

THESIS

THE HALO EFFECT OF WEBSITE EXPERIENCE: EXAMINING THE IMPACT OF
AESTHETICS AND USABILITY BEYOND THE PAGE

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Sean Robert McDermid

Department of Journalism and Media Communication

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Master's Committee:

Advisor: Rosa Martey

John Weiss
Jamie Switzer

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ABSTRACT

THE HALO EFFECT OF WEBSITE EXPERIENCE:

EXAMINING THE IMPACT OF AESTHETICS AND USABILITY BEYOND THE PAGE

In recent years, recruitment efforts among universities have become a priority as competition for enrolling graduate and undergraduate students increases. With the pervasiveness of electronic devices in every-day life, digital channels have become necessary tools in post-secondary recruitment and enrollment efforts. Today, a prospective student's and their parent's experience with a university is largely facilitated by digital means, thus impressions of the institution are largely formed through the organization's digital channels. In many cases these exchanges do not just inform the prospect's experience, they provide tactical information and play a key role in forming the overall impressions of the university. The website's aesthetics and usability are primary factors in forming these impressions. An understanding of the extent to which they impact outcomes is critical to the formulation of any digital communication strategy. This study seeks to further our understanding of the role that visual and usability design plays in forming website experiences and how those experiences influence factors related to university selection.

The current study conducted a two-condition, between-subjects experiment to examine the influence that aesthetics and impressions of usability have on users' impressions of factors that have been identified as important to university recruitment efforts: faculty quality, program quality, perceived value of education, and quality of student life/campus experience. A convenience sample of 201 adults who were likely to have children who are nearing, at, or past the age where they begin considering their child's college education were recruited to complete

an online survey. Participants were shown one of two home page designs and asked to answer a short set of questions. Analysis of their responses showed clear support of all study hypothesis: users who were exposed to a high-quality university website would rate each key recruitment factor more highly than those who were exposed to a low-quality university website.

This study contributes to the research in human computer interaction, marketing, cognitive psychology, and university recruitment. It deepens the understanding of the impact that aesthetic and usability design decisions have on aspects that are critical to an organization, even if those aspects are not directly represented. The results have clear implications for university marketers, recruiters, and leadership as well as anybody who is involved the planning and execution of website projects: the aesthetic and usability design of an organization website is important – it has the ability to influence perceptions of the entire organization and impact target audience decision making.

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CHAPTER 1. INTRODUCTION

In recent years, recruitment efforts among universities have become a priority as competition for students increases. State spending on public colleges and universities has remained below pre-recession levels (Michael Mitchell, 2017; Mitchell, Palacios, & Leachman, 2014) and recent numbers indicate declining enrollment numbers (National Student Clearinghouse Research Center, 2017). Combined with the underemployment numbers for college graduates and a decline in the perceived value of a bachelor's degrees (Vedder, Denhart, & Robe, 2013) an understanding of factors that influence college application and selection is critical for an institution's financial stability. Research has shown that there are several phases to student recruitment, and with each comes a common framework for decision making (Chapman, 1986a). Parents and prospective students both look at pragmatic factors such as faculty quality, program quality, and value of education when making initial decisions on which schools to apply to, but when making enrollment decisions, more emotional factors such as fit and experience take precedent (Bennett & Ali-Choudhury, 2009; Chapman, 1986a; Hodges & Barbuto Jr, 2002; Schofield, Cotton, Gresty, Kneale, & Winter, 2013). Although campus visits still play a vital role in attendance decisions (Hodges & Barbuto Jr, 2002; Ruffalo Noel Levitz, 2017), the path and resources that both parents and prospective students use has shifted significantly in the modern era.

Digital channels have become key elements of an individual's experience with an organization and in many cases, these mediated engagements *are* the experience. As has been demonstrated throughout the literature, aesthetics and usability play key roles in the formation of those experiences (Braddy, Meade, & Kroustalis, 2005; Casaló, Flavián, & Guinalú, 2008;

Chang, Kuo, Hsu, & Cheng, 2014; Huang, Kuo, Luu, Tucker, & Hsieh, 2015; Lindgaard, Fernandes, Dudek, & Brown, 2006; Mishra, Bhusan Dash, & Cyr, 2014; Morgan-Thomas & Veloutsou, 2013; Robins & Holmes, 2008). In higher educational institution undergraduate recruiting, digital resources make up four of the top five most influential sources of information for both parents and prospective students (Ruffalo Noel Levitz, 2017). The school's website is not only the primary source of information but also plays a key role forming the overall perceptions of the college (Noel-Levitz, 2013). An understanding of the impact of aesthetics and usability on outcomes is critical to the formulation of any digital communication strategy. This study seeks to further our understanding of the importance of visual and usability design to website experiences and how those experiences influence factors related to university selection in a key recruitment audience: parents.

Research in both the marketing and decision-making fields point to the importance that direct experiences – such as those offered by websites – have on determining future behavior (Bolchini, Garzotto, & Sorce, 2009; Brakus, Schmitt, & Zarantonello, 2009; Fazio, Chen, McDonel, & Sherman, 1982). This is particularly true when those experiences are the first or predominant ones. The literature suggests that the polarity of these experiences influence or have a "halo effect" over subsequent outcomes relating to the site or represented organization (Finucane, Alhakami, Slovic, & Johnson, 2000; Slovic, Finucane, Peters, & MacGregor, 2007; Zajonc, 1980). In a world where online channels play a significant role in an individual's experience with an organization, an understanding of the factors that influence the experience and the extent to which they affect behavior is paramount.

A key factor in determining the "quality" of a website experience is both the site's aesthetics and the user's perceptions of its usability. Research in the field of human computer

interaction has demonstrated that visual design plays a role much larger than a site being “pretty” or “not pretty” (Phillips & Chaparro, 2009; Tractinsky, Katz, & Ikar, 2000). Aesthetic and usability qualities have been shown to influence visitation patterns, impressions of trust and credibility, purchase intent, or even to overcome other site shortcomings (Chang et al., 2014; Lindgaard et al., 2006; Robins & Holmes, 2008). Importantly, aesthetics and impressions of usability are assessed automatically and immediately; the literature has clearly demonstrated that impressions of aesthetic quality are formed within milliseconds, before cognitive processing can take place (Huang et al., 2015; Lindgaard et al., 2006). Although there continues to be debate over the extent to which aesthetics influence a user’s experience, the fact that they do cannot be denied (Tractinsky et al., 2000; Tuch, Roth, Hornbæk, Opwis, & Bargas-Avila, 2012). On the other hand, there is common consensus regarding the role that usability plays in creating positive and satisfactory website experiences (Casaló et al., 2008; Lindgaard, 2007; Lindgaard & Dudek, 2002). A clear correlation between aesthetic appeal, usability, and outcomes has been well documented: the better looking and more functional the website, the better a product, offering, or service must be.

In the context of higher education, the institution's website has become the primary recruiting tool for both undergraduate and graduate programs (Merker, 2014). As undergraduate recruitment efforts begin to focus on the "iGeneration" (those born after 1995 and never knew a world without the World Wide Web) the university website has become the place where prospective students and their parents turn to find answers for not only common program and application questions, but where students select majors, apply, pay fees, and (importantly) discover if the university "feels right" to them (Noel-Levitz, 2013; Ruffalo Noel Levitz, 2016). In many cases, the university’s digital channels may be the primary means of direct experience a

prospective student and their parents have with the institution at the critical juncture of being asked to make an enrolment decision (Ruffalo Noel Levitz, 2017). Although factors such as faculty quality, program quality, and education value continue to be important in college selection (Bennett & Ali-Choudhury, 2009; Chapman, 1986a; Hodges & Barbuto Jr, 2002; Schofield et al., 2013), understanding how impressions of those factors are shaped by the aesthetics and usability of the online experience is central to the formulation of an appropriate, successful digital communication strategy.

This study used a single factor, one manipulation experiment to examine the impact that website aesthetics and impressions of usability have on perceptions of key decision factors in university undergraduate recruitment: perceptions of instructor quality, program quality, education value (anticipated return on investment), and quality of student life/campus experience. It focuses on exploring those influences on a key audience for college recruiters and a significant voice in the college selection process: the parents. The study recruited adult participants from Amazon's Mechanical Turk service who were likely to have children and who were nearing, at, or past the age where they begin considering their child's college education. Study participants took part in a two-condition, between-subjects experiment involving random assignment of one of two fictional university recruitment websites – one aesthetically pleasing and the other not. This was followed by a brief survey. It was hypothesized that those who were exposed to the website with better aesthetics and impressions of usability would rate the recruitment factors higher than those who were exposed to website with poor aesthetics and impressions of usability.

1.1 Goal and Research Question(s)

The goal of this study is to further the understanding of how website aesthetics and usability impact a user's impressions of an organization including, but not limited to, factors that are important to sales/recruitment efforts. It brings together common understandings from three areas of study – marketing, cognitive psychology, and human computer interaction – to explore the effect that aesthetic and usability design decisions can have on an end user. This information will help deepen the understanding of the role that user experience design plays in determining the overall perceptions of an organization.

The study focused on institutions of higher education, their undergraduate recruitment efforts, and those effort's impact on parents. The strategies that universities have had to employ to successfully recruit students have changed significantly in recent years and determining the importance of aesthetics and usability design to factors closely related with recruitment success will help those organizations focus on key areas of importance when making design decisions.

The study will focus on a single research question:

RQ1: Does the quality of an institution of higher education's website – as determined by aesthetic and impression of usability – influence a user's impressions of the institution's faculty quality, program quality, and the value of the education to the student?

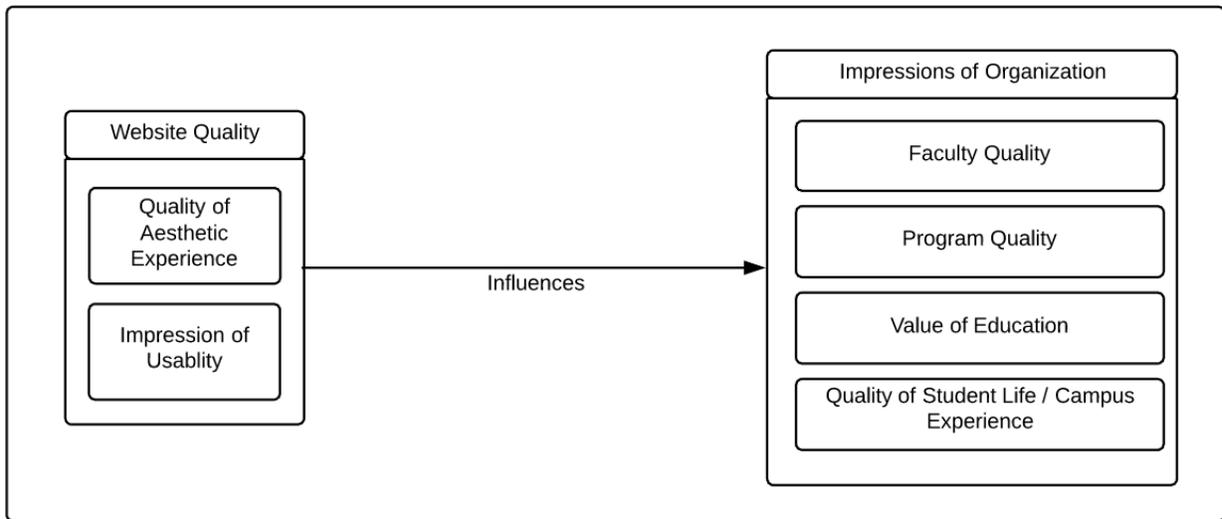


Figure 1. Website quality influence on impressions of key recruiting factors

This research question will be explored through the testing of the following set of hypotheses:

H1: Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the **quality of the institution’s faculty** than those who visit a site with good aesthetics and good impressions of usability

H2: Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the **quality of the university’s programs** than those who visit a site with good aesthetics and good impressions of usability

H3: Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the **educational value to the student** of the university’s programs than those who visit a site with good aesthetics and good impressions of usability

H4: Users who visit a university site with poor aesthetics and poor impressions of usability will have lower expectations for the **quality of student life and campus experience** at the university than those who visit a site with good aesthetics and good impressions of usability

1.2 Organization of Thesis

This thesis is organized into six chapters. Chapter 1 introduces the study and gives a brief background of the drivers, relevant research, goals and questions that it will answer. Chapter 2 provides a more in-depth review of the existing literature that relate to the study and Chapter 3

covers the instruments, materials, and data collection methods that were used in its execution.

Chapter 4 reviews the results and analysis of the gathered data and Chapter 5 provides a discuss of these results and their implications. Study conclusions and critical analysis – including limitations – are covered in Chapter 6.

CHAPTER 2. LITERATURE REVIEW

2.1 Higher Education Recruitment – Key Factors in School Selection

A review of the literature regarding student recruitment for higher education quickly reveals several key factors: value of education, program quality, and faculty quality, and student life/campus experience. Chapman (1986b) highlights the importance of cost, academic quality, career prospects, and quality of life at college in his 1986 paper, *Toward a theory of college selection: A model of college search and choice behavior*. Bennett and Ali-Choudhury (2009) found that key dimensions of a university's image – likely to represent a primary influence on enrollment decisions - were a student's prospects on graduation, the institution's learning environment, and the student's social environment. Employability, perceived value of education, institution reputation, and student relationships were all key elements brought forward by Schofield et al. (2013) in their investigation of marketing practices of British institutions of higher education. (Hodges & Barbuto Jr, 2002) also noted the importance of career preparation and value of education in school selection for both urban and rural students in American university recruitment. They also highlighted both quality of faculty and quality of specific programs that make up an institution's academic quality. Though each individual study highlighted other factors that are important to student recruitment, common themes that appear across the literature are: value of education, program quality, faculty quality, and student life/campus experience.

The role that parents play in college selection is an important one. It is well documented that they are key influencers in attendance decisions of their children (DeBard, 2004; McDonough, 1994; Okerson, 2016). In their exploration of the college choice process, Cabrera

and La Nasa (2000) highlighted parental encouragement and involvement as a central influencer in a child's college choice while Workman (2015) revealed the active role and influence that parents play in the selection of colleges and majors. Warwick and Mansfield (2004) noted that parents feel that school reputation and the quality of faculty were more important than their children did; while their children were more concerned about the social and campus-life aspects than their parents. Both felt the same about the importance of the overall program quality, cost, and reputation of the degree itself. These studies highlight the need for institutions of higher education to be considering the parents as active participants in the college selection process as well as the prospective student.

2.2 Perceptions of Organizations Quickly Formed Through Active Engagement

Channels

In marketing research there is an understanding that opinions of a brand and company are formed through advocacy from trusted sources, interactions with a company representatives, and direct experience with the products or services (Brakus et al., 2009).

When examining the relationship between attitude formation and the manner of that formation, Fazio et al. (1982) found that direct experience created a strong and easily accessible attitude that was a critical determinate of future behavior. Participants in their experiments were able to more quickly express attitudes formed through direct interaction with an attitude-object than when their experiences were indirect. Indirect experiences – formed via passive interactions with a brand through such devices as advertising, public relations, or other promotional activity – depend on repeated exposures to impact brand perception. Direct experiences, they contrast, are quickly formed through active engagement with a product, brand, or brand representative such as

a sales person or a website. This type of interaction quickly creates an emotional connection between an individual and a brand that informs brand perception and future behavior.

If active experiences are instrumental to developing attitudes and opinions regarding an organization, the quality of these interactions can have an impact on the polarity of those perceptions. Bolchini and colleagues (2009) sought to connect the dots between websites, active engagement, and brand perception. They correlated positive experience with a website with positive brand perception, noting the functional and emotional relationships formed through active engagement has a larger impact on a person than those formed through more indirect routes such as traditional advertising. Similarly, Rondeau (2005) found that positive, direct online experiences form positive perceptions of organization and brand, and negative experiences lead to negative ones.

