

Empathy, connectivity, authenticity, trust, and spirituality:

A pedagogical framework for interaction design

Cyndi Wiley*, James R. Ewald *, Rev. Jennifer L. Hall**, Joshua Ryther*

* *Grand View University, Des Moines, Iowa, USA, cwiley@grandview.edu, jewald@grandview.edu, jryther@grandview.edu*

** *UnityPoint Health, Des Moines, Iowa, USA, Jennifer.Hall@unitypoint.org*

Abstract: This paper is an attempt to bridge the gap left by the absence of an inclusive theory for interaction design and is a call for radical change to incorporate empathy, connectivity, authenticity, trust, and spirituality (e-CATs) into all aspects of the design and research process. This process must begin in the classroom. A case study of the beginning design process for development of a mobile game app and interactive website is presented. These interactions will be used by students and faculty in the art and design department at Grand View University in Des Moines, Iowa, USA, and is an example of how this pedagogical framework can build relationships between these often polarized groups. Student engagement inside and outside the classroom is of utmost importance. The researchers believe that this engagement builds community and vocationally healthy adults. This paper focuses on the initial gathering of data to inform the design of evaluation instruments to assess wants and needs of students through the use of the e-CATs framework. The app will apply game design principles that work to increase student engagement through play within the art and design department at Grand View University. Grand View is a private university with approximately 2,000 students, located in the central United States and affiliated with the Evangelical Lutheran Church in America. Although Grand View has a strong Lutheran heritage, spirituality does not always filter into the classroom. Speaking of one's religious beliefs is taboo in the academic environment. Separating religion from spirituality is integral in gathering data and an innovative approach to the pedagogy of interaction design.

Key words: *Interaction design, design education, pedagogy*

1. Introduction

This paper is by no means suggesting this framework is the ultimate solution for interaction design's current lack of a widely accepted inclusive theory, rather it is one among many possibilities that are being brought into the discipline. The current paucity of an inclusive theory for interaction design results in designers not researching social, cultural and emotional effects of their designs with the people that use them [12]. Inclusivity in this sense means designing with marginal groups in mind, rather than only catering to the dominant majority. Whereas the dominant culture might squander more money than subordinate groups, it is imperative to honor the multitude of cultures that represent the US. This ideology keeps financial gain at the lowest possible level while designing interactions with people. At the same time, it holds people at the top level by creating relationship between audience and designer. This flipping of the money aspect is contradictory to the current approach of business that champions profits before people [3]. By examining priorities, the designer can then view through the lens of their

audience's social, cultural, and emotional ties. Using multiple theories in combination will provide a rhetorical framework for designers to work with their intended audiences and build "growth-fostering relationships" [8]. When addressing needs and wants of an audience, the designer has a particular responsibility as a citizen to develop relationships with the people for whom they are designing interactions [4]. Research needs to be conducted before, during and after the launch of a design into the behavior of the people using it.

The researchers introduce a pedagogical framework, e-CATs, with its main component centered on empathy. Empathy is a gateway to building meaningful relationships. Used as a method of teaching and a way of being, the e-CATs framework can lead to wholeness for students and educators alike. As Parker Palmer states, "...intellect, emotion, and spirit depend on one another for wholeness" [11]. Students in the art and design program at Grand View University in Des Moines, Iowa, have not been fully engaged in their educational process in recent years, particularly outside the classroom. Learning environments are changing rapidly with the "Internetz" (a reference to a common meme found in popular culture pertaining to the use of online social media.) Why shouldn't educators use social media and game design principles that our students already use? This adds a level of authenticity for students to co-create their learning environments. In this learner-centered approach, the student shares power with the instructor and more importantly the instructor shares power with her/his students. Thereby, empowering them through empathy to achieve autonomy and share ownership in their learning. This will hopefully lead to mutual respect and eventually trust between student and instructor.

During this study, the researchers used the e-CATs framework to gather data related to the beginning design stages of a mobile game app and interactive website for students enrolled in the art and design program at Grand View University. This framework will inform the entire design process, which will use the rapid prototyping model to design the graphical user interface (GUI) for the app and website at a later time. The research presented in this paper will inform the design of evaluation instruments, prior to any sketches for the GUI, to further gather data from the students to assess their relational connection to others in the art and design department and in their lives in general. These relational connections can include family, friends, teachers, classmates, acquaintances, and a higher power.

