feel about diversity within the education system. This dissertation explores one aspect of how students feel about diversity by expanding on the knowledge students' perceptions of textbook images and the diversity within those images. Thus, this next section focuses on the types of images that students encounter when using college textbooks.

Textbook Images Students Encounter

Textbook information and the images contained within them have changed over time (Clark and Nunes 2008; Stone 1996). The use of more gender-neutral language and an increase in the number of women and minorities portrayed in textbooks have improved textbook representations (Clark and Nunes 2008; Peterson and Kroner 1992). However, a variety of research has shown introductory textbooks still tend to ignore diversity or present one chapter on poverty, race, or gender at the end (Aerni and McGoldrick 1999; Clark and Nunes 2008; Stone 1996). For example, minorities and women are mainly segregated to chapters on race or gender topics as special cases, instead of being integrated throughout the text (Stone 1996).

Specifically, representations within textbooks still tend to underrepresent and stereotype men and women of all race and ethnic groups (Alexanderson et al. 1998; Babchuk and Keith 1995; Clark and Nunes 2008). Current textbooks also lack representations of minority women especially in theory sections, even when discussing concepts that were purely to demonstrate a concept (Clark and Nunes 2008). On the other hand traditionally masculine areas tend to be male dominated such as chapters on technology and sports (Clark and Nunes 2008). Students could be mistakenly learning through their textbook that the images within it are representative when they do not accurately reflect diversity.

Students' experiences in the classroom are supposed to be training for what they will encounter in the real world after high school or college. Among studies that focus on textbook content, rarely do researchers attempt to measure the effects of exposure to stereotypes within educational materials on students' attitudes or behaviors (Carlson et al. 2005). It seems that researchers and publishers are aware that stereotypes exist within educational materials but it is not known how much, if at all, these stereotypes are reproduced specifically because students were exposed to them in a textbook (Clark and Nunes 2008). What has been studied is the impact of media on audiences overall; many consumers report knowing that the media is geared towards selling products and the representations that they use are not reflective of real people (Currie 1997; Milkie 1999; Milkie 2002).

However while an audience might resist stereotypes about their own group, they might believe that members of other groups believe them to be true (Milkie 1999). In particular, students within the education system might choose a certain field based on the belief that it is a good career for them based on gender and race socialization. For example, students could be

drawn to, or avoid a field, based on the belief that a particular field is only for men (computer science) or conversely, mainly for women (nursing, education) based on their experiences with textbook images and faculty in that field. That is, the perception that a field is masculine could be confirmed through the use of a textbook in which women and racial minorities contributions are absent (Bourdieu and Passeron 1990).

By segregating women into certain topics and areas textbook authors are reproducing traditional gender and race roles (Wright 1995). This still defines race and gender as the "other" instead of a norm and implies that men are more important than women are, or that white people are more important than minorities (Aerni and McGoldrick 1999; Meighan et al. 2007). This is important to consider because of the implications being the "other" has to students whose first interaction might be from an introductory textbook (Hardin, Dodd, and Lauffer 2006; Hogben and Waterman 1997). Significantly, while individuals may resist unrealistic depictions, they reported believing that others saw them as real (Milkie 1999). More specifically these textbooks could be sending the message to a student that they are not part of the normal student body or faculty for that particular major.

Additionally, male samples and research conducted by male researchers are regularly the norm in textbooks (Alexanderson et al. 1998; Peterson and Kroner 1992). In the case of research this means studies that were cited within textbooks contained male-only samples but were used to describe both genders (Alexanderson et al. 1998). Generally speaking, it would also not be surprising if these samples contained predominantly white samples or left out racial minorities as well. For example, if a study contains only white males, students that have not been exposed to research methods will assume this sample is representative of all groups.

In addition to being inaccurately represented in fictional accounts and examples, women are underrepresented in textbook citations of female authors. Textbook authors have also been found to use studies with male authors more than female authors, although in some fields there are simply more male authors than female authors (Alexanderson et al. 1998; Miller, Wright, and Smith 2000). In one particular study dermatology textbook authors were more likely to be male than female, yet practicing dermatologists are more likely to be female (Alexanderson et al. 1998). While overall there might be equal numbers or even more women in a particular field, perhaps men within those fields are more likely to publish research.

Besides inaccurate representations of gender and race disabilities have been misrepresented or not shown within textbook images (Taub and Fanflik 2000). Using introduction to sociology textbooks Taub and Fanflik (2000) found nearly half of their sample texts did not mention the topic of disability. However, unless the image caption indicates a person is disabled, or unless the disability is obvious, then students would not necessarily know. Overall, similar to race and gender representations textbook images present a selective portrayal of people with disabilities (Taub and Fanflik 2000).

Importantly, the literature on textbook images primarily focuses on education, nursing, and social science fields (see Hogben and Waterman 1997; Suarez and Balaji 2007; Taub and Fanflik 2000; Yanowitz and Weathers 2004 among others). These fields are more likely than traditionally male-dominated fields such as computer science to discuss issues such as diversity. Textbook images within these fields have shown improvements by including more diverse representations of men and women (Clark and Nunes 2008; Peterson and Kroner 1992). A field that includes discussions on diversity issues could have more diverse images than fields that do

not focus on these issues.   More research is desperately needed on introductory textbooks within some of the most male-dominated fields such as computer science, engineering, and math, in order to provide a baseline for future comparisons.

<div align="center">Students' Use of Textbooks</div>

The types of images that appear within textbooks only matter if students are actually reading them. Are students using their textbooks or do they rely on other sources of information to succeed in college? Research suggests that a majority of students read the textbook for class (Clump, Bauer, and Bradley 2004; Phillips and Phillips 2007). How students read and use their textbooks lead to different levels of success. Overall, students generally do not focus on learning the material instead they worry about grades while attempting to do the least amount of to earn their desired grade (Delucchi and Korgen 2002). Specifically, "students consider whether they need to improve in a particular subject, whether the material is manageable…and whether the assignment is interesting" before reading (Van Etten et al. 1997:202). Based on these findings, it appears that students reflect on their current knowledge and determine if they need to read the material to attain the grade they desire (Delucchi and Korgen 2002; Van Etten et al. 1997).

Some students use the textbook and pay attention to the information within it more than other students. If students believe they do need to read the material for class then there are two ways students report reading—deep reading and skimming (Van Etten et al. 1997). Students typically skim material when the text is unclear or the student reports time restrictions that limit how thoroughly the student is able to read (Van Etten et al. 1997). For example, students have reported work hours impact how much time they have to complete reading assignments (Stinebrickner and Stinebrickner 2004).

The effectiveness of reading a textbook also depends on how distracted a student is while reading. One factor that influences deep reading is the location where a student reads. Of students who reported reading their textbooks, 78 percent read it at home (Phillips and Phillips 2007:30). However, when they were reading, students also mentioned a number of distractions such as eating, watching television, babysitting, or working out at the same time (Phillips and Phillips 2007). Some studies did not find a correlation between time spent reading and grades, which could be because distractions to the reading environment were not considered (Phillips and Phillips 2007).

Students also vary in the time frame in which they complete assigned readings. Typically, while instructors complain that students do not complete the reading, a majority did, just not prior to the class period in which the material is covered (Clump et al. 2004; McKinney 2005). For example, "students read 27.46 percent of the assigned readings before coming to class and 69.98 percent before that material was included on a test" (Clump et al. 2004:229). Other research shows nearly 50 percent of students study throughout the week rather than cramming before a class or test (Michaels and Miethe 1989:312). Thus, many students take the time to read the material just not typically when the instructor expects a student to read, such as prior to covering the topic in class.

Students who read their textbooks also report relying heavily on the text to help them prepare for exams. "More than 90 percent of students used the textbook when reviewing for the midterm and final exams" (Phillips and Phillips 2007:36). Recognizing that the average student will read assigned readings prior to an exam, Howard (2004) and other instructors have influenced when students read the textbook by using frequent quizzes to make sure students read

throughout the term. This teaching strategy changes how frequently students read their textbooks. Using this strategy one study showed students increased reports of always or usually reading the material from 68.7 percent to 98.3 percent among sociology students (Howard 2004). Frequent quizzes would increase how often students read because grades tend to be a motivating factor for how students use their textbooks (McKinney 2005). In sum, how a particular course is designed also influenced how frequently students read their textbooks. However, there are other factors beyond teaching strategies or course design that influence if a student will read for a class.

Students who read frequently are different than students who do not read frequently at least in terms of overall GPA and test scores (Astin 1993; Phillips and Phillips 2007; Stinebrickner and Stinebrickner 2004; Svanum and Bigatti 2006). Additionally, studies on the relationship between grades and student reading typically include one major or subject without comparing across disciplines to explore if students in certain disciplines are more likely to read than students in other disciplines (Phillips and Phillips 2007; Stinebrickner and Stinebrickner 2004; Svanum and Bigatti 2006). What is not known is if students who read more frequently have more positive perceptions regarding their textbooks than students who do not read as frequently. Additionally, the impact of course discipline on student perceptions and reading is unknown (Phillips and Phillips 2007; Stinebrickner and Stinebrickner 2004; Svanum and Bigatti 2006). Thus, the current study includes a measure of how often students read by discipline to explore the relationship between frequency of student reading and how they perceive their textbooks.

Other Factors that Influence Reading

While a majority of students read their textbooks there are many factors that influence textbook reading among students. Factors such as gender, culture, motivation, course, and book quality are associated with reading textbooks (Arquette 2010; Clump et al. 2004; Gurung and Martin 2011; Stinebrickner and Stinebrickner 2004). What makes the results complicated is that some research does not distinguish between reading and studying (Michaels and Miethe 1989; Rau and Durand 2000; Stinebrickner and Stinebrickner 2004). Studying includes a variety of activities such as reviewing lecture notes or PowerPoint presentations created by the instructor. However, because reading is a component of studying these results will be discussed as well.

Gender is associated with reading —male students tend to study or read less than female students in the same classes, which results in lower GPAs (Gurung and Martin; Howard 2005; Stinebrickner and Stinebrickner 2004). In one study, 77 percent of female students reported always or usually reading the textbook compared to 65.7 percent of male students (Howard 2004:199). This finding is not surprising given other research on the role that gender plays in relationship to student behavior. Specifically, for females being a good student and completing the assigned readings for class does not create role conflict. Following rules match society's expectations of both a good student and generally feminine behavior (Kimmel 2008). Conversely, boys are taught more aggressive and independent behaviors that do not always match up with following an educator's instructions (Ferguson 2004; Kimmel 2008).

Comparing educational ideology and its relationship to culture can explain why certain groups may have higher levels of educational achievement than other groups (Steinberg 1981). Groups that have certain types of cultural capital will attain higher success rates —children

within a society will benefit from values within a society that help an individual attain success such as valuing education. For example, Asian groups such as the Vietnamese, Chinese, or Japanese have on average higher test scores than other groups such as Mexican Americans or African Americans (Zhou and Bankston 1996). A family value of educational success and a parent's pressure on their children to work hard in school is correlated with good grades in school (Kao and Thompson 2003). Due to the relationship between reading or studying and higher grades, parents may push students to complete assigned readings (Astin 1993). This is an interesting finding because of the argument that valuing education alone among African American students does not appear to be related to increased effort in school work (Ainsworth-Darnell, James, and Downey 1998). Thus, culture and race group can be related to student effort in reading.

Students report the greatest motivation to read is grades. Doing well on tests and assignments was the biggest motivational factor for completing reading assignments (Arquette 2010). Students clearly understand that reading is important in order to earn a good grade in a course. Specifically, 45 percent said the biggest motivational factor for completing reading assignments is doing well on tests and assignments (Arquette 2010:3). Therefore it would be surprising if students feel motivation to read if they do not believe the textbook is helpful in preparing for class or exams. Thus, the current dissertation includes a discussion on how students perceive textbooks differently based on if they find it helpful, or not, in preparing for class.

However, getting a good grade in a course does not always require reading the assigned material. Depending on how the instructor incorporates the textbook into exam questions, and if they cover the same information as the text in class, influences if their students read. Instructors

who do cover the information within the textbook in class are likely to have students who report not reading the material—39.24 percent of students said it didn't matter if they read or not because the teacher covers the material in class (Arquette 2010). Thus, not only does testing on textbook information influence if students read but also if the instructor repeats the information that is within the text.

Another factor that impacts student reading is the quality of the textbook. One study found student perception of the textbook and the quality of the visuals affected the likelihood of a student reading (Gurung and Martin 2011). In particular, books that are rated higher quality by students are, "more likely to be read than books that are not high quality" (Gurung and Martin 2011:24). Thus, the quality of the textbook and the types of images within it influence student interest and likelihood of reading (McKinney 2005).

Another factor that could impact student reading is the ability for a student to obtain a copy of the required textbook. Being able to afford college relates to student persistence—a student's ability to graduate from college (Pascarella and Terenzini 2005). However, most research focuses on the cost of attending college and not the specific relationship between textbook cost and student persistence (Flacks and Thomas 1998; Pascarella and Terenzini 2005). These studies include the cost of attending college without detailing the specific materials a student would need such as textbooks (Flacks and Thomas 1998; Pascarella and Terenzini 2005). However, with 34.8 percent of students and their families reporting having major concerns about their ability to finance college any related college cost could be a factor into a student's ability to succeed (Higher Education Research Institute 2006). Thus, more research is needed on the

relationship between textbook cost, its impact on students having a copy of the textbook, and if that relates to rates of students reading the textbook.

Theoretical Background

In addition to SoTL research on student reading this study is informed by cultural reproduction theory and the hidden curriculum perspective. Cultural reproduction occurs before students enter the classroom—the skills, values, and financial resources of parents are handed down to their children. Specifically, cultural reproduction theory states parents with more financial resources will ensure that their children will have educational materials like textbooks to succeed in school (Bourdieu and Passeron 1990). Again, with many families worrying about how to finance college, education costs are important (Higher Education Research Institute 2006). Based on this idea, this study explores if parental financial support was related to a student having a copy of the textbook.

Another component of cultural reproduction goes beyond financial resources and suggests educational values parents have for their children influence how children do in school. Evidence of this comes from immigrants such as Vietnamese or Japanese families, in which the parents have low educational attainment, yet their children perform well in school (Zhou and Bankston 1996). This study includes student demographics like race to compare by group but it does not contain a measure of parental education values.

Other literature this study is informed by is the hidden curriculum perspective. The hidden curriculum occurs in latent social functions of the education system. Overall, there are expectations for behavior based on race, class, and gender in an education system that rewards conformity and not creativity when it comes to rules (Lynch 1989). Hidden curriculum can also

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exist within the examples, research, citations, and textbooks that instructors use in their classrooms. For example, citing only white males in a textbook would teach students that the only contributors to the field are white males. The hidden curriculum perspective can go beyond students learning that current contributors are only white males. Based on a student's race and gender he or she might feel discouraged from pursuing a field in which he or she would be token (Dimitradis, McCarthy, and Weis 2006).   In sum, textbook images that suggest a one-dimensional or stereotyped view of gender or race could teach students that the images are reflective of reality.

<u>Previous Research Limitations</u>

One major limitation of current literature on textbooks is the relationship between images and readers. There is lack of evidence supporting the hidden curriculum's impact on students—the impact of visual imagery on individuals has been measured through studies that include mass media such as magazines, television, movies, or advertisements (Currie 1997; Milkie 1999). Rarely has research included the student voice, which can be used to strengthen the validity of previous results by documenting their classroom experiences (McKinney 2007). Studies on student perceptions of textbook images are needed to ascertain how students perceive the importance of portrayals within textbooks (Hardin et al. 2006; Pomerenke et al. 1996). Thus, following in McKinney's steps, this dissertation contributes to the limited literature on the student voice and how they view their educational experience; in particular how they view their textbooks.

Another limitation of current research on textbooks is that it tends to focus on disciplines such as education, sociology, or psychology (see Hall 2006; Hogben and Waterman 1997; Suarez and Balaji 2007; Taub and Fanlick 2000; among others). There has been a call for studies that investigate the variations in gender role portrayals within textbook images from other disciplines (Low and Sherrard 1999). Thus, this study includes the computer science discipline, a male-dominated field, which has not been included in past sociological content analyses of textbook images. Including a male-dominated field allows me to compare computer science textbooks to the female-dominated discipline, education. The portrayal of race groups by discipline is also investigated.

Gender and race topics seem to be more relevant among traditionally female-dominated fields such as education, psychology, or nursing (Marquez 1994). What has yet to be studied is how male-dominated fields, beyond business or sports related courses, depicted race and gender within textbook images (Miller, Wright, and Smith 2000; Pomerenke et al. 1996). Thus, by including a variety of fields I am able to compare the depictions of gender and race by field to see if male or female-dominated fields differ. Currently, female-dominated fields have been the focus for research that documents the progress that has been made in textbook images (Aerni and McGoldrick 1999; Clark and Nunes 2008; Stone 1996). The lack of research on male-dominated textbook images leaves no comparison group for female-dominate textbook images. Are textbooks images in male-dominated textbooks lagging behind female-dominated textbooks that tend to be in fields that discuss diversity issues? Do fields that generally include a discussion on race and gender diversity differ in the types of images they contain in comparison to a field that usually does not focus on such issues?

Purpose Of Current Dissertation

While all the explanations of how students experience the educational system through textbooks highlighted in this dissertation are important, this study examines one piece of the picture—the hidden curriculum, and specifically textbooks. This dissertation contains two parts—part one addresses the current depictions of race and gender within textbook images. Part two of this study focuses on if students experience or perceive their textbooks differently based on their race, class, and gender. Thus, the following research questions guide this study.

 1. How representative are images in terms of race, class, and gender in introductory textbooks?

2. Overall, how do these portrayals vary by academic discipline?

3. Is there a relationship between students who are dependent upon their parent(s)' financial support and likelihood of obtaining a copy of a required textbook?

4. Is there a relationship between a student's demographics (race, class, and gender) and how often they read their textbook?

5. In general, what are students' attitudes towards their textbooks?

6. Do students notice race, class, and gender representations in textbooks?

7. Do students think the information in their textbooks is representative of real life?

Answering these research questions will help fill the gap in the current literature with SoTL research and the hidden curriculum perspective by exploring if students experience textbooks differently based on their race, class, and gender. This dissertation also updates current research to show if textbooks continue to compartmentalize race and gender into specific types of images.