2.3 Websites Are a Primary Interface for Organizations

In today's connected world, websites are the primary interface between an organization and the public. They are a vital component of any contemporary higher educational (HE) institution's communication strategy. According to a 2015 Pew Research poll on internet use among American adults, 96% of 18-29-year-olds and 95% of college graduates use the internet (Perrin & Duggan, 2015). Data from Pew's 2014 Omnibus PRC Internet Project found that 92% of respondents in the 18-29-year-old age range had used the internet in the past day, and 80% of respondents from the same age group felt that it would be very hard (58%) or somewhat hard (22%) to eliminate the internet from their lives (2014).

The high adoption rate among key demographics has translated the web into the primary interface between higher educational institutions and prospective students and a critical player in enrollment decisions. A 2017 survey of 5,580 college-bound high school students by enrollment

consultants EAB found that 93.2% of respondents cited the college website as their most frequently used resource when researching college options (Kiecker Royall & Anne, 2017). An earlier survey of 2,018 high school students conducted by Omni Update found that 97% of prospective students turned to college websites as their first source of information. 90% of respondents had visited a college website in the past 30 days, and 75% felt that the college website was influential in their enrollment decision (Merker, 2014).

This trend towards using the internet to research and make consumer decisions is not limited to just young adults researching higher education. A 2016 Pew Research Center poll found that 82% of American adults consult online reviews and ratings when buying something for the first time – up from 58% in 2010 (Jansen, 2010; Smith & Anderson, 2016). Slightly more than half (53%) of the respondents in the 18-29 year old group indicated that they always or almost always consult online reviews when purchasing something for the first time while 47% of those 30-48 year-old group reported doing so (Smith & Anderson, 2016). Horrigan (2008) noted that for purchasing decisions requiring a large commitment, information gained from online research played a role in final purchase decisions. Indeed, Smith and Anderson (2016) found that 46% of Americans feel that online reviews increase confidence in purchasing decisions. Bolchini et al. (2009) state that across industries, the web has become a primary channel in informing, building relationships, and influencing both attitudes and behaviors. It is of little surprise that they go on to say that the web has become a major component of organizational communication and branding strategies.

2.4 User Experience with Websites Influence Perceptions of Organizations

In the immediate context of the on-page experience there is significant evidence in the literature that demonstrates that the quality of the experience influences perceptions of various

organizational aspects. This quality of experience, driven largely by the site's aesthetics and usability have a strong impact on perceptions of the brand and organization, as well as agents of the organization, including their credibility, competence, reliability, and status.

Mishra and colleagues (Mishra et al., 2014) examined the correlation of positive derived experiences to a variety of measures and found positive relationships between quality of online experience and perceived value, brand trust, and brand loyalty. Robins and Holmes (2008) demonstrated a correlation between aesthetics and credibility, and Morgan-Thomas and Veloutsou (2013) illustrated the connection between positive online experience and satisfaction and brand relationship. Casaló et al. (2008) demonstrated how usability and user satisfaction lead to increased customer loyalty and word of mouth advocacy regarding e-banking services. Chang et al. (2014) also examined the influence of website quality and found correlations to perceived trust and purchase intention. The previous examples serve to illustrate the considerable evidence that support the importance of usability in the immediate outcomes of web interactions and the salient aspects of organizations and brand, however, less is known about if and how a website's aesthetics and usability reach beyond the webpage to influence perceptions of entire organizations or even unrelated organization aspects. This study seeks to increase that understanding.

2.5 Aesthetics and Usability Features Drive User Experience

Research in psychology suggests that the perception of the quality of a user's interaction with web pages is moderated by the impressions of aesthetic and usability features that are formed immediately upon arrival. There are many factors that affect these impressions ranging from physical features to conceptual ones. The following sections discuss influences on usability as found in previous research.

2.5.1 Pragmatic Aspects of Usability

Traditional evaluation methods of usability look at conceptual frameworks that include physical and functional features of websites as well as pragmatic measures such as time to task completion or numbers of errors encountered. Nielsen (2012) suggests that usability is made up of 5 quality components: learnability, efficiency, memorability, errors, and satisfaction. Abran, Khelifi, Suryn, and Seffah (2003) suggest a similar set of categories: effectiveness, efficiency, satisfaction, and learnability. These categories contain such measures as percentage of tasks completed, time to achieve one task, positive or negative characteristics recalled by users, etc.

Contemporary examinations also take into account the physical and design features of the page. Alsudani and Casey (2009) found that design “unity” – comprised of balance, harmony, contrast, and dominance – was a major factor in evaluations of website usability. Lindgaard et al. (2006) showed that the impact of visual appeal is driven by overall impressions of layout and color. Nathan and Yeow (2011) examined features such as system performance, interactivity, clarity of goals, navigability, and use of fonts, colors, multi-media and graphics when examining usability. As we can see, the form as well as the function of the page must be considered when examining usability of web pages.

2.5.2 Usability and Aesthetics

The role that aesthetics plays in system usability is source of continuous debate. On many web development projects, and software projects in general, aesthetics are often seen as little more than a last-minute, pre-release step to “making it pretty,” – not a central factor to the overall success of the project (Anderson, 2009). Detractors argue that there is a limited relationship between aesthetics and usability, citing eye-tracking studies focusing on which content user’s privilege (Nielsen, 2000) as evidence that content rather than design is most

important. Similarly, some who focus on site effectiveness argue that relationships between aesthetics and usability describe correlations rather than causation, suggesting that function is independent of form (Tuch et al., 2012). Alternatively, there is a large body of research that argues that design, aesthetics, and usability are inexorably linked. Tractinsky et al. (2000) describes positive relationships between aesthetics (beauty) and usability. Fogg et al. (2003) found that study respondents referenced “design-look” as the most often referenced reason for assigning credibility to websites. In fact, four seven usability factors identified by Nathan and Yeow (2011) directly involve or are influenced by design and aesthetics.

With these arguments in mind, usability must consider more than just the pragmatic measures of a page, but the impact of those features on the user as well. Robins and Holmes (2008) highlighted that the *amelioration effect* of visual design – the increase in perceived credibility of content due to higher aesthetic treatment – becomes operational within seconds of a visitor arriving on a page. Cardello (2013) highlighted the impact that usability and visual features have on both the immediate online experience and future behavior as well. The current study, therefore, seeks to determine if and how website usability and aesthetics influence perceptions of an organization beyond the page.

2.6 Effects of Usability and Aesthetics

If an individual has a positive interaction with an organization through one of its interfaces, such as a website, that experience can have what psychologists call a *halo effect* that transfers one experience to evaluations of other – even unrelated – aspects of the same organization. Halo (and “devil” or “horns”) effects occur when initial perceptions of a person, object, or experience subsequently influences or biases perceptions of its other characteristics, even those without a direct, causal link. For instance, in an interpersonal exchange, the

approachability of one party in the exchange can bias the other party's overall perceptions dramatically. In Nisbett and Wilson (1977) participants were shown a videotaped interview of a college instructor who spoke with a European accent. Half of the participants were exposed to a version of the interview where the instructor was warm and friendly, and the other half were exposed to the exact same interview, but the instructor was distant and cold. Those who viewed the warm and friendly interview rated his appearance, accent, and mannerisms as appealing, and those who saw the cold and distant interview rated these same attributes as irritating. Interestingly, the study's participants were ignorant of the direction of influence, and even felt it pushed them in the opposite direction. In a study that also exposed the impact of seemingly unrelated factors, Bakhshi, Kanuparth, and Gilbert (2014), showed that the polar direction of online restaurant reviews are influenced by external elements ranging from meal price, to level of service, to reviewer and neighborhood demographics, to the weather outside. If the quality of one aspect of an exchange can so dramatically influence evaluations of other – even tenuously related – aspects of the same exchange, it stands to reason that in the online world, the quality of the experience that a user has with a website can influence the attitude with which that user approaches future interactions with the organization that the website represents.

2.7 Halo Effects an Artifact of Previous Experience

Psychologists describe the halo effect as a type of attitudinal heuristic – a mechanism where past related experiences or biases are used to process current information quickly and efficiently (Pratkanis, 1989). Holbrook (1983) drew a direct line between prior experience and subsequent halo (or horns) effects – in both positive and negative directions. Finucane et al. (2000) described a series of experiments that explored the relationship between perceived risk and perceived benefit and the role that previous experience played in judgment regarding

specific hazards. They found that participants seemed to be using an “affect heuristic” that drew both risk and benefit evaluations from a common, previously experienced source to improve judgmental efficiency. Slovic et al. (2007) formally describes the *affect heuristic* as a framework within which a “goodness” or “badness” previously experienced demarcates the positive or negative quality of a stimulus. This associated polarity quickly and automatically guides judgments and decisions. In contemporary psychology, the “halo effect” is seen as a somewhat outdated concept, one that is better explained through an understanding of the impact of previous experience on cognitive processing.

Neural information processing is influenced by separate but interrelated systems that include both affective and cognitive efforts. Zajonc (1980) demonstrated that reactions driven by heuristic devices and activated schema, both formed by previous experience, occur faster than those that depend on perceptual and cognitive encoding. These decisions are made with a great confidence that has the ability to influence – and even distort – later, more deliberative evaluations. Klauer and Stern (1992) found that a positive first impression of, or experience with, one attribute can activate a schema of “good,” which would tend to positively influence or bias perceptions of other attributes of that entity. In other words, a positive experience can produce a “halo” that alters the evaluations of experiences with that entity for the better. Murphy and Zajonc (1993) support these findings and further concluded that in situations where cognitive processing was not possible due to sub-optimal conditions (brevity of exposure, for example), experience primes had the ability to produce shifts in judgements regarding even unrelated stimuli. Finucane et al. (2000) demonstrated that a response to one aspect of an object based on previous experience has a causal effect on subsequent responses to other aspects of the same entity.

Previous experiences have the potential to supersede contradictory current experiences as well, for example: a good experience with one salient element of a website can lead to a positive evaluation even if there are issues with other aspects of the site. Lindgaard and Dudek (2002) argue that a beautifully designed website with a high level of aesthetic appeal can cause people to overlook less appealing or even flawed aspects of the site. Conversely, a poor first impression may heighten the frustration with a less-than-ideal subsequent experience or cause users to overlook other positive aspects of the same site. Lindgaard et al. (2006) support this notion and suggest that the first impression of a website can dramatically affect the evaluation of the overall website experience. Such impressions may have an influence that extends beyond the immediate experience to influence future evaluations of credibility, quality, or value.

2.8 Research Question(s) / Hypotheses

This study focuses on institutions of higher education and seeks to further the understanding of how website quality impacts (has a halo effect upon) a user's perceptions of key recruitment factors. Initial evaluations of websites are made immediately upon a user's arrival. Aesthetics and impressions of usability have been shown to play a significant role in the formation of those initial opinions. It is well accepted in marketing literature that perceptions of and attitudes towards organizations are most quickly formed through active engagement channels such as websites. These impressions and attitudes are formed through previous interactions and experiences. At the same time, contemporary research in cognitive psychology has explored the role that previous experiences play in attitude formation and decision making; the impact of previous experiences are well documented and have been shown that schema established in those experiences introduce biases that are far reaching. By bridging these two sets of understanding, this study seeks to deepen the understanding of the breadth of impact that

aesthetic and usability design decisions regarding an organization's website can have on aspects of an organization that are critical to a sales cycle, even if those aspects are not directly represented on the website in question. The current study set out to address the following research questions and prove or disprove the related hypotheses:

RQ1: Does the quality of an institution of higher education's website – as determined by aesthetic and impression of usability – influence a user's impressions of the institution's faculty quality, program quality, and the value of the education to the student?

It was expected that a website with good aesthetics and impressions of usability would produce a halo effect and more positively skew responses to questions regarding the organization being represented by the website than one with poor aesthetics and impressions of usability. Study participants exposed to a well-executed website would rate their impressions of other areas of the organization more positively than participants who were exposed to a negative experience.

In the world of higher education recruiting, this will impact impressions of several factors key to recruiting prospective students (Chapman, 1986b; Eagan et al., 2014; Hodges & Barbuto Jr, 2002; Warwick & Mansfield, 2004):

- 1) Quality of faculty
- 2) Quality of specific academic program or major, and
- 3) Value of education to the student from a cost/benefit perspective
- 4) Quality of student life and campus experience

Thus, it is hypothesized that:

H1: Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the **quality of the institution's faculty** than those who visit a site with good aesthetics and good impressions of usability.

H2: Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the **quality of the university's programs** than those who visit a site with good aesthetics and good impressions of usability.

H3: Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the **educational value to the student** of the university's programs than those who visit a site with good aesthetics and good impressions of usability.

H4: Users who visit a university site with poor aesthetics and poor impressions of usability will have lower expectations for the **quality of student life and campus experience** at the university than those who visit a site with good aesthetics and good impressions of usability.

CHAPTER 3. METHODS

The current project conducted a two-condition, between-subjects experiment to examine the influence that aesthetics and impressions of usability have on users' impressions of an organization. Study participants were randomly assigned to one of two stimulus groups and exposed to a corresponding fictional university's recruitment website: one with high quality aesthetics and usability, and one with low quality aesthetics and usability. Participants were then asked to complete a survey that measured expectations regarding the university's instructor quality, program quality, perceived value of education, and quality of student life/campus experience. These factors have all been identified as important to university recruitment efforts (Chapman, 1986b; Eagan et al., 2014; Hodges & Barbutto Jr, 2002; Warwick & Mansfield, 2004). It was hypothesized that those who were exposed to the high-quality website would rate the university more highly on these measures than those who saw the low-quality website.

3.1 Theoretical Framework of the Method

This study took a quantitative, experimental approach to examine the impact of aesthetics as usability on impressions of an organization. Quantitative methods were appropriate in this research because a systematic examination using a large sample helps identify patterns in responses to the websites. A controlled experiment allowed the researcher to isolate only those factors of interest rather than having to account for other influences on impressions of a university.

A two-factor, between-subjects design was used for this study to facilitate the isolation of the independent variables and reduce the contamination of extraneous factors (Charness, Gneezy, & Kuhn, 2012; Shuttleworth, 2016). This approach has been used successfully in prior research

examining similar questions. For example, Bolchini et al. (2009) conducted between-subjects experiments in their investigation of usability's impact on brand perception. Similarly, Brady and Phillips (2003) used a four-factor, between-subjects design when looking at the effect of color and balance on user satisfaction with websites. When specifically researching halo effects, Nisbett and Wilson (1977) also used a two-factor, between-subjects design. As is evident in the literature, a two-factor, between-subjects design is both a common and appropriate approach to researching these types of questions.

3.2 Instruments and Variables

The overall objective of this study was to understand the impact that website quality has on perceptions of organizations beyond the immediate context of a website. The independent variable – website quality – is a construct of two attributes: aesthetic appeal and impressions of usability.

Perceptions of the organization – in this case universities – were measured by looking at factors that research has shown are key to their recruitment efforts: faculty quality, program quality, education value, and quality of student/campus experience (Chapman, 1986b; Eagan et al., 2014; Hodges & Barbuto Jr, 2002). Extraneous variables that are relevant to this study included a manipulation check, basic demographic information, general internet usage and level of sophistication, age and education level of the subject's children, and parent's college attendance expectations for their children. All measures in this study were evaluated with a confidence level of .95.