Relationships are synergistic. Relational theories describe how we create and sustain relationships and take into consideration our own experiences, our own social location and include broad cultural signifiers. Spirituality is defined in this paper as, "... the diverse ways we answer the heart's longing to be connected with the largeness of life..." [11]. Part of our development as people is to learn about power; our own power, and others' power. This study offers the combinational addition of Relational-Cultural Theory and the Connectivity Model, Figure 1, (which uses Activity Theory and Kansei Engineering) to the spectrum of interaction design through the e-CATs framework [5,6]. Since interaction design is about designing mediating tools for people and their subsequent behaviors, particular attention is needed into establishing and maintaining relationship between designer and audience. Activity Theory is one way that interaction designers have tried to meet the needs of their intended audience [7]. It incorporates mediating tools that account for environment, culture, role of the artifact, motivations, and complexity of real life activity. However, a wide gap exists in how to incorporate "... cognition, emotion, as well as affect" [10] by using activity theory alone. The Connectivity Model proposed by Kang and Satterfield [6], accounts for the emotional gap in using Activity Theory in isolation, by incorporating Kansei Engineering to measure emotional responses to products. They have successfully developed the model for use in product design and brand experiences [6]. The model can also be applied to interactive systems and ultimately interaction design.

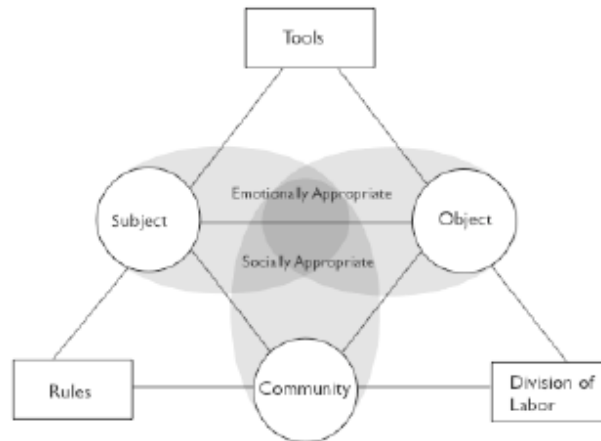


Figure 1. The Connectivity Model in relation to activity theory.

Relational-Cultural Theory pushes against typical patriarchal structures and values in the United States. These typical “power over” values/structures include men over women, whites over blacks, logic over emotion, provider over nurturer, teacher over student, and so on. Relational-Cultural Theory seeks a flatness of power. It creates a sense of shared power, or “power with” others [5]. This idea of shared power can lead to collaborative creation in interaction design to produce useful, good designs that are pleasurable with which to interact. Within the classroom, shared power between student and instructor leads to mutual respect, trust, and greater student engagement.

Empathy, mutuality, authenticity, and spirituality, are essential in recognizing our own limits and strengths in connection with others. Building trust requires a mix of all of these tenets, as well as evolution through conflict. Interaction designers and educators can move toward co-creating an inclusive theory for this discipline by becoming vulnerable and sharing power with the people with whom they design interactions in industry, by first designing with and sharing power with students in the classroom.

1.1 Background of the study

Interactive systems are comprised of both the physicality of the object and its visual language spoken through the GUI. Language gives us knowledge [15]. Winsor (2004) states, “Knowledge is not found ready-made in nature. Instead, knowledge is constructed in the interplay between nature and the symbol systems we use to structure and interpret it.” In other words, symbol systems compose language, and knowledge is created from our interpretation of language. Uniquely, visual language contains both text and images that mediate knowledge to the audience from the designer. The designer then constructs the visual language used within an interactive system, subsequently referred to as interaction design in this paper.

The visual language of interaction design has been used to sustain “...relations of domination” [1], or cultural hegemony in the United States, by catering to the dominant culture. Barton and Barton reference hegemony through the Italian Marxist Antonio Gramsci. Cultural hegemony can also be described through Relational-Cultural Theory as a culturally-diverse society in which the dominant center exerts “power over” subordinate, marginal groups [14]. These marginal groups, “...enjoy less cultural privilege (whether by virtue of race, ethnicity,

sexual orientation, or economic status)...” [9], as well as age or gender identity [2]. The “power over” dynamic is sustained through what Barton and Barton (1993) term the *rules of inclusion* and the *rules of exclusion*. These rules determine what is included and what is excluded from a design and visual language. “These rules amount to either explicit or implicit, overt or covert, claims to power” [1].