CHAPTER THREE: METHODOLOGY

The purpose of this dissertation is to explore images in introductory textbooks across a variety of disciplines, with particular focus on the ways in which race, class, and gender are depicted in textbook images. This study goes beyond a basic analysis of textbooks, however, and also explores students' perceptions of textbook images. Data collection includes content analysis of textbook images, a student survey on textbook use, and focus groups with students.

Both quantitative and qualitative methods were used in this dissertation. This was because this dissertation attempts to both support previous research and explore unknown aspects to student perceptions. For instance, previous researches on textbook images have included primarily quantitative methods to measure how many individuals are portrayed by women and minorities (Ferree and Hall 1996; Hall 2000; Wright 1995). Other research explored student perceptions through qualitative methods that focus on including the student voice in assessments (McKinney 2005). In addition, this study goes beyond the current literature on student perceptions using qualitative methods so student voices are documented in a raw form and can inform future researchers on what needs to be further explored. In sum, following previous research, both quantitative and qualitative methods were used for this dissertation.

Textbooks

Sample

Previous research on course textbooks used introductory classes in their content analysis samples (Ferree and Hall 1996; Low and Sherrard 1999; Wright 1995). Research studies included these courses because introductory textbooks are more likely than upper division

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textbooks to use images in them and are oftentimes the first interaction students have with a subject (Hogben and Waterman 1997). Therefore in line with previous research on the topic of textbooks in higher education, this dissertation includes introductory classes and their course materials used at the University of Central Florida's main campus. Further, images were used not only because they influence student reading but they also lend themselves to cross-disciplinary analysis (Gurung and Martin 2011).

Additionally, studies that have counted topics in indices or diversity in author citations are limited to one field (Alexanderson et al. 1998; Wright and Smith 2000). Generally speaking, certain topics such as race might not be included in all disciplines (i.e. computer science). This means a count of topics that include diversity issues within indices is less likely than other methods to be an appropriate across disciplines. Counting citations by author would not be appropriate for the current dissertation as well. Previous studies that have focused on the lack of diversity in citations of research studies or authors ignore the fact that there might not be much diversity among scholars or research that is available (Hall 2000). This means current available research might be more limited in diversity than within images, which can be constructed to represent concepts. Overall, constructed visual images appear to be one factor that would have a great chance of being included regardless of discipline. Thus, I collected data concerning race, class, and gender representations in a way that allowed for me to investigate a variety of disciplines.

This dissertation was designed to investigate how images vary by discipline, with special attention aimed at whether highly sex-segregated disciplines were less likely to present diverse images. Thus, the selected disciplines vary according to sex and racial segregation of students,

including computer science and engineering, sociology (grouped within social sciences), and education. To show a typical example of just how these fields tend to be segregated, Table 1 displays the total number of male students by race and degree major (Table 2 displays this same information for females).

Table 1: Male Student's Major by Race

Major field of study	Males			
	White	**Black**	**Hispanic**	**Asian**
Computer and information sciences	25,237	3,502	2,455	3,937
Education	18,950	1,693	934	397
Engineering	37,681	2,335	3,179	6,849
Social sciences	44,460	4,735	4,503	5,155

SOURCE: U.S. Department of Education,
National Center for Education Statistics, 2005-
06 Integrated Postsecondary Education Data
System (IPEDS), Fall 2006.

Table 2: Female Student's Major by Race

Major field of study	Females			
	White	**Black**	**Hispanic**	**Asian**
Computer and information sciences	4,627	2,373	709	1,243
Education	72,329	5,171	4,262	1,557
Engineering	7,784	1,020	872	2,221
Social sciences	43,671	8,260	6,305	5,940

SOURCE: U.S. Department of Education, National Center for Education Statistics, 2005-06
Integrated Postsecondary Education Data System (IPEDS), Fall 2006

As shown in Table 1 and Table 2, certain fields still tend to be male dominated (i.e. computer science) while other fields tend to be female dominated (i.e. education). I included a variety of fields because potentially students who are a minority by either gender or race within their discipline might be more sensitive to the images presented within a textbook than a student who is part of the majority. Additionally, including a variety of disciplines allowed me to compare and see if there were differences in race and gender depictions within textbook images. Overall, the content analysis was based on a sample of introductory textbooks images from fields such as computer science, engineering, sociology, and education.

Additionally, my sample focused on introductory courses that use textbooks that contain images with at least one person depicted. Further, there was at least at least one image inside the textbook, specifically, something other than the front or back cover of the textbook. In order to determine what my sample of textbooks would be, I went to the course schedule to obtain a list of introductory courses offered during the Spring 2010 semester on the main campus and their current class enrollment. Since instructors are required to submit textbook orders to the UCF Bookstore, I then went to their online textbook ordering website to investigate whether the course required a textbook. From this list I compiled a list of required textbooks that included basic citation information (title, author(s), publisher, publication year, ISBN), and whether this textbook was available for purchase online (see questions one through eleven in Appendix A for more detailed coding).

After determining which courses require textbooks, I followed up by going to the bookstore to see if the required textbook contained images. Textbooks that contained images

were noted on a list for further analysis. This list was the initial sample of textbooks that I needed to obtain copies of to use in the content analysis. A total of four textbooks were used, which were the required textbooks for courses included in this sample. The textbooks included in this dissertation were: *Sociology Now*, by Michael Kimmel and Amy Aronson; *Sociology: A Compass for a New World, 3rd Edition*, by Robert J. Brym and John Lie; *Teachers, Schools, and Society: A Brief Introduction to Education, 2nd Edition* (Florida Version), by David Miller Sadker and Karen R. Zittleman; *Introduction to Computer Science*: CGS 1060 at the University of Central Florida, by Gary B. Shelley, Misty E. Vermaat, Ralph M. Stair, Kenneth Baldauf, and Jean Andrews.

While only four textbooks were used, these particular books were used in multiple sections of the course taught by different instructors. For example, the education textbook included in this sample was used by two different instructors who each taught three sections of the introduction to the teaching profession course. The sociology textbooks included in this sample were used by three instructors of large section classes with the average enrollment of 150 students per section. Lastly, the computer science textbook was created by the UCF faculty for all sections of introduction to computer science. Three sections of the computer science course were included in this sample with an average enrollment of 200 students in each section.

Additionally, these textbooks were used by instructors for more than one term. In particular the computer science textbook was the same one required for all Fall 2009, Spring 2010, and Summer 2010 sections. The education textbook was also used during the Summer 2010 course. Thus, while only four textbooks were used in this sample they were required in courses in which hundreds of students enrolled.

The textbooks included in this sample were written by diverse authors. The sociology textbook authors consisted of one Asian male, two white females, and two white males. The sociology textbooks were published by Thompson and Pearson publishers. The education textbook was written by an Asian male and a white female and published by McGraw-Hill. Lastly, the computer science textbook was written by three males and two females. Unlike the other textbooks in this sample, which included profile pictures of the authors in the front of the textbook, the race of the computer science authors could not be determined. Additionally, searching for faculty profiles online did not produce profile images, which could be directly linked to the authors and verified as authentic.

Purpose

The purpose of the content analysis was to explore the portrayals of race, class, and gender within textbooks images. While analyzing four textbooks may not be representative of all computer science, sociology, and education textbooks currently available, the purpose of this dissertation is to focus on the relationship students have with textbooks. The content analysis documents the types of images students using these textbooks are potentially exposed to rather than being representative of current textbooks. The content analysis addresses the following research questions:

1. How representative are images in terms of race, class, and gender in introductory textbooks?

2. Overall, how do these portrayals vary by academic discipline?

Data Collection Strategies

The unit of analysis was the individual within the images. While I focused on the individual I also collected basic information regarding the overall image such as page number, how big the image appeared in relationship to the page, and chapter in which the image was placed. Potentially, these factors could influence students' perceptions or ability to remember a particular image, for example being an entire page image at the beginning of the chapter versus an 1/8th of a page. It is important to note here, that for all the variables discussed, I coded them open-ended, describing the image and then collapsed them into categories. This approach allowed me to focus on interesting findings that I might not have anticipated.

Following this step I then looked at the image context. I included a numerical count of the individuals within the image, up to eight. I decided on up to eight individuals since past research considered this to be a reasonable number of individuals, with many more being considered a crowd and coded as such (Hall 2000). However, if a large group or crowd appears in the background of an image with the focus of the camera on one or two individuals in the foreground, I included that image. For example, two individuals in the foreground of an image being arrested for protesting, while in the background of the image there appeared to be many more protestors. In this case I coded the two protestors being arrested (and the officers who arrested them) and not every single protestor in the background.

For images that included eight individuals or less I also coded their race and gender. This would allow me to determine if individuals appeared with different race and gender groups. Due to the issues determining what racial category a particular individual fitted into, I collapsed the category of Hispanic into white or black because it was often difficult to know for certain if an

image is of a white Hispanic or of a Caucasian. In this dissertation "other" race was defined as East Asian or Indian, Native Americans, and individuals whose race was unclear.

Determining social class portrayals were even more difficult than dealing with race classification. It was difficult to determine if a person was depicting lower, middle, or upper class status depending on how many status symbols were included in the image. In these cases I focused on clear indicators, such as a homeless person pushing a shopping cart or an affluent individual in front of an expensive car. This variable still proved to be ineffective; there were not many clear indicators of social class with the vast majority being coded as middle class.

I also included a measure of disability, which Taub and Fanflik (2000) pointed out tend to be shown as individuals in wheelchairs. I looked for a clear indicator that the individual was disabled such as a wheelchair, walker, crutches, or other sign that the individual had limited physical or mental ability. Due to the small number of representations of disabled persons across four textbooks (n=11), these images were omitted from the content analysis. However, students discussed disabilities within focus groups and interviews so this issue is revisited later.

Finally, another variable that previous research also included was the types of actions individuals in the image were engaged in (Hardin et al. 2006; Pomerenke et al. 1996). Therefore I included a measure of the type of activity individuals in the image were engaged in. For example I noted if the individuals were portraying a business meeting, discussion, or a leisure activity. I included because there could be differences between certain groups portraying career or work involvement as opposed to just being a portrait of a model staring at the camera. Basically, I wanted to investigate what types of activities individuals were engaged in by race and gender. This variable helped me recode images into themes, which I will discuss shortly.

Lastly, I did follow past research and record if any individuals in the image were touching each other and who they were touching (Pomerenke et al. 1996). However, I still focused more on the overall context of the image. Touching was potentially important to this study if only certain groups touched each other based on race, class, and gender. I also noted the degree of contact individuals had when touching each other.

Analytic Strategy

To investigate the relationship between individuals in images and the textbooks in which they appear I used descriptive statistics analysis in SPSS to determine how often females, males, whites, nonwhites, upper-class, middle-class, and lower-class images appeared. One of the most frequent types of analysis used is the Chi-square test, which answers the basic question if two variables are related to each other (Meyers, Gamst, and Guarino 2006). Therefore, I used chi-square tests to see if there was a correlation between how frequently each race group appeared within the textbook by discipline. For example, I used a chi-square test to see if white males appear more often white females in the computer science textbook. I also used chi-square tests to see if there were race or gender differences in the types of images individuals appeared in. Another example is if white males appeared as workers more often than white females in the sociology textbooks within this sample. Using the chi-square test allowed me to start with basic variables, see if they were correlated, and then move on to more complex analysis.

Following this step, I then recoded these variables into new variables that combined an individual's race, class, and gender (i.e. white lower class female) in an effort to better understand the intersection of race, class, and gender within textbook representations. Next, I

used an ANOVA test in order to compare the representations of individuals (race, class, and gender) by discipline. This test allowed me to compare each field individually to other fields in terms of the types of diversity within each discipline. However, class depictions were eventually left out of the analysis because individuals were overwhelming coded as middle class, which I discuss in chapter four. This means that while originally including ANOVA tests, the chi square tests are the only results discussed in great detail.

Student Survey and Focus Groups

Purpose

The student survey allowed me to better understand how often students used their textbooks. The second method, student focus groups, was designed to explore student's perceptions of the representations of race, class, and gender diversity within their introductory textbooks. A qualitative method was used because researchers conducting SoTL have called for replicating previous work by listening to what students have to say, in their own words, about learning in their discipline (McKinney 2005; Pascarella 2006; Phillips and Phillips 2007). In Thus, the student survey and focus groups addresses these research questions:

1. Is there a relationship between students that are dependent upon their parent(s)' financial support and likelihood of obtaining a copy of a required textbook?

2 Is there a relationship between a student's demographics (race, class, and gender) and how often he or she reads their textbook?

3. In general, what are students' attitudes towards their textbooks?

4. Do students notice race, class, and gender representations in textbooks?

5. Do students think the information in their textbooks is representative of real life?

Sample

In order to obtain this sample I contacted instructors in selected disciplines who taught introductory courses that met face-to-face during spring 2010 at the UCF main campus. The student sample came from the courses that required textbooks, which were included in the content analysis of this dissertation. I asked instructors for permission to administer a brief five to ten minute survey on textbook use. A combined total of 553 students completed the survey. Computer science students were a majority of the sample (n=231), followed by sociology students (n=205), and lastly education students (n=117). The distribution of students by discipline is consistent with the number of enrolled students within those courses; there are more students enrolled in introduction to computer science courses, followed by introduction to sociology, and then introduction to the teaching profession.

While administering surveys, I also mentioned that I would ask for volunteers to provide me with their email if they would be interested in participating in a focus group concerning their course textbook and supplemental materials. There was a section on the written questionnaire in which students could write down their email address if they were willing to participate in a focus group or interview. Even students that did not read the textbook for class were offered the opportunity to participate for two reasons. One, students are exposed to textbooks throughout the education system. Therefore while a student might not have read the textbook I surveyed him or her on, generally he or she has experienced textbooks. Second, students who do not read textbooks can provide insight as to what turns them off from reading.

While I originally wanted to include students from the courses that required the textbooks used in the content analysis section of this dissertation, it was necessary to expand the sample. During the first round of focus groups the attendance rate was extremely low, with only twelve students participating. Thus, I expanded by including an additional sociology and education course offered during Summer 2010. Overall, thirty-six students participated in either focus groups or interviews and were compensated with a five to ten dollar gift card for use at the main campus bookstore.

Student Survey Data Collection

Appendix B contains a detailed consent and survey questionnaire that was given to participating classes. (Note: the numbers used to code the survey were removed on the student version but are included in this version so that readers may see how these variables were coded.) These surveys allowed me to obtain a large amount of basic information regarding student textbook use. For example, I asked students if they obtained a copy of the required textbook(s) for the class and how (purchased, online access, borrowed). I also asked how often they read their textbook for the class (more than twice a week, once a week, twice a month, once a month, never, or other).

Next, I wanted to see if students found the textbook useful overall and if they felt that images contained within it help them prepare for class. This was following a previous study that analyzed the relationship between how often students read their textbooks and if they found them helpful in preparing for exams (Goldstein, Bailis, and Chance 1983). I also investigated whether students found images within their textbook to be accurate and representative of race and gender

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diversity. This was followed by some basic demographic questions such as the student's race, gender, age, household income, and if they were financially dependent on their parents while attending school.

In addition to obtaining a large sample of students in introductory courses the survey served other purposes as well. Specifically, it allowed me to follow up with students interested in participating in a focus group. Lastly, I was able to build greater rapport with the students by briefly handing out a survey and asking them to help a fellow student, rather than sending a mass email to them asking for their participation.

Student Survey Analytic Strategy

Similar to the textbook analytic strategy, I used descriptive statistics for all my variables to first explore basic correlations. Next, I recoded a student's race, and gender into a variable that will account for the intersection of these demographics (i.e. Hispanic male). I then conducted a series logistic regression test that explored students' demographics and how often they read their textbooks. Logistic regression was the appropriate choice for my variables since the dependent variable was categorical and my independent variables were dichotomous or quantitative (Meyers et al. 2006).

The first logistic regression test explored students' demographics and how often they read their textbooks. I also controlled for the format of the textbook, if any students obtained an electronic copy. The second model included these variables while also controlling for financial dependence on their parents or guardians. Lastly, I also explored other factors that could have an impact on how frequently students read their textbook, such as differences by discipline and student grade level.

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Student Focus Groups Data Collection

Focus groups met towards the end of Spring 2010 and Summer 2010. Thus, students had enough time to use their textbooks for each of these terms. I planned for these focus groups to contain around five students, however most became interviews with only one or two students meeting with me at a time. Focus groups and interviews lasted no more than an hour, depending on group size, because students were likely to lose focus.

Student focus groups were semi-structured with only a few planned questions. Unstructured interviews allowed me to explore students' perceptions with minimal influence from myself, the researcher. I did not want to rush through students' comments to ensure that I asked a set of questions that I already developed. McKinney (2005) suggests this method is the most appropriate so researchers listen to what students have to say about learning. Further, due to the limited research on students' opinions on the representations of individuals in textbooks and course materials I left the discussion open for students to discuss topics that I did not consider. For example, students in focus groups talked about showing individuals with disabilities within textbook images, which is a factor I did not ask students about on the questionnaire.

Similar to Milkie's study, I started off asking students to describe the textbook(s) as if they were talking to a student who had just enrolled in the course and knew nothing about the course (1999). Students were also asked what they liked and disliked about their textbook. Other questions included information about noticing the particular images of individuals in the textbook and how they felt about the representations of their race and gender within them and if

image diversity issues are important. Students fed off each other's responses and I asked for clarification when needed to encourage more detailed responses from students.

Focus groups in this dissertation were recorded. Students agreed to participate by providing me with a contact email were notified that the focus groups would be recorded to facilitate note taking for this study. I reminded them that they would be audio recorded through the use of a consent form at the beginning of each focus group session. In addition to providing me with a record of the event so that I was able to transcribe it for analysis, by recording these sessions I was able to see what I needed to improve on for later focus groups.

Student Focus Groups Analytic Strategy

Within the transcribed accounts of the focus groups I looked for patterns and themes to emerge after reviewing interview notes. This method allowed me to, "identify key points within an initial subset of the data (called 'provisional themes') and then 'test' their validity by determining whether they are confirmed or disconfirmed by subsequently analyzed data" (Phillips and Phillips 2007:23). Specifically, I coded if students said that they noticed textbook images and if they felt images were important to focus on. I also coded students' attitudes concerning likes and dislikes about their textbook because they provided additional detail that written responses to the survey lacked.

