

DIGITAL TECHNOLOGY: A TOOL FOR MITIGATING CULTURAL CONSTRAINTS AND TEACHING DESIGN FOR SOCIAL CHANGE IN THE MENA REGION

Denielle Emans and Adina Hempel

College of Arts and Creative Enterprises, Zayed University, Dubai, United Arab Emirates,
denielle.emans@zu.ac.ae, adina.hempel@zu.ac.ae

ABSTRACT:

While design for social innovation has become a principal area of concentration within design practice, the design classroom offers a testing ground for students to work with communities concerned with environmental, humanitarian, and social impact. In the Middle East, where respect to cultural, religious, and/or regional restrictions is essential to effective teaching, digital technology can serve as a link between socially driven design students and their intended audience. This research expands upon design practices that advocate for community participation, with respect to the cultural constraints surrounding an all-female student body. Extrapolating from current scholarly literature on blended learning, digital tools, and cross-cultural collaboration, this paper offers a pedagogical model for social design instruction in the MENA region. Built upon classroom observation and student interviews from a Dubai-based undergraduate course titled "Design for Social Change," the paper provides an overview of the recently completed projects and a description of forthcoming research.

Keywords: Social Design, Digital Technology, MENA Region

1. INTRODUCTION

1. 1. SOCIAL DESIGN

The tenuous relationship between humanity, the earth, and its inhabitants is simultaneously more precious and unstable than ever before. Confluences of environmental, societal, and humanitarian issues threaten the precious interrelationship between man and nature. Within the Middle East, there exists unprecedented political turmoil, aggressive climate change, and anthropogenic environmental degradation. While the MENA region is currently undergoing a significant period in urban development—with countries such as the United Arab Emirates, Qatar, and Kuwait heavily investing in expanding cities—a dominant challenge is the high unemployment rate of the young generation. Furthermore, employment and education opportunities are lower for females than their male counterparts within GCC countries (State of Arab Cities 2012).

To help address these complex issues, social designers from varying disciplines work together to meet the needs of the community using participatory practices and a process of Human Centered Design (IDEO 2009). Instead of focusing solely on design aesthetics, social designers aim to identify the needs of the community and collaborate with numerous stakeholders concerned with research, government, social science, entrepreneurship, investment, sponsorship, distribution, and consumption. This shift in design practice from designing *for* people to designing *with* people combines design ethnography with community-based initiatives. As a result, the inclusion of the community in social design practice has become paramount to knowledge development and concept generation.

Increasingly, *design for social change* has become a key focus for 21st century professional design practice and consequently a relevant concentration for education programs across the world. Design classrooms can operate as transformative arenas promoting positive social

change when design instructors lead students through collaborative processes with partnering communities. For design classrooms located in the MENA region, where cultural constraints intermittently affect travel and face-to-face meetings, digital technology can serve as an important link between socially-conscious students and external partners. In these instances, instructors can employ existing research on digital tools, social presence, and cross-cultural communication to help guide students through this significant and unfamiliar experience. Even further, classrooms can emulate professional practice, connecting participants together through the use of digital technologies such as email, cloud-based tools, and various social media (Moldenhauer 2010).

1. 2. DIGITAL TOOLS FOR COMMUNICATION

Technology-supported tools for communication can help resolve a plethora of distance, resource, and time-based issues. When working in interdisciplinary design teams, online communication makes it possible for dispersed and international team-members to share ideas and exchange information. Designers can connect in the private, public, and social sectors using social media, whiteboard synch, text chat, voice memos, live application sharing, desktop video communication, e-mail, blogs, file-sharing applications, and video-conferencing. However, inasmuch as the accessibility of digital tools makes connecting with external participants easier than ever before, successful communication relies on effective social presence and cross-cultural awareness.

Research shows that a lack of social context in computer-mediated communication can increase negative communicative tone, hostile language, and depersonalization (Sproull & Kiesler 1986). These findings suggest that designers should take a proactive approach to communication in digital environments, one that accounts for an absence in social presence cues. For example, during synchronous communication, the use of culturally appropriate gestures (nodding, smiling, and bowing) can reinforce positive social presence. Facial expressions and back-channel cues such as "right," "okay," and "hmm" are also effective demonstrations of engagement between team members (Sproull & Kiesler 1986). In asynchronous communication, verbal repetition of relevant information can confirm active listening to a team member, and the use of meta-communicative data (emoticons) can help establish tone.