3.2.1 Scales

Table 1. Variables

Independent Variables	Dependent Variables
Website Quality (I)	Faculty Quality (D): source credibility (McCroskey & Teven, 1999; Teven & McCroskey, 1997)
Website aesthetic quality: Visual Aesthetics of Website Inventory (VisAWI); (Moshagen & Thielsch, 2010)	Program Quality (D): Student Opinion Survey (American College Testing, 1998)
Impressions of Usability: Single Ease Question (SEQ); (Sauro & Dumas, 2009; Wetzlinger, Auinger, & Dörflinger, 2014)	Education Value (D): Scale for Measuring the Perceived Value of Services (Petrick, 2002)
	Quality of Student Life/Campus Experience (D): Student Opinion Survey (American College Testing, 1998)

I – Independent Variable

D – Dependent Variable

3.2.1.1. *Website Quality*

Website quality is the independent variable and main manipulation that was used in this study and is a construct of two factors: aesthetics and perceived usability. To create a valid set of stimulus materials, the author evaluated existing university websites using the Visual Aesthetics of Website Inventory (VisAWI) that was established in Moshagen and Thielsch (2010). This tool measures four factors: simplicity, diversity, colorfulness, and craftsmanship. The scale is made up of 18 items and asks participants to indicate their level of agreement with a statement on a 7-point scale ranging from 1 (disagree) to 7 (agree). Items include statements such as, “Everything goes together on this site,” “The layout is pleasantly varied,” and “The layout appears professionally designed.”

A manipulation check to determine the research subject’s assessment of website quality was performed using a shortened, four-item version of the VisAWI questionnaire as used in Moshagen and Thielsch (2013) to assess subject’s opinions of website aesthetics and the Single

Ease Question (SEQ) (Assila & Ezzedine, 2016; Sauro & Dumas, 2009; Wetzlinger et al., 2014) to assess impressions of usability. Though the VisAWI scale used is much shorter than the full version, it is still able to produce reliable responses from participants (Moshagen & Thielsch, 2013). The SEQ has also been shown to have a very high reliability despite it being just a single question (Assila & Ezzedine, 2016; Sauro & Dumas, 2009).

3.2.1.2. Faculty Quality

Quality of faculty was measured by assessing expectations of faculty credibility, which also includes perceptions of quality. This study uses the competence factors of McCroskey's Source Credibility Scale (McCroskey & Teven, 1999; Teven & McCroskey, 1997). This full scale has 18 items and asks participants to indicate on a 7-point scale which of two words most closely represents their feelings toward a person of interest. The competence factors make up 6 of those 18 items. Items used in this study includes semantic differentials such as, "Inexpert vs. Expert," "Incompetent vs. Competent," and "Intelligent vs. Unintelligent."

In addition, two single-item measures directly assessing perceptions of quality were used to survey impressions of faculty's teaching ability and research field thought leadership (7-point Likert scale from *strongly disagree* to *strongly agree*).

3.2.1.3. Program Quality

Impressions of program quality was measured by asking participants to indicate likely the felt that the fictional university invented for this study, Western Central University (WCU), would be able to contribute to student growth. To measure this the College Outcomes section of American College Testing's (1998) Student Opinion Survey (SOS) was used. This section includes factors such as "acquiring the knowledge and skills needed for a career," "acquiring the knowledge and skills needed for further academic study," and "acquiring the knowledge and

skills needed for intellectual growth throughout your student's life.” It consists of 19 items and asks participants to indicate how the institution contributed to student growth using a 5-point Likert scale. This study used a subset of four of those questions which were reworded to accommodate the context of the subject – expectations of the program rather than a post-program evaluation. The questions and scale items were updated to indicate the subject’s best guess at the likelihood of WCU to be able to contribute to a student’s growth in the respective areas.

3.2.1.4. Perceived Value of Education

Perceived value of education was measured by assessing the study participants expectations regarding the value of the education students receive at WCU and a graduate’s prospects. This study used a scale derived from Petrick (2002)’s Scale for Measuring the Perceived Value of Services and implemented questions regarding two of the five factors, Monetary Price and Reputation. The factors used consist of 6 items and asked participants to rate their feelings toward each item on a scale from 1 (strongly disagree) to 5 (strongly agree). Items included comparisons such as, “Is reputable,” “Is well respected,” and “Is worth the money.”

An additional single-item measure based on Reichheld’s Net Promotor Score (Reichheld, 2003) was used to assess the perceived value of education: “How likely do you think you would be to recommend Western Central University to one of your children or someone you know?” (7-point Likert scale from *extremely likely* to *extremely unlikely*).

3.2.1.5. Quality of Student Life/Campus Experience

Quality of Student Life/Campus Experience was measured by assessing expectations of current student’s satisfaction with student life and campus culture and environment. This study uses a scale derived from American College Testing’s (1998) Student Opinion Survey (SOS). Questions regarding academic experience, campus culture, and college impressions were asked.

The factors used consist of 9 items and ask participants to rate their estimations of a current attendee's satisfaction with each item on a scale from 1 (Very Dissatisfied) to 7 (Very Satisfied). Items include comparisons such as, "Satisfaction with professor's respect for students," "Satisfaction with the social support network at Western Central University," and "Students satisfaction with their sense of belonging at the Western Central University campus."

3.2.1.6. *Other Variables*

General demographic information regarding the participants and their children was gathered in the study. This included questions regarding subject gender and age, children's age-range and education status. To better understand the internet usage habits of the participants, they were also asked to provide information regarding general internet usage, comfort with technology, and their feelings about the importance of websites to a university's recruitment efforts. These factors were examined for moderating or mediating effects on the relationship between website quality and the subject's perceptions of the university.

3.3 Stimulus Materials

This study used two homepage designs of a fictional school, "Western Central University," as stimulus materials. The first was an aesthetically pleasing, usable version (high quality), and the second a less aesthetically pleasing, less usable website (low quality). The design of each version was based on the websites currently being used by two real-world universities and were presented to study participants as static screenshots.

Current aesthetic and usability practices were considered for the selection of the two "inspiration" websites as well as the design of the final stimulus materials. The high-quality site followed best practices carefully, and the low-quality site violated them. For example, following the guidelines laid out in the Visual Aesthetics of Website Inventory (Moshagen & Thielsch,

2013) the high-quality website had a layout that was well structured, composed of appealing colors, and appeared professionally designed. The low-quality site was designed to appear patchy, uninteresting, and the layout neither up-to-date nor executed with care.

To further refine the stimulus designs, a qualitative examination of current university websites was performed. First, various “high” and “low” quality listing sites were used to find a range of university websites. The researcher performed an expert review of several sites before arriving at two final selections – one for “high-quality”, one for “low-quality”. For each finalist, an evaluation was carried out using full-version of the Visual Aesthetics of Website Inventory survey established in Moshagen and Thielsch (2010). This final analysis was intended to reduce any bias introduced by the author’s own preferences for design or style.

3.3.1 Basis for Low Quality Site Based on Poor Aesthetics and Usability

The website that acted as the basis for the “low-quality” state of the dependent variable/stimulus, based on the site’s poor-aesthetic and usability, was Benedict College (<http://www.benedict.edu>) accessed in June and July of 2017 (see Figure 2). This site was chosen because it contains many aesthetic and usability challenges including: poor first impressions; lack of consistency in font use, unclear button and link representations; awkward navigation structures; poor search functionality; lack of clear visual hierarchy; photographs not labeled or given context; and a lack-of-focus regarding different user audiences and their respective intentions (a kitchen-sink approach to page design). Pages lower in the hierarchy, including school and department, how to apply, tuition, and contact pages exhibit a pronounced lower quality.



Figure 2. Example of a "Low Quality" web page

3.3.2 Basis for High Quality Site Based on Good Aesthetics and Usability

The website that acted as the basis for the “high-quality” state of the dependent variable/stimulus, based on the site’s high aesthetic and usability quality, was University of Nebraska-Lincoln (<http://unl.edu>), accessed June and July 2017 (see Figure 2). This site was chosen because it exemplifies high-quality aesthetics and usability factors including: excellent first impressions; consistency in font use, button and link representations, navigation structures; excellent search functionality; clear visual hierarchy; high quality, sophisticated use of photographs to support purpose of the page; and a refined understanding of and focus on intended audiences and their intentions (single primary audience – targeted approach to home page design). Aesthetic, usability, and content consideration remained – for the most part –

consistent across the breadth of the UNL site which contributed to its high-quality appeal. Given the number of strengths with the University of Nebraska-Lincoln website, it acts as a good basis for the “high-quality” website stimulus materials.

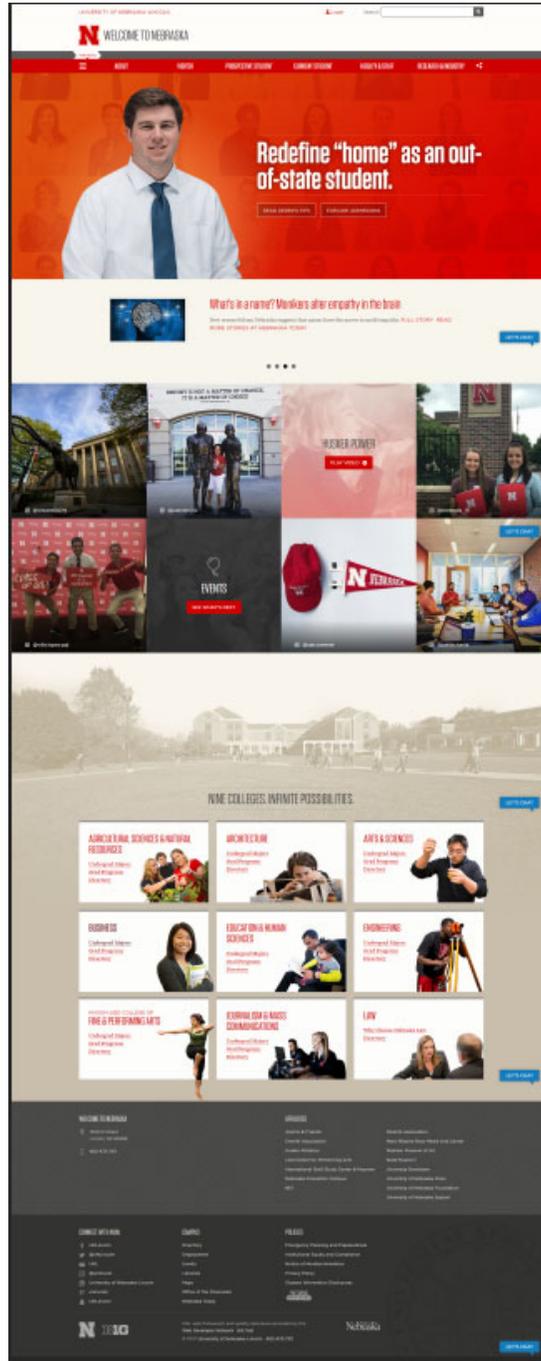


Figure 3. Example of a "High Quality" web page

3.3.3 A Fictional School

To reduce biases that would be introduced by previous associations with a familiar institution, a fictional school – Western Central University – was invented for this study. The school, located in the also fictional town of Miramichi, New Hampshire, was generically named to help reduce biases introduced by state, private, or religious affiliations. To make the school seem “real” and credible, a brand identity, athletic team name and mascot, and several branding assets were developed or acquired. A small brand-identity package was designed that included fonts, a color palette, and several logos/marks including a school logo, wordmarks, and seal. Photo assets for the stimulus materials were sourced from Dalhousie University located in Halifax, Nova Scotia. Sourcing from a single, real-world institution allowed for the creation of a consistent and identifiable physical “ecosystem” that includes locations and settings (Figure 4) and a real, diverse campus population and inhabiting those settings. Dalhousie was chosen because it provided a distinct architectural signature while remaining (likely) unknown to the intended participants of this study.



Figure 4. Dalhousie University Campus

3.3.4 The Home Page Design

Both versions of the stimulus home page (Figures 5 and 6) were based on their respective “source” site and consisted of components that are common on university home pages. These are: a base template that typically includes a branding touch-stone, search, and both general site and audience specific navigation; a hero image or slideshow; institution news and events; intranet logins; recruiting calls to action; a representation of campus-life; a list of links to colleges and/or majors; social media links; physical address and contact information; and legal disclaimers and privacy policies. Both versions use the same information architecture, text-based content, and visual assets.



Figure 5. Low quality stimulus

To ensure the “low-quality” version was sufficiently different than the “high-quality” version, the design was a composite of the site’s home page and several inner pages. The high-quality design was modified only slightly to bring it into alignment with the fictional university’s brand by swapping out logos and updating color palettes from the originals. The same photographic assets were used in both designs and, where appropriate, similar themes or content. Exceptions to this were where photo selections – either good or bad – were used in such a way that significantly contributed to or detracted from the aesthetic or usability quality of the site. Content such as news story headlines and button labels were kept consistent, except where these items influenced the overall quality. Though both sites took a significantly different approach to information architecture and navigation, where possible these were kept consistent across both designs: prospective student options were matched, college names were matched, and address and contact information was matched.

Keeping elements that were not common to both designs was an important consideration as well. There were factors in each that either contributed or detracted from the page’s overall quality and including these elements in both designs would have altered the resulting design’s overall quality. The “high-quality” version kept the audience-appropriate slideshow located at the top of the page, section headings, and the footer section of the source design as these contributed to that site’s quality. The “low-quality” version also included design elements that detracted from the page’s aesthetic and usability quality. News stories, links, and content that did not directly support a recruitment purpose were left in place; a link to the bookstore was also retained as this did not match the context in which it was presented. The social media block was left unchanged though it was formatted to match the styling of the site’s internal pages. The

listed elements that were retained exclusively to their respective versions contributed significantly to the overall aesthetic and usability of the original and resulting designs.

In addition, two alterations were made to the final design of the “high-quality” page to reduce the probability that the overall design would be recognized by participants. The first was an alteration of the site’s “campus-life” content block and the second to the college/major content block. Both alterations were aesthetic only, stayed in line with the intention of their respective content areas, and did not impact either the quality or usability of the overall page.



Figure 6. High quality stimulus

3.4 Data Collection

Data collection for this study took place in February of 2019 over a 5-day period via an online survey administered individually to a convenience sample of adults recruited from Amazon's Mechanical Turk service. Through the process, participants received an orientation regarding the project and instructions for their participation in the study, accepted a consent disclaimer, and were randomly assigned to one of two groups – high-quality stimulus or low-quality stimulus. They were then exposed to the home page of their respective stimulus group's website and asked to complete a brief questionnaire. Upon completion, participants were thanked and compensated for their participation. Data was exported from the online tool then cleaned and analyzed using SPSS.

3.4.1 Sample and Recruitment

This study gathered a convenience sample of 201 adults who were likely to have children who are nearing, at, or past the age where they begin considering their child's college education. Research suggests that the college attendance process begins as early as the seventh grade (Cabrera & La Nasa, 2000). The sample size was chosen to provide a large enough sample that could account for what was anticipated to be a small-effect reaction to the stimulus.

Participants were recruited using Amazon's Mechanical Turk (AMT) service. This service crowd-sources the completion of Human Intelligence Tasks (HITs) – in this case survey responses – by posting opportunities to a “workers board.” Workers choose which tasks they are interested in completing based on the name, type, estimated time to complete, compensation rate, etc. Researchers can target their posting to specific audiences based on filter settings such as location, age range, and parenthood status. Studies have shown AMT to be a viable source for generalizable samples, indicating high levels of reliability comparable to those acquired through

traditional means (Behrend, Sharek, Meade, & Wiebe, 2011; Buhrmester, Kwang, & Gosling, 2011; Michel, O'Neill, Hartman, & Lorys, 2018). The number of workers on Mechanical Turk is estimated to be over 100,000 with around 2,000 being active at any given time. The United States is the country of origin for 75% of those workers (Difallah, Filatova, & Ipeirotis, 2018a). A sample representing American workers during the last three months of 2018 shows that 51.33% are female and 48.67 are male; 25.53% are between the ages of 38 and 57 and 37.98% are between the ages of 28 and 37 – the core of the target range for this study (Difallah, Filatova, & Ipeirotis, 2018b). AMT workers who participated in this study reflected those numbers (51.7% female, 48.3% male; 41.8% under 40, 37.7% between 41 and 55).