Using Bonilla-Saliva's (2010) research as a guideline, students could be ignoring the race and gender of individuals within textbook images based on the belief of the declining importance of diversity. Therefore I discussed with students if diversity within textbook images was something they thought about or discussed in class or among their peers. I also asked them their

opinions of the importance of diversity within textbook images to better understand if students supported the idea of color-blind racism. The results of the interviews and focus groups are discussed in the following chapters.

CHAPTER FOUR: RACE AND GENDER REPRESENTATIONS IN INTRODUCTORY

TEXTBOOKS

Past research has shown that textbooks tend to underrepresent minorities and use stereotypes of groups within images (Alexanderson et al. 1998; Babchuk and Keith 1995; Clark and Nunes 2008). Conversely, introductory textbooks that do include diverse images tend to segregate these images into chapters discussing issues such as poverty, race, or gender (Aerni and McGoldrick 1999; Clark and Nunes 2008; Stone 1996). Such omissions and compartmentalizations are important to investigate because textbooks could be sending a message to the student that he or she is not part of the norm within that discipline. This chapter examines the types of images are currently displayed in students' sociology, education, and computer science textbooks.

Overall Representations

Data collected from computer science, education, and sociology textbooks came from introductory course textbooks at the University of Central Florida. Table 3 displays the overall representations of race and gender from the sample of introductory textbooks.

Table 3: Introductory Textbook Representations by Race and Gender

Race	Male	Female	Total
White	570 (55.6%)	455 (44.4%)	1025 (100%)
Black	108 (49.8%)	109 (50.2%)	217 (100%)
Other Race	130 (53.7%)	112 (46.3%)	242 (100%)
Total	808 (54.4%)	676 (45.6%)	1484 (100%)

A majority of the images contained white males and females (n=1025). Whites were almost twice as likely to appear than blacks (n=217), and "other race" (n=242) individuals combined. A one-sample chi-square test was conducted, which confirmed that whites were more likely to be depicted within textbook images than any other race (p=.000). Another one-sample chi-square test was conducted to see if males and females were shown equally within textbook images. The results of this test were significant, with males appearing more often than females (p=.001).

However, men and women within their own race tended to be shown in fairly equal numbers. Further, while whites appeared frequently, a chi square test was conducted to see if there was a significant difference between race and gender representations within textbook images. The results of this test were found to be not significant between whites and nonwhites by gender (x^2(3, n=1484) = 5.112, p=.164). This means that overall there were no significant differences in the numerical representations of gender by race.

Still, there are aspects of textbook representations that were not captured by the chi square test such as the setting or context of the images. The next step in investigating the representations of individuals within textbooks was to group the images by overall context. In

the current dissertation, context included what the individuals were doing within the image. For example, images within the computer science textbook tended to display individuals using laptops or technology. Understanding the context would help to confirm or refute past research, which showed race and gender tended to be compartmentalized into certain roles (Aerni and McGoldrick 1999; Clark and Nunes 2008; Stone 1996).

  Again, following Phillips and Phillips (2007) data were examined through a method of ''constant comparison''. Constant comparison involves, "comparing the data with provisional themes as they emerge from the data, with a goal of determining the extent to which the provisional themes are supported by subsequent data" (Phillips and Phillips 2007:24). Thus, the context of textbook images was coded as a basic description. A frequency of image descriptions was conducted to see how the descriptions could be grouped into themes. Table 4 displays these themes with a brief description of the types of images that were included.

Table 4: Context of Textbook Images by Themes

Theme	Description
Contributors to the Field	Individuals identified as advancing the discipline
Working	Individuals completing tasks such as signing papers; group meeting,
Using Technology	Talking on cellular telephone; sitting in front of computer or laptop; using equipment such as ATM or self-checkout
Socializing	Individuals sitting together; playing games; talking; laughing
Romance/Sexuality/Beauty	Individuals staring in mirrors; touching self or others in sexually suggestive manner; models on catwalk or posing for photographs
Deviance and Crime	Non-traditional dress style such as tattoos or facial piercing; aggressive behavior such as hitting, chasing, punching, shoving; near weapons
Classroom	Teachers and students within a classroom setting
Family	Family photographs, group that appears to be family doing activities together in and outside the home
Other	Image of individual's face only but not contributor to field; drawing to illustrate concept (such as cloning process)

The following themes were found in all the textbooks: contributors to the field, individuals working, individuals socializing or playing, family images, deviance or crime, and images of beauty. The particular individuals that portray a theme vary by discipline. For example, the theme of showing contributors to a field happens in all disciplines, but one discipline's textbooks may overwhelmingly show white males, where another discipline's textbooks have a more diverse mix. Because of this, analyzing the data lends itself to grouping the data according to discipline.

Table 5 shows that certain themes were discipline-specific. For example, the computer science textbook contained the largest number of portrayals of individuals using technology. On the other hand, the education textbook contained classroom settings within images while the computer science textbook did not show students within classrooms. Further, the results for the

chi-square test show there is a relationship between theme and discipline (x^2 (16, n=1485) = 746.636 p= .000). Some of the specific relationships are between images of socializing in sociology textbooks (n=140), classroom setting within education textbooks (n=22), and using technology as shown in the computer science (n=68). The outcome of the chi-square test seems obvious—the primary focus of the introductory courses in the sample match the theme with which the textbooks are associated.

Table 5: Image Theme by Discipline

Theme	Discipline			
	Computer Science	Education	Sociology	Total
Contributions	36 (37.1%)	37 (38.1%)	24 (24.7%)	97 (100%)
Working	46 (38.7%)	7 (5.9%)	66 (55.5%)	119 (100%)
Using Technology	68 (89.5%)	2 (2.6%)	6 (7.9%)	100 (100%)
Socializing	36 (17.9%)	25 (12.4%)	140 (69.7%)	201 (100%)
Romance, Beauty, or Sexuality	5 (14.5%)	-	30 (85.7%)	35 (100%)
Deviance or Crime	9 (14.5%)	9 (14.5%)	44 (71%)	62 (100%)
Classroom	-	22 (71%)	9 (29%)	31 (100%)
Family	3 (7.5%)	1 (2.5%)	36 (90%)	40 (100%)
Other	15 (31.3%)	2 (4.2%)	31 (64.6%)	48 (100%)

However, the purpose of the current dissertation is to explore beyond what types of images appear within introductory textbooks. Individual portrayals, which take into account race and

gender, will show if images compartmentalize and stereotype groups into certain themes. As shown in Table 5, disciplines vary in the types of theme they include; thus, images are analyzed by discipline, starting with computer science.

Introduction to Computer Science Representations of Race and Gender

Overall the computer science textbook contained more images of "other race" and white males than any other race and gender combined as shown in Table 6. Further, men were significantly more likely to be depicted within images as working or labeled as contributors to the field than women (x^2 (7, n=288) = 20.752, p= .004). On the other hand, as shown in Table 6 and Table 7, the most diverse images within the computer science textbook showed individuals using technology for any purpose (n=82). So while contributors to the development of technology were largely portrayed as white males, technology was depicted as crossing race and gender boundaries and being accessible to everyone.

Table 6: Computer Science Textbook Themes by Gender

Theme	Gender	
	Male	Female
Contributions	32 (18.4%)	4 (3.5%)
Working	52 (29.9)	26 (22.8%)
Using Technology	45 (25.9%)	37 (32.5%)
Socialization	24 (13.8%)	24 (21.1%)
Romance, Beauty, or Sexuality	3 (1.7%)	4 (3.5%)
Deviance or Crime	7 (4%)	8 (7%)
Family	2 (1.1%)	4 (3.5%)
Total	174 (60.4% within theme)	114 (39.6% within theme)

Table 7: Computer Science Textbook Themes by Race

Theme	Race		
	White	Black	Other
Contributions	34 (16.3%)	1 (3.6%)	1 (2%)
Working	53 (25.4%)	9 (32.1%)	19 (31.4%)
Using Technology	55 (26.3%)	8 (28.6%)	19 (37.3%)
Socialization	31 (14.8%)	6 (21.4%)	11 (21.6%)
Romance, Beauty, or Sexuality	5 (2.4%)	2 (7.1%)	-
Deviance or Crime	15 (7.2%)	-	-
Family	6 (2.9%)	-	-
Other	10 (4.8)	2 (7.1%)	4 (7.8%)
Total	209 (72.6% within theme)	28 (9.7% within theme)	51 (17.7% within theme)

The first theme explored were Technology Trailblazers or computer science contributors to the field. Of these thirty-six, there were thirty white males, four white females, one black male, and one Asian male. Contributors to the field were a separate category from profile pictures. This is because profile were usually website profile pictures as opposed to showing the reader a photograph of an important figure in that discipline. Generally speaking, profile images would be easier to create than many other types of photographs; all a photographer would need is a model and a backdrop. Thus, it is possible that profile images might contain more diverse race groups than other types of images. For example, historically women and minority men were excluded from higher education, which might explain why there would be more white males

portrayed from previous generations as contributors to the field. However, the data do not support the hypothesis that profile pictures contained more diversity. For example, in the computer science textbook of the nine profile pictures, white males appeared the most (n=5), followed by white females (n=3), black males (n=2), and other race individuals (n=3). Usually these photos were of a white male chatting online with friends, who were displayed in instant messenger windows.

The next theme, working, showed individuals engaging in business meetings, researching at the library, or holding briefcases and walking presumable to or from work. From Table 6 and Table 7 it is evident that white males were overwhelmingly portrayed as workers (n=36). Further, white men appeared more often than white women, black women, and black men combined (n=42). I further classified images of individuals working in an office or home without using technology versus those that were using computer-based technology. Specifically, because it was difficult to determine if an object was being used for leisure or for work, anyone using computer-based technology was classified as using technology.

Eighty-two individuals were found in images that showed them using the latest technology in everyday life. Table 6 and Table 7 show the results of images that contained individuals using computer-based technology. These images contained people using cell phones, laptops, or desktop computers. These images seemed very diverse in that many "other race" individuals (n=19) were shown as well as blacks (n=8), and whites (n=55). There were a handful of images of individuals using technology that were unique. These images had more detail in terms of what how the individuals were actually using the technology. For example, of those images in which I could determine how the technology was being used, three white women and

one white male used technology to purchase a product or obtain money from an ATM. No other races were specifically depicted as using technology for financial transactions.

Diversity appeared in other images as well. Generally, this occurred within images of socializing such as people sitting at tables talking to each other, smiling and laughing together, playing sports, or playing dress-up (children). Equal numbers of men (n=24) and women (n=24) where shown socializing. However, when looking at these images with greater scrutiny, stereotypes do emerge. For example, the white male video gamer stereotype appeared in all three images of video games being played. Another stereotype appeared within computer science textbooks in terms of who drives cars. Twice images of white men driving cars appeared; no other images were shown of individuals driving cars.

Other stereotypes were shown in the computer science textbook as well. Only men were shown playing sports in two different images (two black males and two white males). Another interesting image included a scene from the television show, *Jeopardy*. Anyone familiar with the show is aware that winnings are in dollar amounts. In this image, a white male was in the lead with the most money, a white woman was breaking even at zero, and a black man had negative two hundred dollars. White men were not the only ones that appeared as stereotypes. For example, one image showed a woman looking very upset at her computer. The caption described her accidentally deleting a file that cannot be recovered, perhaps a warning of the importance of backing-up important files. Thus, a white woman was depicted as an individual using technology incorrectly.

So far images within the computer science textbook did contain stereotypes of men in what is considered to be traditionally male-dominated areas—working outside the home and

contributing to the advancement of science. How do traditionally female-dominated areas, such as beauty or sexuality, compare to male-dominated depictions in this textbook? Answering this question meant looking at images that portrayed romance, sexuality, and beauty to see if they primarily contained females. In the computer science textbook two images that did depict romance or sexuality were advertisements for websites. In one of these images, a black male was proposing marriage with an engagement ring while looking into the camera, with his partner not visible. In the other image, a white male was shown hugging a white female from behind. So while areas such as working remained male-dominated, female-dominated areas such as beauty and sexuality were more gender-neutral.

The last theme is crime or deviance. These images appeared only three times within the computer science textbook. Further, at least two were of the same convicted white male computer hacker who now helps with computer security. There were no images that depicted a more common type of computer related crime, which is illegally downloading or sharing copyrighted materials. This is interesting because it seems like this type of crime would be more relevant to the college student audience than the conviction of a computer hacker.

Overall the computer science textbook contained more stereotypes of white males than any other gender or race. Men, particularly white ones, were most likely to be depicted as working or within images labeled as contributors to the field. On the other hand, the most diverse images were of individuals using technology. Again, while contributors to the development of technology were largely portrayed as white males, technology was depicted as crossing race and gender boundaries; as being accessible to anyone. Further, the computer science discipline is not a field where social issues such as diversity are part of the course. So how do representations in

introductory sociology textbooks, a field that tends to discuss diversity issues, compare to computer science images?

Introduction to Sociology Representations of Race and Gender

In comparison to the computer science textbook, sociology textbooks also compartmentalized race and gender groups into certain themes. Specifically, there was a significant relationship between theme and gender of the individual as shown in Table 8(x^2 (8, n=944) = 69.997 p= .000). Further, as displayed in Table 9, there was also a significant result for the chi-square test of the relationship of an individual's race and theme they appeared in (x^2 (16, n=943) = 79.551 p= .000).

Table 8: Sociology Textbook Themes by Gender

Theme	Gender	
	Male	Female
Contributions	18 (3.6%)	6 (1.4%)
Working	103 (20.4%)	49 (11.2%)
Using Technology	8 (1.6%)	1 (.2%)
Socialization	177 (35%)	155 (35.3%)
Romance, Beauty, or Sexuality	12 (2.4%)	57 (13%)
Deviance or Crime	64 (12.7%)	33 (7.5%)
Family	50 (9.9%)	66 (12.3%)
Classroom	14 (2.8%)	18 (4.1%)
Other	59 (11.7%)	54 (12.3%)
Total	505 (53.5% within theme)	439 (46.5% within theme)

Table 9: Sociology Textbook Themes by Race

Theme	Race		
	White	Black	Other
Contributions	21 (3.2%)	2 (1.4%)	1 (.7%)
Working	117 (18.1%)	16 (10.8%)	18 (12.2%)
Using Technology	4 (.6%)	2 (1.4%)	3 (2%)
Socialization	237 (36.6%)	50 (33.8%)	45 (30.4%)
Romance, Beauty, or Sexuality	49 (7.6%)	8 (5.4%)	12 (8.1%)
Deviance or Crime	78 (12.1%)	16 (10.8%)	3 (2%)
Family	79 (12.2%)	14 (9.5%)	23 (15.5%)
Classroom	11 (1.7%)	13 (8.8%)	8 (5.4%)
Other	51 (7.9%)	27 (18.2%)	35 23.6%)
Total	647 (68.6%)	148 (15.7%)	148 (15.7%)

Similar to the computer science textbook white males appeared in a majority of images of work (n=86). White males were generally portrayed as doctors, researchers, scientists, bosses, construction workers, or famous men speaking in public such as Bill Gates. White women were actively working in images as well (n=31). For example, white women were portrayed as doctors in several images but were just as likely as men to be portrayed as working in factories or as construction workers (n=8)

White women and men were not depicted as the same type of worker. For example, in one image a female was hanging on to a construction beam in a playful manner, in a "Singing in

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the Rain" pose for the camera. This behavior could be considered as play at work rather than productive work. This is in stark contrast to the image of a white male sleeping under his desk showing his commitment to the company. This example illustrates that depictions of men and women are different, with men taking their jobs seriously enough to practically live at work.

Black women and black men also appeared in work-related images (n=10, n=6). However, simply appearing in images where someone is working does not mean that everyone is shown as working within the image. Although black men appeared in images related to work, few were actually working. For example, in one image, a white doctor was giving a black male patient a shot while a second black male stands nearby. This would be coded as one white doctor and two black males appearing in work-related images, however only the white male would be actively working. Thus, while six black males appeared in work-related images, only three black males were actively working. Further, while other races were counted within working images that were not actively working, this portrayal did not occur for other races as often as it did for black males. For example, Asian males and Asian females appeared a total of nine times within working images. However, most were portrayed as active workers within these images. Five of the instances in which Asians appeared were in the context of laboratory work, such as dissecting a frog.

As found in the computer science textbook, white males appeared more frequently as contributors to sociology (n=16). White men contributors were followed by, five white females, one Asian male, one black female, and one black male. This could be due to historical photographs of "founding fathers" from the nineteenth century. Both sociology textbooks had at least one picture of Karl Marx, Max Weber, and Emile Durkheim. Other profile pictures that

were not of contributors followed a similar pattern, with white men and white women shown more often than other groups.

In contrast to working images in which white men appeared more frequently as actively working, family images usually showed white women (n=49). Additionally, when men of any race group appeared (n=50), they were rarely shown as the only adult in the image with children-two out of thirty-six family images showed a father alone with a child. In contrast, white women were shown as supermoms. Examples of this are depicted in the following images of white women; one carrying a briefcase, groceries, and a baby; one trying to work while a child hung around her waist (n=2); one holding multiple children at once (n=3). Other race and gender groups were not depicted as parents capable of multitasking.

There were images that countered the use of stereotypes. One progressive image was of two fathers; together they were carrying groceries and pushing a stroller with a boy and girl. Other images showed a racial minority families working in the kitchen with everyone helping, reading at the library together, or father reading a book to his young daughter. Still, a majority of the images that appeared to have family members together tended to show how white women in particular managed childcare tasks, usually without a father figure in the image with her. Thus, while the computer science textbook contained stereotypes of white men, the sociology textbooks contained more stereotypes of a white woman's nurturing role in society.

In contrast to the computer science textbook, the sociology textbooks within this sample contained more images of people engaging in a wider variety of activities. Additionally, a majority of the images within the sociology textbook displayed images of diverse groups socializing together (n=140). For example, there were more images that depicted men and

women playing sports in comparison to the computer science textbook. However, women were depicted in ways that emphasized their femininity in sports, not as competitors. Specifically, women appeared in five sports related images; in three of these images women are depicted as cheerleaders. This is in contrast to five images that showed men actively playing sports instead of posing in uniforms.