Designers often unknowingly use rules of exclusion in designing visual languages that effect many cultural groups. Unfortunately, these rules are often related to marginal groups and by excluding them, their wants and needs are ignored. Norman (2004) declares, “The distinction between the terms needs and wants is a traditional way of describing the difference between what is truly necessary for a person’s activities (needs) versus what a person asks for (wants). Needs are determined by task... Wants are determined by culture, by advertising, by the way one views oneself and one’s self-image.” Therefore, designers miss a rich (meaning, full of flavorful culture and diversity) potential audience by focusing on the dominant majority [10].

The researchers are attempting to humanize the language commonly used in interaction design by referring to users and target audiences as “people” or “human” as much as possible. After all, it’s people who are interacting with products and systems and it’s important to name them as such. Only by recognizing this relationship can we move toward implementing the e-CATs framework successfully.

1.2 Purpose of the study

The student group in the art and design department at Grand View University is named Seymour Art. Faculty initiated it approximately ten years ago as a way to build community among students; host events outside of regularly scheduled classes, attend events in the local Des Moines art community, and take out-of-town trips to other cities. Its general purpose is to encourage students to “see more” art. However, over the past few years student attendance at events has been lackluster at best. After school and evening events have historically shown low participation and has led to faculty requiring that students attend certain events by assigning grades based on their attendance. While the events are relevant to student learning, grading on attendance is purely extrinsic motivation and creates an environment of resistance and resentment.

This academic year, an additional student group (the Grand View University AIGA student group) was formed as a subgroup of the Seymour Art student group, specifically geared toward graphic and interaction design students. The Grand View University AIGA student group is part of the larger organization of AIGA, a national association for design professionals, students, and educators. The art and design program can only have one recognized student group, hence the inclusion of the AIGA student group within the existing Seymour Art student group.

With the addition of the AIGA student group under the umbrella of the Seymour Art student group, both are experiencing a need to establish strong, linked identities within the art and design department while building community and relationships among students, faculty, and local art and design professionals in Des Moines.

2. Research method

The faculty, along with student leaders of the Seymour Art and AIGA student groups, has been searching for ways to increase student engagement and bring fun into the groups’ events, thereby increasing attendance and participation through intrinsic motivation rather than solely extrinsic factors, such as being graded for attendance. Manual expert methods were used to extract low-level Kanseis, also referred to as Kansei Words [13]. Several

focus group sessions (Figure 2) and interviews were organized with current and prospective student members of the Seymour Art and the AIGA student groups, along with faculty mentors to assess needs and wants from stakeholder groups. Affinity diagrams (Figures 3 and 4) were used as part of one focus group, along with other manual expert methods of gathering Kansei Words, including twelve individual interviews, searching trade magazines and relevant literature, as well as ideas and vision [13]. As Schütte states, “An important point is to translate ideas and visions into Kansei Words because non-existing solutions should also be considered. In this way Kansei Engineering can be used as a creative product development tool, which generates innovative solutions. The task is to describe the domain, not the existing products” [13]. The domain described was Grand View’s art and design student engagement activities.



Figure 2. A focus group session with students and faculty being conducted.



Figure 3. Using sticky notes to begin affinity diagram.



Figure 4. Placing sticky notes in the affinity diagram.

The interviews were conducted in a peer-to-peer fashion with equal distribution of female to male students of varying levels in the art and design program from freshmen to seniors. The peer-to-peer interviews were intentional in format to help the students feel freer to share with their peers, rather than being interviewed by a faculty member, thereby hindering honest responses. More authentic responses were recorded as such.

The data gathered from the focus groups and interviews will inform the design of statistical evaluation instruments that will assess a person's "...Kansei and what they consider to be the important Kansei" [13]. A questionnaire will be developed and sent to the stakeholder groups. "Using statistical methods to evaluate the gathered material quantifies the affinity between the different Kanseis" [13].

