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Clothing Construction Curriculum: Exploring Gender Inclusivity

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CLOTHING CONSTRUCTION CURRICULUM: EXPLORING GENDER INCLUSIVITY

By

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ABSTRACT

Clothing Construction Curriculum: Exploring Gender Inclusivity

by

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Gender inclusivity is crucial for student well-being and learning in increasingly gender-diverse clothing construction courses. Current research highlights inequities faced by minorities in traditionally male-dominant fields, such as Science, Technology, Engineering, and Math fields and areas of Career and Technical Education. However, research was lacking on student experiences in traditionally female-dominant fields, such as Family Consumer Sciences. This study addressed a current literature gap on gender-inclusivity in traditionally female-dominant clothing construction courses, a component of Family Consumer Sciences Education.

Historically, Family and Consumer Sciences was a female-dominant discipline focused on homemaking skills. Over time, the curriculum adapted to emphasize career preparation in domains such as human development, nutrition, and clothing construction. A change in student demographics accompanied the focus of Family Consumer Sciences on a diverse range of careers. Specifically, there was greater gender diversity in clothing construction courses. This trend was especially apparent in clothing construction courses

at Utah State University, where male participation increased in conjunction with the Outdoor Product Design and Development degree program.

This study evaluated the experiences of all students in traditionally female-dominant clothing construction courses. The extent of gender-inclusivity was assessed by evaluating students' previous and current experiences related to representation, external responses, and career connections within clothing construction courses. Participants from clothing construction courses at Utah State University completed an online self-report survey. The survey questions pertained to feelings of belonging, the curriculum's relevancy, and external support of participation in clothing construction courses.

Survey data was disaggregated by gender and degree program. Findings indicated that Utah State University clothing construction courses were generally more relevant and inclusive than secondary clothing construction courses. Female students had more prior sewing experience, a stronger sense of belonging in previous classes, and more awareness of gender stereotypes. No students reported opposition or discouragement from others. Future research could focus on the effect of feminine stereotypes on females in traditionally female-dominant disciplines. Additionally, this study demonstrates the need for additional research on nonbinary or transgender student experiences in clothing construction courses.

(151 pages)

PUBLIC ABSTRACT

Clothing Construction Curriculum: Exploring Gender Inclusivity

ShaeLin M. Nilsen

Female students have traditionally dominated enrollment in Family and Consumer Sciences (FCS) courses (formerly Home Economics). However, gender diversity has recently increased in many FCS areas due to changes in gender stereotypes and career opportunities. This trend is evident at Utah State University, where gender diversity in clothing construction (i.e., sewing) courses has increased drastically since the creation of the Outdoor Product Design and Development degree program. This study evaluated students' experiences in traditionally female-dominant clothing construction courses.

Gender-inclusive courses are crucial for a productive and safe learning environment for all students. Avoiding personal biases and cultivating a relevant curriculum are methods for creating a gender-inclusive curriculum. Utah State University clothing construction students completed an anonymous, online survey about their previous and current clothing construction courses. Survey questions examined feelings of belonging, relevancy of course content, and support students received from others.

One significant finding showed that female students have more previous clothing construction experience than male students. Thus, there are potential barriers to gender-diverse enrollment in clothing construction courses at the secondary level. The data also showed greater inclusivity in post-secondary clothing construction courses due to more gender diversity and course content relevancy. These findings are relevant to clothing construction and FCS instructors in secondary, post-secondary, and public spheres.

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ShaeLin M. Nilsen

CONTENTS

Page

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

Clothing construction and textile courses within the Family and Consumer Sciences (formerly known as Home Economics) curriculum have traditionally been dominated by female students (Barnum, 2014, 2018; Betz, 2010; Montgomery, 2006). Clothing construction (i.e., sewing) was a crucial domestic skill typically undertaken by women attempting to clothe their families. However, the ability to construct personal clothing is no longer necessary to provide clothed protection as it was in past centuries because clothing is now mass-produced and readily available. Nevertheless, technical sewing skills, knowledge of apparel construction, and familiarity with textiles are crucial for many careers in the apparel and soft goods industry (Allsop & Cassidy, 2019; Brandes & Garner, 1997). Therefore, the development of clothing construction skills is now relevant for all genders to prepare for various careers and to become informed consumers.

In recent years there has been an increase in gender diversity in traditionally female-dominant Family and Consumer Sciences (FCS) courses, which is evidence of the relevancy of the curriculum for all students. Specifically, more male students are taking clothing construction courses at Utah State University (USU) due to their interest in obtaining a career in the outdoor product industry (Tilton, 2018). As FCS courses' demographics change, potential barriers may be present for students whose gender is not conventional for the discipline (Lufkin et al., 2014). Male or gender-diverse students who

participate in traditionally female-dominant clothing construction courses could face gender stereotypes and discrimination that may inhibit their experience and success.

FCS courses cover a wide range of subjects, such as clothing construction, nutrition and foods, interior design, child and human development, financial literacy, etc. The most recent statistics indicate that around 50% of male students in middle school and 37% of male students in high school were enrolled in an FCS course. These numbers are significantly greater than the 1.3% of males in 1959 who took FCS courses (Family and Consumer Sciences Education, 2020; Werhan, 2013). The demographics of the introductory sewing courses at Utah State University indicated that male students were just as likely as female students to enroll in clothing construction courses at this institution. Enrollment data starting in Spring 2016 through Fall 2020 semester showed that average gender enrollment for the Introductory Sewing class at USU was 47% female and 53% male (Baird, 2020). These statistics illustrated that clothing construction courses within the Family and Consumer Sciences Education program at USU have an equitable representation of male and female students (Baird, 2020).

Students of all genders at USU were drawn to the sewing courses due to their interest in the Outdoor Product Design and Development (OPDD) program and career opportunities in the outdoor industry (Baird, 2020; Tilton, 2018). The OPDD program at USU requires a basic knowledge of clothing construction as students prepare for careers in sports and outdoor apparel design, development, manufacturing, and merchandising (Allsop & Cassidy, 2019; Outdoor Product Design & Development, 2020; Picture yourself in the OPDD program, 2020; Tilton, 2018).

Problem Statement

Evaluation of clothing construction classes was necessary to cultivate an inclusive and relevant curriculum. The change in student demographics and the need for career-preparatory skill development must be supported by the clothing construction curricula (Allsop & Cassidy, 2019; Brandes & Gardner, 1997; Miller, 2018). The research literature outlined the increase of male enrollment and gender diversity within FCS courses and the importance of clothing construction curriculums (Allsop & Cassidy, 2019; Brandes & Gardner, 1997; Montgomery, 2006). However, additional research provided necessary insight into students of all genders' experiences in traditionally female-dominant clothing construction classes. Although current research indicated that students face barriers and inequities in nontraditional courses for their gender, research focusing on the experience of students in traditionally female-dominant disciplines was limited (Lufkin et al., 2014; Lupton, 2006). Therefore, this study aimed to address the current literature gap by evaluating all students' experiences in clothing construction courses.

Purpose of the Study

The goal of this research study was to assess the experiences of all students in post-secondary clothing construction courses to promote bias-free learning (i.e., education that is available for all students regardless of background, gender, ethnicity, etc. [Fox, 2009]). The observations from this study also supported inclusivity (i.e., intentionally recognizing and mitigating bias [Dewsbury & Brame, 2019]) and encouraged career preparation in clothing construction courses and FCS programs.

Promoting a clothing construction curriculum inclusive for all students with diverse backgrounds, including race, ethnicity, social class, religion, (dis)ability, gender, sexuality, and language, increases student learning and well-being (Wyss, 2004).

Even unconscious biases (e.g., implicit bias, confirmation bias) are damaging as they can highlight some students while marginalizing others (Graham, 1992; Sadker, 1999). Thus, it was essential to assess these biases and student experiences to gain insight into the extent of gender inclusivity in clothing construction classes (Langlais et al., 2017).

Research Methods & Questions

The experiences and perceptions of students in clothing construction courses were evaluated through a quantitative research design. Students enrolled in clothing construction courses at USU during the Spring 2021 semester were invited to complete a self-report questionnaire. The questionnaire was composed of quantitative items on a semantic differential scale (i.e., Likert-type), concluding with an open-ended question to provide participants the opportunity to elaborate on individual experiences. The data was disaggregated by gender and degree program to compare student experiences and perceptions of clothing construction courses. Disaggregating the data made possible bias or discrimination in clothing construction courses apparent.

The following research questions were addressed to meet the goals of this study:

1. What type of clothing construction experience do post-secondary students receive before taking a university clothing construction course?

2. To what extent do students feel they are adequately represented within the clothing construction curriculum?
3. What kind of external responses do students receive regarding their enrollment in clothing construction courses?
4. To what extent do students perceive the connection between clothing construction curriculum and careers?

The following sections discuss the limitations, assumptions, and delimitations of the study to ensure clarity and accuracy of research findings.

Limitations of the Study

The following limitations were present in the research study.

1. Data was only gathered from students in post-secondary clothing construction courses at a single institution of higher education.
2. The sample was limited to participants with internet access and a computer/mobile device.
3. The survey instrument's quantitative questions did not provide a rationale or background for why participants chose their answers.
4. Some participants in their first-ever clothing construction class may have had minimal experience to reference when completing the survey instrument.

Basic Assumptions

The following assumptions were acknowledged in this study.

1. Participants were currently enrolled in a clothing construction course.

2. Participants were students at Utah State University in the Family and Consumer Science Education or Outdoor Product Design and Development degree program.
3. Participants answered the survey instrument accurately and honestly.
4. Participants knew how to access the survey instrument and how to use the software to answer the questions.

Delimitations

A delimitation of this study was the scope of the participants. Data was obtained solely from clothing construction courses at USU because the gender-diverse course enrollment was the ideal scenario to begin exploratory research. Therefore, this study's findings applied to USU and other secondary or post-secondary institutions with FCS programs.

Significance of the Study

Historically, researchers asserted that FCS courses were never intended solely for female students (Thompson, 1986). Nonetheless, FCS programs have been traditionally female-dominant, especially in clothing construction courses (Barnum, 2014, 2018; Betz, 2010; Montgomery, 2006). USU clothing construction courses have become more gender diverse due to the increase in male participation starting in 2016 (Baird, 2020). For example, in the Introductory Sewing course at USU, 1% of students were male in the Fall 2015 semester, while over 50% of students were male in the Spring 2016 semester when the OPDD program was introduced (Baird, 2020). This increased male enrollment trend has continued, with average enrollment in Introductory Sewing being 53% male from

Spring 2016 through Fall 2020 (Baird, 2020). Existing studies do address the experiences of marginalized groups within traditionally male-dominant disciplines (Dewsbury & Brame, 2019; Graham, 1992; Kommer, 2006; Quilling, 1999; Sadker, 1999; Sanders, 2002). However, more research was needed to assess the experiences and perceptions of all students who are potentially marginalized in traditionally female-dominated disciplines.

Current research indicated that an equitable and inclusive curriculum is crucial for all students to succeed in the Family and Consumer Sciences classroom (Fox, 2009). However, the literature in Career and Technical Education (CTE) and Science, Technology, Engineering, and Math education (STEM) has a predominant focus on inequities faced by female students in traditionally male-dominant content areas (Dewsbury & Brame, 2019; Graham, 1992; Kommer, 2006; Quilling, 1999; Sadker, 1999; Sanders, 2002). Therefore, research on the experiences of all students, including male and non-binary students, in traditionally female-dominant content areas was lacking. The demographic change within clothing construction courses called for an investigation into the experiences of potentially marginalized students to address the gap in the literature (Dewsbury & Brame, 2019; Graham, 1992; Kommer, 2006; Quilling, 1999; Sadker, 1999; Sanders, 2002).

This study assessed all students' experiences in clothing construction courses at USU, which provided relevant findings for FCS teachers of all education levels to develop inclusive and enhanced curriculums that appeal to a gender-diverse student body. For example, widening the scope of projects and content in clothing construction curriculums (e.g., making gender-neutral products, focusing on male and female industry

professionals, discussing fit for various body types, etc.) can meet the interests of more students of all gender identities.

Besides making the clothing construction curriculum more inclusive, the findings of this study were significant for promoting FCS programs and recruiting more diverse students by appealing to all students' interests regardless of gender identification (Barnum, 2014, 2018; Betz, 2010; Garcia & Makela, 2006). Furthermore, understanding all students' perceptions and interests could inspire a shift in the focus and marketing of FCS programs. This modification can attract a broader range of students to profit and learn from revitalized FCS courses (Betz, 2010).

Additionally, the participants in this study shared insights into their prior clothing construction experience, which informs course developers of needed adjustments to clothing construction curriculums. Assessing students' preparation and success at USU improves the clothing construction curriculum and teaching practices at the secondary and post-secondary levels. Moreover, this research study promotes college and career preparation in FCS programs by examining the experiences of students at the post-secondary level (Allsop & Cassidy, 2019; Brandes & Garner, 1997).

Definition of Terms

Cisgender: A person whose internal sense of gender identity is the same as their sex assigned at birth (Merriam-Webster, 2020).

Clothing Construction Courses: Classes at the secondary and post-secondary level that teach skills such as operating a sewing machine, using sewing equipment

properly, sewing techniques (i.e., seams, hems, buttonholes, pressing, etc.), using patterns, textile identification, and constructing apparel.

Family and Consumer Sciences Education (FCSE): A program that prepares students to be educators of Family and Consumer Sciences (FCS) in middle schools, high schools, or nonformal/community settings. FCS educators are qualified to teach clothing construction, nutrition and foods, interior design, child/human development, financial literacy, and other subject areas (Family and Consumer Sciences Education, 2020).

Gender Equity: Addressing people's needs with all different gender identities to allow each individual to succeed (Kommer, 2006).

Gender Identity: A person's internal sense of being male, female, neither male nor female, both male and female, or other genders (Gender Unicorn, 2020).

Gender Inclusivity: Intentionally recognizing and reducing biases that exclude certain genders to include all people across gender differences (Dewsbury & Brame, 2019).

Gender Roles: Behaviors and characteristics that society deems to be proper for each gender. For example, societal expectations about which careers, courses, tasks, skills, or activities are considered appropriate for the male gender or the female gender. A typical example of gender roles in society is distinguishing women as homemakers and men as breadwinners (Eagly et al., 2000; Sanders, 2002; Wyss, 2004).

Non-Binary Gender: A person whose internal sense of gender identity is neither wholly male nor entirely female (Merriam-Webster, 2020).

Outdoor Product Design and Development (OPDD): A program that prepares students to design and develop gear and apparel for outdoor sports and recreation.

Students in the OPDD program are prepared for various professional careers (e.g., designer, developer, manufacturing, sales, management, etc.) in the outdoor industry (Picture Yourself in the OPDD Program, 2020).

Sex Assigned at Birth: A person's classification at birth as male, female, intersex, or another gender based on anatomy, hormones, and/or chromosomes (Gender Unicorn, 2020).

Transgender: A person whose internal sense of gender identity is different than their sex assigned at birth (Gender Unicorn, 2020).

Summary

This study addressed the literature gap on the experience of all students in traditionally female-dominant clothing construction classes. At Utah State University, there was a distinct increase in gender diversity in these courses since creating the Outdoor Product Design and Development degree program. Promoting a gender-inclusive curriculum within clothing construction courses allows all students to learn new skills and prepare successfully for various careers. The subsequent chapters review existing literature, present research methodology, report study findings, and discuss the results.

CHAPTER II

REVIEW OF LITERATURE

This chapter reviews current literature regarding the historical background of Family and Consumer Sciences (FCS), benefits of clothing construction courses, gender inclusivity, student motivation, needs for future exploration, and theoretical framework. To create inclusivity within this thesis, a brief review of terms is necessary. When the word "male" is used in this chapter, it refers to people who identify as male, and when the word "female" is used in this chapter, it refers to people that identify as female. If further clarification of terms is needed, the reader should refer to the "definition of terms" in chapter I. The following section discusses the history of FCS to establish the background for this study.

Historical Background

Family and Consumer Sciences Education was formerly known as Home Economics. The traditional Home Economics curriculum focused on home-making tasks (e.g., meal preparation, house cleaning, and clothing construction) while incorporating knowledge of science, human relations, aesthetics, and ethics (Quilling, 1999; Thompson, 1986). Although Home Economics' curriculum was not intended to be specific to one gender, Home Economics courses were dominated by female students. This female-dominant enrollment trend existed in a time when many women did not work outside the home. Consequently, learning domestic skills was beneficial for the typically feminine

role of homemaking (Barnum, 2018; Nickols et al., 2009; Montgomery, 2006; Quilling, 1999; Thompson, 1986).

In 1994, the name “Home Economics” was retired, and the name Family and Consumer Sciences (FCS) was adopted (American Association of Family and Consumer Sciences, 2020). The program transitioned to the title FCS to better serve diverse individuals, families, and communities as they face social and economic issues in a complex society (AAFCS, 2020; Nickols et al., 2009). An increased focus on careers within FCS content's complex and diverse realm of specialties accompanied this rebranding (AAFCS, 2020; Quilling, 1999).

FCS is an applied science in which students are introduced to career paths in childcare, education, interior design, clothing construction, textiles, fashion, culinary arts, food science, hospitality services, human development, consumer services, and more (AAFCS, 2020; National Association of State Administrators of Family and Consumer Sciences, 2018). Furthermore, FCS includes career preparation within the curriculum; therefore, it is a component of Career and Technical Education (CTE) (Thompson, 1986; Rutter & Smith, 2005).

Along with the name change and emphasis on career preparation, FCS students' demographics have changed over time (Baird, 2020; Smith et al., 1998). Traditionally, many careers within FCS have been perceived as female-dominant; however, gender diversity is increasing in FCS due to changes in societal gender roles and interest in modern technical professions, such as outdoor product design (Nickols et al., 2009; Quilling, 1999; Thompson, 1986; Tilton, 2018). Although FCS was traditionally considered a women’s field, students of all genders benefit from involvement in FCS

programs as they prepare for adult living and various careers (Barnum, 2014, 2018; Nickols et al., 2009; Smith et al., 1998).

Moreover, FCS has been perceived as female-dominant because many male or non-binary students are hesitant to participate due to gender stereotypes (Langlais et al., 2017). Gender stereotypes (e.g., feminization, negative external responses, microaggressions, etc.) are evident when males enter careers or perform roles that women typically undertake. Males can experience negative stigmatization and challenges to their masculinity in non-traditional disciplines for their gender (Lupton, 2006). Students who identify with a male or non-binary gender participating in FCS can face similar barriers; however, FCS teachers observe more acceptance of gender diversity in FCS than in the past (Johnson, 2009).

Even before the rebranding of home economics, a 1985 study found that gender diversity in FCS programs at the university level increased due to program specialization trends, increased job opportunities, and more flexibility in career choice for individuals of all genders (Thompson, 1986). In recent years, other studies have found that there has been resistance to traditional gender roles in education. For example, more people are pursuing interests or careers that are nontraditional for their gender (Elan, 2021; Langlais et al., 2017; Stienkopf-Frank, 2020; Wyss, 2004). This continuing trend of less rigid gender barriers has resulted in greater gender diversity in FCS programs (Langlais et al., 2017; Thompson, 1986; Werhan & Way, 2006; Werhan, 2013).

History of the Outdoor Product Design and Development Program

The Outdoor Product Design and Development (OPDD) degree program is one example of a gender-diverse program within FCS that requires specialized training. This degree prepares students for careers in the outdoor industry as designers, technical developers, product line managers, supply chain managers, and more (C. Anderson, personal communication, January 15, 2021; Utah State University, 2020). Basic knowledge of clothing construction principles is essential for success in these careers, especially when designing, developing, and managing outdoor apparel production (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Utah State University, 2020).