However despite the stereotypes that appeared there were some images that showed men and women in non-stereotypical ways. For example, there were images of boys and girls playing together or as older adults socializing together. These images contained not only mixed gender groups, but often mixed races as well. Specific examples included an image of a large group of men and women watching football (n=2), and a white girl and black boy playing dress-up together. Images that depicted individuals socializing were some of the least stereotypical out of all other themes being much more likely to show mixed race and gender groups interacting together.

In terms of beauty-related images, primarily these depictions focused on females (n=57) rather than men (n=12). A majority of females were white (n=41), however Asian (n=5), black (n=7), and "other race" women also appeared within these images. Images of beauty depicted women as beautiful models or ordinary yet thin girls concerned with weight. These images included models walking down the catwalk with a caption mentioning starvation, a woman with her face marked-up for plastic surgery, or a nearly naked woman examining herself in a mirror. The only image containing a male that dealt with beauty showed an overweight Asian male teenager sitting in a chair in front of a fitness poster with a thin Asian woman on it.

Romance and sexuality were also a part of the theme related to beauty. Within this theme, six of the fifteen images in of romance or sexuality were of heterosexual same-race couples. Sexual images within the sample of sociology textbooks emphasized a heterosexual and potentially chauvinistic male perspective of sexuality. There were also two separate images of a man being touched by two females, one on either side of him, in a suggestive manner. One of this images contained two women and one man in their underwear on top of a bed. In another image of sexuality, a white man pours alcohol into a white woman's mouth with the caption below describing alcohol and date rape. However, from the image alone the valuable lesson is lost; it appears that the couple is having fun together. In contrast, women did not appear in any image with more than one male in any sexually suggestive manner.

Not all of the images under the theme of romance or sexuality were limited to heterosexual portrayals. There were also images that depicted gay, lesbian, and transgender individuals. Three of these images depicted gay marriage, and one of these images showed two women holding hands together. However, there were not any images that showed romantic intimacy that included gay or lesbians to the same degree of intimacy as heterosexual couples. This could be a result of trying to please a large politically diverse audience for a textbook that is used nationally.

The last major theme combined several types of deviant or criminal behavior. Within the sociology textbooks, this theme could be further categorized as general deviance or criminal behavior, aggressive behavior, individuals holding weapons, domestic violence and protesting (n=97). Deviant behavior was typically shown as individuals with dyed hair, tattoos, piercings, and a scowl towards the camera. However, deviance or criminal behavior also included other

depictions such as a courtroom scene with a black man being arrested by two white officers. Another image within the grey area of deviant behavior showed a mixed-race group of males smoking an unknown substance out of a hookah.

Aggressive behavior was included under the theme of deviant and criminal behavior. This included images of individuals shouting, pushing, chasing, hitting, or visible bruising from one of these incidents. Usually this was in the context of domestic violence and also contained only white individuals; no other race groups were shown as engaging in intimate partner violence. Four images were of parents shouting at each other in front of their children, sometimes with the children crying in the photographs. One particularly powerful image showed the aftermath of domestic violence; a white woman with a black eye sitting outside with her two daughters next to her side.

While all of the individuals engaging in aggressive behavior were white, there was an even number of white and black men within images that contained weapons (n=6). The images were evenly split between depictions of soldiers carrying weapons and men who had weapons for illegal purposes; such was the case of an image that showed Jesse James and his gang of men. The only image of a woman holding a gun was of a white woman learning to use a gun from a white male instructor standing close behind her. No other images of women with weapons appeared.

Overall, the sociology textbooks were a unique blend of stereotypes and progressive images. They did appear to be representative of race and gender by numerical count, however the context in which individuals were portrayed was different. Women, whites in particular, were primarily depicted as caregivers of children. Women were also displayed as suffering from body

image issues or concerned with their appearance whereas men were largely neglected. In contrast, men were more likely to be portrayed as powerful in the sense that they were more often contributors to the field of sociology and active in the workplace.

Still, it is apparent that sociology textbook publishers have made an effort to include more diverse images. There were images of gay, lesbian, and transgender individuals that were participating in weddings, going shopping together, or simply holding hands on the street. Additionally, the face of deviance and crime was not a racial minority one; males and females of a variety of races were shown in these roles. Again, past research showed that textbooks tended to underrepresent minorities (Alexanderson, Wingren, and Rosdahl 1998; Babchuk and Keith 1995; Clark and Nunes 2008). This means that while there are stereotypes within textbooks there has been progress in comparison by including more images of minorities. Will more diverse images be shown within a female-dominated field such as education as well?

Introduction to Teaching Profession Representations of Race and Gender

As stated earlier, image themes depended on the discipline's textbook. As a result, some themes did not appear in the other textbooks. Unsurprisingly, the classroom was the most common setting for images within the education textbook. The data show how frequently students and teachers appeared in the classroom by gender in Table 10.

Table 10: Education Textbook Themes by Gender

Theme	Gender	
	Male	Female
Contributions	25 (19.2%)	12 (9.8%)
Working	4 (3.1%)	8 (6.5%)
Using Technology	4 (3.1%)	5 (4.1%)
Socializing	34 (26.2%)	41 (33.3%)
Deviance or Crime	11 (8.5%)	17 (13.8%)
Family	3 (2.3%)	1 (.8%)
Classroom	46 (35.4%)	39 (31.7%)
Total	130 (51.4% within theme)	123 (48.6% within theme)

Within classroom images, students were shown sitting at desks working on activities or a teacher was giving a classroom demonstration while the students were watching. Images of classrooms from the early nineteenth century and before only contained whites. There was not a single image that contained a minority student from before the Civil Rights movement of the 1950s. For example, there were no depictions of Native American or black classrooms during segregation. Consequently, classrooms that were shown were skewed towards having white instructors. Specifically, white female teachers appeared a total of eleven times within the classroom, followed by white males (n=3), an Asian female teacher, and a black male instructor. However, when a chi-square test was conducted to see if there was a relationship between gender

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and theme the results were not significant as shown above in Table 10 (x^2 (7, n=253) = 12.343 p= .090).

Table 11: Education Textbook Themes by Race

Theme	Race		
	White	Black	Other
Contributions	28 (16.6%)	3 (8.1%)	6 (14%)
Working	7 (4.1%)	4 (9.8%)	1 (2.3%)
Using Technology	4 (2.4%)	4 (9.8%)	1 (2.3%)
Socialization	51 (30.2%)	11 (26.8%)	19 (30.2%)
Deviance or Crime	22 (13%)	1 (2.4%)	5 (11.6%)
Family	4 (2.4%)	-	-
Classroom	51 (30.2%)	18 (43.9%)	16 (37.2%)
Other	2 (1.2%)	-	1 (2.3%)
Total	169 (66.8% within theme)	41 (16.2% within theme)	43 (17% within theme)

While there were black females within the textbook, not one was depicted as an educator present in the classroom. Specifically, black females were shown within the textbook in teacher meetings and other images but not as educators interacting with students in the classroom. The lack of black female teachers in the classroom is interesting for several reasons. At the front of the textbook, there are several tables that display information about the race and gender of teachers from the Florida Department of Education Statistical Brief (2007). While the table from the 2007 Florida Department of Education Statistical Brief only displays an overall count of

female teachers (n=143,589), in comparison to males (39,399), and also by race group (i.e. 135,827 whites, 26,193 black non-Hispanic) it is clear that black female instructors within textbook images are underrepresented.

Black male teachers were also underrepresented and stereotyped—the only picture that contained a black male teacher interacting with a student showed him playing a musical instrument with a black male student. Despite the lack of black teachers, when a chi-square test was conducted to rest the association between race and theme the results were not significant (x^2 (14, n=253) = 18.542 p= .183). This is due to the fact that classroom images contained both instructors and students. Unfortunately, by removing students from the chi-square test the sample of instructors is too small to accurately measure the relationship between race and classroom theme.

Additionally, in the contemporary classroom setting, students were more racially diverse. Again, students in the classroom setting were doing things such as working at desks or tables on paper, reading books, or engaging in classroom discussions by raising their hands. Most images showed students behaving properly and actively engaging in class work. One of the three negative images that did appear depicted classroom cheating with a white female blatantly looking over the shoulder of another white female sitting in front of her. In the background of this image, two white students, one male and one female, were watching the two others cheating. There were also two other images showing students who were not interested in school. These were also female students, which is interesting because it contradicts the stereotype of males being more likely to engage in negative behavior in the classroom.

Similar to sociology and computer science, individuals shown as contributing to education were primarily white males. In particular, white males appeared in 19 profile pictures highlighting contributions to education. White females appeared nine times, Hispanic ("other race" in this case) males six times, black females three times, and black males once. This appears to be due to the historical aspect of many of the images, which contained eighteenth century drawings of white men that campaigned for educational reform.

The next theme, socialization or playing, included images of people playing musical instruments, using playground equipment, standing in front of the school or lockers, playing video games and getting on the school bus. Similar to the computer science textbook, a majority of these images appeared to be posed, stock photographs that could appear in any textbook. While white males and females appeared the most, these images still appeared to vary in racial diversity and gender. For example, in the computer science textbook, the video game players were portrayed as white males. In the education textbook, the only image that clearly showed children playing video games contained a black female, a black male, and "other race" female.

One final theme was included in the education textbooks. These images were depictions of deviance and crime. As shown in the other disciplines, whites were more likely to be shown as aggressive. One image depicted two white girls making fun of a sad looking white girl. Another image showed two white males and an Asian female going through a metal detector as a security officer ("other race" male) scanned them.

There were a few images that were not mentioned, however the current discussion captured the overall context of the education textbook. As was the case with sociology and computer science textbooks, a majority of the images displaying contributors to the field focused

on white males. On the other hand, white women were usually depicted as an instructor in a classroom in comparison to other groups. However, in contrast to the lack of minorities as instructors, the images of students in the classroom and socializing together were diverse.

Analysis

The results are mixed concerning introductory textbook representations of gender and race within images. A majority of the results confirm past research on the use of gender and race stereotypes within images. For example, sports media studies have shown that women are depicted differently than men in addition to being underrepresented. Specifically, when women are shown they are more likely to be depicted playing individual feminine sports such as ice-skating than team sports such as volleyball (Hardin et al. 2006). Sociology textbooks in this sample contained similar images, with women shown as cheerleaders posing for photographs more often than in any other sports-related role. Conversely, white and black men were shown as active players on the field or on the court.

Additionally, other findings confirm previous research on gender differences in acknowledgements of contributions to the discipline (Peterson and Kroner 1992). Specifically, both the male-dominated field of computer science and the female-dominate field of education included more images of white males as important figures in that discipline's development. Perhaps this is the result of more white males within those disciplines historically since education and sociology textbooks included individuals well into the 1800s. Regardless of the possible reasons, it is important to note that this finding confirms past research while also expanding upon it by including the male-dominated field of computer science.

Beyond who contributed to the field historically, the computer science and sociology textbooks in this sample tended to depict workers as white males. This would not be surprising except for the fact that white males also depicted educators at a higher rate than black females, which does not match real-world experience. Additionally, there was not a single image that contained a minority student from classrooms before desegregation. Consequently, classrooms that were shown were skewed towards having white instructors and students. However contemporary classroom settings contained more diverse groups of students.

However, while past research has shown that textbooks tend to underrepresent minorities, the chi square results within the current dissertation were significant only for computer science and sociology textbooks (Alexanderson et al. 1998; Babchuk and Keith 1995; Clark and Nunes 2008). Consequently, more minorities were shown in textbook images in comparison to previous research. Diverse individuals were found in images that showed them socializing or using the latest technology in everyday life. Images that depicted individuals socializing were some of the least stereotypical out of all other themes being more likely to show mixed race and gender groups interacting together. Additionally, the face of deviance and crime was not a racial minority one; males and females of a variety of races were shown in these roles. Thus, while there are stereotypes within textbooks there has been progress in comparison by including more images of minorities outside of images related to poverty or crime (Stone 1996).

Overall, textbook images did vary by discipline. As shown in Table 5 themes were significantly related to discipline. Specifically, using technology appeared more often in the computer science textbooks while socializing individuals were shown within sociology textbook images. In contrast, the education textbook showed images of classroom settings. Beyond the

type of theme that emerged there were differences in the types of individuals used in images. The computer science and sociology textbooks had significant results for chi-square tests that showed race and gender were associated with image theme. Further, white men in computer science textbooks appeared most often as working and contributing to the discipline through research. Conversely, white women were shown in sociology textbooks as the center of the family.

On the other hand, the education textbook did not have significant results for race or gender related to theme. Thus, despite white males being shown the most as contributors to education, there were no statistically significant results to support this finding. However, one result that was not significant could have been due to a small sample size. Specifically, black female instructors were missing from the classroom however there were not enough teachers to use a chi-square test. Additionally, while the education chi-squares were not significant, the chi-square tests for computer science and sociology textbooks showed there was a significant difference in the way that gender and race were displayed within introductory textbooks.

CHAPTER FIVE: STUDENT TEXTBOOK ACCESS AND USE

Exposure to messages within textbooks are perhaps more long-lasting in comparison to other forms of media such as television show, a magazine advertisement, or a movie because textbooks are more likely to be viewed repeatedly and for longer periods of time. Thus, understanding how often students use textbooks is important because it can inform us about exposure to stereotypes and other types of information within texts. It is also important because it helps provide a context for understanding their attitudes towards textbook images. For example, if a student states that he or she used the textbook once before finals then that could help explain why he or she claims they do not remember textbook images. Thus, student access to a required textbook, and how often he or she uses it, should provide the context for understanding his or her attitude towards textbook images.

Students Who Have a Copy of the Textbook

As shown in Table 12, a majority of students obtained a copy of the textbook for their class (n=462). Further, chi-square test results show sociology students (n=189) were more likely to have a copy of their textbook than computer science (n=183) or education students (n=90) (x^2 (2, n=550) = 18.093, p=.000).

Table 12: Student Has Copy of Textbook by Course Discipline

Discipline	Has Copy	
	No	Yes
Computer Science	48 (54.5%)	183 (39.6%)
Education	25 (28.4%)	90 (19.5%)
Sociology	15 (17%)	189 (40.9%)
Total	88 (16% of respondents total)	462 (84% of respondents total)

Additionally, a chi-square test was conducted to measure the relationship between student gender and having a copy of the textbook, which is displayed in Table 13. The results of the chi-square test measuring student gender by having a copy of the textbook were significant (x^2 (3, n=550) = 17.867, p=.000). Males students (n=53) were significantly less likely to obtain a copy of the textbook in comparison to female students (n=35).

Table 13: Student Has Copy of Textbook by Gender

Gender	Has Copy	
	No	Yes
Female	35 (39.8%)	285 (61.7%)
Male	53 (60.2%)	169 (36.6%)
Total	88 (16% of respondents total)	462 (84% of respondents total)

Further, when controlling for course 13 male sociology students said they did not have a copy of the textbook while only two female students reported that they did not have a copy. However the correlation between gender and course was not significant for education (x^2 (4, n=116) = 5.365, p=.252) or computer science students (x^2 (3, n=233) = 3.830, p=.430).

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While the test results were significant by discipline and student gender, another chi-square test did not show a correlation between student's race and having a copy of the textbook (x^2 (3, n=536) = 4.352, p=.226). However, because race and income tend to be correlated perhaps a student's financial support is more important in determining if he or she will get a copy of the textbook than his or her race. Is there a difference in students who report having financial help from parents or guardians report versus students who do not receive assistance? A chi-square test was conducted to test the association between students' financial help (dependent upon their parents' financial support or not) and likelihood of obtaining a required textbook. While the results for the chi-square were not significant, (x^2 (4, n=553) = 2.120, p= .714), perhaps other student demographics contribute to a having a copy of the textbook for class. Thus, having a copy of the textbook and its relationship to student demographics was tested using a logistic regression model.

The logistic regression test included the dependent categorical dummy variable of a student not having a textbook (0) or student having a copy (1). The independent variables included in the model were gender, race, college level, and financial dependence on parents. Race was recoded into a set of four dummy variables with group membership equal to 1. Next, college level was also recoded into four dummy variables with the group characteristic equal to 1. The four college level variables were First year students, Sophomore, Junior and Senior. Whites and First year students were left out of the logistic regression test as comparison groups.

The independent variables of gender, race, college level, and financial dependence were entered in a three-step logistic regression model. The first step included gender and race, the second step added in college level, and the third step added in financial dependence. The first

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step showed significant results, however the second and third steps within this model were not significant.

As shown in Table 14, the influence of Hispanic and gender within the first model was significant, with the model explaining 7 percent of the variance of students having a copy of the textbook. Specifically, female students had significantly higher odds of having a copy of the textbook than male students (OR=2.691). The influence of being Hispanic was not as strong, with Hispanics having significantly higher odds of having a copy of the textbook than whites (OR=.542). However, when the additional variables of college level and financial dependence were added the overall model became nonsignificant. In short, the only relationship there appears to be is between a student obtaining a copy of the textbook and gender or possibly being Hispanic. However, when controlling for financial dependence and college level this relationship becomes nonsignificant.

Table 14: Logistic Coefficients Predicting If Student Had a Copy of the Textbook by Demographics, College Level, and Financial Dependence on Parents

Independent Variable	Unstandardized Regression Coefficient/Standardized Beta Coefficient (Standard Error)		
	Model 1	Model 2	Model 3
Gender	.990/2.691** (.243)	.967/2.631 (.245)	.959/2.609 (.246)
Black	-.148/.862 (.422)	-.183/.832 (.427)	-.205/.815 (.428)
Hispanic	-.613/.542* (.314)	-.633/.531 (.317)	-.628/.534 (.317)
Asian	.183/1.201 (.514)	.268/1/307 (.520)	.275/1.317 (.521)
Sophomore		-.553/.575 (.292)	-.554/.575 (.292)
Junior		-.213/.808 (.471)	-.232/.793 (.331)
Senior		-.505/.604 (.471)	-.542/.582 (.476)
Financial Dependence			-.163/.849 (.294)
Constant	1.221	1.451	1.587
N	533	533	533
Nagelkerke R^2	.070	.082	.083

*p<.05, **p<.01

Of course, owning a textbook does not measure how often a student uses his or her textbook. Thus, how often a student uses his or her textbook might help explain perceptions of textbook images. For example, a student claimed she used the textbook once during the semester

and she did not notice disabilities within textbook images. Using the textbook only once could explain why a student would not notice images of disabled individuals. On the other hand, if a student claimed he or she read the textbook on a weekly basis yet he or she did not notice disabled individuals within images, then other explanations could be more accurate. Specifically, if a student who reads his or her textbook on a weekly basis did not notice textbook images of people, then either the textbook lacks such images or the student does not pay attention to imagery. Before we can understand the relationship between textbook use and student perceptions of images we must know how often students read their textbooks.