In a city such as Dubai, with a large expatriate community, careful attention to distinctive cultural factors is indispensable when developing digital interactions. Researchers argue that digital technologies can motivate and influence people to approach communication with increased sensitivity, understanding, and ethical awareness during cross-cultural collaborations (O'Brien, Alfano, & Magnusson 2007). William Guykunst explains that people tend to identify shared values and commonalities between themselves and a new cultural group as a way to begin communication (Guykunst 2004). However, as the interaction progresses, participants should pay attention to a broad range of cultural aspects, rather than focusing solely on ideology or discourse patterns (Scollen & Scollen 1995). The iceberg metaphor, developed by French and Bell, helps explain this relationship between implicit and socially manifested values (Figure 1). In the model, visible characteristics are physical or socially manifested values such as fashion and music, whereas implicit cultural values remain concealed under a "surface of water" (French & Bell 1995). This research indicates that thoughtful consideration to hidden cultural factors can help designers more efficiently communicate with external partners during synchronous and asynchronous interactions.

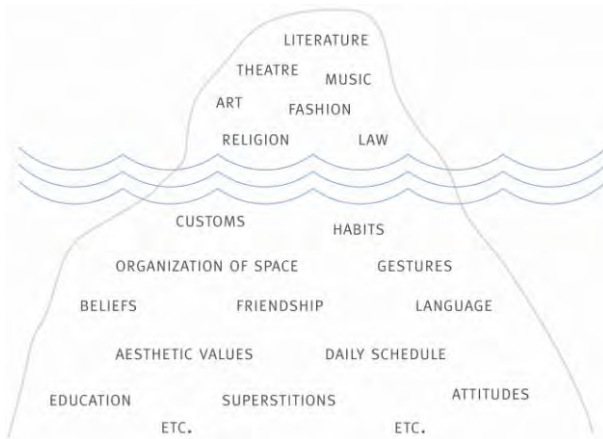


Figure 1: Iceberg metaphor, redrawn from French & Bell, 1995.

1.3. DIGITAL TOOLS FOR LEARNING

In a contemporary design classroom, technology is an integral component of instruction and often influences how students develop their projects. Online tools have not only increased access to global research and perspectives, but also support interaction with people from various cultural and geographic backgrounds. As a result, many international design institutions have broadened their approach to course mediation using a form of 'blended learning' that takes place both online and in traditional brick and mortar classrooms. According to Horn, "blended learning traditionally is a formal education program in which a student learns at least in part through online delivery of content and instruction with some element of student control over time, place, path, and/or pace" (Horn 2012). In a blended learning model, education can be customized to the personal needs of students and their particular cultural background, often resulting in higher-ranking student evaluations and lowered withdrawal rates ("Blended Learning Toolkit" 2013).

Research shows that classrooms that employ a form of blended learning can increase student performance and promote collaboration amongst faculty and students ("Blended Learning Toolkit" 2013). The communication modes for blended learning range from introductory face-to-face discussions followed by online elements, to a combined structure of both online and physical meetings throughout the semester. This approach to learning can model a typical design studio experience; in which designers and clients meet periodically, but primarily communicate using digital communication tools. Additionally, blended learning can support design education in isolated or rural communities by pairing remote communication with periodic face-to-face meetings.

Within the social design classroom, blended learning can support a wider agenda of social equality based on the notion that restrictions to physical presence should not limit participation. In areas such as the Gulf Region, where travel and face-to-face meetings are sometimes restricted, students can virtually connect with external partners using digital tools and participate in meetings based on the project requirements. When needed, instructors can meet directly with these partners instead of the students, helping to mitigate limitations surrounding individual circumstances. Implementing blended learning into social design curriculum can subsequently encourage students to pursue global imperatives while still respecting cultural and/or regional boundaries.

2. SOCIAL DESIGN COURSE PEDAGOGY

2.1. COURSE GOALS AND LEARNING OBJECTIVES

In the Fall and Spring semesters of 2013, a team-taught interdisciplinary design course titled "Design for Social Change" aimed to prepare students to work as effective members in the field of social design. Initiated by a Graphic Design Professor, in conjunction with an Interior

Design Professor, the motivation for the course stemmed from the two professors' shared common beliefs about cultivating collaboration, valuing individual expertise, and recognizing cultural differences as opportunities for mutual learning. The instructors followed the line of thought that education is not merely about the transfer of knowledge to students, but also its ability to "foster and facilitate the creation of agents who are capable not only of independent, reflective, and critical learning, but also of independent, reflective and critical thinking about, and hence engagement with, wider society" (Ferrell 2008).