The OPDD program is innovative, auspicious, and relevant to outdoor enthusiasts of all genders who hope to pursue a career related to their passion for the outdoors (Baird, 2020; Utah State University, 2020). The OPDD program is the first of its kind in the nation. The faculty at Utah State University created the program after recognizing a lack of qualified professionals to work in the outdoor product industry as designers and developers. These faculty leaders used their enthusiasm for the outdoors and connections with industry partners to create a program preparing students to become professionals in the outdoor industry. As an integral part of the OPDD program, students learn how to design, develop, and manufacture both hard goods (i.e., bikes, carabiners, skis, etc.) and soft goods (i.e., outdoor apparel, tents, hammocks, etc.) (C. Anderson, personal communication, January 15, 2021).

Even if students choose not to focus on product design, development, or management related to outdoor apparel or soft goods, the clothing construction classes were required for the degree program and were relevant for their future careers.

According to the current OPDD program coordinator, the opportunity for students to create conceptual designs and prototypes is a valuable experience for any specialty or position they choose within the outdoor industry (C. Anderson, personal communication, January 15, 2021).

The OPDD program has continued to grow and expand due to its popularity and employment opportunities. In 2021, there were approximately 230 students in the OPDD program at USU. The first graduating class from the program in 2019 had a 90% job placement rate, which indicated the extent of opportunities available in the outdoor industry. Although most of the first graduating class members have obtained positions as product designers, students can also prepare for other specialized careers within the outdoor product industry. The OPDD degree program now offers three emphases in either product design, product development, or product line management. (C. Anderson, personal communication, January 15, 2021).

The program coordinator also shared insights about the gender demographics of students in the OPDD degree program at USU. The enrollment in the OPDD program was approximately 60% male and 40% female students in the spring 2021 semester. These statistics represented the gender diversity within clothing construction courses on the USU campus (Baird, 2020). A current goal was to promote diversity and inclusion by marketing the OPDD degree program to students of all genders (C. Anderson, personal communication, January 15, 2021). The clothing construction courses connected to the OPDD major should reflect the same goals of inclusivity.

Gender Enrollment Trends in FCS

In 1959, nearly 50% of all female students took home economics courses while only 1.3% of male students enrolled in such courses (Werhan & Way, 2006; Werhan, 2013). Current student demographics indicate that more male students participated in FCS courses in recent years (Langlais et al., 2017; Thompson, 1986; Werhan & Way, 2006; Werhan, 2013). The most recent U.S. statistics indicate that FCS courses at the middle school level are evenly split between male and female students (Werhan & Way, 2006; Werhan, 2013). At the high school level, the average enrollment by gender in FCS courses is 35% male and 65% female (Werhan, 2013). An FCS course is a common requirement at the middle school level and there is less choice in electives. However, a wider range of electives and demands on student time could present barriers to high school FCS participation. Thus, more male students participate in FCS during middle school than in high school (Werhan & Way, 2006; Werhan, 2013).

Even though more male students participate in FCS courses today in 2021, enrollment is still composed of more females than male students at the high school level (Werhan & Way, 2006; Werhan, 2013). These statistics support the previously held notion that FCS courses are female-dominated, yet they also illustrate the increased participation of male students in FCS (Barnum, 2018; Werhan & Way, 2006; Werhan, 2013). It is noteworthy that the most recent statistics available from 2013 are not current as a national collection of data has not been made for over seven years (Werhan, 2013).

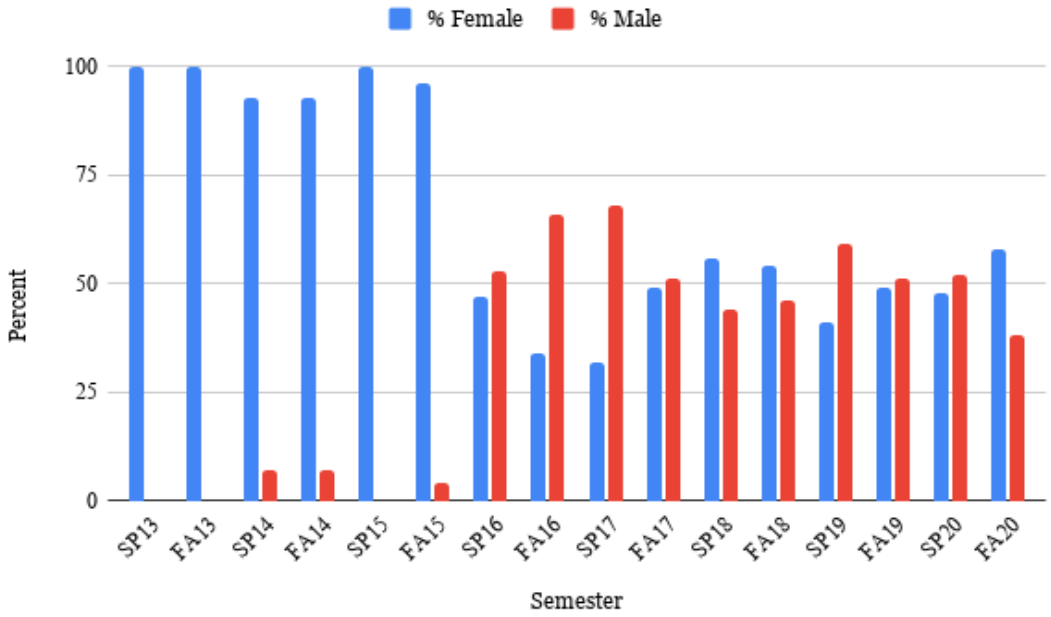
While existing statistics, spanning from 1959 to 2013, focus on FCS gender enrollment trends in secondary education (e.g., more male students taking FCS courses), similar trends can be observed in post-secondary programs (Werhan & Way, 2006;

Werhan, 2013). Student demographics for introductory sewing classes – a component of FCS – at Utah State University (USU) further illustrate the trend of increased male enrollment in FCS classes (Baird, 2020). Before introducing the Outdoor Product Design and Development (OPDD) Program at USU, enrollment in introductory sewing classes was predominantly female (Baird, 2020). When OPDD students started taking sewing and clothing construction classes in the Spring 2016 semester, male enrollment surpassed the percentage of female students in the course. This trend continued for the two subsequent semesters, including the Fall 2016 and Spring 2017 semesters (Baird, 2020).

From Spring 2016 to Fall 2020 semester, the average gender enrollment of introductory sewing students was 47% female and 53% male (Baird, 2020). These statistics indicate that post-secondary students of all genders are taking clothing construction courses in preparation for careers (Allsop & Cassidy, 2019; Baird, 2020; Brandes & Garner, 1997; Montgomery, 2006).

Figure 1

Gender Enrollment in Introductory Sewing at USU



Note. Percentage of male and female students enrolled in Introductory Sewing (FCSE 1040) at Utah State University each semester. Data obtained from Barbara Baird, academic advisor (2020).
*4% of students in the Fall 2020 semester did not specify a gender.

Historical Inequities in Education

Unequal gender enrollments in clothing construction and other FCS courses hinder programs' effectiveness in meeting the inclusivity mission for students of all genders, cultures, and backgrounds (NASAFACS, 2018). School systems (i.e., K-12 and higher education) reinforce social and academic divisions and hierarchies based upon societal gender roles (Sanders, 2002; Wyss, 2004). Gender roles are defined as behaviors and characteristics that society deems to be proper for each gender, such as which courses, skills, or activities are considered appropriate for males or females (Sanders,

2002; Wyss, 2004). Gender barriers and stereotypes are especially prevalent in Career and Technical Education (CTE) (Lufkin et al., 2014). For example, a common notion is that females should not take auto mechanics and males should not participate in FCS (i.e., Home Economics) because these fields have been traditionally restricted to one gender (Lufkin et al., 2014).

Although gender roles and inequities are reinforced within school systems, there has been a push from students and educators, especially in CTE, to remove gender hierarchies and stereotypes (Lufkin et al., 2014; Press Office, 2016; Wyss, 2004). Despite these efforts, discrimination and biases continue to limit male, female, and non-binary students from enrolling in CTE courses that are nontraditional for their gender (Lufkin et al., 2014). Gender stereotyping is evident because only one of seven females participating in CTE takes a nontraditional course for their gender (Lufkin et al., 2014).

Similarly, a 2014 study showed that only 9% of male CTE students participated in nontraditional CTE courses, such as FCS (Lufkin et al., 2014). Because FCS courses are relevant and valuable for all genders, changes should be made to increase gender diversity and inclusivity within CTE and FCS curriculum (Smith et al., 1998; Wyss, 2004). Gender stereotypes and discrimination from peers, parents, teachers, counselors, and administrators impede the creation of inclusive FCS curriculums (Lufkin et al., 2014).

External Perspectives of FCS Programs

Support from stakeholders is vital for an FCS program to receive funding and resources; therefore, it is crucial to promote the value of relevant and career-preparatory

curriculums (Boschetto, 2019). When parents, administrators, and school counselors in Utah were surveyed about FCS programs, they reported FCS as relevant, valuable, practical, and engaging (Barnum, 2014, 2018). In the state of Utah, 98% of school administrators and counselors surveyed in 2018 felt that FCS programs made at least somewhat of a significant difference in students' lives. (Barnum, 2018).

Regardless of these positive perceptions of FCS programs, the parents, administrators, and counselors surveyed also reported that FCS courses' have low respectability (Barnum, 2014, 2018). The perceived respectability of clothing construction courses was unknown. The survey administered by Barnum did not focus solely on specific content areas (e.g., clothing construction, foods, interior design, etc.); instead, the study's purpose was to assess overall FCS programs (2014, 2018). Nevertheless, FCS programs' low respectability likely comes from those who do not understand the breadth and depth of the content or those who continue to affirm rigid gender stereotypes (Barnum, 2014, 2018). These narrow perspectives create barriers for student participation in disciplines that are nontraditional for their gender. For example, male or gender-diverse students could face potential inequities and stereotypes from participation in traditionally female-dominant clothing construction courses (Lufkin et al., 2014).

Benefits of Clothing Construction Curriculum

Clothing construction courses have been a part of FCS education since its origins in 1909 (AAFCS, 2020; Montgomery, 2006). Formerly, learning clothing construction skills was deemed necessary for assuming domestic roles and taking care of a family.

Therefore, traditional gender roles (i.e., women as homemakers [Eagly et al., 2000; Quilling, 1999]) deemed clothing construction a feminine pursuit (Montgomery, 2006).

In the early 1900s, sewing was adopted into home economics curriculums, and by the 1960s, it was considered an essential skill to prepare women for domestic roles (Montgomery, 2006). However, by the end of the 20th century, the wide availability of ready-made apparel in modern society decreased the need for clothing construction in the home (Brandes & Garner, 1997; Montgomery, 2006).

Nevertheless, clothing construction continues to be a major component of FCS curriculums, yet content should reflect the current needs of career preparation rather than merely a continuation of tradition (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Montgomery, 2006). To prepare for technical careers within the apparel, fashion, and outdoor industry, a basic understanding of garment construction and textiles is required (Allsop & Cassidy, 2019; Brandes & Garner, 1997). Additionally, like other FCS classes, students gain valuable soft skills (e.g., resilience, problem-solving, time management, etc.) from participating in clothing construction courses (Carroll, 2018; Clarke, 2020).

Career Preparation

Sewing is not just an outdated craft or hobby; it is a technical skill related to careers and academic growth within the apparel and textile industry— an industry that makes considerable contributions to the United States and global economies (Brandes & Garner, 1997). A viable and growing branch of the apparel and textile trade is the outdoor product industry, including designers, developers, and managers that create and manufacture apparel and gear for outdoor recreation (Utah State University, 2020). The

demand for such products is evident in the outdoor product industry's growth from $121 billion in 2012 to $184.5 billion in 2017 (Tilton, 2018). Consequently, there is a high demand for qualified professionals to work in the booming outdoor product industry, and students of all genders are taking an interest in this career path (Baird, 2020; C. Anderson, personal communication, January 15, 2021; Tilton, 2018).

Careers in the textile, apparel, and outdoor industry include designers, laboratory technicians, machine operators, production managers, public relations, sales, marketing, and more (Utah State University, 2020; Sewing & Craft Alliance, 2020). Even though professionals in many of these careers will not be physically sewing apparel or gear, having a basic knowledge of clothing construction is valuable for any professional in the textile, apparel, or outdoor industry. Many professionals in these industries will be directly involved in the manufacturing, quality assurance, marketing, or sourcing processes of apparel or soft goods (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Meyers et al., 2001; Sewing & Craft Alliance, 2020).

Courses within CTE, such as clothing construction, prepare students for post-secondary career training success (Press Office, 2016). Offering clothing construction courses at the high school and middle school level can eliminate remedial courses for university students, allowing them to progress faster towards a career (Brandes & Garner, 1997). Entering higher education or training programs with a basic knowledge of clothing construction helps students be successful in their preparation for technical careers in the apparel, textile, or outdoor industry (Brandes & Garner, 1997). In these courses, students gain important knowledge about fabric performance, pattern making, and garment construction that are needed to be successful in a wide breadth of careers such as design,

manufacturing, textiles, marketing, sales, and more (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Sewing & Craft Alliance, 2020; USU, 2020).

Development of Soft Skills

Beyond the development of technical abilities in clothing construction classes, students also develop soft skills that apply to all careers (Advance Career and Technical Education, 2017; Carroll, 2018; Clarke, 2020; Kommer, 2006). Soft skills are non-technical skills that are important for employees to be successful and effective (Tulgan, 2015). According to Tulgan, young adults entering the workforce show great potential in technical knowledge, but their soft skills are greatly lacking, much to their employers' frustration (2015). Thus, soft skill development should be included in curriculums at both the secondary and post-secondary levels to prepare students for careers. Fortunately, these skills can be naturally integrated into CTE and clothing construction curricula (Carroll, 2018).

One vehicle to developing soft skills is experiential learning, which involves real-life, hands-on learning experiences that are commonly utilized within CTE (Carroll, 2018). Clothing construction courses are a type of experiential learning that teaches soft skills applicable in adult life and careers while teaching technical skills. Clothing construction courses aid the development of resilience, time management, balance, teamwork, problem-solving, social skills, and adaptability (Carroll, 2018). Additionally, learning clothing construction skills promotes creativity and a sense of accomplishment (Clarke, 2020). Other studies have shown that students who engage in experiential learning and CTE courses have increased self-confidence, better established vocational

identity, and improved self-efficacy in career decisions (Advance CTE, 2017; Carroll, 2018; Kommer, 2006). Therefore, the soft skills gained from clothing construction courses are valuable for students of all genders no matter their career path.

Clothing Construction and Gender Inclusivity

Beyond career preparation, clothing construction skills can help individuals with nontraditional gender identities create or adapt apparel to accommodate their needs (Schmidt, 2019). Apparel is generally designed for cisgender people (i.e., people whose gender identity corresponds with their sex assigned at birth [Merriam-Webster, 2020]), which is problematic for transgender people (i.e., people whose internal sense of gender identity and their sex assigned at birth are different [Gender Unicorn, 2020]) (Schmidt, 2019).

The limited availability of gender-neutral clothing makes it difficult for people who identify as transgender to find clothing that accommodates their gender identity and body type (Schmidt, 2019). Individuals with transgender or non-binary gender identities can build self-confidence in their identity by utilizing clothing construction skills to alter clothing to fit their needs and desires (Schmidt, 2019). Even though clothing construction has traditionally been considered a feminine pursuit, it is evident that these skills are helpful for both career preparation and personal use for all genders (Schmidt, 2019).

Gender Identity

Gender identity is a complex and multifaceted construct that refers to an individual's internal feelings of being male, female, neither, both, or other genders (Gender Unicorn, 2020; Miller, 2018). Gender identity can be the same or different than an individual's sex assigned at birth (Gender Unicorn, 2020). People whose gender identity is the same as their sex assigned at birth are referred to as cisgender, and those whose gender identity is different than their sex assigned at birth are referred to as transgender (Gender Unicorn, 2020; Merriam-Webster, 2020).

The development of gender identity can be an uncomfortable and even traumatic process for some adolescents (Rudy, 2017; Wyss, 2004). Accordingly, many traditional beliefs and mindsets in school environments create prejudice against and alienate students with nontraditional gender identities (Miller, 2018). When teachers cultivate an inclusive curriculum, it creates a safe classroom environment that appeals to and promotes learning for both cisgender and transgender students participating in traditional or nontraditional domains (Miller, 2018; Rudy, 2017; Wyss, 2004).

Evidence of Increased Gender Diversity in Clothing Construction

Recent media coverage highlighted male 'sewists' who are creating their own apparel and patterns (Elan, 2021; Stienkopf-Frank, 2020). More males are taking up the art of sewing and sharing their creations on social media, as evidenced by the popular Instagram hashtag "dopemensew" (Stienkopf-Frank, 2020). This trend has continued to grow during COVID-19 related quarantines and shutdowns. Male sewists are breaking

traditional gender stereotypes while advocating for sustainability and body acceptance (Stienkopf-Frank, 2020).

Despite the increase in gender diversity, male sewists report facing barriers in their clothing construction pursuits. For example, sewing patterns for menswear are less diverse and accessible than women's patterns. This has led some sewists to make their own patterns or adapt female patterns for their bodies (Stienkopf-Frank, 2020). Male sewists also feel out-of-place in traditional sewing communities or craft stores and report concern over how others may react to their interest in sewing (Elan, 2021; Stienkopf-Frank, 2020). These concerns and barriers are legitimate, but changes are taking place within sewing communities and industries. Social media and online classes allow male sewists to connect and learn within an accepting community (Elan, 2021; Stienkopf-Frank, 2020). Additionally, major sewing companies, such as Simplicity (pattern manufacturer) and Janome (machine manufacturer), are working alongside predominant male sewists to create more inclusive products and marketing campaigns (Stienkopf-Frank, 2020).

Gender diversity within clothing construction will continue to increase as creations trend on social media and predominant figures, such as George Clooney, share their interest in sewing (Elan, 2021; Stienkopf-Frank, 2020). This change is advantageous to all genders who wish to develop their clothing construction and sewing abilities. Clothing construction curriculums within FCS programs must accept and promote gender diversity to be relevant and inclusive.

Gender Inclusive Curriculum

According to Dewsbury and Brame (2019), inclusivity is defined as the intentional practice of recognizing and mitigating biases to include diverse people without marginalization or exclusion. In agreement with Dewsbury and Brame, the FCS National Standards stated that curriculum should be designed to apply to students of every age, gender, cultural or ethnic background, and ability (National Association of State Administrators of Family and Consumer Sciences [NASAFACS], 2018). None of the FCS courses' standards within the *Textiles, Fashion, and Apparel* content areas are gender-specific (NASAFACS, 2018). Consequently, gender inclusivity should be promoted in FCS classrooms (NASAFACS, 2018). Regardless of their gender identity, students are the leaders of the future, and each can benefit from an inclusive FCS curriculum that prepares them to improve communities, homes, and industries (NASAFACS, 2018).