<u>Student Demographics and Textbook Use</u>

Is there a relationship between students' demographics and how often they read their textbook? Table 15 shows how often students indicated they read their textbooks.

Table 15: How Often Students Read Introductory Textbooks

Frequency of Reading	Number of Students
More than twice a week	16 (2.9%)
At least twice a week	92 (16.5%)
Twice a month	88 (15.8%)
Once a Month	89 (16%)
Once or Twice During the Semester	110 (19.8%)
Never	62 (11.2%)
Total	457

A majority (62 percent) of students read their textbook at least once a month or more. In contrast, almost 11 percent of students reported never reading their textbook. Overall, most students have read their textbook at some point during the semester (86.4 percent).

There were differences in how often students read their textbooks by discipline. There is a significant relationship between how often a student reads his or her introductory textbook and the course discipline. The chi-square results are shown in Table 16, $(x^2 (10, n=457) = 98.141$, p=.000).

Table 16: How Often Students Read Introductory Textbooks by Discipline

Frequency of Reading	Computer Science	Education	Sociology
More than twice a week	0	3 (3.4%)	13 (7%)
At least twice a week	12 (6.6%)	18 (20.5%)	62 (33.3%)
Twice a month	28 (15.3%)	17 (19.3%)	43 (23.1%)
Once a month	36 (19.7%)	14 (15.9%)	39 (21%)
Once or twice during the semester	64 (35%)	27 (30.7%)	19 (10.2%)
Never	43 (23.5%)	9 (10.2%)	10 (5.4%)
Total	183 (40%)	88 (19.3%)	186 (40.7%)

Computer science students were the most likely group to report never reading their textbook (n=43). While a small minority of education and sociology students reported reading their textbook more than twice a week (n=16), no computer science student reported reading this often. In contrast, sociology students reported reading their textbook more frequently than computer science and education students—nearly 40 percent of sociology students read their textbook weekly.

Clearly, there are course discipline differences in how often students read their textbook. However, the relationship between how often a student reads his or her textbook could be based on the types of resources outside of the textbook that are used for a course. For example, perhaps students that have instructors who use PowerPoint read their textbooks less often than other students. While students were not asked if they, or their instructors, used other resources, other variables could be related to how often a student reads. As shown early, gender was significantly related to a student obtaining a copy of the textbook—is gender also related to how frequently a student reads? This relationship was measured with a t-test with the results are displayed in Table 17.

Table 17: Student Gender and How Frequently He or She Reads Textbook

Frequency of Reading Textbook	Male	Female
N	169	280
Mean	2.0888	2.2393
SD	1.538	1.374

P=.065, t=-1.074

Despite more female students owning their textbooks, there was not a significant relationship between gender and frequency of reading the textbook. This means that while female students are more likely to have a copy, they do not read their textbook more frequently than male students.

In contrast, there were significant findings for the relationship between student race and frequency of reading the textbook. Race was grouped into two categories for a t-test, white and

nonwhite. According to the t-test, nonwhite students read their textbooks more frequently than white students, as is shown in Table 18.

Table 18: Student Race and How Frequently He or She Reads Textbook

Frequency of Reading Textbook	White	Nonwhite
N	297	147
Mean	2.1077	2.3061
SD	1.383	1.52

P=.018, t=-1.374

So far there have been mixed results—gender was not significantly related to how frequently a student read his or her textbook while race was significant. What happens when race, gender, and other student demographics, are controlled for when testing how often a student reads his or her textbook? A multiple regression analysis was conducted to test the effects of student demographics and course discipline on how frequently students read their textbook. The dependent variable was the scale of how often a student read his or her textbook. The independent variables were gender, race dummy variables, and college level dummy variables. Similar to the logistic regression test, white and first year students were the comparison groups since they were the largest groups. New control variables, course disciplines, measured if students were taking an education, sociology, or computer science introductory course. Course discipline variables were coded as nominal dummy variables with group membership equaling 1, with computer science students left out as the comparison group. The results of the multiple regression analysis are displayed in Table 19.

Table 19: Multiple Regression Results of Student Demographic Variables Effect on Frequency of Textbook Use

Independent Variable	Unstandardized Regression Coefficient/Standardized (Beta) Coefficient	Standard Error
Gender	.000/.010	.001
Black	-.073/-.015	.215
Hispanic	.023/.005	.186
Asian	.525/.089*	.255
Sophomore	.141/.040	.158
Junior	.367/.099*	.166
Senior	.254/.042	.264
Education Major	.711/.197**	.171
Sociology Major	1.396/.479**	.137
Intercept	13.182	
N	444	
Adjusted R²	.198	

*p < .05, **p < .01

A multiple regression test was conducted and showed significant results (R^2 = .198, p<.001). The multiple regression model explained nearly 20 percent of the variance and included four significant variables; Asian, Junior, education and sociology students. Sociology (β = 1.396, p= .000) was the most influential predictor, which showed sociology students scored higher on the frequency of reading the course textbook measure than computer science students. The next significant results were for education students. Education course students also scored higher on the frequency of reading the course textbook measure than computer science students (β =.711, p = .000). In terms of race, Asian students scored higher than white students on the frequency of textbook reading measure (β =.525, p = .04). Lastly, junior level students scored higher on the frequency of textbook reading measure than first year students (β =.367, p = .028). Multicollinearity for these variables was tested, in part due to the high β value of the sociology course variable. However, the tolerance level calculated for the variables was high so multicollinearity was not a concern.

<div align="center">Analysis</div>

A few relationships between students and their use of textbooks were surprising. In particular, I thought that students who were not financially supported by their parents would be less likely than those who did receive help to purchase their textbooks. Specifically, I thought there would be a difference among students that did not receive financial help between disciplines with fewer computer science students than education or sociology students purchasing a copy due to the high cost. Based on student surveys, 25 computer science students complained about the cost of their textbook in comparison to 10 education and 13 sociology students. Additionally, I found education students were less likely to obtain their textbooks, even

though the computer science textbook was the most expensive at around $180. The education

textbook was comparatively less expensive at $60. Despite more students complaining about the

price, which will be discussed in the next chapter, computer science students were just as likely

as sociology students to have obtained a copy of the textbook.

However, there may be a cost-benefit-analysis when students purchase textbooks. For

example, some students might consider their knowledge base in that field to help determine if

they need to purchase a textbook—especially when the cost of the textbook is high. As one

student, Bill, mentioned during his interview, the education book "was cheap enough to where

even if we didn't need it, it might be useful." Another explanation is students may look at

textbook prices at the bookstore when determining which classes to take and could avoid

registering for classes that require expensive textbooks.

Another important issue relates to the hidden curriculum. Namely, are students who are

education majors learning that textbooks are not important yet are expected to buy them?

Education major students are obviously planning to enter the education field one day and

potentially require course materials for their students in the future. If education major students

are less likely than other students to purchase a required textbook, would they expect their own

students to purchase a textbook?

Even though education students are less likely to obtain the textbook for their class, a

majority of students did have a copy. Further, 51.5 percent of students read their textbook at least

once a month or more in comparison to students that read their textbook only once or twice

during the semester (19.9 percent) or not at all (11.2 percent). Education and Sociology students

read their textbooks on average more often than computer science students. Still, most students

are exposed to textbook images through their use of the textbook. Most students are reading their

textbook but do they notice the types of representations within textbook images?

CHAPTER SIX: STUDENT PERCEPTIONS OF TEXTBOOKS

The student voice is an important aspect to understanding the relationship between educational materials and how students learn (McKinney 2007). To hear their "voices," and to understand better how they utilize resources in order to achieve academic success, students in the current study responded to survey questions concerning how they viewed their textbooks. A sub-sample of thirty-six students discussed their textbooks in detail during interviews. Education students were a majority of the sample (female=11, male=2), followed by computer science (female=8, male=4) and sociology (female=10, male=2). Student race group was not accurately recorded for several education participants therefore specific data regarding student race cannot be given here. However, to give the reader an idea of the race composition of the students, a majority were white. Students in focus groups commented on what they liked and disliked about their textbooks, their perceptions of textbook accuracy, and the issue of gender and race diversity within textbook images.

What Students Like and Dislike About Textbooks

On survey questionnaires students were asked to describe what they liked and disliked about their textbooks. Whether students participated in interviews or focus groups, they were asked to expand on their likes and dislikes of the course textbook. These questions were asked to capture what students think about when prompted to discuss their textbooks. Thus, these questions were intentionally designed to be open in an effort to see if students mention topics related to the content of their textbooks. Several students on the survey indicated that they did

not read the textbook and could not say what they liked or disliked about it. These were included as "non-responses" since the purpose of the research question was to investigate what students thought about their textbooks rather than whether they had read the textbook. Still, it is relevant to mention here that the data on likes and dislikes came from students who used their textbooks more frequently than others.

Students responded to open-ended questions such as, "What do you like about your textbook?" and "What do you dislike about your textbook?" Student responses were coded and frequencies were run. From the data twelve categories for likes and twelve categories for dislikes were created. Table 20 displays the results for what students liked about their textbook by discipline. Of the 553 students who completed the survey, some students gave multiple reasons why they liked their textbook. Thus, while there were 365 comments classified as what students liked about their textbook, 188 students left this question blank. In contrast, 270 students gave one or more comments concerning what they liked about their textbook. Nearly the same number of students wrote at least one dislike about his or her textbook (n=205). There were 242 comments classified as dislikes from these students.

Overall, the textbook aspects that students most mentioned liking was text simplicity (n=99) and information accuracy/ explanations the text used (n=78), as shown in Table 20. I distinguished between simplicity of the text and explanations because students could say that the text was easy to read or they felt that the text explained the information well, which could be two separate concepts.

Table 20: What Students Like About Their Textbook by Course

Student Likes…	Course			
	Computer Science	Education	Sociology	Total
Detail	7 (6.7%)	3 (3.3%)	5 (2.9%)	13 (4.1%)
Key Terms	6 (5.7%)	4 (4.4%)	6 (3.5%)	16 (4.4%)
Information Accuracy	15 (14.3%)	15 (16.7%)	48 (28.2%)	78 (21.4%)
Simplicity	8 (17.1%)	30 (33.3%)	51 (30%)	89 (27.1%)
Textbook Physical Qualities (weight, font)	6 (5.7%)	9 (10%)	14 (8.2%)	29 (7.9%)
Visuals	7 (6.7%)	13 (14.4%)	17 (10%)	37 (10.1%)
Textbook Resources	4 (3.8%)	2 (2.2%)	0	6 (1.6%)
Online Component Resources	2 (1.9%)	1 (1.1%)	0	3 (.8%)
Organization/Layout	14 (13.3%)	5 (5.6%)	7 (4.1%)	26 (7.1%)
Helpfulness	17 (16.2%)	8 (8.9%)	14 (8.2%)	39 (10.7%)
Corresponds to class	8 (7.6%)	0	6 (3.5%)	14 (3.8%)
Cost	1 (1%)	0	1 (.6%)	2 (.5%)
Total	105 (28.8%)	90 (24.7%)	170 (46.6%)	365

Only two students mentioned they liked the cost of the textbook—one student explained that he or she bought it from a friend. The student who bought his or her textbook from a friend probably paid less than the retail price, which is why he or she was happy with the textbook price. However, liking the textbook price included a small minority of student responses. A large portion of students (n= 39) mentioned the textbook was helpful when preparing for exams or homework.

Another interesting finding was that sociology students wrote more comments concerning what they liked about textbooks than students in education and computer science courses. Sociology students were 36 percent of the total sample (n=204) yet they gave 46 percent of all positive comments. While sociology students might learn about the importance of participating in research, and write in open response sections on questionnaires more often, this relationship was not true for textbook dislikes. Specifically, when comparing sociology students in terms of textbook dislikes computer science students had more complaints.

Overall, students explained in greater detail during focus groups what they liked about their textbook. These responses echoed the results of the survey data. As stated above, simplicity for many students was important. As Jane (pseudonym), a sociology student, said, "I really like the way that they explain things. They don't use obnoxious words that I have to look up and they explain it in a really, like, everyday life kind of way." An education student, Becky, claimed that textbooks were becoming more interesting so that students would actually use them. "I think that textbooks just have this stereotype of being boring and not very interesting. I think every new textbook they try to make it a little more interesting so that students will want to buy it and read it and learn."

Generally speaking, it appears what students disliked about their textbooks were more specific to the book than the reasons they liked it. For example, the computer science textbook was created by faculty in the Computer Science Department at UCF and appears to be more comparable to a course pack with photocopied black-and-white pages. The computer science textbook being black-and-white was a complaint among a handful of computer science students, but obviously not applicable to the sociology or education students, as shown in Table 21. Anonymous students wrote on the survey questionnaire that the computer science textbook "was poor quality" and "they could make it look more professional." However, it is likely that if the sociology or education textbook were black-and-white photocopied pages, a student would have mentioned that as a negative aspect as well.

Table 21: What Students Dislike About Their Textbook by Course

Student Dislikes…	Course			
	Computer Science	Education	Sociology	Total
Lacks Detail	3 (2.9%)	3 (7%)	4 (4.3%)	10 (4.1%)
Black and White	7 (6.7%)	0	0	7 (2.9%)
Information Irrelevant or Outdated	12 (11.4%)	12 (27.9%)	28 (29.8%)	52 (21.5%)
No Index	7 (6.7%)	0	0	7 (2.9%)
Textbook Physical Qualities (weight, font)	19 (18.1%)	3 (7%)	8 (8.5%)	30 (12.4%)
Text is Difficult to Understand/Confusing	3 (2.9%)	0	3 (3.2%)	6 (2.5%)
Organization/Layout	6 (5.7%)	1 (2.3%)	4 (4.3%)	11 (4.5%)
Not Helpful	13 (12.4%)	8 (18.6%)	5 (5.3%)	26 (10.7%)
Sexist/Racist	3 (2.9%)	0	0	3 (1.2%)
Boring	3 (2.9%)	1 2.3%)	8 (8.5%)	10 (5%)
Chapters/Textbook Too Long	5 (4.8%)	5 (11.6%)	21 (22.3%)	31 (12.8%)
Cost	24 (22.9%)	10 (23.3%)	13 (13.8%)	47 (19.4%)
Total	105 (43.4%)	43 (17.8%)	94 (38.8%)	242

Many students, faculty, and publishers might expect that cost would be the most frequently cited complaint by students. A computer science student remarked about the cost in an interview by saying, "My first impression was that it was damn expensive. I thought this was the result of professors creating a retirement fund for themselves." I decided to explore students' cost complaint beyond a basic description so I conducted a chi-square test. The independent variable was the course the student was taking and the dependent variable measured if a student mentioned cost as a negative aspect of their textbook. The textbooks in the current sample ranged from around fifty dollars to nearly one hundred and eighty dollars. However, the large variation in textbook price was not significantly associated with a student's complaint of textbook cost by discipline, (x^2 (2, n=47) = 2.606, p=.272). Specifically, students who paid fifty dollars for a textbook were just as likely to complain about textbook price as students who paid one hundred and eighty dollars. Perhaps students are willing to pay for textbooks depending on the perceived current (or future) usefulness of the textbook.

Despite concerned comments, cost was not the number one complaint, although it does come in a very close second. Students were slightly more likely to complain about textbook information. Complaints about information were that the text was irrelevant to what the student needed to know for exams or included outdated information (n=52). While these complaints are different (i.e. information might be current but not useful to the class) they were grouped together because students specifically mentioned that information within the textbook was the issue. Sociology students (n=28) were significantly more likely to complain that their textbook was outdated or irrelevant to the class than computer science or education students. One sociology textbook was published in 2007 and all other textbooks in the sample were published

in 2009. Due to the way the data were collected I am unable to determine if sociology students who had the 2007 textbook were more likely to complain than students who were using a different textbook published in 2009.

Overall, the relationship between what students disliked about their textbook by discipline is not clear. Specifically, sociology students were more likely to read their textbook than computer science and education students—perhaps they would complain if they read their textbooks like sociology students.

Students mainly discussed what they liked and disliked about their textbooks in relation to the course. Students praised the textbook when they felt they could use it to prepare for the class, and especially so when it was helpful for exams. On the other hand, students who commented on the information within the textbook being irrelevant to the class said that it meant the textbook was larger than it needed to be. Basically, textbooks used by students for the class were viewed more positively than textbooks that did not seem helpful. Lastly, while students did mention how color, images, and layout could make a textbook more interesting, it was ultimately the usefulness of the textbook that was most important to the student. Regardless of the format of the textbook, students liked textbooks that they needed to help complete assignments or help study for exams. Thus, students use textbooks as a source of information for their courses.

Student Perceptions of Textbook Information Accuracy

The results for this section were based on survey and focus group interview data. First, student perception of textbook information accuracy was measured through a series of survey

questions. Students were asked if they felt their textbooks depicted men and women, and different race groups, accurately. More specifically, for information accuracy, one variable measured if a student believed his or her textbook accurately depicted men and women and a second variable measured if he or she thought the textbook depicted different race groups accurately.

First, a chi-square test was conducted to see if there was a difference between a student's gender and the belief that men and women were depicted accurately within the textbook. The results were significant, (x^2 (2, n=545 = 19.242, p= .000). Male students were less likely than female students to agree that textbook depictions of men and women were accurate, as seen in Table 22.

Table 22: Textbook Depicts Men and Women Accurately by Student Gender

Men and Women Accurate in Textbooks	Gender	
	Male	Female
No	3 (25%)	9 (75%)
Yes	80 (31.7%)	172 (68.3%)
Unsure	140 (49.8%)	141 (50.2%)
Total	223 (40.9% of responses)	322 (59.1% of responses)

Another chi-square test was conducted to see if there was a difference between student's gender and the belief that different race groups were depicted accurately. Male students were also less likely than female students to say that different race groups were depicted accurately, as shown in Table 23 (x^2 (2, n=545) = 16.274, p=.000).