Participants were paid \$2.00 for responding to the survey and were limited to participating only once. The survey took participants an average of 6 minutes 27 seconds to complete, and provided an approximate hourly compensation rate of \$18.46, well above both Colorado and Federal 2019 minimum wage limits of \$11.10 per hour and \$10.35 per hour respectively (Labor Law Center, 2018; The Balance Careers, 2018). This rate is in alignment with recommended practice for researchers conducting similarly provisioned online studies (Silberman et al., 2018).

The researcher posted the opportunity on the AMT website in mid-February 2019 and gathered 201 responses using 8 separate postings over five days. Each posting targeted potential participants using one of three filters: American residents born between 1962 and 1971, American residents born between 1972 and 1981, and American residents who are parents. All had to have an MTurk rating of higher than 90%. The posting contained a brief description of the study, a link to the study survey hosted on Qualtrics, and an input field for workers to enter a proof of completion code in order to be compensated.

3.4.2 Data Collection Procedures

Upon arrival at the online survey, participants received an orientation regarding the project and instructions for their participation in the study. After accepting a consent disclaimer and beginning the experiment, participants were randomly assigned to one of two groups – high-quality stimulus or low-quality stimulus. They were then exposed to the home page of their respective group’s website home page and asked to complete a questionnaire. After completing the questionnaire participants were presented with a unique completion code that they then entered back in MTurk to confirm their successful completion of the HIT.

Once all data collection was complete, it was exported from Qualtrics to the researcher’s computer for cleaning and analysis with SPSS.

3.4.3 Pilot Study

A small pilot study (N = 6) for this experiment was conducted using the Qualtrics survey instrument to test the questions and stimulus materials. The researcher took advantage of direct associations with friends, colleagues, and fellow students to recruit a pilot group whose demographics were similar to those used for the main study. The goal of the pilot was to ensure there are no technical problems with the survey process, to assess the manipulation in the two conditions, and to ensure that the survey was asking questions that were in alignment with the goals of the study. A series of closed- and open-ended questions were asked of pilot participants to gather their feedback.

The pilot group consisted of 3 male and 3 female participants who were all over the age of 41. All reported that they spend more than an hour per day on the internet, with 5 of the 6 spending between 1 and 6 hours per day. All considered their abilities with technology to be above to far above average. All reported that their children were extremely likely to or already

attend a post-secondary education institution. 4 of the 6 participants indicated that they felt that university recruitment websites were very to extremely important to the college selection process where two of the six indicated that they were only slightly to moderately important.

Pilot group survey results confirmed the manipulation check by showing significant differences between the high-quality and low-quality stimulus that aligned with the intended direction of the manipulation (see Table 2). Evaluations of both aesthetic quality and impressions of usability showed significant differences between the high-quality and low-quality stimulus with *p*-scores of 0.005 and 0.007 respectively.

Table 2. Pilot Group Manipulation Check – Group Statistics

	Condition	n	Mean	Std. Deviation
Website Quality - Aesthetics	Low Quality	3	8.00	2.646
	High Quality	3	20.67	2.887
Website Quality - Impressions of Usability	Low Quality	3	2.67	1.155
	High Quality	3	6.00	0.000

The feedback from the pilot participants indicated that the wording of the questions seemed to be asking about a participant’s knowledge of the university rather than searching for bias. This was an interesting observation that explained the direction that several of the responses seemed to be taking. The text of the relevant questions was updated and re-tested to overcome the observed limitation.

3.5 Validity and Reliability of the Study

3.5.1 Reliability

This study ensured high levels of reliability by using both established scales and consistent delivery practices. The scales used in the study are based on ones well established in the literature that have been shown to have high levels of reliability. Additionally, this study was delivered through Qualtrics, an online survey tool, to ensure as consistent a participant

experience as possible. All instructions, stimulus materials, and survey questions were asked in the same order in the same way across participants. See Table 3 for details.

Table 3. Scale Levels of Reliability

Scale	Cronbach's Alpha
Website Quality – Aesthetics	0.937
Website Quality – Impressions of Usability	n/a
Source Credibility – Competence	0.946
Student Opinion Survey – College Outcomes	0.927
Perceived Value of Services	0.860
Student Opinion Survey – Academic Experience, Campus Culture, College Impressions	0.954

3.5.2 Internal Validity

Internal validity was addressed by using consistent information architecture, images, and content across the two stimulus materials, and by performing a manipulation check on study participants. Western Central University, the fictional university used in this study, was designed to avoid potential biases introduced by a recognizable brand, and generically named to circumvent evoking any religious, political, or geographic biases. The brand standards were designed to mimic those of an actual school to add to the realism and credibility of the stimulus materials.

A manipulation check of the independent variable was successful. This was tested by asking participants to answer the questions that evaluated website quality based on aesthetics and impressions of usability. The test validated that the low-quality design was perceived as low quality and the high-quality design was perceived as high quality. Results for website aesthetics indicates a significant difference in the scores for the low quality home page design ($n=6$, $M=14.87$, $SD=6.87$) and the high quality home page design ($n=6$, $M=24.07$, $SD=3.59$)

conditions; $t(197)=-12.1000, p<0.005$. Results for impressions of usability also suggest a significant difference in the scores for the low quality home page design ($n=6, M=4.29, SD=1.68$) and the high quality home page design ($n=6, M=6.11, SD=0.83$) conditions; $t(199)=-9.737, p<0.005$ (see Tables 4 and 5).

Table 4. Study Group Manipulation Check – Group Statistics

	Condition	n	Mean	Std. Deviation
Website Quality - Aesthetics	Low Quality	3	14.87	6.87
	High Quality	3	24.07	3.59
Website Quality - Impressions of Usability	Low Quality	3	4.29	1.68
	High Quality	3	6.11	0.83

Table 5. Study Group Manipulation Check – Independent Samples (IS) T Test

	t	df	Sig (2-tailed)	Mean Difference	Std. Error Difference	Cohen's <i>d</i>
Website Quality - Aesthetics	-12.10	197	0.000	-9.38	0.775	1.68
Website Quality - Impressions of Usability	-9.74	199	0.000	-1.82	0.187	1.37

3.5.3 External Validity

External validity was maintained in this study through using random assignment of stimulus materials, and the use of an adequately sized study group. Due to the size and demographic nature of the sample group, the results of this study are not generalizable to the overall population.

Assignment biases inherent in between-subject designs have been mitigated by the random assignment of stimuli to participants. Study participants viewed either a high-quality home page design with good aesthetics and usability or a low-quality home page design with poor aesthetics and usability. The version of the site they were exposed to was randomly assigned by the survey tool at the time the study was conducted.

This study used a convenience sample of 201 adults who were likely to have children who are nearing, at, or past the age where they begin considering their child's college education. Targeting this number provided a large enough sample to account for expected small effects in reaction to the stimulus.

3.5.4 Ecological Validity

This study used real-world websites as the bases for the design of the stimulus materials to ensure good ecological validity. The high-quality design deviated very little from the site it was based on – that of the University of Nebraska-Lincoln. The low-quality design was a combination of elements from two pages Benedict College's website – the institution's home page and their Business program's home page. Basing the design of the stimulus materials on websites that are currently in use by organizations related to the scope of this study helps establish and maintain the overall credibility and validity.

CHAPTER 4. RESULTS

This study examines the role that a university's homepage aesthetics and impressions of usability had on factors related to university selection and is an exploration that seeks to more deeply understand the influence website design has on perceptions of an organization. The findings reported here are based on an online survey taken by a convenience sample of 201 adults during February of 2019. An almost even number of females and males participated (51.7% female and 48.3% male) of whom over three-quarters (77.1%) reported having children with a little less than half (44.8%) being over the age of 14. Seven out of ten (69.2%) of the participants were the ages of 36 and 55, while one in five (20.4%) were under the age of 36. 10.4% reported being over the age of 55. Across all groups, nine out of ten (90.1%) reported daily internet use of more than an hour per day and almost all (97.5%) considered themselves to be comfortable with technology ("tech savvy"). 95.5% of respondents indicated that they felt that websites were at least moderately important to university recruitment with the majority (81.1%) feeling that they were very to extremely important.

Responses showed normal distribution within accepted norms for both skewness (-1.0 to 1.0) and kurtosis (-3.0 to 3.0) except Website Importance to University Recruitment that had a skewness of 1.075 (see Table 6).

The author used independent samples t-tests and two-way ANOVAs to analyze and understand the responses. Two-way ANCOVAs were used to test and correct for confounding variables including gender, age group, comfort with technology, children, children over 14, and likelihood of child to pursue post-secondary education. Exploratory analysis further examined

the contribution of individual factors and sections of Perceived Value of Services scale and Student Opinion Survey respectively.

Table 6. Distributions by Measure

	N	Mean	Standard Deviation	Skewness	Kurtosis
Time Spent on Internet	201	1.92	0.659	0.934	2.37
Comfort with Technology	201	2.11	0.792	0.107	-0.768
Website Importance to University Recruitment	201	1.79	0.887	1.08	0.927

4.1 Manipulation Check

A manipulation check of the independent variable was done by asking participants to answer the questions that evaluated website quality based on aesthetics and impressions of usability. The test validated that the low-quality design was perceived as low quality and the high-quality design was perceived as high quality. Responses for Website Quality measures across stimulus groups indicate distribution within accepted norms for both skewness (aesthetics: -0.712, impressions of usability: -0.932) and kurtosis (aesthetics: -0.758, impressions of usability: -0.204) (see Table 7). Analysis of the data indicates a significant difference in the scores for the low quality home page design (M=14.87, SD=6.87) and the high quality home page design (M=24.07, SD=3.59) conditions; $t(197)=-12.1000, p<0.005$. Results for impressions of usability also suggest a significant difference in the scores for the low quality home page design (M=4.29, SD=1.68) and the high quality home page design (M=6.11, SD=0.83) conditions; $t(199)=-9.737, p<0.005$. A Cohen's *d* analysis shows a very large effects for both measures (aesthetics: $d=1.713$, impressions of usability: $d=1.376$) and high levels of reliability (aesthetics: Cronbach's Alpha of 0.937, impressions of usability: n/a) (see Tables 8 and 9).

Table 7. Study Group Manipulation Check Distributions

	N	Mean	Standard Deviation	Skewness	Kurtosis
Website Quality - Aesthetics	199	19.40	7.20	-0.712	-0.758
Website Quality – Impressions of Usability	201	5.19	1.61	-0.932	-0.204

Table 8. Study Group Manipulation Check – Group Statistics

	Condition	n	Mean	Std. Deviation
Website Quality - Aesthetics	Low Quality	99	14.87	6.87
	High Quality	100	24.07	3.59
Website Quality - Impressions of Usability	Low Quality	101	4.29	1.68
	High Quality	100	6.11	0.83

Table 9. Study Group Manipulation Check – IS T Test

	t	df	Sig (2-tailed)	Mean Difference	Std. Error Difference	Cohen's <i>d</i>
Website Quality - Aesthetics	-12.10	197	0.000	-9.38	0.775	1.71
Website Quality - Impressions of Usability	-9.74	199	0.000	-1.82	0.187	1.38

4.2 Faculty Quality

Hypothesis 1 predicted that “users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the quality of the institution’s faculty than those who visit a site with good aesthetics and good impressions of usability.” To test this, t-tests, ANOVAs, and ANCOVAs were used to compare treatment groups.

4.2.1 Source Credibility – Competence Results

Responses for the Source Credibility – Competence measure across stimulus groups indicate distribution within accepted norms for both skewness (-0.752) and kurtosis (-0.232) (see Table 10).

Table 10. Source Credibility – Competence Distributions

	N	Mean	Standard Deviation	Skewness	Kurtosis
Source Credibility - Competence	199	38.93	7.79	-0.752	-0.232

Independent t-tests showed a that there was a significant difference in competence assessments between the low quality home page design ($n=100$, $M=35.04$, $SD=7.72$) and the high quality home page design ($n=99$, $M=42.87$, $SD=5.58$) conditions; $t(197)=-8.188$, $p<0.005$. A Cohen's d analysis shows a very large effect ($d=1.162$) with a high level of reliability (Cronbach's Alpha of 0.946) (see Tables 11 and 12).

Table 11. Faculty Quality – Source Credibility – Group Statistics

	Condition	n	Mean	Std. Deviation
Source Credibility - Competence	Low Quality	100	35.04	7.72
	High Quality	99	42.87	5.58

Table 12. Faculty Quality – Source Credibility – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen's d
Source Credibility - Competence	-8.19	197	0.000	-7.83	0.956	1.16

ANCOVA analysis of gender, age, parental status, computer experience, and time spent on internet showed no significant covariate effects indicating that none of the tested variables moderate the difference between stimulus groups (see Table 13).

4.2.2 Single-Item Measures Results

Two single-item measures questions regarding faculty quality were also asked. Analysis of the responses show distributions within accepted norms for both questions (see Table 14) and indicate a significant difference in the scores for the low-quality home page design and the high-

quality home page design as illustrated in Tables 15 and 16. Both measures had a $p < 0.05$ and a Cohen's $d > 0.8$ indicating significant differences between the two stimuli groups with a large effect size.

Table 13. Faculty Quality – Source Credibility – Covariate Analysis

	Sig.	Partial Eta Squared
Source Credibility No Controls	0.000	0.254
Controlled for Gender*	0.000	0.245
Controlled for Age Group	0.000	0.267
Controlled for Time Spent on Internet**	0.000	0.250
Controlled for Comfort with Technology	0.000	0.259
Controlled for Website Importance to University Recruitment*	0.000	0.234
Controlled for Subject has Children	0.000	0.254
Controlled for Subject has Children 14 or Over**	0.000	0.255
Controlled for Likelihood of Children to Attend Post-Secondary Institution	0.000	0.224

* covariate did not show equal distribution of responses,

** covariate did not show equivalent homogeneity of regression

Overall, the results of both the analysis of credibility and the single-item measures regarding faculty quality support Hypothesis 1.

4.3 Program Quality

Hypothesis 2 predicted that “Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the quality of the university’s programs than those who visit a site with good aesthetics and good impressions of usability.” To test this, the impressions of the quality of programs at Western Central University’s faculty were measured by assessing expectations for student growth.

Table 14. Faculty Quality – Single-Item Measures Distributions

	N	Mean	Standard Deviation	Skewness	Kurtosis
Teaching Competence	201	5.34	1.21	-0.788	0.479
Expertise in Field of Study	200	4.78	1.40	-0.389	-0.409

Table 15. Faculty Quality – Single-Item Measures – Group Statistics

	Condition	n	Mean	Std. Deviation
Teaching Competence	Low Quality	101	4.87	1.15
	High Quality	100	5.82	1.09
Expertise in Field of Study	Low Quality	100	4.10	1.31
	High Quality	100	5.45	1.14

Table 16. Faculty Quality – Single-Item Measures – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen's <i>d</i>
Teaching Competence	-6.03	198.62	0.000	-0.949	0.158	0.850
Expertise in Field of Study	-7.76	194.14	0.000	-1.35	0.174	1.10

4.3.1 Student Opinion Survey – College Outcomes Results

Responses for the Student Opinion Survey – College Outcomes measure indicate a negative skewness to the distribution of responses that falls outside of accepted norms (-1.318), while the kurtosis remains acceptable at 1.478 (see Table 17).