Gender-inclusive curriculums consider student voice and student needs (Dewsbury & Brame, 2019). For example, a study done by Rutter and Smith (2005) found that male students who are enrolled in FCS courses have a higher need for affiliation (i.e., sense of belonging) than female students. Characteristics of affiliation include a desire for approval and reassurance from others, a tendency to conform to the 'norm,' susceptibility to peer pressure, and interest in others' feelings (Rutter & Smith, 2005). All students need to belong in the classroom, but this study indicated that male students participating in a CTE course nontraditional for their gender have a greater need for inclusion (Rutter & Smith, 2005). FCS teachers can increase students' sense of

affiliation and inclusivity by providing gender-neutral activities that enhance togetherness and group work (Fox, 2009; Rutter & Smith, 2005).

Gender roles manifest in society (i.e., which jobs are appropriate for which genders) are also present within school systems (Lupton, 2006). Hence, the school environment offers a prime opportunity to promote gender equity and push back against societal gender stereotypes (Lupton, 2006; Quilling, 1999; Towery, 2007; Wyss, 2004). Gender socialization increases during adolescence, so FCS teachers must combat negative gender stereotypes by developing inclusive curriculums that accommodate all genders' learning and interests (Kommer, 2006). Beyond gender differences, each individual has different needs as well. Thus, the key to creating equity is to purposefully address the particular needs of each student rather than expecting students to conform to traditional gender roles (Gosselin, 2007; Kommer, 2006).

Students are aware of gender inequities in the school system, and they face barriers when pursuing interests or courses that are nontraditional for their gender (Lufkin et al., 2014; Towery, 2007). Gender stereotypes should not be reinforced in curriculums. Instead, gender equity and an inclusive curriculum can be integrated into every classroom to create a space that is as safe as possible while promoting student well-being (Dewsbury & Brame, 2019; Miller, 2018; Sanders, 2002; Towery; 2007; Watson, 2012; Wyss, 2004). Sexism and gender discrimination must be acknowledged and eliminated so that all students can have equal opportunity to explore careers based on their interests, skills, and talents - not their gender (Lufkin et al., 2014; Towery, 2007). Therefore, it is essential for educators to be aware of their own biases and be educated on gender equity

in their schools and classrooms (Miller, 2018; Sadker, 1999; Sanders, 2002; Towery, 2007).

Biased Free Learning. When students experience gender stereotypes, harassment, or intimidating behaviors in FCS or other CTE classes, they are less likely to be successful and they miss out on valuable career development skills (Lufkin et al., 2014). One way to increase inclusivity in the curriculum is to remove gender biases, so students face fewer barriers when pursuing CTE paths that are nontraditional for their gender (Lufkin et al., 2014). Eliminating gender discrimination from FCS programs ensures equitable access and gives all students opportunities to pursue high-skill, high-wage, and high-demand careers (Press Office, 2016). Some suggestions for removing gender discrimination and biases from FCS classes include understanding the learning preferences of students from different backgrounds, implementing research-based strategies, and believing that all students can succeed (Fox, 2009). Incorporating an inclusive curriculum relevant to students of all genders results in biased-free learning, student self-efficacy, and an increased sense of belonging (Dewsbury & Brame, 2019; Langlais et al., 2017).

Many educators are unaware of their subtle gender biases, often referred to as gender blindness (Sadker, 1999). As humans, we all have unintentional biases or implicit biases due to a lack of awareness or experience (Graham, 1992; Sadker, 1999). Implicit bias (i.e., unintentional bias) is defined as discriminatory behaviors or attitudes without conscious intent (Greenwald & Krieger, 2006; Pritlov et al., 2019). These biases can be manifest in both schools and the workplace (Graham, 1992; Lufkin et al., 2014; Sadker, 1999).

Even when biases are unintentional, they can still be damaging to students (Greenwald & Krieger, 2006; Pritlov et al., 2019; Sadker, 1999; Towery, 2007). Consequently, teachers must promote an inclusive curriculum by being aware of their implicit gender biases and doing their best to mitigate them (Dewsbury & Brame, 2019; Pritlov et al., 2019; Sadker, 1999; Towery, 2009). Teachers should believe that all students can learn and achieve in all content areas regardless of gender (Fox, 2009). When teachers accept this belief, it creates inclusive classroom environments where increased learning can occur (Dewsbury & Brame, 2019; Fox, 2009).

Inequities in Other Domains. Relevant educational studies within the domains of Science, Technology, Engineering, and Math (STEM) – a typically male domain – indicate that post-secondary educators exhibit unconscious discriminatory behavior towards ethnic minorities, women, and people with disabilities (Dewsbury & Brame, 2019; Graham, 1992; Sadker, 1999). Evidence from these studies indicates that underrepresented students (i.e., gender or cultural minorities) often leave STEM majors due to reduced social belonging rather than lack of ability or interest in the material (Dewsbury & Brame, 2019; Graham, 1992).

Even though these findings were within the STEM field and addressed inequities faced by females, they re-emphasized that barriers are faced by students who are pursuing careers that are nontraditional for their gender (Dewsbury & Brame, 2019; Graham, 1992; Lufkin et al., 2014). It stands to reason that students of non-female genders pursuing education and careers in traditionally women-focused disciplines, such as clothing construction, could face similar barriers as females in STEM disciplines

(Dewsbury & Brame, 2019; Graham, 1992; Lufkin et al., 2014). Hence, further research on all students' experiences in these disciplines illustrated the barriers that they may face.

Gender Stereotypes

Gender stereotypes begin at an early age. According to Sadker, boys are stereotyped into gender roles more rigidly and at an earlier age than girls (1999). Males also reported facing social pressure and receiving negative feedback when expressing interest in nontraditional careers or skills typically considered feminine (Sadker, 1999). Even children as young as six to eight years old reported eliminating career choices because their gender is not suitable for those professions. Similarly, children ranked male-dominant professions as more prestigious (Gottfredson, 1981; Lufkin et al., 2014).

Male or non-binary gender students or professionals often feel concerned over perceived stigmas when they pursue courses or careers in typically female-dominated fields, such as education, childcare, or secretarial work (Lupton, 2006). Male professionals in nontraditional careers are questioned about their masculinity and heterosexuality regardless of their position on sexuality and gender roles (Lupton, 2006). Negative stigmatization can result in professionals in traditionally female-dominant positions facing institutionalized challenges to masculinity and stereotypes that inhibit job performance and placement (Lufkin et al., 2014; Lupton, 2006).

Although rigid gender stereotypes and negative stigmatization exist, acceptability for pursuing careers that are nontraditional for one’s gender is evolving. According to Thompson’s 1986 work, males enrolled in home economics (a.k.a. FCS) courses did not appear less masculine. However, females received more encouragement to take home

economics, and fewer male students participated in home economics at the time of the study; hence these findings are not current and not specific to the traditionally female-dominant area of clothing construction courses. Thompson's research reiterates the existing gap in the literature on male and non-binary students' experiences in nontraditional CTE programs (Thompson, 1986).

A more recent study by Barnum indicated that many parents and school counselors viewed FCS courses as appropriate for students of all genders; however, FCS courses were still perceived as female-dominant (2014, 2018). FCS teachers also perceived that there was more acceptance for all genders to learn domestic skills now than there was in the past (Johnson, 2009). Nonetheless, some parents, school counselors, and teachers still affirm gender stereotypes that usually result from a lack of knowledge about FCS courses and what they have to offer (Barnum, 2014, 2018). For example, one may assume that clothing construction is a feminine pursuit if they are unaware of the technical nature of the skill and its connection to a wide variety of careers (Brandes & Garner, 1997).

Although Barnum's findings illustrate decreased gender stereotypes in FCS courses, this work looked at FCS programs as a whole (2014, 2018). FCS encompasses a wide range of topics and content; thus, gender enrollment varies by course. For example, there is likely more gender diversity in food preparation courses and sport and outdoor product courses than in child development courses (Barnum, 2018; Tilton, 2018). Accordingly, further research is needed on the external responses, barriers, and stereotypes experienced by all students participating in clothing construction courses to promote gender inclusivity and biased-free learning in these courses.

Research on another area of FCS, family science courses, at the post-secondary level indicated that gender stereotypes do exist in these classes (Langlais et al., 2017). College students of all genders perceived that stereotypes led to a gender imbalance in family science course enrollment (Langlais et al., 2017). Specifically, male students in family science courses reported that they felt participation in the courses was not masculine and may result in peers' judgment (Langlais et al., 2017). These findings indicate that students participating in FCS courses that are nontraditional for their gender (i.e., family science) experience negative stigmatization (Langlais et al., 2017). Therefore, it is likely that students in other branches of FCS, such as clothing construction, are also experiencing negative external responses. Gender stereotypes are a barrier to student enrollment in FCS (Langlais et al., 2017).

Student Motivation for Enrollment in FCS

Students are influenced by counselors, parents, and peers whether or not to enroll in an FCS course. If these influencers exhibit gender stereotypes towards FCS courses, gender-diverse students are less likely to participate (Barnum, 2014, 2018). Fortunately, many parents and school counselors perceived FCS courses as relevant and important for all genders; however, data does not exist on parents' and counselors' specific perceptions of clothing construction courses (Barnum, 2014, 2018; Betz, 2010).

Another motivating factor for student enrollment in FCS courses is teacher and content quality. Teachers who are qualified, upbeat, passionate, inclusive, and unbiased about FCS content areas promote more robust programs with larger, more diverse student populations (Barnum 2014, 2018; Boschetto, 2019; Lee, 1998). The need for qualified

and inclusive FCS teachers is reinforced by Lee's study of middle school student perceptions (1998). Lee found that male students were more likely than female students to be dissatisfied with their FCS class and perceive FCS as a women's domain (Lee, 1998). On that account, the FCS course curriculum should be inclusive and gender-neutral at all grade levels to promote positive student experiences for students of all genders (Lee, 1998).

In a study by Boschetto (2019), additional factors for student motivation to enroll in FCS were found. Boschetto's study was on the Adult Roles course within FCS, but the identified motivational factors could also apply to clothing construction and other FCS courses. Students reported that they were motivated to enroll in Adult Roles to explore personal interests and learn adulthood skills (Boschetto, 2019). Both of these factors could apply to clothing construction because the courses offer opportunities to learn a new creative skill and prepare for various careers (Allsop & Cassidy, 2019; Clarke, 2020; Brandes & Garner, 1997). The greatest motivating factor for enrollment in the Adult Roles FCS course was to be with friends, which illustrates that students' course choices are influenced by peers (Boschetto, 2019). Marketing clothing construction courses concerning gender inclusivity would help to reduce stereotypes and decrease negative feedback experienced by students (Boschetto, 2019; Garcia & Makela, 2006; Johnson, 2009)

Informed Marketing of FCS Programs

Societal gender stereotypes and personal gender biases are ingrained in individuals and K-12/post-secondary school systems (Lufkin et al., 2014). Consequently,

students will only participate in nontraditional CTE programs if they feel welcomed, specifically invited, and represented in the curriculum (Lufkin et al., 2014; Press Office, 2016). School counselors and FCS teachers can work together to promote gender equity in FCS courses by eliminating their personal biases and encouraging students of all genders to participate (Barnum, 2014, 2018; Betz, 2010; Lufkin et al., 2014).

Langlais and colleagues (2017) offered suggestions for increasing male enrollment in non-traditional disciplines, including cultivating a more gender-inclusive curriculum, promoting male role models in the career field, and increasing diverse representation through professional presentations by males (Langlais et al., 2017; Lufkin et al., 2014). Involving and recruiting students in FCS in earlier grades can also contribute to greater gender diversity in FCS because it reduces gender stereotypes and stigmas before they begin to take a firmer hold in adolescence (Barnum, 2014; Kommer, 2006; Langlais et al., 2017). Involving students from all genders in showcasing FCS projects and skills is another effective method for reducing gender stereotypes and recruiting more diverse students to FCS (Garcia & Makela, 2006).

Needs for Future Exploration

Female students' inequities are troubling as women strive to pursue nontraditional jobs that earn higher pay (Lufkin et al., 2014). While these inequities must be addressed, equitable education and biased-free learning are essential for every student in every discipline (Sadker, 1999). Current evidence does indicate that students of all genders also face discrimination and biases when pursuing nontraditional courses or careers, yet the majority of existing research focuses on the inequities and barriers that female students

face in traditionally male-dominant fields (Dewsbury & Brame, 2019; Graham, 1992; Kommer, 2006; Lufkin et al., 2014; Quilling, 1999; Sadker, 1999; Sanders, 2002). More research about inequities and biases that students face in traditionally female-dominant disciplines is necessary to address the current literature gap and promote gender-inclusive curriculums and biased free learning (Lufkin et al., 2014; Press Office, 2016; Sadker, 1999; Towery, 2007).

FCS courses are a component of Career and Technical Education (CTE), and these courses are available to all students, yet student enrollment is traditionally female-dominant (Lee, 1998, Barnum, 2014, 2018; Betz, 2010). Existing literature examines motivating factors and growing acceptance for students who are not female to participate in FCS courses (Barnum, 2014, 2018; Betz, 2010; Rutter & Smith, 2002; Thompson, 1986). However, the existing literature is limited and primarily assessed the perceptions of others – such as parents, administrators, counselors, and teachers – about student participation in traditionally female-dominant FCS programs (Barnum, 2014, 2018; Betz, 2010). An examination of male students' motivation in FCS classes by Rutter and Smith (2005) was a study that evaluated gender inclusivity within FCS programs. As mentioned previously, these findings indicated that male students in FCS desire more affiliation (i.e., sense of belonging) (Rutter & Smith, 2005). All students can feel like they belong in the FCS classroom when the curriculum is inclusive and relevant.

Dated findings from Smith and associates (1988) indicated that students feel that FCS content is valuable for all genders. Gender roles and barriers have lessened in recent years, so these student viewpoints likely persist (Johnson, 2009; Wyss, 2004). However,

Smith's data is not disaggregated by gender, so perceptions of FCS content relevant to gender remain unclear (1998).

Conversely, Lee (1998) assessed student satisfaction with FCS courses and found that male students were more likely to be dissatisfied with FCS courses and perceive FCS as a women's domain. This literature offered insight into male students' motivation and the importance of cultivating an inclusive classroom (Rutter & Smith, 2005; Lee, 1998). Even so, the gap in the existing literature is evident. Additional research is needed to gain an understanding of all students experiences specific to gender diversity in clothing construction courses because of the extensive career opportunities in the fashion, sport, outdoor, apparel, and textile industries (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Tilton, 2018). Because these careers require clothing construction knowledge, research is crucial to cultivate inclusive learning environments that allow all students to develop these skills unhindered by biases or discrimination (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Lufkin et al., 2014; Towery, 2007).

Theoretical Framework

As previously mentioned, gender roles are defined as the behaviors and characteristics that society deems to be proper for each gender (Sanders, 2002). According to the Social Role Theory, the beliefs that society holds about members of each gender are derived directly from the observation of gendered role performances (Eagly et al., 2000). These observations can lead to stereotypes that reflect the division of labor and hierarchy within a society (Eagly et al., 2000). Small yet significant differences

in behavior exist between genders and can lead to gender roles and societal stereotypes (Eagly & Wood, 1991; Eagly et al., 2000).

According to the Social Role Theory, gender roles are shaped from a young age through socialization, media, family, and community (Eagly & Wood, 1991; Eagly et al., 2000; Gosselin, 2007; Lufkin et al., 2014). In observations of first-grade students, Gosselin (2007) found that children did behave differently based on gender and classroom structure. When teachers reinforced gender roles – consciously or unconsciously – there were inequities between genders in the classroom (Gosselin, 2007; Kommer, 2006; Lufkin et al., 2014). Having mixed-gender groups of students in the classroom encouraged interactions across genders, increased understanding of other genders, and helped children resist societal gender stereotypes (Gosselin, 2007; Sadker, 1999). Thus, facilitating constructive group work also increased feelings of belonging and affiliation for all students in the classroom (Gosselin, 2007; Rutter & Smith, 2005).

Even though gender stereotypes are often formed based on observed behavior, it is important to note that biology does not equal destiny (Eagly & Wood, 1991; Eagly et al., 2000). As illustrated by the Social Role Theory, society's gender roles change over time in response to changes in typical work and family roles of each gender (Eagly & Wood, 1991; Eagly et al., 2000). The change in the traditional gender roles of men as breadwinners and women as homemakers demonstrates how gender roles change over time (Eagly et al., 2000; Quilling, 1999).

In the past, clothing construction was domestic labor that was necessary to clothe a family. Clothing construction has been stereotyped as a feminine skill because women learned these skills to satisfy their gender roles and familial responsibilities within the

home (Barnum, 2014; Betz, 2010; Eagly et al., 2000). Now that more women work outside the home and ready-made apparel is widely available, clothing construction is no longer an essential domestic task (Eagly et al., 2000). Hence, the feminine gender role of homemaker and the accompanying construction of clothing for a family has decreased over time. This change in feminine gender roles is evidence of the Social Role Theory.

Gender roles have evolved in modern society; therefore, clothing construction should not be considered a gendered pursuit. Instead, it should be viewed as a technical skill applicable for all genders pursuing related careers or personal enjoyment (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Schmidt, 2019). As gender diversity grows within clothing construction courses, the existing gendered stereotypes should be mitigated to allow students of all genders to participate in clothing construction courses without negative stigmatization (Eagly & Wood, 1991; Eagly et al., 2000). The Social Role Theory explains why gender inequities and discrimination can exist in a classroom (Eagly & Wood, 1991; Eagly et al., 2000). However, inclusive curriculums are cultivated when educators and students acknowledge and resist stereotypical or damaging gender roles (Langlais et al., 2017; Wyss, 2004). When the curriculum focuses on equity between genders, all students can perform at the same level unhindered by gender biases (Eagly & Wood, 1991; Gosselin, 2007).

Summary

Education free of gender discrimination ensures equitable access for students to pursue high-skill, high-wage, and high-demand careers (Press Office, 2016). CTE educators should utilize biased free learning that is inclusive by recognizing and

mitigating biases to include diverse individuals without marginalization or exclusion (Dewsbury & Brame, 2019). Educators can promote equity by addressing each gender and individual student's needs rather than expecting students to conform to traditional gender roles (Kommer, 2006; Miller, 2018; Sadker, 1999; Sanders, 2002; Towery, 2007). Facilitating inclusivity and social belonging creates a welcoming space for all students to learn free from stereotypes or discrimination (Dewsbury & Brame, 2019; Gosselin, 2007; Graham, 1992; Rutter & Smith, 2005).

As stated in the Social Role Theory, socialization from media, family, and community shape gender roles from a young age (Eagly & Wood, 1991; Eagly et al., 2000; Gosselin, 2007; Lufkin et al., 2014). Hence, gender roles and stereotypes exist in education and society, resulting in barriers and inequities for students. (Eagley & Wood, 1991; Eagly et al., 2000; Lufkin et al., 2014; Sanders, 2002; Towery, 2007; Wyss, 2004). The fact that very few students participate in CTE programs that are nontraditional for their gender is evidence of the gendered barriers in education (Lufkin et al., 2014). Because gender roles change over time, gendered obstacles and stereotypes in education and society are problematic (Eagly & Wood, 1991; Eagly et al., 2000).

An example of changing gender roles is evident in clothing construction courses. In the past, clothing construction was considered a feminine pursuit, but now it is an essential technical skill for many careers that are relevant and available to all genders (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Clarke, 2020; Meyers et al., 2001; Montgomery, 2006; Quilling, 1999; Sewing & Craft Alliance, 2020). The creation of the OPDD program at USU has encouraged all genders to learn clothing construction skills, which are essential for professionals in the outdoor product, fashion, and textile industries

(Allsop & Cassidy, 2019; Brandes & Garner, 1997; Tilton, 2018). The researcher has observed first-hand the increased gender diversity in clothing construction courses at USU and the accompanying shift in curriculum intended to accommodate all students' learning (Baird, 2020). Similarly, the increased prevalence of male “sewists” in the media has triggered industry inclusivity changes that should carry over to inclusive clothing construction curriculums in all FCS programs.