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Table 23: Textbook Depicts Race Accurately by Student Gender

Race Accurate in Textbooks	Gender	
	Male	Female
No	6 (35.3%)	11 (64.7%)
Yes	51 (29%)	125 (71%)
Unsure	166 (47.2%)	186 (52.8%)
Total	223 (40.9% of responses)	322 (59.1% of responses)

Results for an additional pair of chi-square tests were mixed. Specifically, the chi-square results of student's race and the belief that gender was accurately depicted within his or her textbook were not significant (x^2 (8, n=539) = 2.04, p=.980). Conversely, a chi-square test showed that student race was significantly related to the belief that different race groups were depicted accurately, shown in Table 20 (x^2 (8, n=539) = 20.415, p=.009). Whites were more likely to agree that race is depicted accurately than black, Hispanic, Asian, and "other race" groups. However, 64 percent of all students regardless of race were unsure if images of race groups were accurate.

Table 24: Textbook Depicts Race Groups Accurately by Student Race

Race	No	Yes	Unsure
White	6 (35.3%)	120 (69.4%)	228 (65.3%)
Black	3 (17.6%)	14 (8.1%)	32 (9.2%)
Hispanic	2 (11.8%)	18 (10.4%)	55 (15.8%)
Asian	2 (11.8%)	13 (7.5%)	19 (5.4%)
Other	4 (23.5%)	8 (4.6%)	15 (4.3%)
Total	17 (3.2%)	173 (32.1%)	349 (64.7%)

Overall, what these chi-square tests show is that gender is significant when students are asked if men and women are accurately displayed within textbooks. What happens when a student's race and gender are controlled for when asking students if race or gender is accurate within textbook images? To further explore the relationship between students' demographics and their attitudes towards accuracy of gender and race depictions within textbooks, two logistic regression tests were conducted. The independent variables included in regression tests were student's gender, race, college level, and financial dependence. Based on the analysis of the student survey data, both logistic regression models were found to be not significant. That is, these student demographic variables (gender, race, college level and financial dependence status) did not explain variations in perceptions of accuracy. The logistic regression test results for gender accuracy within images are shown in Table 25.

Table 25: Logistic Coefficients Predicting if Student Felt Gender Portrayed Accurately in Images by Student Demographics

Independent Variable	Unstandardized Regression Coefficient/Standardized Beta Coefficient (Standard Error)		
	Model 1	Model 2	Model 3
Gender	.002/1.002	.002/1.002	.002/1.002
	(.014)	(.013)	(.013)
Black	.182/.865	.131/1.140	.141/1.151
	(1.075)	(1.084)	(1.084)
Hispanic	-.628/.865	-.690/.501	-.703/.495
	(.688)	(.696)	(.698)
Sophomore		-.652/.521	-.635/.530
		(.637)	(.638)
Junior		-.245/.783	-.205/.815
		(.737)	(.743)
Senior		-1.196/.302	-1.129/.323
		(.887)	(.902)
Financial			.260/1.297
Dependence			(.583)
Constant	2.524	2.865	2.659
N	202	202	202
Nagelkerke R^2	.012	.036	.038

*p<.05, **p<.0

Thus far the data shows mixed results. Three of the four chi-square results were significant with gender significantly correlated to the perception that gender and race were portrayed accurately. However, the logistic regression test of student demographic variables and the belief that gender and race were shown accurately was not significant. Because of the mixed results students were asked during interviews their thoughts about textbook information accuracy.

Students who believe textbooks are authority sources also mentioned trusting publishers to release textbooks that were accurate. One student, Jessica, commented on this by saying, "I would hope they wouldn't be teaching us stuff that isn't true or outdated." Further, a majority of the students did say their textbook was accurate and current; fifteen of the students agreed to this without going into greater detail. Additionally, at least another twelve students agreed that textbooks were accurate and up-to-date but did say they could be biased in the way the information is presented to the student. As Angie said:

> I think they can be fair and they can be accurate but I think a lot of the times what you'll find—especially when it relates to children or younger students—teachers will teach a book as though it's fact... I learned it as if everything in the book was correct and I assumed that it was accurate... I didn't realize that I had a choice to agree or disagree.

Other students agreed that it is instructors who emphasize textbooks as accurate sources. Two students focused on the problem within early education, which is understandable given these students were from an education course for individuals who plan to be teachers in the K-12

system. Jessica explained how instructors influence the perception of textbook as authority sources:

> I think it's drilled in our minds that they are accurate and they are the main source of information especially for a classroom, but who okays [sic] them? Like there is a couple of authors that get together write this and the government is like, "Okay, that's fine," and they push it to the kids and stuff. But realistically for one class you buy one textbook and that is your source of information. Rarely do you go out—especially in college—go out of your way to spend another $200 on a really expensive textbook for your own benefit; especially if the teacher's going to focus on their own thing.

Angie, another student in the same focus group, responded to Jessica's comment:

> Most of the time you'll find that schools get a book from a publisher about a subject that's bias [sic] towards what they already believe, so they'll just buy or gravitate toward that publisher and you'll find a pattern of getting those same books by that same publisher. It's not necessarily fair to the students' cause they're getting a bias education.

Angie was not the only student to remark on the bias nature of textbook information. Other students mention bias information as an issue that students rarely discuss with their instructors or other classmates. A few students within the education focus group discussed how relying on one textbook would not allow for a well-rounded view of an issue. This group of

students also remarked that one of the requirements for the course they were taking was to bring in journal articles so that students had the opportunity to discuss different viewpoints on current issues in education.

Another student distinguished between in-text information and images—"The information might be accurate, but the images are not." However, do most students distinguish between the information conveyed through images and in-text information? While this question was not asked, students are taught to distinguish between certain types of information. Students discussed how they are taught textbooks are different from other forms of media as sources of information. In particular, students mentioned that their textbooks are resources to be used for exams and papers while other forms of media are generally considered nonacademic. Thus, students are taught to treat textbooks differently than other types of media. They are taught that textbooks are legitimate authority sources and that they are accurate by using them, sometimes exclusively, to determine what a student understands about a subject area. Basically, while students might not notice images directly, they might believe a textbook is an authority and potentially treat it as such.

Further, while some students might find images that openly display diversity laughable at times, as we see later in this chapter, they still treat textbooks overall as legitimate resources. Specifically, only two of thirty-seven students included in the interview sessions said that the textbooks were not accurate or up-to-date. Further, the issue for these two students appeared to be related to currency of information rather than inaccurate information. Jeff discussed information currency when he said, "I noticed that a lot of the references were to 2006, which was pretty up-to-date at the time. But I looked at the copyright and they're republished in 2009-

2010, but they haven't updated the links and haven't updated the references." While only having

references to four years ago might sound recent enough, and was for other students that were

interviewed, the quoted student was referring to the computer science textbook included in the

current study. In fact, due to the software packaged with this particular textbook, a new version

comes out each fall requiring students to purchase a new textbook and occasionally not be able to

sell their textbook.

The data collected through student surveys suggest that there is not a significant

relationship between students and their beliefs about textbook images being representative by

gender and race. However when speaking in depth about this issue, students elaborated on this

by suggesting that the textbook is accurate but biased. Further, the biased information could be

the result of the author, publisher, or the way the instructor presents the information. Ultimately

students framed the biased information problem as a result of the way that textbooks are used in

the education system.

Overall students tended to see textbooks as accurate sources, even if the information

presented was skewed towards the author's viewpoint of the subject. Beyond textbook

information being accurate the current dissertation also explores student perceptions of diversity

within textbooks.

<u>Student Perception of Diversity Within Textbooks</u>

To better understand students' perceptions of diversity, a chi-square test was conducted

to see if course discipline was related to students noticing images within their textbook. The

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results of this test were significant, (x^2 (4, n=462) = 67.424, p=.000), and are displayed in Table 26.

Table 26: Textbook Contained Images by Course Discipline

Contains Images	Computer Science	Education	Sociology
No	23 (12.6%)	3 (3.3%)	8 (4.2%)
Yes	104 (56.8%)	83 (92.2%)	167 (88.4%)
Unsure	56 (30.6%)	4 (4.4%)	14 (7.4%)
Total	183 (39.6% of those that answered)	90 (19.5% of those that answered)	189 (40.9% of those that answered)

Of students that responded, 76.6 percent of all students correctly answered that their textbook contained images. Computer science students were most likely to answer that they did not think their textbook contained images (n=23) or that they were unsure (n=56). Further, students were only included in the chi-square if they said they had a copy of the textbook. Thus, nearly 43 percent of computer science students who had a copy of the textbook were unsure or did not think their textbook contained images. This is in stark comparison to only 7 percent of education and almost 12 percent of sociology students, who did not think or were unsure, if their textbook contained images.

Additionally, several logistic regression models were estimated to assess the effects of student demographics and other variables on whether or not the student noticed images of people. The first two logistic regression models were estimated to assess the effects of demographics, college level, and financial dependence on parents on whether or not the student noticed images of people in their textbook (recoded to 0=no, 1=yes). As in the above analysis,

race was measured by a series of dummy variables (white, black, Hispanic, and Asian), with white being the comparison group. College level was a series of dummy variables (First year students, Sophomore, Junior, Senior) with First year students left out as the comparison group. Lastly, financial dependence was a recoded dichotomous variable that simply measured if students were financially dependent upon their parents for college expenses (0=independent; 1= dependent). The logistic regression results were not significant, as shown in Table 27.

Table 27: Logistic Coefficients Predicting If Student Believed Textbooks Contained Diverse Representation of Gender by Demographics and College Level

Independent Variable	Unstandardized Regression Coefficient/Standardized Beta Coefficient (Standard Error)		
	Model 1	Model 2	Model 3
Gender	.002/1.002	.002/1.002	.003/1.003
	(.024)	(.024)	(.024)
Black	-1.471/.230	-1.509/.221	-1.514/.220
	(.644)	(.657)	(.659)
Hispanic	-.352/.703	-.375/.687	-.381/.683
	(.802)	(.804)	(.805)
Sophomore		.116/1.123	.134/1.114
		(.698)	(.700)
Junior		-.198/.821	-.166/.847
		(.710)	(.714)
Senior		.356/1.428	.423/1.526
		(1.096)	(1.101)
Financial Dependence			.319/1.376
			(.574)
Constant	2.916	2.912	2.671
N	245	245	245
Nagelkerke R^2	.048	.050	.038

*p<.05, **p<.01

Using the same independent variables, another logistic regression model was estimated to assess the effects of student demographics and college level on whether or not students believed their textbook contained diverse images of race (recoded to 0=no, 1=yes). The results for this test were found to be not significant as well, which are displayed in Table 28. (Note: there were not enough seniors in the overall sample (n=36) and they were not included in this logistic regression test). Overall, perceptions of textbooks being representative of gender and race groups do not vary by student demographics.

Table 28: Logistic Coefficients Predicting If Student Believed Textbooks Contained Diverse
Representation of Race by Demographics and College Level

Independent Variable	Unstandardized Regression Coefficient/Standardized Beta Coefficient (Standard Error)		
	Model 1	Model 2	Model 3
Gender	.002/1.002	.074/1.077	.071/1.073
	(.019)	(.445)	(.445)
Black	-1.916/.147	-1.892/.151	-1.892/7.564
	(.676)	(.688)	(.688)
Hispanic	.134/.1.144	.139/.899	-.139/1.142
	(1.085)	(1.092)	(1.092)
Sophomore		.421/1.523	.421/1.528
		(.823)	(.823)
Junior		-.198/1.001	.001/1.049
		(.710)	(.837)
Financial Dependence			.312/1.366
			(.659)
Constant	3.361	3.141	14.852
N	265	265	265
Nagelkerke R^2	.084	.108	.108

*p<.05, **p<.01

To confirm the logistic regression results I asked students during interviews and focus groups their views of textbook representations. Student interviews also expanded survey data on race and gender to include perceptions of social class and disabilities. First, students discussed if they felt they noticed representations of gender and different race groups within textbooks. A majority of students stated that the textbooks were representative with only one student claiming that the images were not representative without elaborating as to why she felt that was the case. At least four other students specifically stated that they did not notice or were unsure if images within their textbooks were representative. A student in the computer science class, Sharon, stated:

> Whenever I flip through it I don't even pay attention to the people 'cause it's not a class focused on people, it's focused on computers, so I just move past that a lot of times... It doesn't really register to me. For me personally, I don't care if it's guys or girls or a race or anything, as long as it's getting across the point I need. It doesn't make a difference to me.

Of the fourteen students who said that their textbooks were representative of gender and race groups, a few claimed the textbooks were representative but it depended on the subject. Specifically, students mentioned that courses such as math or science are different than humanities subjects. This was primarily because humanities courses are more likely to include a discussion related to issues of diversity, which students would not expect within science or math courses. The following comments were typical of students that responded in this manner:

Becky: I think for science books usually it's equal but for history and government... men show up more. I don't know, maybe because in history men have been able to be in charge longer. I just know that when I'm studying history and stuff it's mostly men.

Angie: History books have a lot of images of men and of course because of the role that they played in particular periods... In social studies, sociology, they had all kinds of races, ethnicities, and genders that were incorporated in the book. I think they are trying to incorporate different genders as well as races in books now.

Linda: Most course specific classes like religion or philosophy, you see a lot of diversity but standard textbooks, if they aren't just drawings or diagrams, they are mostly probably going to be men and it's usually like mid-age white men. Really it is. Or sometimes they'll have like the cute family group and every now and then you'll see an Asian family or like a Hispanic family but for the most part it's mostly men.

When students were asked about their opinions on images that did include diverse individuals most students found them to be stereotypical. Students suggested that these images were more forced or fake than images that did not strive to contain a lot of diverse individuals within them. Three student's comments below highlight this viewpoint:

Jane: For the most part I do every once in a while notice a picture that's like five people and it's like a black person, then a white person, then a Hispanic person, then I'm like I don't really know if that's a typical group. But I then do realize that they are trying to incorporate everybody. We learn in sociology and psychology that people tend to stick to cliques that they're comfortable with so in reality you're going to find a group of five white girls or five black girls not one of each.

Sharon: Things like that, in a computer class, like every chapter they have a new race or a different gender, it sounds slightly forced. They are trying to make sure no one feels left out but it's a class about computers so you don't really need people to do that.

Bill: My friends and I like to joke around about stereotypes but if you look... 33 percent are always black. You know there's always one black guy in a group of three. They are obviously trying to stress diversity but if you look at the census it's really not that way... I did notice there's stereotypical usage of certain races...

Bill continued the discussion of diversity in textbook images when he mentioned the impact that I had after visiting his classroom to recruit students to attend focus groups for the current dissertation. During these visits I explained to Bill and other students what to expect in

the focus group sessions. My visit prompted Bill to think about diversity and go back and view the images within his textbook:

> After you came to visit us I did take a look at the pictures about the diversity. Sometimes it felt as if they were trying too hard to include diversity. There was never two of the same people back-to-back pages. If there was white there had to be black, almost as if they were trying too hard.

Following this discussion I asked students to think about how disabilities were portrayed within textbooks. According to Taub and Fanflik (2000), students who use introductory textbooks would be exposed to a selective depiction of people with disabilities. Further, because individuals with disabilities are stigmatized and discriminated against, like other members of minority groups, I asked students to discuss their perceptions of disabilities in textbook images (Taub and Fanflix 2000). The responses to this question were more diverse than their responses to representations of race and gender. Twelve of the students said that they either didn't know or think that their textbook had any images of individuals with disabilities in them. This would not be surprising, since the sample of textbooks showed that each only contained one or two images of disabilities.

An almost equal proportion of students claimed that there were images that showed disabled people. Donnie, an education major who came from a computer science background said of the education textbook, "the book makes a point to include everybody... 'cause everyone learns differently whether your disabled or not." Students pointed out that disabilities are not always easy to see. Most commonly students compared nonvisible disabilities with individuals

shown sitting in wheelchairs. A student named Missy explained the problem of including disabilities within textbook images. "It's not like you can really portray disabilities, unless it's a wheelchair, you know? There's a lot of disabilities that you can't see."

In contrast to the discussion on race and gender representations a few students claimed that certain characteristics could be distracting or point out differences that could make disabled students feel uncomfortable. One student, Becky, expressed this belief when she said, "I don't know if disabilities really need to be pointed out as much as diversity of race because it's not something, if I had a disability that I'd want." Another student, Tara, responded to this comment in more depth:

> I agree with her. People with disabilities want to be treated like they're normal, not like they're some sort of freak. I mean yeah, disabilities, it's important for people to understand it, but from their perspective I'm pretty sure that they'd like people to understand what they are going through but not constantly have to feel sorry for them or feel like they have to be singled out... I'm pretty sure everyone in the class is going to turn around and look at them and they are just going to be like, "oh, god." I think it's important to understand but not to the point of being singled out.

Students suggested by making disabilities more noticeable it might be negative for disabled students in the class; students did not point out the same feeling of being singled-out by being portrayed within a textbook for race or gender. This is particularly interesting because men

would be a minority within the education field yet the same students that made comments about disabilities did not mention that men might feel singled out in education classrooms. Another student compared disabilities to other individual characteristics that a publisher would not show. Specifically, a textbook publisher might show a disabled person but he or she will be attractive. Textbooks, like other types of media, show diverse but attractive individuals. Marissa, a student in the education class, mentioned how attractive individuals are used in media images:

> In a lot of the books I've read they've had pictures of people in wheelchairs. I think there's a lot of other indicators of disabilities besides a wheelchair, like a walker or something, but they're not going to show like an ugly person. They aren't going to show someone who doesn't have a nose or an eye.

Showing attractive individuals is an idealized version of the real people students will encounter in everyday life. Showing a skewed image of the world applied to how students felt about the depictions of social class as well. While I was unable to find many examples of social class outside of middle class portrayals, I did ask a few students if they felt different social classes were shown within their textbook. Students confirmed the textbook content analysis data when they suggested that while lower classes are shown, the vast majority of images were of middle class people. Donnie discussed the lack of lower class individuals depicted within textbook images:

> I think when you see the statistics from pay scales and funding you learn of it but as in you see the pictures and stuff it's strictly just middle class. Everyone just the

same. There's no rich, there's no poor; every one's average... When you read about the lack of funding, the different policies... and the struggles, then you can kinda get the real image of it but it's in the backdrop.

Another student, Bill, talked about social class in the context of urban school districts and the difficulties instructors might face in those environments. He agreed Donnie's assessment of the lack of lower class individuals shown within the education textbook. Bill equated the lack of portrayals to a trap and suggested that it was intentional:

I think having an urban view of the textbook is nice but as a textbook, cause you don't want to scare people off your major, you kinda hide the bad stuff until you're pretty deep into it and then you're trapped. It would be nice but I can see why to paint a brighter picture before showing the reality of it. Personally I would prefer if they just had it all out at the beginning.