Table 17. Source Credibility – Competence Distributions

	N	Mean	Standard Deviation	Skewness	Kurtosis
Student Opinion Survey – College Outcomes	201	22.71	4.62	-1.32	1.48

Analysis of all 201 responses found a significant difference in the scores for the low quality home page design ($n=101$, $M=21.07$, $SD=4.71$) and the high quality home page design

($n=100$, $M=24.37$, $SD=3.91$) conditions; $t(199)=-5.414$, $p<0.005$. A Cohen’s d analysis shows a large effect ($d= 0.764$) with a high level of reliability (Cronbach’s Alpha of 0.927) (see Tables 18 and 19).

Table 18. Student Opinion Survey – College Outcomes – Group Statistics

	Condition	n	Mean	Std. Deviation
Student Opinion Survey – College Outcomes	Low Quality	101	21.07	4.71
	High Quality	100	24.37	3.91

Table 19. Student Opinion Survey – College Outcomes – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen’s d
Student Opinion Survey – College Outcomes	-5.41	199	0.000	-7.83	0.611	0.764

ANCOVA analysis of gender, age, parental status, computer experience, and time spent on internet showed no significant covariate effects indicating that none of the tested variables moderate the difference between stimulus groups (see Table 20).

Overall, the results support Hypothesis 2.

4.4 Perceived Value of Education

Hypothesis 3 predicted that “Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the educational value to the student of the university’s programs than those who visit a site with good aesthetics and good impressions of usability.” To test this, the study participant’s impressions of the perceived value of a Western Central University education was assessed. The monetary price and reputation

Table 20. Program Quality – Covariate Analysis

	Sig.	Partial Eta Squared
Program Quality No Controls	0.000	0.128
Controlled for Gender*	0.000	0.122
Controlled for Age Group	0.000	0.131
Controlled for Time Spent on Internet	0.000	0.126
Controlled for Comfort with Technology	0.000	0.129
Controlled for Website Importance to University Recruitment*	0.000	0.112
Controlled for Subject has Children	0.000	0.129
Controlled for Subject has Children 14 or Over	0.000	0.128
Controlled for Likelihood of Children to Attend Post-Secondary Institution	0.000	0.095

* covariate did not show equal distribution of responses

factors of Petrick (2002)'s Scale for Measuring the Perceived Value of Services were used for this purpose as well as a single direct question.

4.4.1 Perceived Value of Services Results

Responses for the Perceived Value of Services measure indicate distribution within accepted norms for both skewness (-0.292) and kurtosis (-0.452) (see Table 21).

Table 21. Perceived Value of Services Distributions

	N	Mean	Standard Deviation	Skewness	Kurtosis
Perceived Value of Services	199	29.64	5.65	-0.292	-0.452

Analysis found a significant difference in the scores for the low quality home page design ($n=100$, $M=27.60$, $SD=5.79$) and the high quality home page design ($n=99$, $M=31.70$, $SD=4.71$) conditions; $t(197)=-5.473$, $p<0.005$ (see Tables 22 and 23). A Cohen's d analysis shows a large

effect ($d= 0.776$) with a high level of reliability (Cronbach’s Alpha of 0.860). Deleting one item – tuition likely to be reasonably priced – increases the reliability to a Cronbach’s Alpha of 0.917.

Table 22. Perceived Value of Services – Group Statistics

	Condition	n	Mean	Std. Deviation
Perceived Value of Services	Low Quality	100	27.60	5.79
	High Quality	99	31.70	4.71

Table 23. Perceived Value of Services – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen’s <i>d</i>
Perceived Value of Services	-5.47	197	0.000	-4.10	0.749	0.776

ANCOVA analysis of gender, age, parental status, computer experience, and time spent on internet showed no significant covariate effects indicating that none of the tested variables moderate the difference between stimulus groups (see Table 24).

Table 24. Perceived Value of Services – Covariate Analysis

	Sig.	Partial Eta Squared
Perceived Value of Services	0.000	0.132
No Controls		
Controlled for Gender*	0.000	0.137
Controlled for Age Group	0.000	0.132
Controlled for Comfort with Technology	0.000	0.133
Controlled for Time Spent on Internet	0.000	0.128
Controlled for Website Importance to University Recruitment*	0.000	0.115
Controlled for Subject has Children	0.000	0.132
Controlled for Subject has Children 14 or Over	0.000	0.131
Controlled for Likelihood of Children to Attend Post-Secondary Institution	0.000	0.121

* covariate did not show equal distribution of responses

Overall, the results support Hypothesis 3.

4.4.1.1. Perceived Value of Services – Monetary Factor Results

Exploratory analysis of the Perceived Value of Services scale’s monetary factor, quite interestingly, did *not* show a significant difference between the two groups. Based on 200 valid responses, results fail to suggest a significant difference in the scores for the low quality home page design ($n=100$, $M=14.44$, $SD=2.63$) and the high quality home page design ($n=100$, $M=15.07$, $SD=2.65$) conditions; $t(198)=-1.688$, $p=0.093$ (see Tables 25 and 26). A Cohen’s d analysis shows a small effect ($d= 0.239$) with a low level of reliability (Cronbach’s Alpha of 0.653). Deleting one item from this factor – tuition likely to be reasonably priced – increases the reliability to a Cronbach’s Alpha of 0.799.

Table 25. Perceived Value of Services – Monetary Value – Group Statistics

	Condition	n	Mean	Std. Deviation
Perceived Value of Services – Monetary Value	Low Quality	100	14.44	2.63
	High Quality	100	15.07	2.65

Table 26. Perceived Value of Services – Monetary Value – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen’s d
Perceived Value of Services – Monetary Value	-1.69	197.98	0.090	-0.630	0.373	0.239

Deeper analysis of the questions that make up the Monetary Value factor show different results than the aggregate value: there is a significant difference between stimulus groups for each of the questions, however the question regarding tuition being reasonably priced at WCU showed mean values that were opposite to the other question’s responses (see Tables 27 and 28).

Table 27. Perceived Value of Services – Monetary Value Questions – Group Statistics

	Condition	n	Mean	Std. Deviation
Perceived Value of Services – Reasonable Tuition	Low Quality	100	5.14	1.15
	High Quality	100	4.50	1.12
Perceived Value of Services – Good Buy	Low Quality	101	4.72	1.13
	High Quality	100	5.19	1.02
Perceived Value of Services – Worth the Money	Low Quality	101	4.60	1.18
	High Quality	100	5.38	1.03

Table 28. Perceived Value of Services – Monetary Value Questions – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen's <i>d</i>
Perceived Value of Services – Reasonable Tuition	4.00	197.8	0.000	-0.640	0.160	0.566
Perceived Value of Services – Good Buy	-3.07	197.3	0.000	-0.467	0.152	0.433
Perceived Value of Services – Worth the Money	-5.04	196.2	0.000	-0.786	0.156	0.758

4.4.1.2. *Perceived Value of Service – Reputation Factor Results*

Exploratory analysis of the reputation factor shows a significant difference between the low-quality stimulus and high-quality stimulus groups. Based on 200 responses, analysis found a significant difference in the scores for the low quality home page design ($n=101$, $M=13.16$, $SD=3.64$) and the high quality home page design ($n=99$, $M=16.61$, $SD=2.57$) conditions; $t(198)=-7.714$, $p<0.005$. A Cohen's *d* analysis shows a large effect ($d= 1.093$) with a high level of reliability (Cronbach's Alpha of 0.905) (see Tables 29 and 30).

ANCOVA analysis of gender, age, parental status, computer experience, and time spent on internet showed no significant covariate effects indicating that none of the tested variables moderate the difference between stimulus groups (see Table 31).

Table 29. Perceived Value of Service – Reputation – Group Statistics

	Condition	n	Mean	Std. Deviation
Perceived Value of Service – Reputation	Low Quality	101	13.16	3.64
	High Quality	99	16.61	2.58

Table 30. Perceived Value of Service – Reputation – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen's <i>d</i>
Perceived Value of Service – Reputation	-7.71	198	0.000	-3.48	0.447	1.09

Table 31. Perceived Value of Service – Reputation – Covariate Analysis

	Sig.	Partial Eta Squared
Perceived Value of Service – Reputation No Controls	0.000	0.231
Controlled for Gender*	0.000	0.230
Controlled for Age Group	0.000	0.233
Controlled for Time Spent on Internet	0.000	0.226
Controlled for Comfort with Technology	0.000	0.233
Controlled for Website Importance to University Recruitment*	0.000	0.212
Controlled for Subject has Children	0.000	0.232
Controlled for Subject has Children 14 or Over	0.000	0.230
Controlled for Likelihood of Children to Attend Post-Secondary Institution	0.000	0.221

* covariate did not show equal distribution of responses

4.4.2 Single-Item Measures Results

One single-item measures questions regarding perceived value of education was also asked. Analysis of the responses show distributions within accepted norms (see Table 32) and indicate a significant difference in the scores for the low-quality home page design ($n=101$, $M=3.61$, $SD=1.73$) and the high-quality home page design ($n=100$, $M=5.57$, $SD=0.98$)

conditions; $t(199)=-9.874, p<0.005$ (see Tables 33 and 34). A Cohen’s d analysis shows a very large effect ($d= 1.395$).

Table 32. Perceived Value of Education - Single Item Measures Distributions

	N	Mean	Standard Deviation	Skewness	Kurtosis
Likelihood to recommend WCU	201	4.59	1.71	-0.568	-0.638

Table 33. Perceived Value of Education - Single Item Measures – Group Statistics

	Condition	n	Mean	Std. Deviation
Likelihood to recommend WCU	Low Quality	101	3.61	1.73
	High Quality	100	5.57	0.977

Table 34. Perceived Value of Education - Single Item Measures – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen’s d
Likelihood to recommend WCU	-9.87	199	0.000	-1.96	0.198	1.40

4.5 Quality of Student Life/Campus Experience

Hypothesis 4 predicted that “Users who visit a university site with poor aesthetics and poor impressions of usability will have lower expectations for the quality of student life and campus experience at the university than those who visit a site with good aesthetics and good impressions of usability.” Study participant’s expectations of Western Central University’s student life and campus culture and environment were assessed. The academic experience (AE), campus culture (CC), and campus environment (CI) sections of American College Testing’s (1998) Student Opinion Survey (SOS) were used for this purpose.

4.5.1 Student Opinion Survey – AE CC CI Results

Responses for the Student Opinion Survey – AE CC CI measures indicate distribution within accepted norms for both skewness (-0.874) and kurtosis (0.446) (see Table 35).

Table 35. Source Credibility – Competence Distributions

	N	Mean	Standard Deviation	Skewness	Kurtosis
Student Opinion Survey – AE CC CI	197	47.89	10.26	-0.874	0.446

Based on 197 responses, analysis found a significant difference in the scores for the low quality home page design ($n=100$, $M=44.29$, $SD=10.33$) and the high quality home page design ($n=97$, $M=51.61$, $SD=8.80$) conditions; $t(195)=-5.346$, $p<0.005$. A Cohen’s d analysis shows a medium to large effect ($d= 0.763$) with a high level of reliability (Cronbach’s Alpha of 0.954) (see Tables 36 and 37).

Table 36. Student Opinion Survey – AE CC CI – Group Statistics

	Condition	n	Mean	Std. Deviation
Student Opinion Survey – AE CC CI	Low Quality	100	44.29	10.33
	High Quality	97	51.61	8.80

Table 37. Student Opinion Survey – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen’s d
Student Opinion Survey – AE CC CI	-5.35	195	0.000	-7.32	1.37	0.763

ANCOVA analysis of gender, age, parental status, computer experience, and time spent on internet showed no significant covariate effects indicating that none of the tested variables moderate the difference between stimulus groups (see Table 38).

Table 38. Student Opinion Survey – Covariate Analysis

	Sig.	Partial Eta Squared
Student Opinion Survey – AE CC CI No Controls	0.000	0.128
Controlled for Gender*	0.000	0.121
Controlled for Age Group	0.000	0.130
Controlled for Time Spent on Internet	0.000	0.128
Controlled for Comfort with Technology	0.000	0.128
Controlled for Website Importance to University Recruitment*	0.000	0.112
Controlled for Subject has Children	0.000	0.128
Controlled for Subject has Children 14 or Over	0.000	0.126
Controlled for Likelihood of Children to Attend Post-Secondary Institution	0.000	0.100

* covariate did not show equal distribution of responses

Overall, analysis shows that Hypothesis 4 was supported.

4.5.1.1. Student Opinion Survey – Academic Experience Results

Exploratory analysis of the academic experience section shows a significant difference between the low-quality stimulus and high-quality stimulus groups. Based on 200 responses, analysis found a significant difference in the scores for the low quality home page design ($n=101$, $M=4.86$, $SD=1.38$) and the high quality home page design ($n=99$, $M=5.89$, $SD=1.14$) conditions; $t(198)=-5.734$, $p<0.005$. A Cohen’s d analysis shows a large effect ($d= 0.812$) (see Tables 39 and 40).

Table 39. Student Opinion Survey – Academic Experience – Group Statistics

	Condition	n	Mean	Std. Deviation
Student Opinion Survey – Academic Experience	Low Quality	101	4.86	1.38
	High Quality	99	5.89	1.14

Table 40. Student Opinion Survey – Academic Experience – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen's <i>d</i>
Student Opinion Survey – Academic Experience	-5.73	198	0.000	-1.03	0.180	0.812

ANCOVA analysis of gender, age, parental status, computer experience, and time spent on internet showed no significant covariate effects indicating that none of the tested variables moderate the difference between stimulus groups (see Table 41).

Table 41. Student Opinion Survey – Academic Experience – Covariate Analysis

	Sig.	Partial Eta Squared
Student Opinion Survey – Academic Experience No Controls	0.000	0.142
Controlled for Gender*	0.000	0.133
Controlled for Age Group**	0.000	0.150
Controlled for Time Spent on Internet**	0.000	0.141
Controlled for Comfort with Technology	0.000	0.145
Controlled for Website Importance to University Recruitment*	0.000	0.127
Controlled for Subject has Children	0.000	0.143
Controlled for Subject has Children 14 or Over	0.000	0.142
Controlled for Likelihood of Children to Attend Post-Secondary Institution	0.000	0.103

* covariate did not show equal distribution of responses

** covariate did not show equivalent homogeneity of regression

4.5.1.2. Student Opinion Survey – Campus Culture Results

Exploratory analysis of the campus culture section shows a significant difference between the low-quality stimulus and high-quality stimulus groups. Based on 198 responses, analysis found a significant difference in the scores for the low quality home page design ($n=100$, $M=25.56$, $SD=5.46$) and the high quality home page design ($n=98$, $M=28.37$, $SD=5.13$)

conditions; $t(196)=-3.724, p<0.005$ (see Tables 42 and 43). A Cohen's d analysis shows a medium effect ($d= 0.529$).

Table 42. Student Opinion Survey – Campus Culture – Group Statistics

	Condition	n	Mean	Std. Deviation
Student Opinion Survey – Campus Culture	Low Quality	100	25.56	5.47
	High Quality	98	28.37	4.13

Table 43. Student Opinion Survey – Campus Culture – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen's d
Student Opinion Survey – Campus Culture	-3.73	195.65	0.000	-2.81	0.753	0.529

ANCOVA analysis of gender, age, parental status, computer experience, and time spent on internet showed no significant covariate effects indicating that none of the tested variables moderate the difference between stimulus groups (see Table 44).