This research was essential to understand students’ experiences when participating in a nontraditional course for their gender. Evaluating the perception of clothing construction students at USU increased understanding of inclusive curriculums. Due to the gender diversity present within clothing construction courses at USU, this study addressed the current literature gap by focusing on students' experience in a nontraditional discipline for their gender (Baird, 2020).

The next chapter discusses the research methods for this study. When surveyed about their experiences and perspectives, clothing construction students at USU offered rich insight into the impact and deficits of current clothing construction curriculums. The researcher developed a survey instrument that assessed students’ feelings of representation within the curriculum, perception of career preparation, external responses to course participation, and experiences before post-secondary courses.

CHAPTER III

METHODOLOGY

This chapter addresses the study methodology for obtaining student perception data in a traditionally female-dominant discipline (i.e., clothing construction courses). This research analyzed the experiences of male students, female students, and students of other genders at the post-secondary level regarding gender inclusivity, career preparation, stereotypes, and prior experiences in clothing construction courses. The study's survey instrument used a semantic differential scale and categorical questions for gathering perception data followed by an open-ended question about students' experiences. A detailed description of the research design, study population, research questions, data collection, and data analysis will follow.

This research study addressed a gap in the research literature regarding gender inclusivity in clothing construction courses. Most existing research focused on gender discrimination faced by students in traditionally male-dominant areas of Career and Technical Education (CTE) and Science, Technology, Engineering, and Math (STEM) fields (Dewsbury & Brame, 2019; Graham, 1992; Kommer, 2006; Lufkin et al., 2014; Quilling, 1999; Sadker, 1999; Sanders, 2002). Hence, this research attended to the current gap in existing research on discrimination and biases against students in traditionally female-dominant disciplines. The collected data also provided insight into the experiences of students of all genders in clothing construction classes.

Examining the experience of students in a discipline that is nontraditional for their gender promoted biased free learning and gender inclusivity (i.e., the removal of gender

discrimination [Dewsbury & Brame, 2019]) in CTE (Lufkin et al., 2014). Promoting a clothing construction curriculum that is inclusive for all students – including those with diverse race, ethnicity, social class, religion, (dis)ability, gender, sexuality, age, and language – will increase student learning, well-being, and career preparation (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Lufkin et al., 2014; Press Office, 2016; Wyss, 2004). The research questions for this study evaluated student experiences in clothing construction courses.

Research Questions

The research questions for this study were designed to gain insight into all gender's experiences in clothing construction courses during the Spring 2021 semester at Utah State University. The questions assessed the inclusivity and career preparation of the curriculum. External responses to participation and prior experiences with clothing construction courses were also evaluated. The research questions are listed below:

1. What type of clothing construction experience do post-secondary students receive before taking a university clothing construction course?
2. To what extent do students feel they are adequately represented within the clothing construction curriculum?
3. What kind of external responses do students receive regarding their enrollment in clothing construction courses?
4. To what extent do students perceive the connection between clothing construction curriculum and careers?

These research questions addressed a breadth of topics concerning clothing construction courses and curriculum that are important for understanding student experiences and perspectives. A quantitative research design was utilized to explore these broad questions.

Research Design

The quantitative research design was effective for identifying themes and trends in student experiences, while the open-ended question provided further insight into those experiences (Cohen et al., 2011; Colton & Covert, 2007). The brief qualitative component complemented the quantitative data and increased study quality (Johnson & Christensen, 2016). The research was exploratory since there was little existing literature on the topic; hence, the quantitative approach was well-suited for the study's goals (Johnson & Christensen, 2016).

The quantitative survey questions were an effective method to identify themes regarding participants' perspectives and experiences. Additional valuable insights were gained from the qualitative responses. A weakness of using a multiple-choice, self-report survey was the limitation of participants' responses because they can only select one of the provided options for each question (Johnson & Christensen, 2016). Incorporating an open-ended qualitative question at the end of the survey instrument allowed participants to share additional information or experiences that were not reflected in the quantitative responses.

The research design proved effective in gathering robust data from the study participants. This study design was appropriate because quantitative data were collected

and analyzed according to the research questions. The quantitative data gave an overall picture of student experiences, and the qualitative data gave a brief insight into individual student experiences that provided more depth and a foundation for further research.

The Participants

Participants for this study were recruited using two types of sampling methods. First, a convenience sample was used to identify students enrolled in clothing construction courses at Utah State University (USU) during the Spring 2021 semester (Johnson & Christensen, 2016). Next, a purposeful sampling procedure was used because the participants in this study were pursuing a degree in Outdoor Product Design and Development (OPDD) or Family and Consumer Sciences Education (FCSE) (Johnson & Christensen, 2016). Through these sampling processes, the participant population resulted in a diverse group of students with differing interests, perspectives, and expertise relevant to the purpose of the study. The survey was distributed to 105 students, and 42 students completed the survey.

These specific populations were recruited because the average gender enrollment for the introductory clothing construction course was 47% female students and 53% male students as of the Fall 2020 semester at USU (Baird, 2020). The upper-division clothing construction courses were also gender-diverse (Baird, 2020). This gender-diverse enrollment trend continued in the Spring 2021 semester.

The demographics and curriculum of the clothing construction courses at USU are unique because the OPDD program was not offered at other universities. Because of this innovative program, the research at USU provided insight into new career fields within

the outdoor industry that require knowledge of clothing construction skills. The clothing construction courses are innovative and gender diverse. Therefore, students in these classes were the ideal participants to offer insight into the gender-inclusive and career preparatory nature of clothing construction curriculums.

The sample population included students enrolled in the following courses during the Spring 2021 semester at Utah State University:

- Introductory Sewing for Outdoor Products (FCSE 1040)
- Intermediate Clothing Construction Skills, Principles, and Alteration (FCSE 2040)
- Advanced Clothing Studies: Patternmaking (FCSE 3040)

Students progress through these clothing construction courses in the order listed. FCSE 1040 is a prerequisite course for FCSE 2040, and FCSE 2040 is a prerequisite for FCSE 3040. The introductory class (FCSE 1040) teaches students basic skills, such as operating the sewing machines and applying various sewing techniques while creating projects. The intermediate class (FCSE 2040) applies the skills gained in FCSE 1040 to clothing construction and apparel design. The advanced patternmaking class (FCSE 3040) furthers the knowledge of apparel design as students create clothing patterns and manufacture prototypes.

These courses were chosen to recruit participants because the students enrolled in these specific courses represented the study's target demographic. The students had experiences in clothing construction courses from various instructors at the post-secondary level and may have taken clothing construction courses at the secondary level. Students in the sample came from a wide range of backgrounds (e.g., diverse gender,

career interests, class level, etc.) with differing clothing construction experience levels. Therefore, the obtained data allowed for a robust comparison of experiences in clothing construction courses between students of different genders and degree programs. The perceptions shared by the sample of students gave insight into the impact and deficits of current clothing construction curriculums.

Instrumentation

The survey instrument utilized in this study was a self-report questionnaire with responses on a semantic differential scale (i.e., Likert-type). The survey was created using Qualtrics software, which allowed participants to complete the survey on a computer, tablet, or other mobile devices. A copy of the researcher-developed survey instrument can be found in Appendix A.

The survey began with questions about demographics and prior sewing experience. The subsequent questions used the semantic differential scale and categories designed to gather perspectives of student experiences and clothing construction curriculum. The survey questions' quantitative focus was effective in gathering perception data as an initial examination of the relationship between gender and clothing construction curriculums.

Instruments using a similar format (i.e., semantic differential scale) have been used in prior research regarding the perceived value of Family and Consumer Sciences (FCS) programs (Barnum, 2014, 2018; Wendlend & Torrie, 1993). The semantic differential scale was a useful format for gathering and analyzing perspectives from a diverse sample population (Barnum, 2018). In these former semantic differential scale

applications, the survey instruments were designed to gather data from school administrators, counselors, teachers, and parents (Barnum, 2014, 2018; Wendlend & Torrie, 1993). However, the current study's survey instrument was designed to gather student perspectives and focus specifically on clothing construction courses rather than entire FCS programs.

The Semantic Differential Scale. The Likert-type scale on the survey instrument used a four-point or five-point scale with word pairings, such as never/sometimes/often/always or definitely no/no/yes/definitely yes, depending on the question (see Appendix A). There was no neutral option for most questions. Prior research indicated that omitting the neutral option was appropriate and allowed the researcher to distinguish between participants' perspectives (Boone & Boone, 2012; Barnum, 2018; Clason & Dormody, 1994). In addition to the questions answered on the semantic differential scale, there was also an open-ended question asked at the end of the survey.

Qualitative Component. The open-ended question assisted in collecting additional insight into student experiences in clothing construction courses. The insights obtained related to the research questions provided information about other areas of students' experience. This open-ended question was also included in the survey because it was written to elicit rich data, further exploring student experiences in clothing construction courses. This qualitative data can be used to guide future research on gender-inclusive curriculum.

Participants were given the option to provide contact information (e.g., name and email) if they were willing to participate in future interviews and/or focus groups about

gender inclusivity in clothing construction courses. Student contact information is stored securely in Box, an authenticated cloud system. This information will be useful for additional qualitative or mixed-methods research studies in the future.

The current survey instrument collected data using a semantic differential scale and one open-ended question. Measures were taken to ensure the validity and reliability of the quantitative survey questions and the trustworthiness of the open-ended qualitative question. The following sections discuss the validity, reliability, and trustworthiness of the study and survey instrument.

Validity, Reliability, and Trustworthiness

A discussion of the research study's validity, reliability, and trustworthiness is included in this section. Validity and reliability were established following patterns used in other Likert-type research studies in FCS (Barnum, 2014, 2018; Wendlend & Torrie, 1993). Trustworthiness was ensured through triangulation as recommended by qualitative research experts (Johnson & Christensen, 2016; Merriam & Tisdell, 2015).

In prior research, word pairings on a Likert-type scale were used to represent each conceptual area of the research (Barnum, 2014, 2018; Wendlend & Torrie, 1993). Although the survey instrument for this research followed a similar structure, the word pairings were unique and specific to the research questions regarding clothing construction courses. The instrument was reviewed by experts in FCS (i.e., teachers at the secondary and post-secondary level). Revisions were made based on their feedback to ensure the validity of the survey instrument. Measurement error was minimized by using skip logic in the survey instrument. Students were only directed to answer questions that

were relevant to them. For example, students with no sewing experience before enrollment at USU were not asked questions about previous experience in clothing construction courses.

The study's validity and reliability were ensured through the expert panel, skip logic, and Cronbach's alpha. Additionally, the qualitative portion of the study's trustworthiness was established using triangulation (Johnson & Christensen, 2016; Merriam & Tisdell, 2015). The first aspect of triangulation applied in this study was using multiple methods to obtain data (Merriam & Tisdell, 2015). As previously discussed, both quantitative and qualitative methods were utilized to obtain rich insight into students' experiences in clothing construction classes.

Another aspect of triangulation was obtaining data from multiple sources (Merriam & Tisdell, 2015). Even though the current research study was conducted at a single institution, data was gathered from students in three different types of clothing construction classes. The students in these classes varied by class rank, experience level, and choice of a degree program. Therefore, the responses varied between participants, but convergent themes were identified (Johnson & Christensen, 2016; Merriam & Tisdell, 2015). Furthermore, collecting data from this diverse sample allowed for the maximum variation of the data to increase trustworthiness (Merriam & Tisdell, 2015).

Pilot Study. In addition to the review process by an expert panel, a pilot survey was attempted with students enrolled in Advanced Clothing Studies: Patternmaking (FCSE 3040) during the end of the Fall 2020 semester. Piloting the survey was an effort to ensure that the instrument was reliable and user-friendly. The patternmaking students from the Fall 2020 semester were a suitable sample for piloting the instrument because they were not included in the data collected in the Spring 2021 semester as these students were not enrolled in a clothing construction class at that time. Unfortunately, due to the timing at the end of the Fall 2020 semester and low enrollment in FCSE 3040, no students completed the pilot survey.

After collecting the data in the spring 2021 semester, Cronbach's alpha was calculated for the semantic differential scale questions as a test of internal consistency and reliability. A value of 0.405 was obtained, which indicates low reliability. Upon reviewing the survey instrument, some inconsistencies in the scale format of the questions (i.e., some questions used a four-point scale and others used a five-point scale) could have been the cause for this low value. Nevertheless, the findings are still meaningful and successfully address the research questions.

Researcher's Positionality. The researcher instructed three sections of the Introductory Sewing for Outdoor Products (FCSE 1040) course at Utah State University during the Spring 2021 semester. The researcher's involvement in developing curriculum and their direct relationships with students allowed for an inside perspective of the importance of a gender-inclusive curriculum in clothing construction courses. The researcher's position caused them to deem this topic relevant and important, but a neutral position and perspective were utilized while analyzing the data. The researcher's degree

professor invited the students in FCSE 1040 to complete the study to remove any potential bias or obligation perceived by participating students. Presenting the study in this way allowed for more accurate data collection and avoided undue pressure on participants.

Data Collection

Approval from the Utah State University Institutional Review Board (IRB) was granted in December of 2020 (refer to Appendix B). The study strictly adhered to the Family Educational Rights and Privacy Act (FERPA) guidelines to ensure study participants' privacy. A random drawing for two $25 Amazon gift cards was conducted as an incentive to complete the survey. After completing the research survey, a link was provided to a secure external survey for the collection of email addresses to ensure participants' confidentiality.

Data collection occurred during the first three weeks of the Spring 2021 semester. Study participants were recruited from clothing construction courses at Utah State University. Course instructors sent Canvas announcements accompanied by the Qualtrics survey link (see recruitment message in Appendix C). Two reminder messages followed the initial survey invitation to encourage student participation. The first reminder message was sent one week after the initial announcement, and the second was sent five days before the close of the survey.

An electronic letter of consent for participants was provided at the beginning of the survey before the participants could answer the questions. The letter of consent is included in Appendix D. The Qualtrics survey did not collect any identifiable

information from study participants. Participants were diverted to a separate Qualtrics survey to enter their personal contact information to participate in future research or be considered for one of the Amazon gift cards. The data collected in the initial survey was separate from the follow-up survey to ensure participant confidentiality.

Data Analysis

The study data were analyzed using the online software *Statistical Package for the Social Sciences* (SPSS). Demographic data was reported for overall sample composition and then disaggregated by gender and degree program. The items on the survey instrument qualified as Likert-type because questions were analyzed individually rather than being combined into a composite scale (Boone & Boone, 2012). Therefore, data analysis of Likert-type questions used recommended descriptive statistics (i.e., mean and mode) for ordinal measurement scale items (Boone & Boone, 2012). Demographic and non-Likert-type questions were analyzed with frequencies and averages. In addition, the chi-square measure of association was used to analyze the significance of the relationship between gender, degree program, and various survey responses (Boone & Boone, 2012; Haug, Rogers, & Lotha, 2019).

Qualitative data obtained from the open-ended question was analyzed separately from the quantitative data, but related themes were discussed in data interpretation (Caracelli & Greene, 1993; Merriam & Tisdell, 2015). Responses to the open-ended question were analyzed and organized into categories and themes to identify recurring patterns that connected to the quantitative data (Caracelli & Greene, 1993; Merriam & Tisdell, 2015). The patterns that arose were related to the research questions and added

depth to the quantitative data. Additionally, some patterns represented other themes to be explored in future research (Caracelli & Greene, 1993; Merriam & Tisdell, 2015).

While analyzing the qualitative data, the researcher took a phenomenological approach. Accordingly, the researcher avoided biases and judgments while openly interpreting the participants' experiences in clothing construction classes (Merriam & Tisdell, 2015). Taking this approach allowed insight into the essence of student experiences from different perspectives and positions to achieve a structural description of student experiences in clothing construction classes (Merriam & Tisdell, 2015). Further discussion of the qualitative data is included in Chapter V.

Summary

This chapter presented the methodology for the research study. The purpose of the study and research questions were reviewed. The research design, survey instrument, study population, data collection, and data analysis have been discussed. Most of the survey instrument was composed of quantitative questions that produced data analyzed using frequencies, averages, means, modes, and the chi-square measure of association (Boone & Boone, 2012). The qualitative data added depth to quantitative data and established findings for future research. The next chapter presents research findings, and the final chapter presents conclusions, discussions of results, and recommendations for future research.

CHAPTER IV

RESULTS

This study aimed to evaluate the experiences of students in the traditionally female-dominant discipline of clothing construction. Students in post-secondary clothing construction classes were asked about their perceptions and experiences via an anonymous survey. The survey questions focused on prior sewing experience, student representation in the curriculum, external responses to sewing ability, and connection to careers. The anonymous survey was administered via Qualtrics and distributed to students by clothing construction instructors via Canvas course announcements. The survey was in the form of a self-report questionnaire composed primarily of items on a semantic differential scale. Other questions were answered with a "yes/no" response or by selecting options from a list.

Course instructors and primary investigators sent the survey instrument to 105 students in clothing construction courses at Utah State University (USU) at the beginning of the spring 2021 semester. After deleting three responses from participants who did not finish most of the survey, there were 42 total responses to the survey. The gender demographics of the respondents were 35.6% male (n = 15) and 64.4% female (n = 27). No respondents identified as a gender besides male or female.

The sample was made up of undergraduate students in the Family and Consumer Sciences Education (FCSE) and Outdoor Product Design & Development (OPDD) bachelor's degree programs at USU. Of the study participants, 42.2% were in the FCSE program (n = 19) and 57.8% were in the OPDD program (n = 23). All participants in the

FCSE program identified as female. More participants in the OPDD program identified as male (70.4%, *n* = 15) than female (29.6%, *n* = 8).

The participants' progress towards completion of their degree varied. Most participants planned to graduate in the year 2023 (42.2%, *n* = 19) or 2024 (40%, *n* = 18). This indicated that most of the study participants were in their first or second year of the degree program. A few participants were further along in their program and expected to graduate in 2022 (6.7%, *n* = 3). Five respondents indicated they expect to graduate in 2025 (8.9%, *n* = 4) or 2026 (2.2%, *n* = 1). These students may have transferred to their program from a different university or degree program; thus, their graduation timeline could have been delayed.

The research questions for the study are listed below.

1. What type of clothing construction experience do post-secondary students receive before taking a university clothing construction course?
2. To what extent do students feel they are adequately represented within the clothing construction curriculum?
3. What kind of external responses do students receive regarding their enrollment in clothing construction courses?
4. To what extent do students perceive the connection between clothing construction curriculum and careers?

This chapter will report the findings by following the order of the research questions. The data was disaggregated by gender and degree program to evaluate if there was a difference in responses based on these variables. Additionally, five study participants responded to the qualitative question at the end of the survey. One response

was an irrelevant comment on the survey layout, while the other four meaningful responses are discussed within the relevant sections of chapter 5. Three female students and one male students gave a relevant response to the qualitative question.

Research Question 1

The first research question evaluated the participants' sewing experiences before coming to USU. The purpose was to determine how much previous experience students had and to evaluate student perceptions of their previous clothing construction courses. Collecting perceptions about students' previous experience also allowed comparison between clothing construction courses at the post-secondary and secondary levels.