3. Findings and discussion

The manual expert methods demonstrated several important findings and insights into why student participation has been low, as well as current levels of student engagement. Emphasis was placed on the assessment of emotional and spiritual connection in identifying Kansei Words (see Table 1). The most common response stated by students was a lack of time due to their work schedule and the amount of homework from their classes. The average number of hours students work per week varies from 20-40, spread between part-time jobs and internships. Most students take between 15-18 credit hours each semester in classes. In addition to an average of 6-8 hours of homework per week for their general education requirements, art and design students are expected to spend 6-8 hours per week, per studio class on project assignments. Studio classes differ from most general education classes that meet for three contact hours per week, by requiring six contact hours per week for the same three credit hours. More than half of the students involved in the focus groups and interviews were enrolled in more than one studio class at the same time. The heavy time requirement of the art and design classes, in addition to part-time jobs and internships, shows to be taxing on the students' physical energy, mental energy, and overall wellbeing, therefore negatively affecting their connection to the largeness of life. Students reported feeling overwhelmed and anxious by the amount of work, and said they were depressed that there was not enough time to do everything expected of them. They also showed resentment to instructors that required them to attend outside the classroom events. They stated they would be more likely to want to attend if given autonomy in their decision

and given enough time to plan their schedule accordingly. Requiring them to attend has not given them ownership of using outside the classroom events to aid in their learning process.

Table 1. Quantity of 230 Kansei Words

Adjectives	Nouns	Verbs
Goofy	Events	Design Thinking
Clever	Design	Design Feeling
Innovative	Emotion	Thinking
Designerly	Aesthetic	Feeling
Fun	Team Player	Empathize
Empathic	Play	Design
Creative	Community	Motivate
Diverse	Student	Designing
Insular	Students	Playing
Premature	Classes	Create
Easy	Professors	Creating
Familiar	Teachers	Network
Intimidating	Instructors	Networking
Accessible	Spirit	Developing
Informative	Spirituality	Connect
Motivational	Empathy	Connecting
Inspirational	Originality	Conflict
Red, black, grey	Creativity	Nervous
Progressive	Commonplace	Depressed
Fast-paced	Professionalism	Anxious
Convenient	Diversity	Happening
Quirky	Connected	What's Happening
Popular	Campus	Communing
Playful	Studio	Alerting
Good	Anxiety	Eating
Alone	Friends	Sharing
Together	Navigation	Acting arrogant
Alone together	Competitions	Acting like a jerk
Introvert	Upcoming Events	Social Networking
Extrovert	Accessibility	Knowing
Scary	Open Door	Being known
Professional	Commute	Requiring
Futuristic	Alert	Working
Busy	Deadlines	Motivating
Unique	Food	Demotivating
Beneficial	Activities	Notifying
Edgy	Hands-on Activities	Seeing
Funky	General Education	Inspiring
Out There	Art and Design	Discussing
Different	AIGA	Participating
Beautiful	Seymour Art	Lacking
Awesome	Student Group	Hanging Out
Aesthetically Pleasing	Student Groups	Open and Understanding
Silly	Social Network	Pushing
Prestigious	Discussion	Leading
Refining	Free Food	Involving
Rigorous	Time	Forcing
Time Consuming	Rasmussen Center	Locating
Effective	Artwork	Eating
Efficient	Internships	Educating
Current	Jobs	Teaching
Friendly	Real world	Learning

Instructive Hidden Open Cool Encouraging Recruitment	Constructive Critique Designer of the Month Leadership Involvement Games Schedule Homework Group Faculty Facebook Email Notification Work Foursquare Geo location Video game Calendar	Being Driving Typing Encouraging Recruiting Staying Leaving Blinding Binding
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Informal responses from faculty showed a similar feeling of resentment to requiring students to attend. Out of six full-time faculty, four felt that this was the only way to encourage students to show up. Their resentment was aimed toward the students for “making them require attendance” in order for students to go. This mutual feeling of resentment has proved to be demotivating for both students and faculty.

Another important pattern that was apparent during the focus groups and interviews indicated that students often did not find out about Seymour Art and AIGA events until too late. Some suggestions were to keep a centralized calendar of all events within the community, as well as Grand View events so students could plan more than two weeks in advance to ask off work. The current method for posting events is to email students in a bulk email, as well as post to Facebook. Three-fourths of the students included in the study stated that email was not an effective way to inform them, as they did not check it in time to plan in advance for the event. Three-fourths of the students reported that Facebook was currently the main point of contact for them to track events, however, things seemed to get lost in Facebook’s timeline interface. One-fourth of the students did not know about the two separate Facebook pages for the two groups. Students stated that they needed to be verbally reminded in classes about events, as well as having another way to keep track of the events. They stated it was difficult to keep track of which events were more important than others, and which events were free or had a cost associated. Lack of finances was cited as a major deterrent to attending some events.