Table 44. Student Opinion Survey – Campus Culture – Covariate Analysis

	Sig.	Partial Eta Squared
Student Opinion Survey – Campus Culture No Controls	0.000	0.066
Controlled for Gender*	0.001	0.061
Controlled for Age Group	0.000	0.067
Controlled for Time Spent on Internet	0.000	0.067
Controlled for Comfort with Technology	0.000	0.066
Controlled for Website Importance to University Recruitment*	0.001	0.051
Controlled for Subject has Children	0.000	0.066
Controlled for Subject has Children 14 or Over	0.000	0.065
Controlled for Likelihood of Children to Attend Post-Secondary Institution	0.006	0.045

* covariate did not show equal distribution of responses

4.5.1.3. Student Opinion Survey – College Impressions Results

Exploratory analysis of the college impressions section shows a significant difference between the low-quality stimulus and high-quality stimulus groups. Based on 201 responses, analysis found a significant difference in the scores for the low quality home page design ($n=101$, $M=13.92$, $SD=4.18$) and the high quality home page design ($n=100$, $M=17.45$, $SD=3.10$) conditions; $t(199)=-6.794$, $p<0.005$. A Cohen’s d analysis shows a large effect ($d=0.959$) (see Tables 45 and 46).

Table 45. Student Opinion Survey – College Impressions – Group Statistics

	Condition	n	Mean	Std. Deviation
Student Opinion Survey – College Impressions	Low Quality	101	13.92	4.18
	High Quality	100	17.45	3.10

Table 46. Student Opinion Survey – College Impressions – IS T Test

	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Cohen’s d
Student Opinion Survey – College Impressions	-6.79	199	0.000	-3.53	0.520	0.959

ANCOVA analysis of gender, age, parental status, computer experience, and time spent on internet showed no significant covariate effects indicating that none of the tested variables moderate the difference between stimulus groups (see Table 47).

4.6 Summary

Overall, analysis of the results showed strong support for all hypotheses. Users who were exposed to a university site with poor aesthetics and poor impressions of usability had lower impressions of the quality of the institution’s faculty than those who were exposed to a site with good aesthetics and good impressions of usability; study participants who were exposed to a

Table 47. Student Opinion Survey – College Impressions – Covariate Analysis

	Sig.	Partial Eta Squared
Student Opinion Survey – College Impressions No Controls	0.000	0.188
Controlled for Gender*	0.000	0.181
Controlled for Age Group	0.000	0.192
Controlled for Time Spent on Internet	0.000	0.187
Controlled for Comfort with Technology	0.000	0.190
Controlled for Website Importance to University Recruitment*	0.000	0.174
Controlled for Subject has Children**	0.000	0.190
Controlled for Subject has Children 14 or Over**	0.000	0.189
Controlled for Likelihood of Children to Attend Post-Secondary Institution	0.000	0.162

* covariate did not show equal distribution of responses

** covariate did not show equivalent homogeneity of regression

website with poor aesthetics and poor impressions of usability had lower impressions of the quality of the university’s programs than those who were exposed to a site with good aesthetics and good impressions of usability; participants who were exposed to a university site with poor aesthetics and poor impressions of usability had lower impressions of the educational value to the student of the university’s programs than those who were exposed to a site with good aesthetics and good impressions of usability; and users who were exposed to a university site with poor aesthetics and poor impressions of usability had lower expectations for the quality of student life and campus experience at the university than those who were exposed to a site with good aesthetics and good impressions of usability. Two-way ANCOVAs found no confounding influence of measured variables including gender, age group, comfort with technology, children, children over 14, and likelihood of child to pursue post-secondary education. Exploration of the Monetary factor of the Perceived Value of Services Scale used to measure Perceived Value of Education did not show significant differences in the responses of

stimulus groups, but a more detailed analysis of each question revealed a limitation in the scale that did not support calling into question the validity of overall results. With very low p values and large effects for all measures, the results of this study are clear: the quality of an institution's website, as determined by aesthetics and impressions of usability, has the ability to influence a user's impressions of the organization.

CHAPTER 5. DISCUSSION

This study examined how website quality – as determined by aesthetics and impressions of usability – influences perceptions of an organization. Focusing on institutions of higher education and examining how website quality influences user’s impressions of factors that are important to student recruitment and university selection, the current study suggests an answer to the question: *Does the quality of an institution of higher education’s website – as determined by aesthetic and impression of usability – influence a user’s impressions of the institution’s faculty quality, program quality, and the value of the education to the student?*

To do so, a two-condition, between groups experiment was conducted to explore, test and ultimately accept the hypotheses. The following sections discuss the results.

5.1 Research Question Discussion

Analysis of the study results strongly support the notion that the quality of a university’s website *does* influence a user’s impressions of factors that are important to student recruitment. Results for all measures examined in this study – program quality, value of education, faculty quality, and quality of the student experience/campus life – showed significant differences in the responses by participants who were exposed to a high-quality homepage design and those who were exposed to a low-quality homepage design. Analysis of the data gathered in this study demonstrated *p*-value scores of substantially less than .05 for all measures and large to extremely large effects across the board: five of the seven measures analyzed demonstrated a Cohen’s *d* of greater than 0.79 with three of those seven being over 1.0.

Table 48. Hypothesis Results

Hypothesis		Accepted
H1	Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the quality of the institution's faculty than those who visit a site with good aesthetics and good impressions of usability	
H2	Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the quality of the university's programs than those who visit a site with good aesthetics and good impressions of usability	
H3	Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the educational value to the student of the university's programs than those who visit a site with good aesthetics and good impressions of usability	
H4	Users who visit a university site with poor aesthetics and poor impressions of usability will have lower expectations for the quality of student life and campus experience at the university than those who visit a site with good aesthetics and good impressions of usability	

These results are in alignment with previous studies by Bolchini et al. (2009) and Rondeau (2005) who found positive correlations between website experience and brand perception. They also correspond to the findings of Mishra et al. (2014) who demonstrated positive relationships between quality of online experience and perceived value, brand trust, and brand loyalty; Robins and Holmes (2008) who described a correlation between aesthetics and credibility; and Morgan-Thomas and Veloutsou (2013) who illustrated the connection between positive online experience and satisfaction and brand relationship.

Answering the study's overarching research question is of particular interest to university decisionmakers and recruitment officials. The results show that website design influences the perception of factors that are important to university selection as has been identified in the literature (Bennett & Ali-Choudhury, 2009; Chapman, 1986b; Hodges & Barbuto Jr, 2002; Schofield et al., 2013), particularly for parents (Warwick & Mansfield, 2004). As discussed by

Cardello (2013), the quality of a website is able to influence future behavior – including what university a prospective student and their parents selects.

5.2 Hypothesis Testing Discussion

Hypothesis 1 speculated that *“Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the quality of the institution’s faculty than those who visit a site with good aesthetics and good impressions of usability.”*

Analysis of responses that measured study subject’s impressions of the competence of WCU’s faculty suggest strong support for accepting the hypothesis. Results showed large effects for all measures with *p*-values of significantly less than 0.05. Follow-up ANCOVAs revealed no confounding influences from any of the demographic or behavioral data that was also gathered. These results show that higher quality websites have a powerful effect on people’s beliefs about the faculty, even when there is no information about faculty on the page they are viewing. This suggests that perceptions of a university’s faculty are influenced by the aesthetics and impressions of usability of the institution’s website. This is significant for university recruitment efforts as the quality of the faculty has been demonstrated to be a key factor in university selection (Bennett & Ali-Choudhury, 2009; Chapman, 1986b; Hodges & Barbuto Jr, 2002), particularly for parents (Warwick & Mansfield, 2004).

Similarly, results for Hypothesis 2 also show support for the notion that *“Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the quality of the university’s programs than those who visit a site with good aesthetics and good impressions of usability.”* Analysis of participant responses that measured study subject’s impressions of program quality demonstrated significant differences between the high-quality stimulus group and the low-quality stimulus group with very low *p*-values (<.05)

and large effects. Follow-up ANCOVA's revealed no confounding influences from measured demographic or behavioral data. These results indicate that perceptions of the quality of a university's programs are influenced by the aesthetics and impressions of usability of the institution's website. This is important for recruiters as the quality of the university's programs are carefully considered by both parents and prospective students when making an enrollment decision (Chapman, 1986b; Hodges & Barbuto Jr, 2002; Schofield et al., 2013; Warwick & Mansfield, 2004). These findings suggest that website quality is an important factor in considerations about university programs.

Hypothesis 3, "*Users who visit a university site with poor aesthetics and poor impressions of usability will have lower impressions of the educational value to the student of the university's programs than those who visit a site with good aesthetics and good impressions of usability*" was also supported by the data. The perceived value of the education being offered at fictional WCU was measured by the monetary price and reputation factors of Petrick (2002)'s Scale for Measuring the Perceived Value of Services (PVoS) and a single-item measure based on Reichheld's Net Promoter Score (Reichheld, 2003). Analysis of these measures showed large effects with very low p-values (<.05) and no confounds.

An exploratory analysis of the individual factors of the PVoS scale unexpectedly revealed no significant difference ($p=0.093$) between stimulus groups in the PVoS Monetary factor. Further question-by-question analysis, however, *did* demonstrate significant differences for each of the three items that measured the monetary value factor, but one question's responses were in opposition to the others. Responses indicate that participants who were exposed to the low-quality stimulus were more inclined to expect that *the tuition at WCU is reasonably priced* than those who were exposed to the high-quality site (low-quality mean: 5.14, high-quality mean:

4.5). These results don't appear to contradict the overall direction of the study; rather, they suggest that the question was not properly coded or is measuring a different (though important) factor altogether. There does not appear to be any evidence that the anomaly in the data should call into question the validity of the acceptance of Hypothesis 3.

Acceptance of Hypothesis 3 suggests that perceived value of the education being offered by a university is influenced by the aesthetic and usability properties of their website. This is relevant in university recruitment as Chapman (1986b), Schofield et al. (2013), and Hodges and Barbuto Jr (2002) all noted that the value of the education being offered is important to university selection. Warwick and Mansfield (2004) found this to be of particular relevance to parents who often contribute financially to their child's education.

Finally, hypothesis 4 speculated that *"Users who visit a university site with poor aesthetics and poor impressions of usability will have lower expectations for the quality of student life and campus experience at the university than those who visit a site with good aesthetics and good impressions of usability."* Measures of study participant's expectations regarding Western Central University's student life and campus culture and environment showed significant difference between the low-quality stimulus group and the high. Analysis demonstrated *p*-values of significantly less than 0.05 and medium to large effect for these measures (Cohen's *D*: 0.76). Follow-up ANCOVAs revealed no confounding influences from any of the demographic or behavioral data gathered. Acceptance of this hypothesis supports the suggestion that the aesthetic and usability qualities of a website has an influence over the perception of the quality the university's student life and campus culture. These are an important consideration for both prospective students and their parents when making attendance decisions

as described in Chapman (1986b), Bennett and Ali-Choudhury (2009), Schofield et al. (2013), and Warwick and Mansfield (2004).

5.3 Halo Effect and Affect Heuristic Discussion

The study's results also suggest that website design can have a "halo/horns" effect that shapes opinions of elements of an organization that are not present on the page. Similar to Nisbett and Wilson (1977), a polarizing stimulus influenced responses to survey questions in a corresponding direction. Where the Nisbett and Wilson experiment compared the impact of demeanor on the appeal of an "instructor's" appearance, accent, and mannerisms, this experiment showed similar differences in responses to website design. Responses to questions that evaluated faculty member intelligence, thought leadership, and respect for their students all showed significant differences between stimulus groups with medium to very large effects.

Similarly, respondent's expectations for the student experience was shaped by the website design; responses to questions regarding openness to the opinion of others, campus social support networks, and building life-long learning skills demonstrated significant differences between stimulus groups in the direction of the website quality. These results align with the findings of Zajonc (1980), Klauer and Stern (1992), Finucane et al. (2000), and Slovic et al. (2007) where the polarity of a stimulus activated an affect heuristic that guided study subject's judgements and decisions regarding other aspects of the same entity. In this case, the quality of the university home page showed a determining influence of study subject's judgements and expectations for ancillary aspects of the same organization.

While the lack of interaction of this study's stimulus is a limiting factor in understanding the overall impact of usability on a user, it does suggest an alignment with Murphy and Zajonc (1993). Their study showed that the polarity of a prime shifted judgements even in sub-optimal

conditions where dependence on heuristic devices were necessary. By not providing participants with a full website experience, the stimulus used in this study forced a dependence on the subject's existing schema that shaped judgements regarding the aspects of Western Central University's faculty, programs, and student experience – even when those items were not directly represented on the page.

5.4 Limitations

This study has some important limitations. First, because the sample is non-random and relatively small (N = 201) generalizability is limited. Similarly, the study uses only university websites for analysis. It is possible that other types of organizations would demonstrate different relationships between website exposure and impressions formed.

There are limitations due to the sample size and composition. However, compared to similar studies, a sample group of this size and composition is adequate for this study. Nisbett and Wilson (1977) sampled 118 University of Michigan students looking at halo-effects; (Tractinsky et al., 2000) sampled 132 third-year Industrial Education students when examining the effects of aesthetics on impressions of usability and Tuch et al. (2012) sampled 80 participants digging deeper into the same subject. Brady and Phillips (2003) also sampled 80 college students in their study. Hassenzahl and Monk (2010) summarized influential studies examining the relationship between beauty and usability between 1998 and 2010 and the average number of participants was 93 (high 252, low 11). Bolchini et al. (2009) conducted four experiments with 120 participants in a similar study, and between the four experiments the largest single group was 25 participants. Based on these examples, the size and composition of the group of participants being sampled is well within the norms of this area of study.

The process used to gather samples may also have introduced limitations. Recruiting efforts on MTurk was carried out using the same post targeted to three different groups: American adults born between 1971 and 1980, American adults born between 1981 and 1990, and American adults who are parents. This practice may have inadvertently introduced error into the measures, however analysis of responses does not suggest differences in responses between these groups.

The scales used in this study are largely subsets or slimmed-down versions of larger accepted measures, thus the validity of each of those scales may be reduced. While this allows for a general indication of the effect the independent variable, further research that directly targets each factor would need to be done to establish a deeper understanding.

An additional limitation of this study was the selection and creation of stimulus materials. Assessments of real-world websites might evoke different levels of attention or different responses to quality than those used here. In addition, because participants can only see a screenshot, significant elements of website design are not being tested. For example, perceptions of an organization may be less influenced by homepage design when people navigate through the site to find specific information either successfully or unsuccessfully.

Similarly, because participants assessed these sites in a study context, their level of scrutiny may have been higher or lower than in a natural setting. Additionally, participants only looked at one of two sites, instead of the many sites that would more realistically be part of any search for information about colleges and universities. The relationship between judgements of the school and design of the site may have been stronger in the current study than in a natural setting. Future research observing actual searches for university information would add to our understanding about the phenomena being studied here.

Importantly, there are many factors other than website design that play an important role in assessments of university quality. Although those are deliberately controlled here to isolate the effects of website design, it is likely that interaction effects between website design and previously held beliefs, information from others, and/or experiences with universities influence perceptions of the institution in various ways. Future research is needed to identify how these other factors contribute to overall relationships between website design and perceptions of organizations.

CHAPTER 6. CONCLUSIONS

As competition for student recruitment has increased so has the importance of a university's online presence. Today's websites have evolved to become the primary recruiting tool for both undergraduate and graduate programs as prospective students and their parents turn to online channels to research, interact with, and ultimately select which institution to attend. Direct experiences, such as those offered by websites, have been shown influence future behavior and the polarity of those experience has a "halo effect" that determines direction. The aesthetics of a website and a user's initial impressions of usability are key elements in determining the quality of their experience. Assessed automatically and immediately, these factors have a powerful influence on site visitors. This study explored the influence that website design has on a user's impressions of an institution's faculty, programs, and educational value – items that are central to enrollment decisions.