The survey utilized skip logic to ask relevant questions about prior sewing experience. Students who indicated that they had taken zero sewing classes before their current sewing class (n = 6) skipped ahead in the survey and did not respond to prior sewing experience questions. Participants who indicated they had taken one or more classes before their current clothing construction class (n = 36) answered additional questions about their previous sewing experiences. More female students (69.4%, n = 25) than male students (30.6%, n = 11) answered questions about their former sewing experience. The participants who answered questions about previous sewing experiences were split evenly between the FCSE (50%, n = 18) and OPDD (50%, n = 18) degree programs.

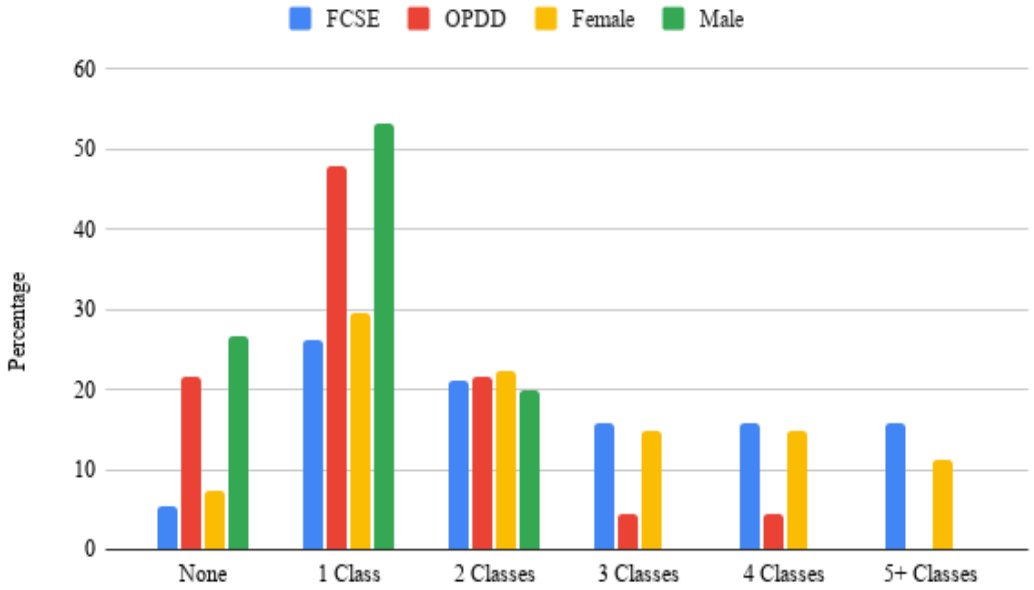
Most participants (69%, n = 29) reported having previous clothing construction experience outside of school, such as 4-H, private lessons, learning from a family member/friend, self-taught, internet tutorials, etc. More female respondents (81.5%, n =

22) than male respondents (46.7%, $n = 7$) indicated that they had previous clothing construction experience outside of school classes. A chi-square test of the data indicated a statistically significant association between gender and the likelihood of having previous sewing experience outside of school classes ($p = 0.019$). There was no statistically significant association between degree program and prior experience outside of class, but more OPDD students ($n = 9$) than FCSE students ($n = 4$) indicated that they did not have prior experience outside of sewing classes in school.

Most participants have taken at least one sewing class before their current sewing class (85.7%, $n = 36$). There is a moderate association ($p = 0.074$) between the number of previous classes taken and gender identity. No male students had taken more than two previous classes while 11 female students had taken three or more previous classes (see Figure 2). A similar trend is evident when disaggregating the data by degree program ($p = 0.083$). More FCSE students ($n = 9$) than OPDD students ($n = 2$) had taken three or more prior sewing classes. There is also more variance in prior class experience among both FCSE students (SD = 1.575) compared to OPDD students (SD = 0.998) and female students (SD = 1.466) compared to male students (SD = 0.719). These results are illustrated in Figure 2.

Figure 2

Number of Clothing Construction Classes Taken Before Current Class



Note. n = 36 students took 1 or more previous sewing class. n = 6 students took none.

Typically, clothing construction or sewing classes are offered at the middle school and high school level. Fewer participants reported taking a class at the high school level (41.7%, n = 15) than at the middle school level (72.2%, n = 26). More participants who identify as female took a class at the middle school level (80%, n = 20) and the high school level (48%, n = 12) than participants who identify as male. However, there was no statistically significant association between gender and taking a clothing construction class in middle school or high school (p = 0.116).

There was a statistically significant association between degree program and whether the respondent took a class at the middle school (p = 0.026) or high school level (p = 0.018). More FCSE students took a class at the middle school level (88.9%, n = 16)

than OPDD students (55.6%, *n* = 10). This trend is similar at the high school level because more FCSE students (61.1%, *n* = 11) than OPDD students (22.2%, *n* = 4) reported taking a clothing construction class. These findings are presented in Table 1.

Table 1

Middle School and High School Clothing Construction Course Enrollment

Baseline Characteristic	Middle School			High School		
	n	%	*p*	*n*	%	*p*
Gender						
Male	6	54.5	0.116	3	27.3	0.245
Female	20	80	0.116	12	48	0.245
Program						
FCSE [a]	16	88.9	0.026*	11	61.1	0.018*
OPDD [b]	10	55.6	0.026*	4	22.2	0.018*
Full Sample	26	72.2	-	15	41.7	-

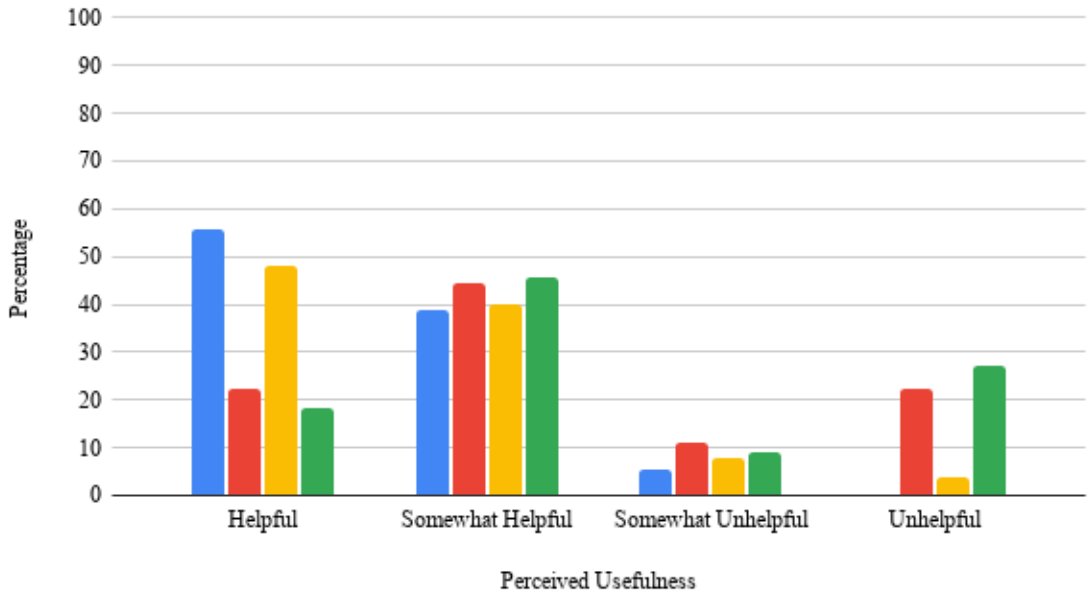
Note. *n* = 36 students took 1 or more previous sewing class. *n* = 6 students took none.
[a] Family and Consumer Sciences Education
[b] Outdoor Product Design and Development
*Statistically Significant P < 0.05

Most respondents indicated that their previous sewing experiences were helpful (38.9%, *n* = 14) or somewhat helpful (41.7%, *n* = 15) for their current sewing class at USU (see figure 2). The data was similar when disaggregated by gender, with no statistically significant association between gender identity and perceived helpfulness of

previous classes (p = 0.137). However, there was a moderate association between degree program and perceived helpfulness of prior classes (p = 0.073). More FCSE students rated their prior experience as helpful (55.6%, n = 10) compared to OPDD students (22.2%, n = 4) (see figure 2). A similar number of FCSE (38.9%, n = 7) and OPDD (44.4%, n = 8) rated their prior experience as somewhat helpful (see figure 2). As illustrated in figure 3, no FCSE students rated their previous experience as unhelpful (0%, n = 0), but some OPDD (22.2%, n = 4) students did perceive their prior experience to be unhelpful.

Figure 3

Perceived Helpfulness of Prior Sewing Classes



Note. Student perceptions of the helpfulness of previous sewing experience for their current clothing construction classes disaggregated by degree program and gender.

Research Question 2

The second research question analyzed the inclusivity of clothing construction curriculums by evaluating students' feelings of representation. Students shared their perceptions of the class environment, projects, and opportunities for success in previous and current clothing construction courses. Thirty-six students with sewing experience before their current class at USU shared perceptions of their previous clothing construction classes. Similar questions were then asked to all 42 survey respondents about their perceptions of their current sewing course at USU. The survey questions were designed to analyze students' feelings of representation and relevancy within the clothing construction curriculum.

Perceptions of Gender Enrollment

Survey respondents were asked about perceived gender enrollment of their sewing courses. Responses could have been all-female (1), mostly female (2) equal male and female (3), mostly male (4), or all-male (5). Regarding clothing construction classes taken prior to USU (M = 2.50, SD = 0.561), most students reported their classes were mostly female (44.4%, n = 16) or equal male and female (52.8%, n = 19). The lower standard deviation value indicated less variability in these responses (M = 2.50, SD = 0.561) than responses about gender demographics in sewing classes at USU (M = 2.93, SD = 0.712).

This data was disaggregated by gender to determine if there was a difference in demographics of the classes that female or male students took previous to their courses at USU. A greater number of female students (56%, n = 14) than male students (18.2%, n =

2) indicated that their prior classes were mostly female. A larger proportion of male respondents (72.7%, $n = 8$) than female respondents (44%, $n = 11$) reported their former classes had equal gender enrollment.

Some differences in perception were also evident when the data were disaggregated by degree program. FCSE students (66.7%, $n = 12$) were more likely than OPDD students (22.2%, $n = 4$) to indicate that their former classes were mostly female. Consequently, more OPDD students (72.2%, $n = 13$) than FCSE students (33.3%, $n = 6$) indicated that their former sewing classes had equal enrollment of males and females. The association between degree program and perceived gender enrollment of former sewing classes is statistically significant ($p = 0.023$).

Study participants were asked the same question about perceived gender enrollment regarding their clothing construction classes at USU. Half of the respondents reported that they perceived equal gender enrollment (50%, $n = 21$). Unlike the gender enrollment of classes before USU, some students indicated that their classes were mostly male students (21.4%, $n = 9$). Some participants also perceived that there were mostly female students in their USU clothing construction classes (28.6%, $n = 12$). A higher standard deviation of responses about gender enrollment at USU ($M = 2.93$, SD = 0.712) compared to gender enrollment in classes at the secondary level ($M = 2.50$, SD = 0.561) represents greater variability in responses about gender enrollment in clothing construction classes at USU. There was no statistically significant association between reported gender or degree program and perceptions of gender enrollment in USU courses.

Sense of Belonging

Next, participants were asked about how welcome they felt in their clothing construction classes both before USU and classes at USU. Responses were provided on a semantic differential scale of welcome (1), somewhat welcome (2), somewhat out of place (3), and out of place (4). Regarding classes before USU, the most common response was "welcome" (M = 1.56), but there was a high amount of variability in responses (SD = 0.909) as shown in Table 2. There was a statistically significant association between gender and sense of belonging as more female students indicated that they felt “welcome” and more male students indicated that they felt “somewhat welcome (p = 0.011). Similarly, more FCSE than OPDD students indicated that they felt “welcome” in their prior clothing construction classes (p = 0.016).

Table 2

Sense of Belonging in Classes Before USU

Baseline Characteristic	Welcome		Somewhat Welcome		Somewhat out of Place		Out of Place		Descriptive Statistics	
	n	%	*n*	%	*n*	%	*n*	%	*M*	SD
Gender										
Male	3	27.3	6	54.5	1	9.1	1	9.1	2.00	0.894
Female	20	80	3	12	0	-	2	8	1.36	0.860
Program										
FCSE	16	88.8	1	5.6	0	-	1	5.6	1.22	0.732
OPDD	7	38.9	8	44.4	1	5.6	2	11.1	1.89	0.963
Full Sample	23	63.9	9	25	1	2.8	3	8.3	1.56	0.909

Note. More female and FCSE students felt “welcome” in previous classes.

When reporting their sense of belonging in clothing construction classes at USU, more students indicated that they felt "welcome" (73.8%, *n* = 31) than students who reported the same feelings about classes taken before USU (68.9%, *n* = 23). As indicated in Table 3, there was also less variance in participants' sense of belonging in classes at USU because no students indicated that they felt "out of place" (SD = 0.697). Additionally, there was no statistically significant difference in responses based on gender or degree program.

Table 3

Sense of Belonging in Classes at USU

Baseline Characteristic	Welcome		Somewhat Welcome		Somewhat out of Place		Out of Place		Descriptive Statistics	
	n	%	*n*	%	*n*	%	*n*	%	*M*	SD
Gender										
Male	12	80	2	13.3	1	6.7	0	-	1.27	0.594
Female	19	70.4	4	14.8	4	14.8	0	-	1.44	0.751
Program										
FCSE	14	73.7	2	10.5	3	15.8	0	-	1.42	0.769
OPDD	17	73.9	4	17.4	2	8.7	0	-	1.35	0.647
Full Sample	31	73.8	6	14.3	5	11.9	0	-	1.38	0.697

Note. *n* = 42 for full sample

Relevancy of Clothing Construction Curriculum

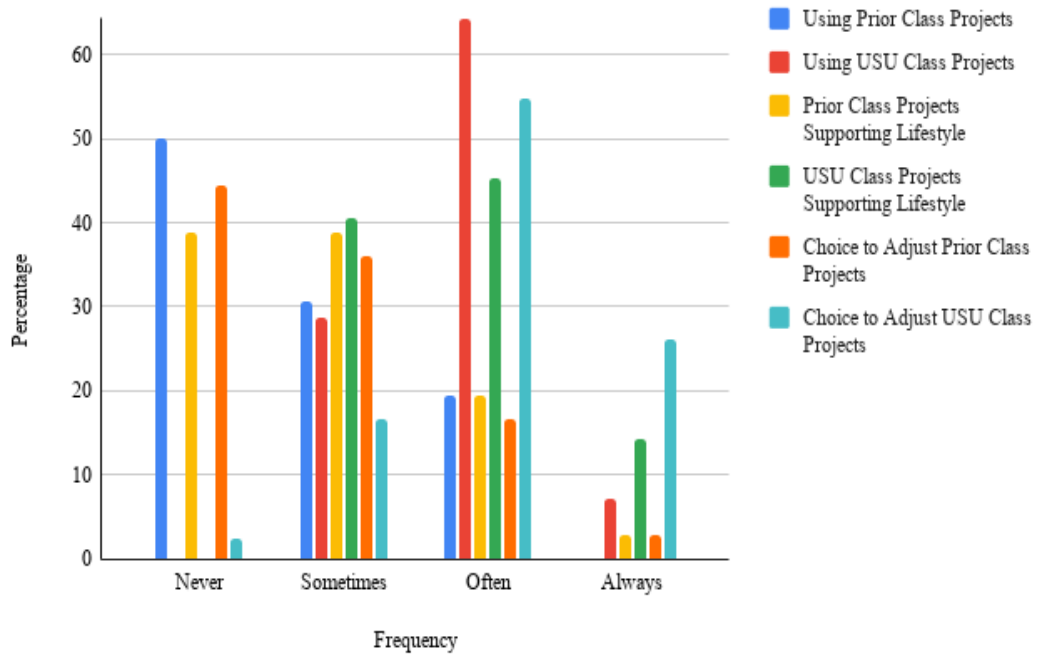
To evaluate the relevancy of the clothing construction curriculum in classes before and at USU, the following questions were asked. Students responded with never (1), sometimes (2), often (3), or always (4).

- How often do you use the projects made in your sewing class(es) before attending/at USU?
- How often do the projects made in your sewing class(es) before attending/at USU support your lifestyle?
- How often are you given options and choices to adjust projects to be suitable for personal use in your sewing class(es) before attending/at USU?

There is no statistically significant association between responses to these questions and gender or degree program. However, there is a noticeable difference in participants' perceptions of the curriculum in classes taken before USU and classes taken at USU. Participants reported more relevancy for clothing construction classes at USU compared to classes taken before USU. These findings are presented in Figure 3.

Figure 3

Relevancy of Clothing Construction Projects



Note. Frequency of projects' use, support of lifestyle, and freedom to adapt was consistently rated higher for USU course projects.

Equal Opportunities

The final inquiry for this research question evaluated perceptions of the opportunity to succeed in clothing construction courses. Survey respondents were asked if they felt they had the same opportunity to succeed as other students in their sewing classes. Participants' responses were given on a four-point scale using the following responses.

1. Definitely yes, I was provided all of the same opportunities.
2. Yes, I feel I was provided most of the same opportunities.
3. No, I recognized I had fewer opportunities.

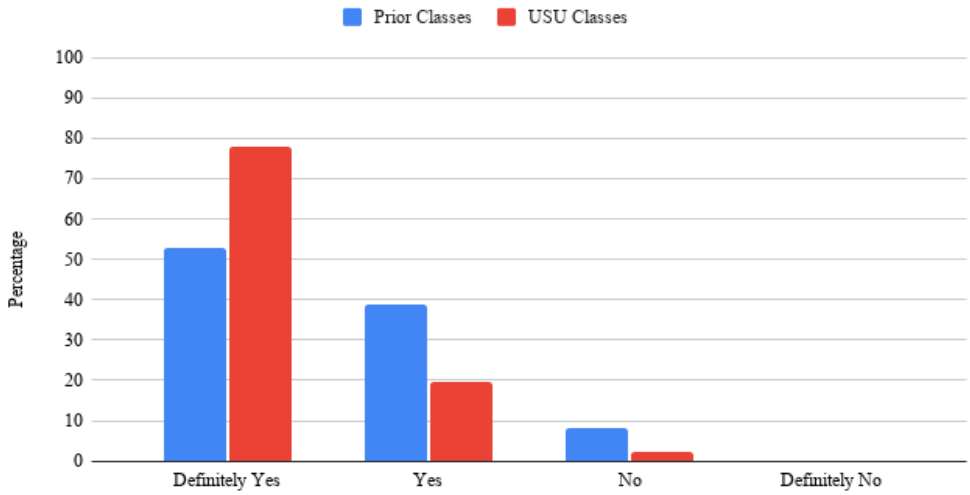
4. Definitely no, I was not offered the same opportunities.

When sharing perceptions about their sewing courses before USU, most students indicated that they felt they had equal opportunities to succeed as other students (91.7%, N = 33, M = 1.56, SD = 0.652). Although there was no statistically significant association with perception of an opportunity to succeed and gender, there was a statistically significant association with degree program (p = 0.010). More FCSE students (77.8%, n = 14) responded with “definitely yes” than OPDD students (27.8%, n = 8). Nonetheless, most OPDD students responded with "yes" (61.1%, n = 11). Very few FCSE (5.6%, n = 1) or OPDD (11.1%, n = 2) responded with “no.”

Regarding classes at USU, there was an increase in the number of students who indicated they felt they had equal opportunities to succeed (see Figure 4). There was no statistically significant association between gender or degree program and perceived opportunities to succeed in USU clothing construction classes.