Overall, students felt that most images of men and women were representative within the context of those disciplines. In social sciences we would see more men because historically, students argued, men were in power and had more influence. It is interesting that students treated male-dominated fields such as science and math as different; this student's claim was related to context. Basically, students did not expect science or math books to be held to the same standard because they included topics that do not address diversity. Further, some students also commented how textbooks did include disabilities and occasionally poor individuals but were more likely to show middle class "normal" people than any other group.

As detailed in this section, students feel that textbooks contain stereotypes. However, the stereotypes that students mentioned were not in the context of what individuals were doing within the images but rather how race or gender was used to portray different groups socializing with each other. Basically, diversity itself became a stereotype for some of these students. Looking beyond what is currently available within textbooks, students were asked to reflect on these diverse portrayals. Did they feel that diverse portrayals were important or had they become an expected stereotype and overlooked by the student?

Student Attitudes Regarding the Importance of Diversity Within Textbooks

The current section expands on two research questions: student attitudes towards their textbooks and whether students noticed race and gender representations in their textbooks. During the interview sessions students were asked how they felt about diversity within textbooks. More specifically, students discussed their opinions on the importance of diversity within textbooks. They spoke not only about race and gender but disabilities as well. Students were divided on the importance of having diverse individuals within textbook images. However, there appeared to be no indication of a difference of opinion among students based on their gender or race. As an example, two students from the computer science class discussed the importance of diversity within textbook images. Jeff, a white male student, spoke about the importance of including diverse images while Sharon, a white female student, said that it was irrelevant to the course topic.

Similar to results presented in the previous section in this chapter, some students made distinctions of the importance of diverse portrayals for disabled people versus race groups. One of the students within the education course, Angie, stated that it also depended on the discipline and if diversity would be relevant to the course:

I don't think people with disabilities are represented well at all in textbooks but I don't know what the relevance is. If it's specifically for diversity then I don't understand that... They shouldn't be putting someone in a book when there's no relevance to what [the student is] learning.

At least five other students made similar comments about the course topic relating to issues of diversity. In these cases students suggested that some disciplines, such as math or biology, should not be held to the same standard as humanities courses that could include discussions related to diversity:

Bill: I would say that it pertains to what we are talking about... If it's a math book and all the guys are white, I wouldn't really care, but if it's a diversity class like this one and it's all one race then I would be like... what are we [doing] here? Are we saying one thing and doing another?

Bev: We should not necessarily focus on diversity if that's not the subject but if there's something different to be learned. Like studying people and the way they think like psychology or when it comes to sciences... with different diseases there

should be a focus on all different types of medical conditions or different

disorders that may be more common in different races or different cultures. That

is important to learning; not just the majority but specifics as well.

Three students remarked that diversity is important because anyone should be able to

pick up the textbook and see representations of his or her race and gender in it. As one white

student, Jane, claimed, "I guess it could offend some people. If like, I was reading a textbook and

it only included black people or Hispanic people." An additional three students said that it was

important to include diverse race groups so that the publisher would not offend anyone. Beyond

offending the audience, students also claimed it was better to include diversity for the publisher's

sake. For example, one student named Jackie stated that diversity was important, "So they

[publishers] won't get sued for discrimination." Or, as Bill put it, it was better to include

diversity in textbook images "rather than cause trouble later."

On the other hand, at least four students expressed the opinion that diversity in textbooks

was not important. The following comments capture the beliefs of students who felt this way:

Sharon: I know that there is [sic] people that might be more touchy about subjects

like that. Like, 'oh, my race was left out; this is a problem'... I'm white. I can't be

angry about white people not being in textbooks but you never see people with

red hair in textbooks... You never see redheads. So should I just go to the

publisher and say, "Hey, you're leaving my people out." I don't see the point to

it...

Angie: If you are doing it just to promote diversity or just to make sure that every one's fair then good god, there are ten million different things that you'd have to do. Like what about people with different hairstyles? Then what? Then it becomes a little ridiculous. What is the purpose?

Conversely, there were students that claimed gender and race portrayals were important in fields that typically would not discuss issues related to diversity. These students came from diverse racial backgrounds. Students who felt diversity was important claimed it was a way for the textbook to relate to the audience while not excluding students. Further, students also talked about the valuable learning experience that could occur from breaking stereotypes related to race and gender within certain disciplines:

Jeff: I think that it's an important issue, especially in computers...There was once this thing called bulletin boards... one of these people that was concerned she was working on this dictionary file and I was working on it for awhile with her... We were discussing computer technology and I didn't realize that she was a female. When I found out she was a female I was surprised. It was just my reaction. Most of the people I came into contact with were men; it was a man's field.

Linda: I definitely think in every textbook... every gender should be incorporated. Diverse groups should be incorporated because that's who I assume the publisher is trying to attract. If you have a textbook and it has black males and specific groups then in my mind I'm like, okay, what does this have to do with me? I don't

feel a connection 'cause I don't see me in there. Me as a female, me as a black woman... I mean if that's their intent then go for it but if they are capturing a diverse group in the world… then it should be incorporated. That's just like common sense to me.

Students' attitudes towards diversity in textbook images were mixed. Some students claimed that the information in the textbook outweighed the need for diversity in images. Basically, they were concerned about passing an exam or the course and did not pay attention to the races and genders within the images. Thus, these students remarked that diversity was not important. However this could be due to a lack of complete exclusion of mixed race groups in textbooks currently. No student mentioned feeling excluded by textbooks and perhaps if they felt they had been, their opinions on the importance of diversity might change. Lastly, students that felt diversity was important were more likely to say it depended on the course. If the discipline is likely to address issues related to diversity, then the textbook should display diverse images to match up with the purpose of the course.

<u>Analysis</u>

It is apparent that there are differences in how students viewed their textbooks. Specifically, there were differences in attitudes towards textbook images by discipline as well as student gender and race. Computer science students were more likely than other students to think their textbook did not contain images at all, which was incorrect. Students in computer science classes also had the most complaints about their textbook. In contrast, sociology students gave more positive comments than any other group, stating what they liked about their textbook.

In addition to difference by discipline, gender and race played a role in how students viewed their textbooks. Female students were the more likely than male students to say that both gender and race were accurately depicted within textbook images. While generally females might be expected to be more sensitive towards the way women are depicted within images, men in this sample were more likely to say that textbook portrayals were not accurate. Perhaps students are thinking about images generally rather than truly analyzing the context of each image. For example, students might see three images of women holding children and one image of a male doctor holding a baby. The student could see those independent images as accurate- women hold children, men hold children as well—without seeing that the whole textbook tends to place women in family nurturing roles and males in work roles. Basically, students could be thinking about images generally without taking the time to think about the gender or race message it is sending. Race also played a factor in how students felt about race being depicted accurately; most students were unsure if race was shown accurately in textbook images. However of students that responded either yes or no, whites were more likely to agree that race was shown accurately.

Listening to how students view their textbooks expands upon research on how students actually learn. Literature on capturing the student voice, which investigates in detail the process of learning from the student perspective, show educators what tools students use in order to learn course material (McKinney 2007). Through qualitative research, such as student interviews and focus groups included in the current dissertation, educators can better understand how students use textbooks for their courses. Further, understanding how students view textbooks can help

educators make informed decisions about the types of course materials that would work best for their course.

CHAPTER SEVEN: DISCUSSION AND CONCLUSIONS

This dissertation analyzed the extent to which college textbooks reproduce gendered and racial images and the ways in which students perceived these images. I wanted to investigate if students were experiencing the textbook, and thus the educational experience within introductory classes, differently based on their race or gender. First I needed to confirm if race and gender were shown differently within textbook images.

Textbook Representations

This dissertation discussed textbook image representations by discipline. I wanted to see if textbooks such as sociology or education were more likely to include diverse representations of race and gender because they are typically courses that include diversity issues. Additionally, because computer science tends to be a male-dominated field I wanted to compare it to education, a female-dominated field.

Some discipline-specific differences in the way race and gender were shown did occur. For example, the computer science textbook contained more stereotypes of white males than any other gender or race. Men, particularly white ones, were most likely to be depicted as working or within images labeled as contributors to the field. This finding confirms research which showed minority women were not likely to be represented in chapters on theory or creating the foundation of a field (Clark and Nunes 2008).

On the other hand, the most diverse images within the computer science textbook contained individuals using technology. Thus, while computer science is male-dominated historically, as shown in the images of contributors to the field, technology and perhaps

computer science is diverse. One caveat is the computer science textbook was in black-and-white, which made coding of race difficult. Race being more difficult to determine could result in a higher number of "other race" individuals than would have been coded in a full-color textbook. However, this could be a positive aspect as well—a researcher looking closely at images was unable to distinguish what race groups some individuals belonged to. Perhaps a student, who is focusing on retaining information for assignments or exams, will pay even less attention to race within constructed images. Simply, the race of the individuals within textbook images is unimportant to the reader's eye because it is difficult to determine who is being portrayed.

How did sociology, a field that typically includes topics such as the influence of media and diversity issues, compare to computer science textbooks? Similarly to computer science white men appeared more frequently as actively working than any other race and gender within sociology textbook images. In contrast, within sociology textbooks, family images usually showed white women. White women were depicted as multi-taskers while other groups were not depicted as balancing many roles in one image. This finding shows that both textbooks that discuss diversity issues and textbooks that do not tend to compartmentalize individuals by race and gender. Further, this tends to confirm previous research, which also showed images tended compartmentalize individuals by gender and race (Aerni and McGoldrick 1999; Clark and Nunes 2008; Stone 1996).

How did education textbooks, a female-dominated field that tends to include diversity issues within textbooks, compare? Education textbook images depicted primarily diverse groups of students sitting at desks and participating in classroom activities. While there appeared to be

few racial minority depictions of teachers, the chi-square test was not significant for race and gender by theme. However, due to the small sample size, students and teachers were included within one type of theme (classroom) rather than two (teacher or student). If the sample included more teachers then a chi-square test by teacher race might have been significant. Regardless of the possible outcomes, currently, the education textbook was the only book that did not show significant results for the chi-square tests of theme by gender and then race. Consequently, education textbooks were the least likely to show individuals within certain image themes by gender or race. Overall, education textbooks lack of compartmentalization of race and gender are evidence of the improvements within textbook images (Aerni and McGoldrick 1999; Clark and Nunes 2008; Stone 1996).

While education textbooks tended not to depict individuals based on race and gender, sociology and computer science textbooks did tend to place individuals into certain roles. This is important to consider because of the implications to students whose first interaction might be from an introductory textbook and how feeling unwelcome impacts student's likelihood of persistence (Hardin et al. 2006; Hogben and Waterman 1997; Mayhew et al. 2005). In addition, past research has shown, while individuals may resist unrealistic depictions they reported believing others saw the depictions as real (Milkie 1999). Briefly, textbook images are important to students if they change their belief or behaviors based on them. Despite this finding, if students are not reading textbooks then what do the images within them matter? In order to test the relationship between images and students I had to investigate if students were obtaining copies of textbooks and actually using them. First, I tested the relationship between students that

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are dependent upon parental financial support and likelihood of obtaining a copy of a required textbook.

Student Textbook Use

Parental resources can influence if a student will be able to acquire needed materials to succeed (Bourdieu and Passeron 1990; Pascarella 2006). Thus, this dissertation explored if students were less likely to have a copy of the textbook if they did not have financial help from their parent(s). The results did not show a difference between students with parents who help them financially and those who do not receive help. Regardless of their financial situation, most students had a copy of their textbook. Both the chi-square and logistic regression tests for student race and financial dependence were not significant. In contrast to these demographic results, sociology students were more likely to have a copy of their textbook than computer science or education students.

In contrast, there were significant findings for the relationship between student race and how often students read their textbook. In terms of race, Asian students read their textbooks .53 times more often than white students. This relates to past research, which has shown cultural values of educational success and parental pressure on their children to work hard, like reading their textbook, was correlated with good grades in school (Kao and Thompson 2003). In particular, Asians within the Kao and Thompson study were more likely to achieve despite their father's level of education if family values pushed them to value education (2003). While the current dissertation did not ask about family values, or parental support other than finances, Asians within the sample did tend to read their textbook more often than white students. Perhaps Asian students tend to have greater pressure placed on them to achieve than other students.

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However, more conclusive results on this relationship could only be drawn if this study included a measure of educational values.

There were also results, which support previous literature on gender differences in student rule following (Stinebrickner and Stinebrickner 2004). Male students were significantly less likely to obtain a copy of the textbook in comparison to female students. This supports previous literature, which supports gender differences in which it is culturally more appropriate for girls to be obedient and follow rules, like needing to have a copy of the textbook, than boys (Feagin, Vera, and Imani 1996; Ferguson 2004; Kimmel 2008). However, while female students may have been more likely to have a copy of the textbook, they were not more likely to read their textbook than male students.

Further, there were discipline-specific differences in the frequency of how often a student read his or her textbook. Sociology students reported reading their textbook more frequently than computer science and education students—nearly 40 percent of sociology students read their textbook weekly. Overall, sociology students read their textbooks 1.3 times more often than computer science students. This finding shows sociology students were exposed to imagery within textbooks more frequently than computer science and education students.

Most students have read their textbook at some point during the semester, which means that students were exposed to them. I wanted to see if students would mention images or information accuracy in their responses of textbook likes and dislikes. Did students think about these issues or were they more concerned with textbook cost? Of the students that had a copy of the textbook there were many students who commented on what they liked, and did not like, about their textbooks.

Student Attitudes Toward Textbooks

Overall, students mainly discussed what they liked and disliked about their textbooks in relation to the course. Students praised the textbook when they felt they could use it to prepare for the class, and especially so when it was helpful for exams. On the other hand, students who commented on the information within the textbook being irrelevant to the class said that it meant the textbook was larger than it needed to be.

There are differences by discipline in the types of comments made. Computer science students had more complaints than any other group. On the other hand, sociology students reported more positive comments also read their textbooks more often than other students in the sample. Perhaps sociology students read their textbook more frequently because they found it enjoyable to read. On the other hand, computer science students could be less likely to read a textbook and more likely to use the computer to learn. Specifically, an introductory computer science class does include a hands-on lab component and students could feel they learn what's needed for the lecture portion through demonstrations and experience.

Student grades when not analyzed in the current dissertation however there could be a relationship between student grades and how frequently they read for class, as shown within Michaels and Miethe (1989) study. For instance, in their study only engineer's grades were not correlated to the amount of time spent reading (Michaels and Miethe 1989). Similarly, perhaps hands-on labs are more important to UCF computer science student's grades than reading the textbook. To clarify the relationship, students could be asked in the future how they use their textbooks.

Beyond differences in frequency of reading, other differences that I thought might matter did not. Specifically, cost was expected to be the most frequent complaint, especially for computer science students who paid $180 for their textbook. There were no significant results by student demographics or by discipline related to cost complaints. However, students who felt the cost of the textbook was too great might have decided not to buy a textbook. Students without a copy were asked socio-demographic questions, but not specifically why they decided not to obtain a copy of the textbook. In addition, students in focus groups were not asked if they ever decided to not take a class because of the textbook cost. This would have added to the data to show what factors influence a student's decision to not obtain a copy of a textbook and would support previous literature on the impact of cost on educational decision making (Higher Education Research Institute 2006).

From student responses textbook information is important overall. This study also includes questions to measure student attitudes towards image accuracy and representativeness of race or gender. Were students experiencing the textbook differently by thinking the textbook was inaccurate or not representative of real-life?

Textbook Images: Accurate and Representative?

The results for the relationship between student demographics and belief that the textbook images were accurate and representative were mixed. Further, 64 percent of all students regardless of race were unsure about textbook images—a majority of students were not sure if images were accurate. Additionally, the chi-square results of student's race and the belief that gender was accurately depicted within his or her textbook were not significant. However, a

chi-square test showed whites were more likely to agree that race is depicted accurately than black, Hispanic, Asian, and "other race" groups.

Another chi-square test was conducted to see if there was a difference between student gender and the belief that different race groups were depicted accurately. Male students were less likely than female students to say that different race groups were depicted accurately. This was surprising because historically women have been left out of media, or stereotyped into certain roles, yet they were more likely to say that images were accurate.

Overall, when giving an opinion about images students' claimed textbook representations of both gender and race were accurate. Some students made these claims even when the portrayals lacked representativeness or accuracy. For example, the lack of black women educators in the classroom or women's contributions to sociology is not representative of those fields. This finding supports Bonilla-Silva's (2010) naturalization frame of color-blind racism, in which individuals accept the status quo of race or gender in society as simply being the way things are. Students supported the naturalization frame by saying they hoped the information textbook publishers provided was accurate without really questioning if the information they were exposed to was reflective of real life.

Focus groups and interviews explored in greater detail student perceptions of the accuracy of textbook images. Students talked about images being idealized versions of the real world. This echoes what Milkie (1999) had found in her studies of teenagers and their perceptions of teen magazine images. Basically, students see the images as fantasy—regardless of it's a black man, a white woman, or a 12-year-old in a wheelchair the person shown will be attractive.

Showing a skewed image of the world applied to how students felt about the depictions of social class as well. While I was unable to find many examples of social class outside of middle class portrayals, I did ask a few students if they felt different social classes were shown within their textbook. Students confirmed the textbook content analysis data when they suggested that while lower classes are shown, the vast majority of images were of middle class people. Two students suggested this was a way for textbooks to communicate a rosy picture of the field.

Despite mixed results regarding image accuracy and representativeness during interviews students discussed how they noticed images within textbooks and the importance of diversity. Students mentioned how textbooks should be inclusive and that someone might feel offended if his or her race and gender were not represented. This supports other literature, which discussed how students who feel unwelcome are not likely to succeed in college (Mayhew et al. 2005). In contrast, there were students who felt that textbooks should only worry about representative images if they are within disciplines that would discuss diversity issues.