To accomplish this, this study examined the influence that aesthetics and impressions of usability have on users' impressions of an organization through a controlled experiment. Participants were exposed to one of two recruiting websites for a fictional university: one with high quality aesthetics and usability, and one with low quality aesthetics and usability.

Analysis of the resulting data demonstrated that the quality of website design has a significant impact on user's opinions and that those influences extend to aspects of an organization that may not be represented on the page. Opinions of the quality of instruction, the long-term value of programs, and even the support systems available to students were all shaped by the aesthetic and usability qualities a visitor encountered. These results emphasize the role that design plays in shaping consumer's opinions of institutions and organizations. This study

contributes to the research in human computer interaction, marketing, cognitive psychology, and university recruitment and deepens the understanding of the impact that aesthetic and usability design decisions have on aspects that are critical to an organization, even if those aspects are not directly represented.

6.1 Recommendations for Universities

The findings of this study serve to underscore the importance of high-quality website design for educational institutions. The results have shown how a simple screen shot can impact impressions of a whole organization. It is understood that impressions from websites are formed almost immediately (Lindgaard et al., 2006) and those impressions may have a powerful effect on future behavior (Fazio et al., 1982; Zajonc, 1980). This study looked at factors that are important to university recruitment and selection (Chapman, 1986b), but recent trends suggest that those are just the tip of the iceberg. As university recruitment efforts shift away from Millennials to focus on the "iGeneration" (those born after 1995 and never knew a world without the World Wide Web) the university website has become the place where prospective students and their parents discover if the university "feels right" to them (Noel-Levitz, 2013; Ruffalo Noel Levitz, 2016). Factors such as faculty quality, program quality, and education value continue to be important, but so are the larger impressions left by the website experience (Bennett & Ali-Choudhury, 2009; Chapman, 1986a; Hodges & Barbuto Jr, 2002; Schofield et al., 2013). Today's university website has become the primary locus of interaction between the individual and the organization – the place prospects and their families turn to find answers for not only common program and application questions, but for selecting majors, applying, pay fees, and to simply become engaged with their university of choice (Noel-Levitz, 2013; Ruffalo Noel Levitz, 2016).

It is vital that decisionmakers at colleges and universities continue to invest in digital recruitment materials and for designers and contributors to understand that the quality of those materials must run deeper than just the home page. Users today may arrive at a site many ways and land at many locations; the quality of those landing places – and the pages that follow – have a significant impact on the user. The immediate impressions these pages have can make the difference between prospects selecting College A over College B. In today’s competitive university environment, where each enrollment counts, just having a website, a nice home page, or a nice landing page is no longer enough; the whole website needs to be good. Ensuring that web properties maintain high levels of aesthetic quality and usability throughout will help the institution keep a competitive edge by creating a perception of quality and excellence that extends to the whole organization.

6.2 Recommendations for Software Projects

For many technical teams, including those who work on web-based software, usability and aesthetics are frequently seen as nothing more than an effort to “making it pretty” – a last-minute, pre-release step that is viewed as peripheral in the overall functionality and success of a project (Anderson, 2009). Despite these realities, there are numerous studies that have established the importance of a user’s aesthetic and usability experience in the overall success of software projects, including websites, particularly on immediate, in-context outcomes (Alsudani & Casey, 2009; Lindgaard et al., 2006; Robins & Holmes, 2008). The current study demonstrates that a user’s experience influences perceptions of a whole organization; impressions of quality, driven by aesthetic and usability has a halo effect that extends beyond the immediate context of the application itself. Ensuring a positive user experience is essential for the success not only the application or project itself, but for the whole organization. To ensure the best quality possible,

aesthetics and usability must be a core and ongoing consideration for a software project, not a mere afterthought.

6.3 Recommendations for Future Study

With the successful results of this study and acceptance of all hypotheses, there are many directions that this line of research could take in the future. From using other means to measure dependent variables to designing and researching practical methods for incorporating design within a software development lifecycle, this research could lead to further studies that elicit more detailed recommendations for digital marketing materials. Obvious follow-up studies would investigate the impact of website design direct on prospective students rather than their parents. The results of this study do not suggest differences across age groups, but Warwick and Mansfield (2004) have demonstrated different concerns between parents and students when it comes to factors that are important to university selection. Directly targeting the student population would help broaden the understanding of website design on factors that are of particular relevance to that audience.

The size and clarity of the effects of quality of website design on the measured variables was far outside of the researcher's expectations and suggests that a follow-up study that explores the same items would be of value. Carrying out the experiment at a different time, location, and/or sample source would reveal whether the current results were an anomaly or a true representation of the impact of design quality on an end user.

Repeating this experiment with more tightly controlled manipulations would also enhance our understanding of critical design elements. What types of content have the most influence? Photos of people, places, or things? Large photos or small? Warm colors or cool? A monochromatic palette, a complimentary palette, or a tertiary? Do the use of common design

elements influence organization credibility? Is it possible to look too much like every other site, and how much of a difference is needed?

An understanding of the time-related impact of the website quality “halo effect” is also important. This project measured the immediate effect of website quality on judgements related to the organization, but how first impressions endure would greatly contribute to our understanding of the temporal importance of website design.

Finally, there is much research that could be done to investigate the priority and timing that aesthetic and usability design should hold in project planning and execution. When is the best time to incorporate experience design into web projects? Commonsense suggests that this may be a critical first step, even before software architecture begins. A study that compares early, middle, and late incorporations of aesthetic and experience design to overall project success and organization credibility would clearly inform the product development lifecycles and project priorities.

REFERENCES

- Abran, A., Khelifi, A., Suryan, W., & Seffah, A. (2003). Usability meanings and interpretations in ISO standards. *Software Quality Journal*, 11(4), 325-338.
- Alsudani, F., & Casey, M. (2009). *The effect of aesthetics on web credibility*. Paper presented at the Proceedings of the 23rd British HCI Group Annual Conference on People and Computers: Celebrating People and Technology.
- American College Testing. (1998). Student Opinion Survey. Retrieved from <https://www.genesee.edu/cms/home/assets/File/SOS%202016%20Survey%20Instrument.pdf>
- Anderson, S. (2009). In defense of eye candy. *A List Apart*, 21.
- Assila, A., & Ezzedine, H. (2016). Standardized usability questionnaires: Features and quality focus. *Electronic Journal of Computer Science and Information Technology: eJCIST*, 6(1).
- Bakhshi, S., Kanuparth, P., & Gilbert, E. (2014). *Demographics, weather and online reviews: A study of restaurant recommendations*. Paper presented at the Proceedings of the 23rd international conference on World wide web.
- Behrend, T. S., Sharek, D. J., Meade, A. W., & Wiebe, E. N. (2011). The viability of crowdsourcing for survey research. *Behavior research methods*, 43(3), 800.
- Bennett, R., & Ali-Choudhury, R. (2009). Prospective students' perceptions of university brands: An empirical study. *Journal of Marketing for Higher Education*, 19(1), 85-107.
- Bolchini, D., Garzotto, F., & Sorce, F. (2009). Does branding need web usability? A value-oriented empirical study *Human-Computer Interaction—INTERACT 2009* (pp. 652-665): Springer.
- Braddy, P. W., Meade, A. W., & Kroustalis, C. M. (2005). *Organizational website usability and attractiveness effects on viewer impressions*. Paper presented at the 20th Annual Conference of the Society for Industrial and Organizational Psychology, Los Angeles, CA., <http://www4.ncsu.edu/~awmeade/Links/Papers/WebImpressions%28SIOP05>.
- Brady, L., & Phillips, C. (2003). Aesthetics and usability: A look at color and balance. *Usability News*, 5(1), 2-5.
- Brakus, J. J., Schmitt, B. H., & Zarantonello, L. (2009). Brand Experience: What Is It? How Is It Measured? Does It Affect Loyalty? *Journal of Marketing*, 73(3), 52-68. doi:10.1509/jmkg.73.3.52
- Buhrmester, M., Kwang, T., & Gosling, S. D. (2011). Amazon's Mechanical Turk: A new source of inexpensive, yet high-quality, data? *Perspectives on psychological science*, 6(1), 3-5.
- Cabrera, A. F., & La Nasa, S. M. (2000). Understanding the College-Choice Process. *New Directions for Institutional Research*, 2000(107), 5-22. doi:doi:10.1002/ir.10701
- Cardello, J. N., Jakob. (2013). The Halo Effect. Retrieved from <https://www.nngroup.com/articles/halo-effect/>
- Casaló, L. V., Flavián, C., & Guinalú, M. (2008). The role of satisfaction and website usability in developing customer loyalty and positive word-of-mouth in the e-banking services. *International Journal of Bank Marketing*, 26(6), 399-417.
- Chang, K.-C., Kuo, N.-T., Hsu, C.-L., & Cheng, Y.-S. (2014). The Impact of Website Quality and Perceived Trust on Customer Purchase Intention in the Hotel Sector: Website Brand

- and Perceived Value as Moderators. *International Journal of Innovation, Management and Technology*, 5(4), 255.
- Chapman, R. G. (1986a). Toward a theory of college selection: A model of college search and choice behavior. *ACR North American Advances*.
- Chapman, R. G. (1986b). Toward a theory of college selection: A model of college search and choice behavior. *NA-Advances in Consumer Research Volume 13*.
- Charness, G., Gneezy, U., & Kuhn, M. A. (2012). Experimental methods: Between-subject and within-subject design. *Journal of Economic Behavior & Organization*, 81(1), 1-8.
- DeBard, R. (2004). Millennials coming to college. *New directions for student services*, 2004(106), 33-45.
- Difallah, D., Filatova, E., & Ipeirotis, P. (2018a). *Demographics and dynamics of mechanical turk workers*. Paper presented at the Proceedings of the Eleventh ACM International Conference on Web Search and Data Mining.
- Difallah, D., Filatova, E., & Ipeirotis, P. (2018b). MTurk Tracker. Retrieved 12/31/2018 <http://demographics.mturk-tracker.com>
- Eagan, K., Stolzenberg, E. B., Ramirez, J. J., Aragon, M. C., Suchard, M. R., & Hurtado, S. (2014). The American freshman: National norms fall 2014. *Los Angeles: Higher Education Research Institute, UCLA*.
- Fazio, R. H., Chen, J.-M., McDonel, E. C., & Sherman, S. J. (1982). Attitude accessibility, attitude-behavior consistency, and the strength of the object-evaluation association. *Journal of Experimental Social Psychology*, 18(4), 339-357.
- Finucane, M. L., Alhakami, A., Slovic, P., & Johnson, S. M. (2000). The Affect Heuristic in Judgments of Risks and Benefits. *Journal of Behavioral Decision Making*, 13(1), 1-17.
- Fogg, B., Soohoo, C., Danielson, D. R., Marable, L., Stanford, J., & Tauber, E. R. (2003). *How do users evaluate the credibility of Web sites?: a study with over 2,500 participants*. Paper presented at the Proceedings of the 2003 conference on Designing for user experiences.
- Hassenzahl, M., & Monk, A. (2010). The Inference of Perceived Usability From Beauty. *Human-Computer Interaction*, 25(3), 235-260. doi:10.1080/07370024.2010.500139
- Hodges, T. D., & Barbuto Jr, J. E. (2002). Recruiting urban and rural students: Factors influencing the postsecondary education institution choices for rural versus urban high school students. *College and University*, 77(3), 3.
- Holbrook, M. B. (1983). Using a Structural Model of Halo Effect to Assess Perceptual Distortion Due to Affective Overtones. *Journal of Consumer Research*, 10(2), 247-252. doi:10.2307/2488928
- Horrigan, J. (2008). The Internet and consumer choice.
- Huang, Y.-F., Kuo, F.-Y., Luu, P., Tucker, D., & Hsieh, P.-J. (2015). Hedonic evaluation can be automatically performed: An electroencephalography study of website impression across two cultures. *Computers in Human Behavior*, 49, 138-146.
- Jansen, J. (2010). Online product research. *Pew Internet & American Life Project Report*.
- Kiecker Royall, P., & Anne, D. (2017). *Student Communications in the Evolving Digital Era*. Retrieved from EAB Global, Inc.: https://www.eab.com/-/media/EAB/Technology/Royall-and-Company/Undergrad-Enrollment/2017-Student-Communications-Whitepaper_v2

- Klauer, K. C., & Stern, E. (1992). How attitudes guide memory-based judgments: A two-process model. *Journal of Experimental Social Psychology, 28*(2), 186-206.
doi:[http://dx.doi.org/10.1016/0022-1031\(92\)90038-L](http://dx.doi.org/10.1016/0022-1031(92)90038-L)
- Labor Law Center. (2018). State & Federal Minimum Wage Rates. Retrieved from <https://www.laborlawcenter.com/state-minimum-wage-rates/>
- Lindgaard, G. (2007). Aesthetics, Visual Appeal, Usability and User Satisfaction: What Do the User's Eyes Tell the User's Brain? *Australian Journal of Emerging Technologies & Society, 5*(1).
- Lindgaard, G., & Dudek, C. (2002). User Satisfaction, Aesthetics and Usability *Usability* (pp. 231-246): Springer.
- Lindgaard, G., Fernandes, G., Dudek, C., & Brown, J. (2006). Attention web designers: You have 50 milliseconds to make a good first impression! *Behaviour & Information Technology, 25*(2), 115-126.
- McCroskey, J. C., & Teven, J. J. (1999). Goodwill: A reexamination of the construct and its measurement. *Communications Monographs, 66*(1), 90-103.
- McDonough, P. M. (1994). Buying and Selling Higher Education: The Social Construction of the College Applicant. *The Journal of Higher Education, 65*(4), 427-446.
doi:10.2307/2943854
- Merker, L. (2014). Option Anxiety: A new study offers insight into reaching prospective students. Retrieved from <https://omniupdate.com/resources/pdfs/articles/ccc-jan-2014-p66-67.pdf>
- Michael Mitchell, M. L., Kathleen Masterson. (2017). A Lost Decade in Higher Education Funding: State Cuts Have Driven Up Tuition and Reduced Quality. Retrieved from <https://www.cbpp.org/research/state-budget-and-tax/a-lost-decade-in-higher-education-funding>
- Michel, J. S., O'Neill, S. K., Hartman, P., & Lorys, A. (2018). Amazon's Mechanical Turk as a Viable Source for Organizational and Occupational Health Research. *Occupational Health Science, 2*(1), 83-98.
- Mishra, A., Bhusan Dash, S., & Cyr, D. (2014). Linking user experience and consumer-based brand equity: the moderating role of consumer expertise and lifestyle. *Journal of Product & Brand Management, 23*(4/5), 333-348. doi:doi:10.1108/JPBM-12-2013-0459
- Mitchell, M., Palacios, V., & Leachman, M. (2014). States are still funding higher education below pre-recession levels. *Center on Budget and Policy Priorities, 5*(1), 14.
- Morgan-Thomas, A., & Veloutsou, C. (2013). Beyond technology acceptance: Brand relationships and online brand experience. *Journal of Business Research, 66*(1), 21-27.
doi:<http://dx.doi.org/10.1016/j.jbusres.2011.07.019>
- Moshagen, M., & Thielsch, M. (2013). A short version of the visual aesthetics of websites inventory. *Behav. Inf. Technol., 32*(12), 1305-1311. doi:10.1080/0144929x.2012.694910
- Moshagen, M., & Thielsch, M. T. (2010). Facets of visual aesthetics. *International Journal of Human-Computer Studies, 68*(10), 689-709.
- Murphy, S. T., & Zajonc, R. B. (1993). Affect, cognition, and awareness: Affective priming with optimal and suboptimal stimulus exposures. *Journal of personality and social psychology, 64*(5), 723-739. doi:10.1037/0022-3514.64.5.723
- Nathan, R., & Yeow, P. H. P. (2011). Crucial web usability factors of 36 industries for students: a large-scale empirical study. *Electronic Commerce Research, 11*(2), 151-180.