One-third of the students interviewed individually did not know the purpose of the Seymour Art student group or the AIGA student group. They were confused as to the mission of each, how to become involved, and which group was appropriate for them. These students also stated that there seemed to be a lack of fun involved with attending events. Based on the student responses, it will be important to determine each student’s range on the introvert/extrovert scale in determining intrinsic motivational factors for attending events.

4. Conclusions and future study

According to individual interviews and focus groups, art and design students are confused as to how to get involved with Seymour Art and/or the AIGA student group and the similarities and differences between them. The heavy time requirement and rigor of art and design classes, combined with students’ work schedules does not

leave time for students to regularly attend evening and weekend events without much prior planning to adjust their schedules and save money for attendance fees. The lack of fun and sense of play was missing from many of the past events.

An important consideration of inviting the students to offer direct, critical feedback during the focus groups and interviews was a manifestation of using the e-CATs framework. The researchers used empathy to lead them on a path to begin building growth-fostering relationships with students by encouraging authentic responses by providing a safe space in which to do so. The statistical evaluations are expected to indicate if trust is being achieved through the use of high-level Kanseis, as well as if the students who have been actively attending events feel more connection to other students, faculty and the local Des Moines art and design community. By using the e-CATs framework, the researchers have modeled the behavior of using empathy in the research and design process. Since October 2012 when the research was started, attendance at events has shown a very significant increase in participation by almost 50%, without the need to require graded attendance.

The Kansei Words gathered during this first phase of research will inform the design of the statistical method questionnaire that will be sent to the stakeholder groups of students and faculty. This will lead the researchers to high-level Kanseis, or Kansei Engineering Words to begin the design process for the GUI of the app and the interactive website.

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6. Citations

- [1] Barton, B. F., & Barton, M. S. (1993). Ideology and the map: Toward a postmodern visual design practice. In J. Johnson-Eilola & S. A. Selber (Eds.), *Central Works in Technical Communication* (pp. 232-252). Oxford University Press, New York.
- [2] Butler, J. (1999). *Gender trouble: Feminism and the subversion of identity*: Theatre Arts Books, New York.
- [3] Buxton, B. (2007). *Sketching User Experiences: Getting the Design Right and the Right Design*. Elsevier, San Francisco.
- [4] Heller, S., Vienne, V. (2003). *Citizen designer: perspectives on design responsibility*: Allworth Press, New York.
- [5] Jordan, J., Walker, M., & Hartling, L. (Ed.). (2004). *The Complexity of Connection: Writings from the Stone Center's Jean Baker Miller Training Institute*. The Guilford Press, New York.

- [6] Kang, S. R., & Satterfield, D. (2009). *Connectivity Model: Evaluating and Designing Social and Emotional Experiences*. In Proceedings of IASDR 2009.
- [7] Kaptelinin, V., & Nardi, B. A. (2006). *Acting with Technology: Activity Theory and Interaction Design* (Kindle ed.). MIT Press, Cambridge.
- [8] Miller, J. (1976). *Toward a New Psychology of Women*. Beacon Press, Boston.
- [9] Miller, J. B., & Stiver, I.P. (1997). *The Healing Connection: How Women Form Relationships in Therapy and in Life*. Beacon Press, Boston.
- [10] Norman, D. (2004). *Emotional Design: Why We Love (or Hate) Everyday Things*. Basic Civitas Books, New York.
- [11] Palmer, P. (1998) *The Courage to Teach: Exploring the Inner Landscape of a Teacher's Life*. Josey-Bass, a Wiley Imprint, San Francisco.
- [12] Rogers, Y., Sharp, H., & Preece, J. (2011). *Interaction Design: Beyond Human-Computer Interaction* (3rd Edition ed.). John Wiley & Sons Ltd., West Sussex, United Kingdom.
- [13] Schütte, S. (2005). *Engineering Emotional Values in Product Design: Kansei Engineering in Development*. Linkopings Universitet, Unityck.
- [14] Walker, M., & Rosen, W. (Eds.). (2004). *How Connections Heal: Stories from Relational-Cultural Therapy*. The Guilford Press, New York.
- [15] Winsor, D. (2004). Engineering Writing/Writing Engineering. In J. Johnson-Eilola & S. A. Selber (Eds.), *Central Works in Technical Communication* pp. 341-350. Oxford University Press, New York.