<div align="center">Student Attitudes Towards Diversity Within Textbook Images</div>

Students provided insight in their discussions of diversity within educational images. For example, some students made distinctions between disabilities and race or gender being represented. Specifically, race groups are important to include while textbook editors might want to consider leaving disabilities out intentionally. Students claimed that showing disabilities within textbooks might draw attention to anyone in the classroom that shared the condition— images could make students hyper-visible in the classroom. Being hyper-visible, or a token, is particularly interesting because men would be a minority within the education field yet the

education students that made comments about disabilities did not mention that men might feel

singled out in education classrooms. This finding can also relate back to differential treatment—

disabled students should be treated the same in the classroom, claimed by students who suggest

making them visible within images might bring attention to student differences.

Students suggested that images might not be central to their experience when reading

their textbook. However, this could be because there were diverse individuals within images

overall—perhaps students are paying attention to images overall but not looking at the context of

each one. When students flip through their textbook to look at the images they see women and

men of all race groups included. A few students commented that they would feel bad if their race

or gender did not appear in a single image within an entire textbook. The content analysis results

of textbooks in this study showed that diverse groups were included yet compartmentalized—no

one appeared to be left out entirely. It would be interesting to see if students would notice a

textbook that left out men, women, or a race group. Again, students could be thinking about the

textbook as a whole rather than the individual images that are shown within it. If students

analyzed textbook images individually within focus groups, it could help determine if students

recognized stereotypes within them.

Limitations

There were limitations to this study, which future researchers should consider. While

hundreds of students came into contact with these textbooks, only four textbooks were included

in the sample. The small sample size of textbooks means that there are not enough data to

generalize to a larger population. By including more textbooks from different universities the

results in the current dissertation would more concrete. Also, with online textbooks becoming more popular, future research should expand research to include these types of reading materials.

Another limitation of this dissertation was that I did not ask students on the survey questionnaire if they felt that diversity was important within textbook images. Therefore, the data show that most students read their textbook and notice the images within them. However this dissertation does not include a large sample of students discussing their views on diversity within textbook images.

In the future, researchers who want to study the relationship between student perceptions and textbook reading should also include the impact the instructor has on student textbook use. Specifically, instructors who allowed me to recruit from their classes were not asked about their expectations of student's textbook reading for class. What had faculty members told their students in relation to how they expected them to use the textbook to prepare for class? While I know that three exams per semester were given in the computer science courses to measure student knowledge I do not know if the instructor told students to read the textbook prior to all lectures, prior to exam time, or only as the student needed. An instructor's expectations of how much material students should learn on their own through the textbook can have an impact on how much a student relies upon a textbook and thus, how frequently and in-depth he or she is exposed to the information and images.

As with any study that involves face-to-face contact between the researcher and respondents, the bias introduced to my study of as the result of me being a white female is unknown. Potentially, students could have changed their comments in order to seem more accepting of race and gender diversity within textbook images. Conversely, in support of the

limited influence of my race and gender, many respondents from a variety of backgrounds claimed that overly diverse images were laughable and unrealistic. Additionally, results from the anonymous survey tend to support student's comments during focus groups, which indicated race and gender were of limited importance within textbook images. Specifically, race and gender diversity within images were only important when they were included as part of the course topic. Still, perhaps the results of student perceptions of images would change if faced with a researcher who was a white male, Hispanic male, black female, or any other race and gender combination, asking them about the importance of diversity.

Lastly, there are always questions that emerge after data have been collected and analyzed. For instance, asking students how they use their textbooks and their current course grade could have been helpful in understanding the differences in reading by discipline. Understanding how students use their textbooks could have informed instructors of these disciplines of the ways in which students learn the material for their courses.

<u>Contributions to Literature</u>

This dissertation expands current research on textbook content in the following ways. First, this study updates textbook research on how gender and race are shown within textbooks images. While some studies counted the number of individuals within textbook images by race or gender the current dissertation also included image context (Hall 2000; Hogben and Waterman 1997; Robson 2001). Beyond a numerical count this study includes how race and gender are depicted within images. Image context is important because it shows certain groups

are more likely to be shown working, with families, or as contributors to the field. Thus, image context, in the current dissertation, provides greater detail than previous research on textbooks.

This dissertation also expands current research conducted on SoTL by listening to student voices (McKinney 2005; Steadman 1998). Student perceptions of the images within their textbooks are included in this study. Until the current dissertation most research on individuals' perceptions of race and gender portrayals within images perception did not include educational materials instead focusing on mass media (Milkie 1999). Of studies that did include student attitudes towards textbook portrayals of race or gender, many only include a small sample of students from one discipline (Calson et al. 2005). Thus, the current dissertation expands research on media perceptions by using a larger multidisciplinary sample of student perceptions than in the past. Further, this sample includes computer science students, while most previous research focused on social science courses, such as sociology, business, or education (Hall 2000; Hanson 1999; Hogben and Waterman 1997; Yanowitz and Weathers 2004). By including computer science this study was able to compare both the textbook and student perceptions with disciplines that tend to discuss diversity, such as sociology and education.

In this dissertation students discussed their perceptions of textbook information as bias but taught as accurate. Although some students did point out that textbooks could present bias information or contained inaccurate imagine, students still appeared to be more concerned with how the textbook could be used to achieve a good grade than challenging textbook information. Also, the data show students were nearly as likely to complain about textbook cost, as they were to complain about the information within the textbook. Overall students appeared to be focused on how a not-too-expensive textbook could be used to do well in a course.

In addition, there were no students in the sample of over five hundred students that noticed the lack of black female educators in the classroom with the education textbook, or how women were underrepresented in contributions to sociology or computer science. Beyond ignoring the lack of black female educators or women contributors to the field, white students were more likely to agree that race was depicted accurately than black, Hispanic, Asian, and other race group students. However, a vast majority of all race groups were more likely to agree that race was depicted accurately than it was not depicted accurately. Also, female and male students were more likely to agree that textbook depictions of men and women were accurate than depictions were not accurate. Both findings and the comments students provided during focus groups support Bonilla-Silva's (2010) naturalization frame of color-blind racism. Specifically, some students claimed textbook representations of gender and race were accurate even when the portrayals lacked representativeness of black women educators or women's contributions to sociology.

Some students further supported the naturalization frame by saying they hoped the information textbook publishers provided were accurate—that it was reflective of real-life. Textbook publishers, some students felt, would not want to intentionally mislead students by using inaccurate information. Thus, the images are reflective of what's out there and it's not the textbook publishers fault if there is a lack of women contributing to research. Regardless of the reasons behind why students did not challenge the lack of women contributors or black female educations, their actions support the naturalization frame by accepting images of race and gender even when they were not accurate (Bonilla-Silva 2010).

Additional support of Bonilla-Silva's findings on color-blind racism can be highlighted in other student comments on diversity within college textbook images. Sharon's comment, "you never see redheads… should I just go to the publisher and say, 'Hey, you're leaving my people out.' I don't see the point to it..." rationalizes unfairness and the belief of the declining importance of diversity (Bonilla-Silva 2010). Specifically, Sharon and several other students pointed out that paying attention to the race and gender of individuals within images was not important because someone could always find a personal attribute left out of textbook images. Again, the representations of gender and race within textbook images were not important because everyone could not be included within them.

These findings also support previous literature by showing that students are more concerned with other factors than questioning the information presented to them. Potentially these students saw certain groups of people, such as white males, as the primary workers or contributors to the field. If these students tell other individuals about the information they learned in these textbooks, which highlight white male contributions in images, then they would be continuing a cycle neglecting women and minorities contributions.

Overall, this dissertation can act as a foundation for continuing the discussion on diversity within images in addition to documenting how publishers can improve the images that appear within textbooks. Only future research will be able to show if textbooks will continue to change, challenging the current compartmentalizations of race and gender within images.

Implications

This dissertation also has implications for the way instructors use textbooks and can provide a learning opportunity for students. For example, contributors to the field in sociology

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were primarily shown as men. As discussed in chapter three, currently sociology shows more gender parity than what the images might lead students to believe. Thus, instructors could discuss with students why female sociologists are not shown within textbook images as frequently as male sociologists. This could include a historical discussion on how women and racial minorities were barred from higher education or instructors could use a conflict or feminist perspective to discuss why female contributions might exist but are ignored. This discussion could help students develop critical thinking skills and apply them to the information they are presented.

Publishers can also apply the information in this dissertation to the images they choose for textbooks. While there have been improvements in textbook images there are still images that could be improved. In particular, within the education textbook black women were not shown as educators in the classroom, which does not reflect reality. Thus, paying attention to what individuals are depicted as doing, rather than just making sure groups are included overall, would improve images within textbooks.

APPENDIX A: TEXTBOOK CODEBOOK

Datasheet Part 1

1. Course that requires this textbook _____
2. Title _____
3. Author 1 _____
4. Author 2_____
5. Author 3_____
6. Author 4_____
7. ISBN _____
8. Publisher _____
9. Publication year _____
10. Available for online purchase
        0. No

        1. Yes

11. Edition # _____

Datasheet Part 2

12. Image ID # _____
13. Page # on which image appears _____
14. Chapter title in which image appears _____
15. Image Type
        0. Photograph
        1. Drawing
        2. Other
16. Size of the image
        1. Entire page
        2. Half page
        3. Quarter of the page
        4. Eighth of the page
17. Number of people in the image
      1. One
      2. Two
      3. Three
      4. Four
      5. Five
      6. Six
      7. seven or more
18. Race of person (1) in image (all images coded from left to right)
        0. White (includes white Hispanic)
        1. Black (includes black Hispanic)
        2. Asian
        3. Native American
        4. Other
19. Gender of person (1) in image
        0. Male
        1. Female
        2. Unclear
20. Depicted social class of person (1)
        0. Homeless
        1. Poor
        2. Middle class
        3. Affluent/Upper
21. Does there appear to be a group leader in the image?

22. Is anyone depicted as disabled?

23. Is there anyone touching? (describe)

24. Does there appear to be a group leader in the image?

25. Describe the activity occurring in the image.

26. Facial expression of person (1)
       0. No expression (not smiling, not frowning)
       1. Smiling
       2. Frowning
       3. Crying (happy)
       4. Crying (appears sad)
       9. N/A
27. Race of person (2) in image
       0. White (includes white Hispanic)
       1. Black (includes black Hispanic)
       2. Asian
       3. Native American
       4. Other
28. Gender of person (2) in image
       0. Male
       1. Female
       2. Unclear
29. Depicted social class of person (2)
       0. Homeless
       1. Poor
       2. Middle class
       3. Affluent/Upper
30. Facial expression of person (2)
       0. No expression (not smiling, not frowning)
       1. Smiling
       2. Frowning
       3. Crying (happy)
       4. Crying (appears sad)
       9. N/A
31. Race of person (3) in image
       0. White (includes white Hispanic)
       1. Black (includes black Hispanic)
       2. Asian
       3. Native American
       4. Other
32. Gender of person (3) in image
       0. Male
       1. Female
       2. Unclear
33. Depicted social class of person (3)

0. Homeless
1. Poor
2. Middle class
3. Affluent/Upper

34. Facial expression of person (3)
0. No expression (not smiling, not frowning)
1. Smiling
2. Frowning
3. Crying (happy)
4. Crying (appears sad)
9. N/A
35. Race of person (4) in image
0. White (includes white Hispanic)
1. Black (includes black Hispanic)
2. Asian
3. Native American
4. Other
36. Gender of person (4) in image
0. Male
1. Female
2. Unclear
37. Depicted social class of person (4)
0. Homeless
1. Poor
2. Middle class
3. Affluent/Upper
38. Facial expression of person (4)
0. No expression (not smiling, not frowning)
1. Smiling
2. Frowning
3. Crying (happy)
4. Crying (appears sad)
9. N/A
39. Race of person (5) in image
0. White (includes white Hispanic)
1. Black (includes black Hispanic)
2. Asian
3. Native American
4. Other
40. Gender of person (5) in image
0. Male
1. Female

2. Unclear

41. Depicted social class of person (5)
  0. Homeless
  1. Poor
  2. Middle class
  3. Affluent/Upper

42. Facial expression of person (5)
  0. No expression (not smiling, not frowning)
  1. Smiling
  2. Frowning
  3. Crying (happy)
  4. Crying (appears sad)
  9. N/A

43. Race of person (6) in image
  0. White (includes white Hispanic)
  1. Black (includes black Hispanic)
  2. Asian
  3. Native American
  4. Other

44. Gender of person (6) in image
  0. Male
  1. Female
  2. Unclear

45. Depicted social class of person (6)
  0. Homeless
  1. Poor
  2. Middle class
  3. Affluent/Upper

46. Facial expression of person (6)
  0. No expression (not smiling, not frowning)
  1. Smiling
  2. Frowning
  3. Crying (happy)
  4. Crying (appears sad)
  9. N/A

APPENDIX B: STUDENT CONSENT AND SURVEY

Student Textbook Survey

Principal Investigator: Chastity Blankenship

Faculty Supervisor: Elizabeth Grauerholz, PhD

Sponsor: Department of Sociology

Investigational Site(s):   University of Central Florida

Introduction: Researchers at the University of Central Florida (UCF) study many topics. To do this we need the help of people who agree to take part in a research study. You are being invited to take part in a research study of students at UCF. You have been asked to take part in this research study because you are a student in an introductory course at UCF. You must be 18 years of age or older to be included in the research study and sign this form. You can read this form and agree to take part right now, or take the form home with you to study before you decide.

Chastity Blankenship, the person doing this research, is a graduate student in UCF's Department of Sociology. Because the researcher is a graduate student, she is being guided by Dr. Elizabeth Grauerholz, a UCF faculty supervisor in Sociology.

What you should know about a research study:
- Someone will explain this research study to you.
- A research study is something you volunteer for.
- Whether or not you take part is up to you.
- You should take part in this study only because you want to.
- You can choose not to take part in the research study.
- You can agree to take part now and later change your mind.
- Whatever you decide it will not be held against you.

- Feel free to ask all the questions you want before you decide.

Purpose of the research study: The purpose of this study is to learn more about the resources students are using in introductory courses.

What you will be asked to do in the study: You are being asked to answer the following survey regarding your use of the textbook(s) in this course. This brief survey will take five to ten minutes to complete. You do not have to answer every question or complete every task. You will not lose any benefits if you skip questions or tasks.

Confidentiality: We will limit your personal data collected in this study to people who have a need to review this information.

Study contact for questions about the study or to report a problem: If you have questions, concerns, or complaints, or think the research has hurt you talk to Chastity Blankenship, Graduate Student, Department of Sociology, cblanken@gmail.com or Dr. Elizabeth Grauerholz, Faculty Supervisor, Department of Sociology (407) 823-4241 or by email at grauer@mail.ucf.edu.

IRB contact about your rights in the study or to report a complaint: Research at the University of Central Florida involving human participants is carried out under the oversight of the Institutional Review Board (UCF IRB). For information about the rights of people who take part in research, please contact: Institutional Review Board, University of Central Florida, Office of Research & Commercialization, 12201 Research Parkway, Suite 501, Orlando, FL 32826-3246 or by telephone at (407) 823-2901. You may also talk to them for any of the following:
- Your questions, concerns, or complaints are not being answered by the research team.
- You cannot reach the research team.
- You want to talk to someone besides the research team.
- You want to get information or provide input about this research.

Your signature below indicates your permission to take part in this research:

_____
Name of participant

_____   _____
Signature of participant   Date

The first section of this survey contains questions about your use of the textbook(s) required for this course. Please circle the best answer for each question.

1. Did you obtain a copy of the textbook(s) required for this course?
      1   Yes

      2   No (Skip to question 11)

2. If you answered yes, how did you obtain the textbook(s) required for this course?

      1   Purchased it
      2   Purchased online access to the textbook through the publisher
      3   Borrowing or sharing it
      4   Other _____

3. If you have the textbook(s) for this course, how often do you read it on average?

      1   More than twice a week
      2   At least once a week
      3   Twice a month
      4   Once a month
      5   Once or twice during the semester
      6   Never
      7   Don't know

4. If you have the textbook(s) for this course, how helpful is it for preparing for exams, homework, and assignments?

      1   Very helpful
      2   Helpful
      3   Not very helpful
      4   Not at all
      5   Unsure/Don't know

5. Did you notice if your textbook had images of people in it?
      1   Yes
      2   No
      3   Don't know or remember

6. If there are images within your textbook, do you think they are helpful when you are preparing for exams, homework, and assignments?

      1   Very helpful
      2   Helpful
      3   Not very helpful
      4   Not at all
      5   Unsure/Don't know

7. Do you think your textbook(s) contains diverse images of men and women?

      1   Yes
      2   No
      3   Unsure/Don't know

8. Do you think your textbook(s) for this class depict men and women accurately?

      1   Yes
      2   No

3 Unsure/Don't know

9. Do you think your textbook(s) contains diverse images of different race groups?

   1 Yes
   2 No
   3 Unsure/Don't know

10. Do you think your textbook(s) for this class depict different race groups accurately?

   1 Yes
   2 No
   3 Unsure/Don't know

The next section contains questions about you as a student.

11. What is your current major? _____

12. What is your current grade level at UCF?
   1 Freshman
   2 Sophomore
   3 Junior
   4 Senior
   5 Other _____
   6 Don't know

13. In what year were you born? _____

14. What is your gender?
   1 Male

   2 Female

15. What is your race?

        1   White, non- Hispanic
        2   African American
        3   White, Hispanic
        4   Black, Hispanic
        5   Asian
        6   Asian Indian
        7   Other

16. Do your parent(s) or guardian(s) financially help support you here at UCF?
        1   Yes

        2   No

17. What is your best guess of your household income? If you are dependent on your parent(s) or guardian(s) this would be their household income. If you are not dependent, this is your household income.

        1   Less than $30,000
        2        $30,000 - 40,000
        3        $40,000 – 50,000
        4        $50,000 – 70,000
        5        $70,000 – 90,000
        6   More than $90,000
        7   Don't know

Would you be willing to participate in a focus group concerning additional details about the resources used in this course? If so, please provide your email address here and the researcher may contact you within the next few weeks:

        Email _____

APPENDIX C: APPROVAL OF EXEMPT HUMAN RESEARCH

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Chastity Blankenship**

Date: **March 04, 2010**

Dear Researcher:

On 3/4/2010, the IRB approved the following activity as human participant research that is exempt from regulation:

Type of Review:	Exempt Determination
Project Title:	Student's Understanding of Textbook Images
Investigator:	Chastity Blankenship
IRB Number:	SBE-10-06743
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Joseph Bielitzki, DVM, UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 03/04/2010 09:16:28 AM EST

IRB Coordinator

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