Figure 4

Perception of Equal Opportunities to Succeed



Note. No statistically significant differences.

Research Question 3

After evaluating students' feelings of representation within the curriculum, the survey asked about personal feelings of pride and the feedback participants received from others about their enrollment in a clothing construction course. These survey responses were pertinent to the research question about external responses to student enrollment in a clothing construction course.

Pride in Sewing Ability

Participants first shared their personal feelings of pride about learning how to sew on a four-point rating scale of very proud (1), somewhat proud (2), somewhat embarrassed (3), and very embarrassed (4). Most participants indicated that they were "very proud" (54.8%, $n = 23$) or "somewhat proud" (38.1%, $n = 16$, $M = 2.53$, SD = 0.634). Only three respondents felt "somewhat embarrassed" (7.1%, $n = 3$) and no respondents felt "very embarrassed." There was no statistically significant difference in the level of pride regarding personal sewing ability between male and female students or FCSE and OPDD students. One male student and two female students reported feeling "somewhat embarrassed."

Support from Others

Students rated their family and friends' support regarding their enrollment in a sewing course on the following scale.

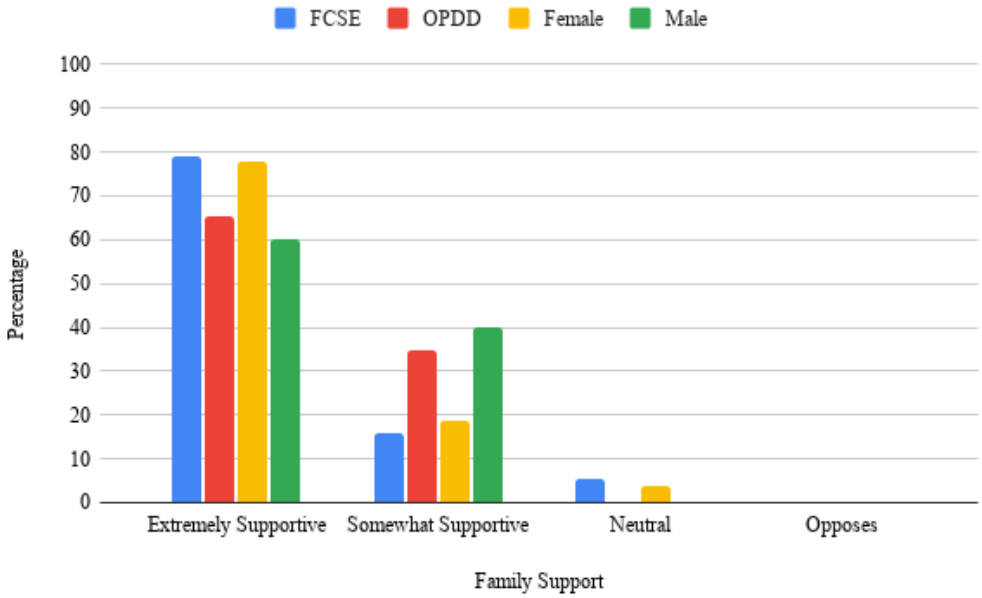
1. Extremely supportive
2. Somewhat supportive

3. Neutral
4. Somewhat opposes
5. Extremely Opposes

Concerning familial support, most students indicated their family is “extremely supportive” (71.3%, *n* = 30) or “somewhat supportive” (26.2%, *n* = 11, *M* = 1.31, SD =0.517). Figure 5 illustrates that no students indicated family opposition to their participation in a clothing construction course, but one female participant reported "neutral" family support (2.4%, *n* = 1). There was no statistically significant association between the perceived level of family support and gender or degree program. However, a larger proportion of female participants reported their family was "extremely supportive," while a greater proportion of male participants reported "somewhat supportive." The distribution of responses was similar between degree programs.

Figure 5

Perception of Family Support in Clothing Construction Course Enrollment

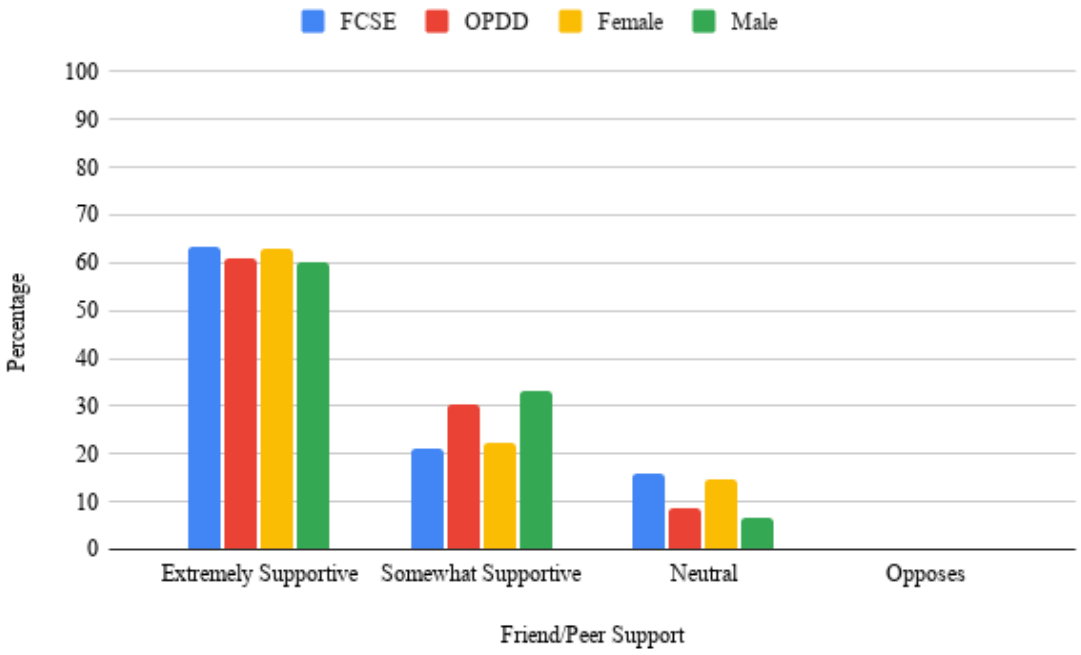


Note. No statistically significant association between family support and gender/program.

Using the same scale, students reported the level of support they receive from their friends or peers about their enrollment in a clothing construction course. Like family support, no participants reported experiencing any opposition. As shown in Figure 6, most participants perceived their peers to be “extremely supportive” (61.9%, *n* = 26) or somewhat supportive (26.2%, *n* = 11). More students indicated that their friends/peers' support is neutral (11.9%, *n* = 5) compared to perceptions of neutral family support (2.2%, *n* = 1). Like family support, there was no statistically significant association in perceived support related to gender or degree program.

Figure 6

Perception of Friend/Peer Support in Clothing Construction Course Enrollment

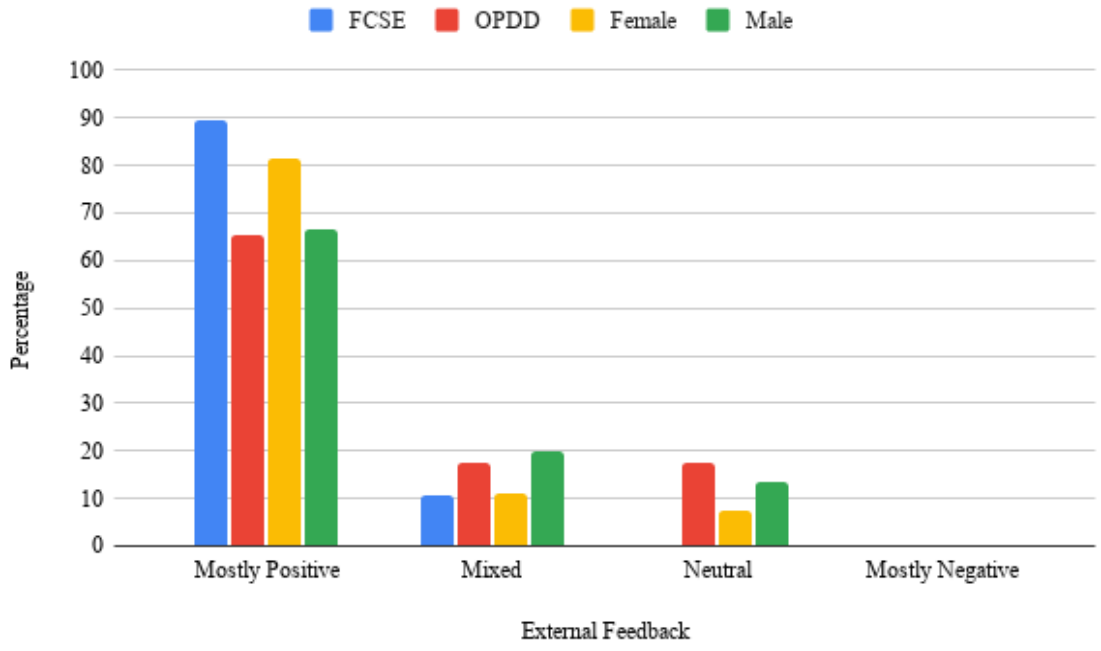


Note. No statistically significant association between peer/friend support and gender/program.

Next, participants rated the feedback they received from others regarding their participation in a sewing course. The responses shown in Figure 6 were given on a scale of mostly positive (1), mixed positive/negative (2), neutral (3), and mostly negative (4). Participants indicated that most of the external responses they received were positive (76.2%, *n* = 32). Some participants indicated receiving mixed (14.3%, *n* = 6) or neutral (9.5%, *n* = 4) responses, but no one reported receiving mostly negative feedback. There was no statistically significant difference in responses when the data was disaggregated by gender or degree program.

Figure 7

Nature of External Feedback about Sewing Course Enrollment



Note. *M* = 1.33, SD = 0.650 for entire sample.

Subsequently, participants reported if they had ever been discouraged to sew because of their gender. Most respondents indicated that they had not been discouraged from sewing because of their gender (95.2%, n = 40). Only two respondents indicated that they have been discouraged from sewing due to their gender (4.8%, n = 2). Of these two respondents, there was one male OPDD student and one female FCSE student (n = 2). Accordingly, there was not a statistically significant difference in responses between genders or degree programs.

Research Question 4

The final research area addressed in the survey was the perceived connection between careers and skills obtained in clothing construction classes. Survey respondents were asked, "will the skills obtained from your sewing class(es) be helpful for your future career?" and instructed to answer with the following semantic differential scale.

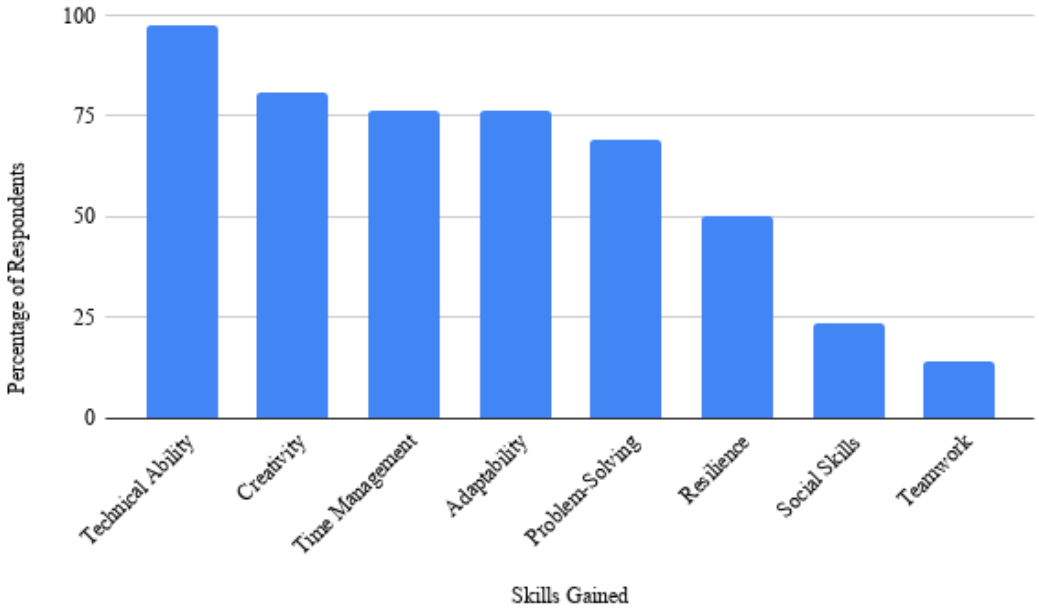
1. Helpful
2. Somewhat Helpful
3. Somewhat Unhelpful
4. Unhelpful

All study participants indicated that the sewing classes would be "helpful" (90.5%, n = 38) or "somewhat helpful" (9.5%, n = 4) for their future careers. No participants responded with "somewhat unhelpful" or "unhelpful." There was no statistically significant association between question responses and gender or degree program.

Additionally, participants were presented with a list of skills that are relevant for careers in any field. Survey respondents selected skills that they felt they had gained from their sewing classes. Respondents could select multiple skills from the list. The most common skills participants developed were technical ability, creativity, time management, adaptability, and problem-solving (see figure 8). A fewer number of participants reported developing resilience, social skills, and teamwork (see figure 8). When the data were disaggregated by gender and degree program a similar pattern of responses was apparent.

Figure 8

Skills Gained from Sewing Classes



Summary

This chapter has reported quantitative research findings from a survey administered to undergraduate students in the FCSE and OPDD degree programs during the USU spring 2021 semester. The purpose of the survey was to evaluate student perceptions and experiences in clothing construction courses. The data reported in this chapter was relevant to the following research questions.

1. What type of clothing construction experience do post-secondary students receive before taking a university clothing construction course?
2. To what extent do students feel they are adequately represented within the clothing construction curriculum?
3. What kind of external responses do students receive regarding their enrollment in clothing construction courses?
4. To what extent do students perceive the connection between clothing construction curriculum and careers?

The next chapter will discuss the relevant qualitative responses from the survey and connect them to the appropriate research questions. Chapter 5 will also discuss research conclusions, implications, and recommendations.

CHAPTER V

DISCUSSION

This chapter discusses the conclusions and implications of the research findings. Significant findings are explained and connected to existing literature. The study's purpose is to evaluate student experiences in clothing construction courses related to gender inclusivity and career preparation. Data was collected from students enrolled in clothing construction classes at Utah State University (USU) during the Spring 2021 semester via a self-report survey. Course instructors distributed the online survey to their students through Canvas course announcements. Forty-two students of all genders in the Family and Consumer Sciences Education (FCSE) and Outdoor Product Design and Development (OPDD) degree programs completed the survey. The survey questions used semantic differential and categorical scales to evaluate student experiences based on the following research questions. The conclusions and discussion of findings within this chapter are organized by research question.

1. What type of clothing construction experience do post-secondary students receive before taking a university clothing construction course?
2. To what extent do students feel they are adequately represented within the clothing construction curriculum?
3. What kind of external responses do students receive regarding their enrollment in clothing construction courses?
4. To what extent do students perceive the connection between clothing construction curriculum and careers?

Research Question 1

The first research question evaluated students' experience with clothing construction before taking a course at the post-secondary level. Most of the study participants (85.7%; *n* = 36) did have experience with clothing construction or sewing before taking a USU clothing construction course. However, more female students (*n* = 25) than male students (*n* = 11) had prior sewing experience. Many participants (*n* = 29) – most of whom were female (*n* = 22) – also reported having previous sewing experience outside of a school class (learning from another person, 4-H, self-taught, etc.).

The trend of more sewing experience reported by female participants than male participants was evident from all the survey questions related to prior experience. No male participants had taken more than two previous clothing construction classes, while eleven female participants reported taking three or more clothing construction classes before their current course. Consequently, more female than male students reported taking a clothing construction class at the middle and high school levels. This data indicates that some clothing construction classes at the secondary level continue to be female-dominant even though more male students participate.

These findings align with the most recent FCS national statistics (Werhan & Way, 2006; Werhan, 2013). Although more male students participate in FCS and clothing construction courses than in the past, the female-dominant enrollment at the secondary level could reinforce gender stereotypes, thus preventing some students from enrolling in these courses. When students perceive a discipline as specific to one gender, they are hesitant to participate if the course is nontraditional for their gender (Sadker, 1999; Lufkin et al., 2014; Lupton, 2006).

There is growing acceptability for all genders to participate in FCS courses, yet gender diversity is lacking within some clothing construction courses (Barnum, 2014, 2018; Johnson, 2009). The homogeneity of gender within some clothing construction courses could be due to gender stereotypes and lack of information about the curriculum's relevancy (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Montgomery, 2006). It should be noted that gender diversity in clothing construction courses can vary between class, year, and location.

Two of the four relevant qualitative responses to the survey also illustrate student experiences with gender stereotypes. One female participant felt that they were expected to prioritize learning clothing construction skills because they will "need" it more than male students. A second female participant felt that they were expected to learn sewing and other domestic skills because of their gender. These two female students' perspective indicates that some do still apply feminine stereotypes to clothing construction courses. However, the qualitative data did not support any challenges to masculinity for male students in clothing construction courses. The only male student who provided a pertinent qualitative response did not report feeling any disadvantages or negative stereotypes due to their gender. This male student's perspective could be due to gender privilege, which will be further discussed in a future section.

Another significant finding from this study is that fewer students took a high school clothing construction course (n = 15) than in middle school (n = 26). Commonly, courses at the middle school level, such as *FCS Exploration* or *College and Career Awareness,* have a unit on sewing that is one of the multiple units over a term. Conversely, there are specific classes that focus on clothing construction for an entire

term at the high school level. Thus, the high school's clothing construction classes are more likely to teach skills in-depth and provide an extended experience for greater learning.

Besides more students taking clothing construction classes in middle school, there is a statistically significant association between degree program and taking a class at the secondary level. More FCSE students than OPDD students took a clothing construction course in both middle school and high school. All students in the FCSE degree program identify as female, explaining the relationship between degree programs and taking classes at the secondary level. Additionally, the curriculum's scope and focus may be more relevant for secondary students interested in FCSE than for those interested in OPDD degree programs.

Regarding previous clothing construction classes, more FCSE students (n = 10) than OPDD students (n = 4) rated their prior experience as “helpful.” A similar number of students in both programs rated their prior experience as somewhat helpful. However, no FCSE students rated their prior experience as "unhelpful," while some OPDD (n = 4) gave this rating. Even though most participants perceived their prior experience as "helpful" or "somewhat helpful," the difference in responses between degree programs is notable (p = 0.073). Because fewer OPDD students took a course in high school, their experience was less recent and in-depth.

The discrepancy in perceived helpfulness of previous classes could also be due to the clothing construction curriculum's focus. Traditional clothing construction curriculum that focuses on home or craft sewing is less useful for those interested in careers related to outdoor product design. Clothing construction courses specific to outdoor product

design, such as *Sports and Outdoor Product Design*, have been developed in the state of Utah and are supported by these findings. Students of all genders may be interested in outdoor industry careers and these specialized classes can inclusively teach relevant skills. Unfortunately, these courses may not be available at out-of-state schools (Utah Education Network, 2021).

Research Question 2

The second research question evaluates the inclusivity of clothing construction curriculum in previous and USU classes. Study participants shared their perceptions of the class environment, relevancy of projects, and success opportunities in clothing construction courses.

Perceptions of Gender Enrollment

Most students reported that the gender enrollment of their previous clothing construction classes was predominately female students (n = 16) or was equally split between male and female students (n = 19). This data was disaggregated by gender to determine if there was a difference in gender demographics of the courses taken at the secondary level by male or female students. More female students (n = 14) than male students (n = 2) indicated that mostly female students were enrolled in their previous clothing construction classes. This phenomenon could be related to gender stereotypes or course focus.