- National Student Clearinghouse Research Center. (2017). *Current Term Enrollment Estimates - Spring 2017*. Retrieved from <https://nscresearchcenter.org/wp-content/uploads/CurrentTermEnrollment-Spring2017.pdf>
- Nielsen, J. (2000). Eyetracking study of web readers. Retrieved from <http://www.nngroup.com/articles/eyetracking-study-of-web-readers/>
- Nielsen, J. (2012). Usability 101: Introduction to Usability.
- Nisbett, R. E., & Wilson, T. D. (1977). The halo effect: Evidence for unconscious alteration of judgments. *Journal of personality and social psychology*, 35(4), 250.
- Noel-Levitz. (2013). *2013 E-Expectations Report: The Impact of Mobile Browsing on the College Search Process*. Retrieved from https://www.ruffalonl.com/documents/shared/Papers_and_Research/2013/2013_E-Expectations_mobile.pdf
- Okerson, J. R. (2016). Beyond the campus tour: College choice and the campus visit.
- Perrin, A., & Duggan, M. (2015). Americans' internet access: 2000–2015. *Pew Research Center*, 26.
- Petrick, J. F. (2002). Development of a multi-dimensional scale for measuring the perceived value of a service. *Journal of leisure research*, 34(2), 119.
- Pew Research Center. (2014). *Jan. 9-12, 2014 – 25th Anniversary of the Web*.
- Phillips, C., & Chaparro, B. (2009). Visual appeal vs. usability: Which one influences user perceptions of a website more. *Usability News*, 11(2), 1-9.
- Pratkanis, A. R. (1989). The cognitive representation of attitudes. *Attitude structure and function*, 71-98.
- Reichheld, F. F. (2003). The one number you need to grow. *Harvard business review*, 81(12), 46-55.
- Robins, D., & Holmes, J. (2008). Aesthetics and credibility in web site design. *Information Processing & Management*, 44(1), 386-399.
- Rondeau, D. B. (2005). For mobile applications, branding is experience. *Communications of the ACM*, 48(7), 61-66.
- Ruffalo Noel Levitz. (2016). *2016 E-Expectations Trend Report*. Retrieved from http://ruffalonl.com: http://learn.ruffalonl.com/rs/395-EOG-977/images/2016_E_Expectations_Trend_Report_1.0.pdf
- Ruffalo Noel Levitz. (2017). *2017 E-Expectations Trend Report*. Retrieved from http://ruffalonl.com: http://learn.ruffalonl.com/WEB2017E-ExpectationsReport_LandingPage.html
- Sauro, J., & Dumas, J. S. (2009). *Comparison of three one-question, post-task usability questionnaires*. Paper presented at the Proceedings of the SIGCHI conference on human factors in computing systems.
- Schofield, C., Cotton, D., Gresty, K., Kneale, P., & Winter, J. (2013). Higher education provision in a crowded marketplace. *Journal of Higher Education Policy and Management*, 35(2), 193-205.
- Shuttleworth, M. (2016). Between Subjects Design. Retrieved from <https://explorable.com/between-subjects-design>
- Silberman, M. S., Tomlinson, B., LaPlante, R., Ross, J., Irani, L., & Zaldivar, A. (2018). Responsible research with crowds: pay crowdworkers at least minimum wage. *Commun. ACM*, 61(3), 39-41.

- Slovic, P., Finucane, M. L., Peters, E., & MacGregor, D. G. (2007). The affect heuristic. *European journal of operational research*, 177(3), 1333-1352.
- Smith, A., & Anderson, M. (2016). Online shopping and e-commerce. *Pew Research Center*, 19.
- Teven, J. J., & McCroskey, J. C. (1997). The relationship of perceived teacher caring with student learning and teacher evaluation. *Communication Education*, 46(1), 1-9.
- The Balance Careers. (2018). 2019 Federal and State Minimum Wage Rates. Retrieved from <https://www.thebalancecareers.com/2018-19-federal-state-minimum-wage-rates-2061043>
- Tractinsky, N., Katz, A. S., & Ikar, D. (2000). What is beautiful is usable. *Interacting with computers*, 13(2), 127-145.
- Tuch, A. N., Roth, S. P., Hornbæk, K., Opwis, K., & Bargas-Avila, J. A. (2012). Is beautiful really usable? Toward understanding the relation between usability, aesthetics, and affect in HCI. *Computers in Human Behavior*, 28(5), 1596-1607. doi:<http://dx.doi.org/10.1016/j.chb.2012.03.024>
- Vedder, R., Denhart, C., & Robe, J. (2013). Why Are Recent College Graduates Underemployed? University Enrollments and Labor-Market Realities. *Center for College Affordability and Productivity (NJ1)*.
- Warwick, J., & Mansfield, P. M. (2004). Perceived Risk in College Selection: Differences in Evaluative Criteria Used by Students and Parents. *Journal of Marketing for Higher Education*, 13(1-2), 101-125. doi:10.1300/J050v13n01_07
- Wetzlinger, W., Auinger, A., & Dörflinger, M. (2014). *Comparing effectiveness, efficiency, ease of use, usability and user experience when using tablets and laptops*. Paper presented at the International Conference of Design, User Experience, and Usability.
- Workman, J. L. (2015). PARENTAL INFLUENCE ON EXPLORATORY STUDENTS' COLLEGE CHOICE, MAJOR, AND CAREER DECISION MAKING. *College Student Journal*, 49(1), 23-30.
- Zajonc, R. B. (1980). Feeling and thinking: Preferences need no inferences. *American Psychologist*, 35(2), 151-175. doi:10.1037/0003-066x.35.2.151

APPENDICES

Appendix A: Survey Questions

Pre-stimulus Exposure Questions

Q 1: Are you familiar with Western Central University? (Yes / No)

Q 2: Indicate how strongly you agree or disagree with the following statements. (display if Q 1 answer is 'Yes'; 5-point Likert, Strongly disagree – Strongly agree)

- Western Central University is a reputable college.
- The professors at Western Central University are excellent teachers.
- The education students receive at Western Central University is a good value for their money.

Post-stimulus Exposure Questions

Q 3: How strongly do you agree or disagree with the following statements? (7-point Likert, Strongly disagree – Strongly agree)

- The design is cohesive and everything seems to belong together.
- The layout of the page is pleasantly varied.
- The colors on the web page are used in an attractive way.
- The page appears professionally designed.

Q 4: How easy do you think it would be to find information you are looking for, or complete a specific task? (7 point Likert, Extremely easy – Extremely difficult)

Q 5: Based on your impressions of the page above, how likely do you think you would be to recommend Western Central University to one of your children or someone you know? (7-point Likert, Extremely likely – Extremely unlikely)

Q 6: Based on the general impressions you have of the web page above, how strongly would you agree or disagree with the following statements: (7-point Likert, Strongly agree – Strongly disagree)

- My best guess is that the tuition at Western Central University is likely to be reasonably priced.

- My impression is that having a degree from Western Central University is likely to increase a graduate's status.
- My guess is that the education being offered by Western Central is likely to be a "good buy."
- I would expect that the professors at Western Central University are likely to be good teachers.
- My best guess is that the professors at Western Central University are likely to be leading experts in their fields.
- I got the impression that a Western Central University education is reputable.
- I got the impression that a Western Central University education is worth the money.
- I got the impression that a degree from Western Central University degree is well respected.

Q 7: Based on your impression of the web page above, what is your best guess as to where the professors at Western Central University likely fit between each of the following word pairs? (8-point semantic differential)

- Intelligent - Unintelligent
- Untrained - Trained
- Inexpert - Expert
- Informed - Uninformed
- Incompetent - Competent
- Bright - Stupid

Q 8: Based on your impressions of the website above, what is your best guess as to how likely Western Central University would be able to contribute to your student's growth in the following areas? (7-point Likert, Extremely unlikely – Extremely likely)

- Working well with others
- Acquiring knowledge and skills needed for a career
- Acquiring knowledge and skills for further academic study
- Acquiring knowledge and skills for intellectual growth throughout your student's life

Q 9: Based on your impressions of the website above, what is your best guess as to how satisfied the students who currently attend Western Central University are with each of the following? (7-point Likert, Extremely dissatisfied – Extremely satisfied)

- The overall quality of instruction
- Professor's respect for the students
- The student's sense of belonging at the Western Central University campus
- The University's openness to the opinions of others
- Student respect for other students

- The student's social support networks on campus
- Western Central University's reputation
- The status of Western Central University
- The value of the education students receive at Western Central University

Q 10: What gender are you? (Multiple choice)

- Male
- Female
- Other _____
- Prefer not to answer

Q 11: What age group do you fall in to? (Multiple choice)

- Under 36
- 36-40
- 41-45
- 46-50
- 51-55
- Over 55

Q 12: On average, how much time do you spend on the internet browsing websites, checking social media, or following up on emails? (Multiple choice)

- More than 7 hours per day
- Between 1 and 6 hours per day
- Less than one hour per day
- A few hours per week
- A few hours per month
- Less than a few hours per month

Q 13: How "tech savvy" do you consider yourself to be? (Multiple choice)

- Far above average
- Somewhat above average
- Average
- Somewhat below average
- Far below average

Q 14: If you have children, what age groups do your children fall in to? Select all that apply. (Multiple choice)

- 13 or under
- 14 or 15

- 16 or 17
- 18 or 19
- 20 or 21
- 22 or older

Q 15: If any of your children are currently in school, what grades are they in? Select all that apply. (Multiple choice)

- Preschool
- Elementary School
- Middle School
- High School
- College or University - Undergraduate
- University - Graduate

Q 16: How likely is at least one of your children to attend college or university in the future? (Multiple choice)

- They already attend
- Extremely likely
- Somewhat likely
- Neither likely nor unlikely
- Somewhat unlikely
- Extremely unlikely

Q 17: How important do you feel that websites are to a university's recruitment efforts? (Multiple choice)

- Extremely important
- Very important
- Moderately important
- Slightly important
- Not at all important

Appendix B: Recruitment Materials

mTurk Post

Title: Website Design Survey: What are your opinions? (~10 Minutes)

Description: This is a short survey for an academic study. You will be asked to view a website design and complete a short survey. This will take approximately 7 - 10 minutes to complete.

Keywords: survey, academic, web, website, design, opinion, user experience, experiment, psychology, questionnaire

Posting:

We are conducting an academic survey about the impact of website design on a user's opinions. You will be asked to view a web page design and complete a short survey; this should take about 7-10 minutes to complete. At the end of the survey, you will receive a code to paste into the box below to receive credit for taking our survey.

This HIT is periodically re-posted. If you've already completed this HIT previously, please do not complete it a second time. You will not be compensated a second time.

Make sure to leave this window open as you complete the survey. When you are finished, you will return to this page to paste the code into the box.

Select the link below to complete the survey.

Appendix C: Stimulus Materials

Low Quality Stimulus

Discover Your Center,
Impact The World:
An education is
preparing for success

[> Read Darek's Tips](#)
[> Explore Admissions](#)



CURRENT STUDENTS VISITORS FACULTY / STAFF RESEARCH & INDUSTRY ALUMNI

NEWS / EVENTS ATHLETCS SAFETY AND CAMPUS POLICE GIVE TO WESTERN CENTRAL

Highlights & Upcoming Events

To pause the following scroller, **mouseover**.



[University Welcomes
2018 President's Honors
Club Inductees](#)

[Western Central Language Arts Camp](#)
8:00am - 5:00pm (M-Th).
(Children ages 5-13)

Apply Now

[Plan a Visit](#)

[Request an Address](#)

[Bookations](#)

Western Central's **No Smoking Policy** featured on PBS
Newsroom Awareness, April 12, 2018. [Click here to see the
interview.](#)

Divisions

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- [Career Services](#)
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- [College of Business](#)
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- [College of Fine & Performing Arts](#)
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- [College of Health & Human Services](#)
- [College of Journalism & Mass Communications](#)
- [College of Veterinary Medicine & Biomedical Sciences](#)
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- [University Administration](#)

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 Search

Let's Chat

Facts and Figures Summary, Fall 2016

(As of October 30, 2016)

Student to Faculty Ratio	8:1	Gender:		
Faculty w/ Terminal Degree	93%	Female	1103	48.3%
		Male	1179	51.7%

Fall 2016 Students:

First-time Freshmen	601
New Students	853
Freshmen	1020
Sophomores	509
Juniors	369
Seniors	384
TOTAL ENROLMENT	2282

Geographic Distribution:

State of New Hampshire	1238
54.3%	
Other U.S. States	973
42.6%	
International	71
3.1%	

"WE'LL REMEMBER IN THE YEARS..."



EIGHT COLLEGES, INFINITE POSSIBILITIES

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- | | | |
|---|---|---|
| Arts & Sciences
Undergrad Majors , Grad Programs , Directory | Fine & Performing Arts
Undergrad Majors , Grad Programs , Directory | Journalism & Mass Communications
Undergrad Majors , Grad Programs , Directory |
| Business
Undergrad Majors , Grad Programs , Directory | Geosciences & Natural Resources
Undergrad Majors , Grad Programs , Directory | Veterinary Medicine & Biomedical Sciences
Undergrad Majors , Grad Programs , Directory |
| Engineering
Undergrad Majors , Grad Programs , Directory | Health & Human Services
Undergrad Majors , Grad Programs , Directory | |

See [College Catalogue](#) for more information, including Courses and Programs of Study.

SOCIAL MEDIA

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<p>APPLYING</p> <ul style="list-style-type: none"> ▶ Apply Now at Western Central ▶ Admission ▶ Financial Aid ▶ International Admissions ▶ Placement Office ▶ Request an Address ▶ Request a Bookation ▶ Request a Visit ▶ Request a Tour ▶ Request a Video ▶ Request a Webpage ▶ Request a Website ▶ Request a Website 	<p>CAMPUS</p> <ul style="list-style-type: none"> ▶ Admission ▶ Financial Aid ▶ International Admissions ▶ Placement Office ▶ Request an Address ▶ Request a Bookation ▶ Request a Visit ▶ Request a Tour ▶ Request a Video ▶ Request a Webpage ▶ Request a Website 	<p>AFFILIATES</p> <ul style="list-style-type: none"> ▶ Admission ▶ Financial Aid ▶ International Admissions ▶ Placement Office ▶ Request an Address ▶ Request a Bookation ▶ Request a Visit ▶ Request a Tour ▶ Request a Video ▶ Request a Webpage ▶ Request a Website 	<p>LOGINS</p> <ul style="list-style-type: none"> ▶ Admission ▶ Financial Aid ▶ International Admissions ▶ Placement Office ▶ Request an Address ▶ Request a Bookation ▶ Request a Visit ▶ Request a Tour ▶ Request a Video ▶ Request a Webpage ▶ Request a Website
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High Quality Stimulus



Discover Your Center, Impact The World

An education is preparing for success

READ DEREK'S TIPS EXPLORE ADMISSIONS



University Welcomes 2018 President's Honors Club Inductees

The Western Central University community celebrated this year's President's Honors Club inductees in a special dinner and ceremony and the S.D. Cornsweat Performing Arts Center on late August. [READ FULL STORY](#) [MORE STORIES AT WESTERN CENTRAL TODAY](#)

LET'S CHAT

93

Percentage of faculty members who have attained the highest available degree in their field

LEARN MORE



SABER CAT POWER

SLAY VIDEO



EVENTS

SEE WHAT'S NEXT

8:1

Student to Faculty Ratio

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- Western Central University Foundation
- S.D. Cornsweat Center for Performing Arts
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