If the clothing construction courses were predominately marketed to female students and mostly female students enrolled in the courses, that could deter male or

gender non-binary students from enrolling. Students who are not female may feel unwelcome due to implicit biases, perceived stereotypes, or a gender-specific curriculum (Greenwald & Krieger, 2006; Lufkin et al., 2014; Pritloy et al., 2019).

Additionally, the type of clothing construction course could also affect gender demographics. Utah secondary schools have developed sport and outdoor product sewing courses that appeal to students interested in Outdoor Product Design and Development degree programs (Utah Education Network, 2021). There is more gender diversity in the OPDD degree program than the FCSE program at USU, so there is likely more gender diversity in outdoor product-focused clothing construction classes at the secondary level. The study data support this assertion. More OPDD (n = 13) than FCSE (n = 6) students indicated that their previous clothing construction classes had equal gender enrollment. Consequently, fewer OPDD students (n = 4) than FCSE students (n = 12) reported that their previous classes were mostly female. The association between perceived gender enrollment of previous clothing construction classes and degree program was statistically significant (p = 0.023).

Gender enrollment of secondary clothing construction courses is connected to Barnum's study on perspectives of Utah FCS programs (2014, 2018). Parents, school counselors, teachers, and administrators considered FCS course content to be appropriate for all genders. Nonetheless, these external opinions still perceived enrollment as female-dominant (Barnum, 2014, 2018). Although Barnum's study was not specific to clothing construction courses, the gender trends in FCS are relevant. External perspectives indicated that even though gender stereotypes are less pervasive in recent years, gender roles and enrollment patterns have not changed in all courses or schools. A lack of

understanding of the benefits and applications of clothing construction courses could be the cause for minimal gender diversity in some schools (Barnum, 2014, 2018; Brandes & Garner, 1997).

Students reported greater gender diversity in clothing construction classes at USU than classes taken previously. Half of the respondents perceived equal gender enrollment (50%, n = 21). Some students did sense that there were primarily female students in their USU courses (28.6%, n = 12), but nearly as many reported mostly male students (21.4%, n = 9). No participants perceived having mostly male students in clothing construction classes at the secondary level, which supports greater gender diversity in USU classes. There is variance in gender enrollment between the multiple sections of clothing construction courses at USU due to student schedules. More male students enrolled in some sections indicate greater gender diversity and inclusivity of clothing construction courses at USU. Further evidence of inclusivity is discussed in the next section.

Sense of Belonging

Students' reports of how welcome they felt in the classes evaluated the inclusivity of clothing construction courses. Most students said they felt "welcome" or "somewhat welcome" in their previous clothing construction courses. Only a few participants felt "out of place," and there was no association with gender. This finding indicates that gender stereotypes were not pervasive enough to make students uncomfortable in their previous classes. However, there is a statistically significant association between gender and the extent to which students felt welcome in their previous classes.

Female students were more likely to report feeling "welcome," which is the highest rating on the semantic differential scale used in the survey. More male students reported feeling "somewhat welcome" in previous clothing construction classes, which is one unit lower on the survey scale. The exact difference between feeling "welcome" and "somewhat welcome" cannot be quantified. Regardless, it is noteworthy that male students rated their sense of belonging slightly lower than female students. This could indicate some awareness of implicit biases or gender stereotypes.

Overall, more students said that they felt "welcome" in clothing construction courses at USU (73.8%, $n = 31$) than in previous classes (63.9%, $n = 23$). A few students (11.9%, $n = 5$) reported feeling "somewhat out of place," but no students responded with the lowest semantic rating of "out of place." There was no significant association between gender and sense of belonging in USU clothing construction courses. The difference in the data between previous and USU clothing construction classes could indicate that USU courses are more inclusive. More evidence of this will be discussed in the next section.

Some students reported feeling "somewhat out of place" and "out of place" in previous and current clothing construction classes which could be evidence of perceived gender stereotypes and implicit biases. However, the data from this study is not strong enough to support this. Further research must be conducted to rule out other potential causes of feeling unwelcome in clothing construction classes. Students could feel uncomfortable in these courses because of poor instructor-student relationships, intimidation from learning a new skill, or disinterest in the subject.

Nonetheless, measures should be taken to allow all genders to feel like they belong in clothing construction courses. According to Rutter and Smith's study, male

students in FCS courses have a strong desire for a sense of belonging (2005). Male or gender-diverse students who are a minority in a female-dominant class may feel out of place. Therefore, it is crucial to cultivate a sense of affiliation through an inclusive curriculum. Gender inclusivity of all students in clothing construction courses can be increased through relevant, gender-neutral projects and group work (Fox, 2009; Rutter & Smith, 2005). Students will feel like they belong in the sewing lab if they feel welcome, specifically invited, and represented in the clothing construction curriculum (Lufkin et al., 2014; Press Office, 2016). This can be accomplished by facilitating teacher-student connections, allowing student voice and choice in course projects, and creating opportunities for peer collaboration (Dewsbury and Bram, 2019; Fox, 2009; Rutter & Smith, 2005).

Relevancy of Clothing Construction Curriculum

Study participants shared opinions about the projects made in their previous clothing construction classes and current USU classes. Students' projects are an integral part of the course curriculum and provide an opportunity to develop sewing skills. To cultivate an inclusive clothing construction curriculum, course projects should be relevant and adaptable to diverse student needs, skill levels, and interests (Dewsbury & Brame, 2019).

In this study, students reported that the projects made in their USU clothing construction classes are more practical, applicable, and customizable than previous class projects. These findings indicate that an inclusive curriculum is present at USU. Students reported that projects made in their USU classes are frequently used and support their

lifestyle more than the projects completed in previous classes. They also reported that they frequently have the freedom to adjust and customize their projects in USU classes, while this opportunity was rare in previous classes.

A key characteristic of gender-inclusive curriculums is giving heed to student voice and choice (Dewsbury & Brame, 2019). Thus, allowing students the freedom to modify projects for a specific purpose increases student investment and feelings of inclusion in a clothing construction class. Another critical aspect of a gender-inclusive curriculum is being aware of student needs (Dewsbury & Brame, 2019). Choosing class projects that are gender-neutral and that can be modified to meet a variety of student needs, skill levels, and interests promotes an inclusive curriculum. Project relevance can also be promoted by using textiles (i.e., fabrics) that are aligned with professional purposes. Students in USU clothing construction courses have access to a wide selection of such textiles donated from industry partners. However, the limited availability of diverse, professional-grade textiles in secondary schools could be a barrier to project practicality.

Another method for increasing clothing construction project relevancy is to allow students the opportunity to customize their work. Students can incorporate "design changes" to make their projects more useful or customized while still meeting the course objectives. Enabling student freedom and encouraging creativity promotes an inclusive curriculum while preparing students for careers. Successful product designers do not recreate items already on the market, rather they think outside the box to create innovative products that meet consumers’ wants and needs. FCS teachers also must think critically to effectively teach students in various situations and content areas. Therefore,

encouraging students to make “design changes” will improve critical thinking and prepare them to be effective product or instructional designers in the future.

Equal Opportunities

An inclusive curriculum allows all students the opportunity to succeed by removing gender barriers (Lufkin et al., 2014; Towery, 2007). Most students felt that they had the same opportunities as other students to succeed in previous and USU clothing construction courses. Students still felt that they could succeed in their previous classes even though the projects were less inclusive than USU course projects. However, there was a difference in the degree of perceived opportunities to succeed. More students responded with "definitely yes" regarding their opportunity to succeed in USU classes (78%, $n = 32$) than in prior classes (52.8%, $n = 19$). Therefore, the inclusive curriculum and projects at USU promote greater student confidence in their ability to succeed.

A significant association between perceived opportunity to succeed in previous classes and degree program affirms that inclusive curriculums promote student success. Regarding previous clothing construction courses, more FCSE students (77.8%, $n = 14$) than OPDD students (27.8%, $n = 8$) responded with “definitely yes.” This trend relates to the earlier discussion of secondary clothing construction courses being more relevant to FCSE student interests.

Nonetheless, there is no evidence supporting that students of any degree or gender are at a significant disadvantage in previous or USU clothing construction courses. A few students responded with "no, I recognized I had fewer opportunities to succeed" in previous (8.3%, $n = 3$) and USU (2.4%, $n = 1$) clothing construction classes. Although

the cause for these few instances of perceived disadvantage could be related to gender stereotypes or a biased curriculum, multiple other factors could contribute. One male student provided a qualitative response saying, "The class is all very new information for me, and I feel like I've got just as good a chance at succeeding as anyone else." This brief thought shows that detrimental gender stereotypes are not readily apparent or damaging to male students in clothing construction classes. Qualitative responses from female students indicated that they are more aware of feminine gender stereotypes related to clothing construction courses. Despite personal or vocational interests, these gender stereotypes could put more pressure or expectation upon females to succeed in clothing construction courses.

The qualitative responses to the survey could be evidence of male gender privilege. According to a study by Lupton, males carried their gender privilege into female-dominant careers (2006). Males' success in nontraditional careers was not hindered by their gender even though they perceived negative stereotypes and challenges to their masculinity (Lupton, 2006). Although they may face stigmatization or social discomfort, men are not hindered by a "glass ceiling" in most female-dominant careers. For example, even though education is typically considered a female-dominant career, men fill most administrative and higher-paying positions (Lupton, 2006). Gender privilege could be beneficial in the case of clothing construction courses because it lessens barriers to male student success in traditionally female-dominant disciplines. However, future research should evaluate how gender stereotypes and the lack of gender privilege affects female and non-binary students in disciplines that are typical for their gender.

Research Question 3

The following research question continues to evaluate gender stereotypes. Study participants' responses about personal feelings of pride and external feedback regarding their enrollment in a clothing construction course assess gender stereotypes.

Pride in Sewing Ability

Individuals who pursue a nontraditional discipline for their gender often face negative stigmas (Langlais et al., 2017; Lupton, 2006; Sadker, 1999). For example, males who pursue female-dominant professions, such as education or family science traditionally, can face challenges to their masculinity from others (Langlais et al., 2017; Lupton, 2006). This study aimed to see if male or non-binary students faced similar challenges when taking a traditionally female-dominant clothing construction course.

Most participants indicated that they were "very proud" (54.8%, $n = 23$) or "somewhat proud" (38.1%, $n = 16$) of their ability to sew. Only three students reported that they were "somewhat embarrassed" about their sewing ability, but there could be other reasons for this. Besides negative gender stigmatization, these few students could have been "somewhat embarrassed" because their sewing skills are not yet proficient. Of these three students, two identified as female and one as male, so there is no evidence of gender stereotypes in this regard. However, as indicated by previously discussed qualitative responses, female students may be more sensitive to gender stereotypes in clothing construction courses. Overall, students are proud of their skills from clothing construction courses regardless of their gender. Therefore, this supports the decrease in

rigid gender stereotypes in recent years (Barnum, 2014, 2018; Johnson, 2009). Gender stereotypes do not seem to be a barrier to student success in clothing construction classes.

Support from Others

When pursuing a nontraditional career or skill for one's gender, students can also receive negative feedback from others (Langlais et al., 2017; Lupton, 2006; Sadker, 1999). Participants shared the nature of feedback they receive from family members and friends regarding their enrollment in a clothing construction course.

Study participants reported high familial support of their enrollment in a clothing construction course. No students reported receiving negative feedback or opposition to their enrollment from family members. A somewhat higher proportion of female students (77.8%, $n = 21$) than male students (60%, $n = 9$) reported their families were "extremely supportive." More male students (40%, $n = 6$) than female students (18.5%, $n = 5$) reported their families were “somewhat supportive.” Although a difference is evident, it is not statistically significant. Additionally, the distinction between "extremely supportive" and "somewhat supportive" cannot be quantified. Therefore, this finding is noteworthy but does not provide sufficient evidence for negative gender stereotypes from family members. Negative gender stereotypes would have represented opposition from family members, but no opposition was reported.

Similar responses were given about support from friends or peers. No opposition to enrollment in a clothing construction course from friends or peers was reported. Most students indicated that their friends or peers were "extremely supportive" (61.9%, $n = 26$) or "somewhat supportive" (26.2%, $n = 11$). This finding provides more evidence of

decreasing gender stereotypes. More peers/friends were reported as “neutral” (11.9%, *n* = 5) than family members (2.4%, *n* = 1). However, family members typically have greater opinions and offer more support in academic pursuits and careers than friends, so greater neutrality among non-family members is anticipated.

Former research indicates that parents and peers significantly influence student choices in course enrollment (Barnum, 2014, 2018; Betz, 2010). Therefore, support from family and friends of clothing construction courses is important to maintain strong and diverse enrollment in these classes. Advertising the benefits and applications of clothing construction courses to students and families could encourage more students to enroll. Inclusive and unbiased marketing of courses by clothing construction teachers can also boost student enrollment and gender diversity (Barnum, 2014, 2018; Boschetto, 2019; Lee, 1998; Lufkin et al., 2014).

To further investigate possible gender stereotypes, study participants were asked about the nature of feedback they receive from others regarding their enrollment in a clothing construction course. Most participants received positive feedback (76.2%, *n* = 32), thus providing further evidence of decreasing gender stereotypes. The proportion of participants who reported receiving positive feedback was similar across gender and degree programs.

Although no students reported receiving mostly negative feedback, some received mixed (14.3%, *n* = 6) or neutral (9.5%, *n* = 4) feedback. Details about such instances are beyond the scope of this exploratory study. However, some students' presence of mixed positive and negative feedback indicates that some gender stereotypes or implicit biases

could still be perceived. Further research into mixed feedback content would provide more insight into the specific type and source of feedback students receive.

Correspondingly, study participants were asked if they had ever been discouraged from sewing because of their gender. This data provides further evidence of decreasing gender stereotypes in clothing construction courses. Nearly all the participants reported that they have not been discouraged from sewing or enrolling in a clothing construction course due to their gender. Only two respondents said they had been discouraged from sewing because of their gender, which is a small proportion of the sample. One of these respondents identified as male and one as female; thus, this does not provide evidence of gender stereotypes or biases against a specific gender. These students may have been discouraged from sewing because of others' views of gender roles or others' lack of awareness regarding benefits and career opportunities within clothing construction courses.

Research Question 4

The current clothing construction curriculum should focus on career preparation. Although technical sewing skills are no longer necessary for domestic living, they are essential for various careers in the textile, apparel, and outdoor product industry (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Montgomery, 2006; USU, 2020; Sewing & Craft Alliance, 2020). These industries – especially the outdoor product industry – constantly grow and contribute to the national and global economy (Brandes & Garner, 1997; Tilton, 2018). Therefore, students who are interested in such careers should participate in a clothing construction course to prepare.

Students do understand the important connection between clothing construction courses and career preparation. All participants in this study reported that their clothing construction courses would be "helpful" (90.5%, $n = 38$) or "somewhat helpful" (9.5%, $n = 4$) to their future careers. Even though no students indicated that clothing construction courses were unhelpful, one female student expressed frustration about taking clothing construction courses for their degree program at USU. This student felt that the extent of their previous experience made the USU clothing construction classes irrelevant. They pointed out that technical skills were more important than technical knowledge. Although this may seem to be accurate, the goal of the OPDD and FCSE programs at USU is to help students develop both professional ability and professional knowledge (USU, 2020). Thus, this student's comment affirms the importance of creating a relevant and career preparatory clothing construction curriculum. However, the student's frustrations and arguments in this qualitative response are likely an emotional reaction. This student is probably upset about taking clothing construction courses that they feel are repetitive for them. Nonetheless, there are specific, required courses for every university degree that all students must take to earn a diploma. Students with extensive prior experience can test out of the USU introductory sewing class, but the intermediate class is still required for FCSE and OPDD degree programs.

Students' technical abilities in clothing construction classes are important for specialized careers within the textile, apparel, or outdoor product industry (Allsop & Cassidy, 2019; Brandes & Garner, 1997; Montgomery, 2006; USU, 2020; Sewing & Craft Alliance, 2020). The importance of clothing construction courses in helping

students develop these skills is apparent because 97.6% (n = 41) of participants reported gaining technical skills while enrolled in these courses.

In addition to the development of relevant technical ability, clothing construction courses also help students develop soft skills important for success in any profession (Advance Career and Technical Education, 2017; Carroll, 2018; Clarke, 2020; Kommer, 2006). In recent years employers have expressed frustration over the lack of soft skills new young employees bring to their profession (Carroll, 2018; Tulgan, 2015). Consequently, the findings from this study are encouraging in that regard. Students reported developing many soft skills in clothing construction classes that are important for professional success.

Students can develop soft skills through various experiences and activities in clothing construction classes. Students develop creativity and problem-solving when choosing appropriate textiles and designing projects for a specific purpose. USU introductory sewing students develop soft skills by learning about the design cycle, which involves designing a product to solve a specific problem. Part of the process involves researching and obtaining feedback on prototypes to consider modifications for product improvement. Students in clothing construction classes also must manage their time effectively to meet deadlines. Planning and working on a timeline simulate deadlines that professionals must meet for product manufacturing. Clothing construction courses also cultivate resilience by promoting a growth mindset. Learning a new skill typically involves mistakes which can be discouraging for some. Teaching students to move past mistakes and to embrace them as part of the learning process helps students to be resilient

and develop problem-solving ability. Finally, students can develop social skills and teamwork through collaborative group projects.

Students reported gaining skills related to creativity (81%), time management (76.2%), adaptability (76.2%), problem-solving (69%), and resilience (50%) in clothing construction classes. All these skills are important for careers in any domain (Carroll, 2018). Hence, clothing construction courses are relevant and useful for students even if they choose a career unrelated to textiles, apparel, or outdoor products. Unfortunately, fewer students reported growth in social skills (23.8%) and teamwork (14.3%). These soft skills are also important, so clothing construction curriculums should place more emphasis on these areas.

Significance of the Study

Even though gender stereotypes within clothing construction courses are decreasing, it is evident that some gender stereotypes still exist. For example, female students are more likely to take a clothing construction course at the secondary level, indicating that females may feel more accepted into these courses. Female students also report perceptions of feminine gender stereotypes related to clothing construction courses, yet there is no evidence of barriers against male or non-binary student participation or success in these courses.

There is greater gender diversity in clothing construction courses at USU. Consequently, students report that the projects and curriculum are more gender-inclusive than at the secondary level. Although few students report feeling "out of place" in secondary or post-secondary clothing construction courses, there is a greater sense of

belonging in USU clothing construction classes. Some students may feel "out of place" in clothing construction classes due to the course demographics and their peers. For instance, one USU spring 2021 introductory sewing class has thirteen OPDD students and one FCSE student. Although the FCSE student is unlikely to be facing stereotypes that inhibit their success, they may feel "out of place" because they have different interests and goals than their classroom peers. Clothing construction instructors cannot control who enrolls for each section of their course, but they can try to make all students feel welcome. An inclusive curriculum and a sense of belonging promote student success and well-being (Dewsbury & Brame, 2019; Rutter & Smith, 2005). Decreased gender stereotypes also help students have equal opportunities for success.

Further evidence of decreased gender stereotypes is apparent by the support students receive from family, friends, and peers of their enrollment in a clothing construction course. No study participants reported receiving opposition or negative feedback from others. Additionally, only two students reported being discouraged from sewing because of their gender.

The findings also support the career preparatory nature of clothing construction classes. All students said that the classes would be helpful for their future careers. Consequently, students reported developing important technical abilities and soft skills (i.e., creativity, time management, adaptability, problem-solving, and resilience).

Recommendations and Implications

The findings from this study are relevant to clothing construction instructors, curriculum designers, and school administrators. This section will discuss recommendations for professional practice.

Previous clothing construction courses are helpful for student success in post-secondary courses and future professions. Marketing these courses to students of all genders allows more students to reap the benefits of technical and soft skill development. The data shows that more female students than students of other genders are taking clothing construction courses at the secondary level, yet there is greater gender diversity in USU courses. Strategies for cultivating gender diversity in clothing construction courses at the secondary and post-secondary level include reducing instructor biases, using an inclusive curriculum, highlighting gender-diverse role models in the profession, and recruiting students to FCS at earlier grades (Barnum, 2014; Kommer, 2006; Langlais et al., 2017; Lufkin et al., 2014). Inviting gender-diverse students to demonstrate their skills or showcase clothing construction projects can also reduce gender stereotypes and recruit a diverse student body to clothing construction courses (Garcia & Makela, 2006). Gender diversity and equity can be cultivated by addressing individual student needs and interests rather than expecting student confirmation to traditional gender roles (Kommer, 2006; Miller, 2018; Sadker, 1999; Sanders, 2002; Towery, 2007).

The difference in the gender diversity of clothing construction courses at the secondary and post-secondary level was reflected in the curriculum's inclusivity. Students felt that their USU clothing construction projects were more relevant and applicable to their lives than projects in their previous courses. Students also reported more freedom to

adapt projects in USU classes. Clothing construction courses at the secondary level should also allow students autonomy and choice in clothing construction projects to promote an inclusive curriculum (Dewsbury & Brame, 2019). Even simple projects for beginners can have elements for student customization. For example, the first project in the introductory sewing course at USU is an equipment roll kit that requires students to choose pocket sizes and placement for their sewing equipment or other items. This basic project with simple techniques allows students the freedom to create a product that is personal to their own needs and preferences. Gender-inclusive projects should also be used in all clothing construction courses to avoid making students of any gender feel marginalized.

In this study, students of all genders understood that there was a connection between clothing construction courses and careers. In addition to technical clothing construction skills, students reported developing soft skills applicable to all disciplines. This finding is important because young adults entering the workforce or higher education in any domain need these non-technical, professional skills to be successful employees and students (Carroll, 2018; Tulgan, 2015). Study participants reported that their clothing construction courses helped them develop soft skills related to creativity, time management, adaptability, problem-solving, and resilience. However, few students reported the development of social skills and teamwork in clothing construction courses. Projects, activities, and lessons designed to promote crucial communication and collaboration skills should be incorporated in clothing construction curriculums.

Suggestions for Future Research

This study explored gender diversity and inclusivity in clothing construction courses. Since little existing research exists specific to this topic, there are multiple suggestions for future research. Pursuing these suggestions would offer more insight and data to best support student learning in clothing construction courses and other FCS courses.

1. A similar survey should be administered to a sample with more gender diversity. All the participants in this sample identified as male or female, and there was more female than male participants. Thus, no data on non-binary or transgender student experiences in clothing construction courses was obtained. Clothing construction skills are useful for all genders, but they can be especially useful for individuals with transgender or non-binary identities. Gender-neutral clothing is limited, but with clothing construction skills individuals can construct or alter clothing to express their desired gender identity (Schmidt, 2019). Research on the experience of non-binary or transgender students would further increase clothing construction curriculum inclusivity at the secondary and post-secondary levels. More gender-diverse sample data could also indicate the presence of male gender privilege in female-dominant disciplines (Lupton, 2006).
2. Qualitative responses show that female students are aware of gender stereotypes within clothing construction courses. On the other hand, male students bring their gender privilege into female-dominant disciplines (Lupton, 2006). Accordingly, there was no evidence of disadvantages to male students in clothing construction courses. The data did not indicate specific disadvantages to female students

because of feminine stereotypes, but additional research would provide more insight. Future research should explore how these feminine stereotypes affect female students in traditionally female-dominant disciplines, such as clothing construction or other FCS courses.

3. Another national collection of FCS data should be conducted to evaluate current FCS program gender demographics The most recent national data collection indicated increased diversity in FCS courses, but this data is eight years old (Werhan, 2013). Another collection of national data would indicate if gender diversity has continued to increase or if it has stabilized in recent years. This study showed increased gender diversity in clothing construction courses at a single institution, but a national sample would show if this trend were present elsewhere. An updated national survey would provide demographic data for all FCS content areas in multiple locations.
4. Additional qualitative data should be collected via participant interviews or focus groups. Qualitative data may offer more insight into the causes of the patterns presented in this study. For example, this study showed that more female students felt “welcome” while more male students felt “somewhat welcome” in secondary clothing construction courses. The quantitative nature of this study does not provide a clear rationale for this trend. A qualitative study could provide more insight into gender stereotypes, implicit biases, or other factors that made female students feel more welcome than most male students.
5. Data should be collected from secondary and post-secondary clothing construction teachers regarding implicit biases, instructional practices, and

inclusive curriculums. This study discussed the importance of inclusive curriculums and gave general suggestions, such as project relevancy and choice, for promoting inclusivity. Additional research and recommendations of specific teaching strategies and curricular design could help practitioners promote inclusivity in their classrooms. Teacher training on gender equity is necessary to promote gender inclusivity for students in all content areas (Fox, 2009, Sanders, 2002; Towery, 2007).

6. Inclusive language, projects, and activities within state standards and clothing construction objectives should be evaluated. This study did not evaluate systemic barriers that could inhibit gender inclusivity in clothing construction or other FCS courses. Systemic changes are necessary to continue decreasing negative gender stereotypes in all domains (Lufkin, 2014).

Final Statement

The findings of this study are relevant to clothing construction instructors and students. The data and conclusions support the Social Role theory framework because gender diversity is present in a traditionally female-dominant discipline (Eagly & Wood, 1991; Eagly et al., 2000). Thus, this data shows that gender stereotypes and roles continue to evolve (Eagly & Wood, 1991; Eagly et al., 2000; Lufkin et al., 2014). Increased gender diversity is advantageous for student learning; therefore, more research is needed (Gosselin, 2007). This study was one of the first recent studies explicitly related to gender diversity in clothing construction courses, so it was exploratory in nature. However, the findings provide sufficient evidence for the importance of future research.

Conducting additional research from this foundation can continue to promote gender inclusivity in clothing construction and FCS courses.

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Appendices

Appendix A

Survey Instrument

Clothing Construction Survey

Q1 What gender do you identify with?

- Male
- Female
- Other: _____

Q2 What is your major?

- Family & Consumer Sciences Education (FCSE)
- Outdoor Product Design & Development (OPDD)
- Other: _____

Q3 What year do you expect to graduate from USU?

- 2021

- ○ 2022
- ○ 2023
- ○ 2024
- ○ 2025
- ○ 2026
- ○ Other: _____

Q4 Do you have prior clothing construction experience outside of school classes (e.g. 4-H, private lessons, learning from a family member/friend, self-taught, internet tutorials, etc.)?

- ○ Yes
- ○ No

Q5 How many clothing construction (e.g. sewing) classes in a school setting have

you taken prior to your current class?

- ○ 0
- ○ 1
- ○ 2
- ○ 3
- ○ 4
- ○ 5 or more

Skip To: Q13 If How many clothing construction (e.g. sewing) classes in a school setting have you taken prior to... = 0

Q6 Did you take a clothing construction (e.g. sewing) course in middle school?

- ○ Yes
- ○ No

Q7 Did you take a clothing construction (e.g. sewing) course in high school?

- ○ Yes
- ○ No

Q8 Which of the following statements best describes the demographics of your sewing class(es) in junior high or high school?

- ○ All female students
- ○ Mostly female students
- ○ Equal numbers of male & female students
- ○ Mostly male students
- ○ All male students

Q9 To what extent did you feel you belonged in your sewing class(es) before

attending USU?

- ○ Welcome
- ○ Somewhat welcome
- ○ Somewhat out of place
- ○ Out of place

Q10 Please answer the following questions regarding the projects made in your sewing classes before attending USU.

	Never	Sometimes	Often	Always
How often do you use the projects made in your sewing class(es) before	○	○	○	○

attending USU?				
How often did the projects made in your sewing class(es) before attending USU support your lifestyle?	○	○	○	○
How often were you given options and choices to adjust projects to be suitable for personal use	○	○	○	○

in your sewing class(es) before attending USU?	

Q11 Do you feel that you had the same opportunity to succeed as other students in your sewing class(es) before attending USU?

- ○ Definitely yes, I was provided all of the same opportunities
- ○ Yes, I feel I was provided most of the same opportunities
- ○ No, I recognized I had fewer opportunities
- ○ Definitely no, I was not offered the same opportunities

Q12 How helpful was your prior sewing experience for your sewing class(es) at

USU?

- ○ Helpful
- ○ Somewhat helpful
- ○ Somewhat unhelpful
- ○ Unhelpful

Q13 Which of the following statements best describes the demographics of your current sewing class(es) at USU?

- ○ All female students
- ○ Mostly female students
- ○ Equal numbers of male and female students
- ○ Mostly male students
- ○ All male students

Q14 To what extent do you feel you belong in your sewing class(es) at USU?

- ○ Welcome
- ○ Somewhat Welcome
- ○ Somewhat out of place
- ○ Out of place

Q15 Please answer the following questions regarding your sewing projects at USU.

	Never	Sometimes	Often	Always
How often do you think you will use the projects made in your sewing	○	○	○	○

class(es) at USU?				
How often do the projects made in your sewing class(es) at USU support your lifestyle?	○	○	○	○
How often are you given options and choices to adjust projects to be suitable for personal use in your sewing class(es) at	○	○	○	○

USU?

Q16 Do you feel that you have the same opportunity to succeed as other students in your sewing class(es) at USU?

- Definitely yes, I am provided all of the same opportunities
- Yes, I feel I am provided most of the same opportunities
- No, I recognize I have fewer opportunities
- Definitely no, I am not offered the same opportunities

Q17 Will the skills obtained from your sewing class(es) be helpful for your future career?

- Helpful
- Somewhat Helpful

- ○ Somewhat Unhelpful
- ○ Unhelpful

Q18 Which of the following skills have you gained from your sewing class(es)? (Select all that apply)

- ☐ Creativity
- ☐ Technical Ability
- ☐ Problem-Solving
- ☐ Resilience
- ☐ Time Management
- ☐ Teamwork
- ☐ Social Skills
- ☐ Adaptability

- [ ] None of the above
- [ ] Other: _____

Q19 What is your level of pride in learning how to sew?

- ○ Very Proud
- ○ Somewhat proud
- ○ Somewhat embarrassed
- ○ Very Embarrassed

Q20 What level of support do you receive from your family regarding your enrollment in a sewing course?

- ○ Extremely supportive
- ○ Somewhat Supportive

- ○ Neutral
- ○ Somewhat Opposes
- ○ Extremely Opposes

Q21 What level of support do you receive from your friends or peers regarding your enrollment in a sewing course?

- ○ Extremely Supportive
- ○ Somewhat Supportive
- ○ Neutral
- ○ Somewhat Opposes
- ○ Extremely Opposes

Q22 What is the nature of feedback from others about your participation in a sewing course?

- Mostly positive
- Mixed positive/negative
- Neutral
- Mostly negative

Q23 Have you ever been discouraged to sew because of your gender?

- Yes
- No

Q25 Please provide any other information about your experience in clothing construction courses that you wish to share.

_____

Clothing Construction Survey Part 2

Q1 In the future, would you be willing to discuss your experience in clothing construction courses in an interview with the researcher? This is not related to the current study.

- ○ Yes
- ○ No

Skip To: Q4 If In the future, would you be willing to discuss your experience in clothing construction courses i... = No

Q3 Please provide your name and email address if you are interested in participating in future research.

_____

Q4 Would you like to enter the drawing for one of two $25 Amazon gift cards?

- ○ Yes
- ○ No

Skip To: End of Survey If Would you like to enter the drawing for one of two $25 Amazon gift cards? = No

Q5 If you are interested in entering the drawing for an Amazon gift card please provide your email address.

_____

Appendix B

IRB Approval

Institutional Review Board

Exemption #1 and #2
Certificate of Exemption

From: Melanie Domenech Rodriguez, IRB Chair

Nicole Vouvalis, IRB Director

To: ***Lacee Boschetto***

Date: ***December 8, 2020***

Protocol #: ***11584***

Title: **Clothing Construction Curriculum: Exploring Inclusivity and Increased Male Participation**

The Institutional Review Board has determined that the above-referenced study is exempt from review under federal guidelines 45 CFR Part 46.104(d) category #1 and #2:

> *Research, conducted in established or commonly accepted educational settings, that specifically involves normal educational practices that are not likely to adversely impact students' opportunity to learn required educational content or the assessment of educators who provide instruction. This includes most research on regular and special instructional strategies, and research on the comparison among instructional techniques, curricula, or classroom management methods.*
>
> *Research that only includes interactions involving educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior (including visual or auditory recording) if at least one of the following criteria is met: (i) The information obtained is recorded in such a manner that the identity of the human subjects cannot readily be ascertained, directly or through identifiers linked to the subject; (ii) Any disclosure of the responses outside the research would not reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, educational advancement, or reputation, or (iii) the information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and the IRB conducts a limited IRB review to make required determinations.*

This study is subject to ongoing COVID-19 related restrictions. As of March 15, 2020, the IRB has temporarily paused all in person research activities, including but not limited to recruitment, informed consent, data collection and data analysis that involves personal interaction (such as member checking and meaning-making). If research cannot be paused, please file an amendment to your protocol modifying procedures that are conducted in person. The IRB will notify you when in person research activities are once again permitted.

This exemption is valid for five years from the date of this correspondence, after which the study will be closed. If the research will extend beyond five years, it is your responsibility as the Principal Investigator to notify the IRB before the study's expiration date and submit a new application to continue the research. Research activities that continue beyond the expiration date without new certification of exempt status will be in violation of those federal guidelines which permit the exempt status.

If this project involves Non-USU personnel, they may not begin work on it (regardless of the approval status at USU) until a Reliance Agreement, External Research Agreement, or separate protocol review has been completed with the appropriate external entity. Many schools will not engage in a Reliance Agreement for Exempt protocols, so the research team must determine what the appropriate approval mechanism is for their Non-USU colleagues. As part of the IRB's quality assurance procedures, this research may be randomly selected for audit during the five-year period of exemption. If so, you will receive a request for completion of an Audit Report form during the month of the anniversary date of this certification.

Institutional Review Board

Exemption #1 and #2
Certificate of Exemption

In all cases, it is your responsibility to notify the IRB prior to making any changes to the study by submitting an Amendment request. This will document whether or not the study still meets the requirements for exempt status under federal regulations.

Upon receipt of this memo, you may begin your research. If you have questions, please call the IRB office at (435) 797-1821 or email to irb@usu.edu.

The IRB wishes you success with your research.

Appendix C

Recruitment Letter

Dear FCSE 1040/2040/3040 Student,

A research study is being conducted about inclusivity and biased-free learning in clothing construction courses (i.e., sewing courses). Your participation in this study is voluntary and is not connected to your progress, performance, or grade in FCSE 1040/2040/3040. The expected survey completion time is approximately 5 minutes. This survey will open on January 19, 2021, and will be open for 14 days.

The survey will be completely anonymous. Questions will be asked about previous and current experiences in clothing construction courses. The questions will pertain to feelings of belonging, the relevancy of the curriculum, and external responses to participation in clothing construction courses.

An incentive drawing for two $25 Amazon gift cards is available for participants who complete the survey. To maintain the anonymity of the research study, participants will be asked to provide a name and email address in a separate survey link if they choose to enter the drawing. All personal contact information collected for the incentive drawing will be destroyed after the gift cards have been distributed to the recipients to preserve confidentiality.

Participants also have the option to provide contact information for participation in future research studies about clothing construction courses. All contact information will be kept separate from the current research data to ensure anonymity. After completing the research survey, participants will be directed to a separate survey where they can provide their contact information for future research if they so choose. Participants who choose to provide their name and email address may be contacted in the future about additional research and at that time they may elect whether to participate. Participants' choice about whether to participate in future research has no impact on course grades, progress, performance, or the results of this study.

If you choose to do so, you may proceed to the survey using the link below:

Clothing Construction Curriculum Survey

If you have any questions about this research study you may contact Lacee Boschetto (lacee.boschetto@usu.edu) or ShaeLin Nilsen (shaelin.nilsen@usu.edu).

Appendix D

Letter of Consent

OFFICE OF RESEARCH
UtahStateUniversity

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Informed Consent

Clothing Construction Curriculum: Exploring Inclusivity & Increased Male Participation

You are invited to participate in a research study conducted by Lacee Boschetto, an assistant professor in the department of Applied, Sciences, Technology, and Education (ASTE), and ShaeLin Nilsen, a graduate student in the department of ASTE at Utah State University.

The purpose of this research is to evaluate student experiences relating to gender inclusivity and equity in clothing construction courses (i.e., sewing courses) at Utah State University. Specifically, we are interested in learning about current and prior experiences in clothing construction classes related to gender stereotypes, the relevancy of the curriculum, and career preparation. You are being asked to participate in this research because you are enrolled in a clothing construction course at Utah State University.

Your participation in this study is voluntary and you may withdraw your participation at any time for any reason.

If you take part in this study, you will be asked to complete one self-report survey. The singular survey should take approximately 5 minutes to complete. We anticipate that 50 people will participate in this research study.

The possible risks of participating in this study include loss of confidentiality or answering uncomfortable questions on the anonymous survey. The benefits of participating in this study are increasing the quality of clothing construction courses at USU. We cannot guarantee that you will directly benefit from this study, but it has been designed to learn more about gender inclusivity and equitable learning in clothing construction classes.

We will make every effort to ensure that the information you provide remains confidential. We will not reveal your identity in any publications, presentations, or reports resulting from this research study. Your survey responses will be anonymous.

We will collect your information through Qualtrics. Online activities always carry a risk of a data breach, but we will use systems and processes that minimize breach opportunities. This data will be securely stored in a restricted-access folder on Box.com, an encrypted, cloud-based storage system. Identifying information (i.e., email addresses for the incentive gift card drawing) will be destroyed after the gift cards are awarded upon the close of the survey. Email addresses for participants who consent to participate in future research will be kept separate from survey responses. After the future research participants have been contacted the email addresses will be deleted. This information will be kept for five years after the study is complete, and then it will be destroyed.

For your participation in this research study, you will receive an opportunity to enter a random drawing for one of two Amazon gift cards ($25). At the end of the survey, you will be redirected to a separate survey to enter your email address if you are interested in participating in the incentive drawing. You must complete the survey to enter the random drawing.

You can decline to participate in any part of this study for any reason and can end your participation at any time.

If you have any questions about this study, you can contact Dr. Lacee Boschetto at (435) 797-1565 or lacee.boschetto@usu.edu, or you can contact ShaeLin Nilsen at shaelin.nilsen@usu.edu. Thank you again for your time and consideration. If you have any concerns about this study, please contact Utah State University's Human Research Protection Office at (435) 797-0567 or irb@usu.edu.

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By continuing to the survey, you agree that you are 18 years of age or older, and wish to participate. You agree that you understand the risks and benefits of participation, and that you know what you are being asked to do. You also agree that if you have contacted the research team with any questions about your participation, and are clear on how to stop your participation in this study if you choose to do so. Please be sure to retain a copy of this form for your records.