Comprised of all-female Emirati students from mixed undergraduate levels, the class members had varied experience in design, digital media, and research methods. The course goals emphasized social responsibility within interdisciplinary design practice, asking students to build collaborative skills while working on projects for social, humanitarian, and environmental good in the MENA region. The specific learning objectives revolved around student's ability to:

Conduct primary and secondary research on a socially relevant topic using structured and/or unstructured interviews guided by self-generated questionnaires.

Learn to work in interdisciplinary design teams and collaborate on research collection surrounding self-selected topics of interest.

Enhance technical proficiency in the use of digital tools to address issues of narrative and literacy. Creative tools include Adobe Creative Suite and iBooks Author, along with employing outcomes onto the iPad.

Develop and share social design outcomes with the community through exhibition design and presentations at a local school.

2.2. COURSE STRUCTURE

The interdisciplinary "Design for Social Change" course began with a series of field trips and presentations introducing students to the field of social design, along with an overview of the principal sustainability issues in the region. Following in-depth discussions relating personal connections to social topics, students chose an area of interest for primary and secondary research collection. The selected topics ranged from coral reef destruction, water conservation, Arabic language preservation, to autism education. The introduction of research methods preceded a sequence of unstructured and structured interviews conducted by students in the class.

Next, students formed multidisciplinary teams around overarching topics to help individuals examine international case studies and enable cross-pollination across research. For instance, three students examining the topics of water shortage, coral reef destruction and over-fishing in the UAE teamed together in a group named "H₂O." These students conducted interviews together, shared individual research, and participated in group-critiques during breakout sessions throughout the course. Working in small teams empowered students to become the class expert on a self-defined skills topic while encouraging respectful peer-critique and appreciation of discipline-specific skills.

Following the initial observation and synthesis phases of the course, students composed a storyline to translate their complex research into a focused narrative for Emirate schoolchildren. The introduction of storyboarding, character development, and the "narrative arc" guided writing across the curriculum. Additionally, the importance of comprehensively understanding the chosen topic in order to explain it clearly to a child, became paramount to group discussions. Upon completion of the written component of the project, students moved from the role of the author, to the designer, to complete their children's e-book.

After weeks of illustration and design refinement, students translated their stories into a multi-touch learning environment for the iPad. Not only were the iPads an exciting tool for the design students to work with, they also presented an engaging medium to teach children

about social design topics. Research suggests that basic e-books have the ability to capture the attention of children using sound and motion, while also eliciting similar “levels of content related actions (e.g., labeling, pointing, and verbal elaboration of story features) from the children as its print counterpart” (Chiong, Ree, & Takeuchi 2012). In other words, the multi-touch features of an iPad can bring stories to life with a simple tap or swipe, without sacrificing content related learning. In addition, embedding digital technologies into the learning environment and course pedagogy can positively impact student engagement, confidence levels, and attitudes toward learning (Getting Started 2011)

Using iPad technology, students presented their completed e-books to the local community as part of the final requirements for the course, in a manner aligned with the “iPad initiative” at Zayed University. By leveraging the interactive features of the e-book and creating complimentary promotional materials, students generated interest in their topics to an audience of parents, schoolteachers, and school administrators. The subsequent exhibition titled “Change in Motion: A Storybook Exhibition” was open to the university population, and select guests from across the Emirates (Figure 2). During this concluding stage of the class, students produced assessment sheets to understand their project impact via attendee responses. Overwhelmingly, the participant feedback praised community inclusion in the process and provided networking opportunities with non-profit organizations interested in partnering with the students.



Figure 2: “Change in Motion: A Storybook Exhibition” held in Dubai, UAE.

Following the exhibition, a local primary school in Dubai, Jumeirah Model School, invited the design students to share their e-books with a group of children ages six to nine years old. Although the entire class played a role in the “Change in Motion: A Storybook Exhibition” held on university grounds, less than one-third of the students were able to present their work at the primary school. Unfortunately, the off-campus locale of the event affected student’s ability to participate due to family, religious, and/or cultural reasons. Providentially, digital technology offered an inclusive opportunity for these students to contribute to the children’s book reading while respecting their personal and family preferences. Particularly, the use of the iBooks application on Apple’s iPad enabled all course participant work to be shown, despite fewer students attending the event.

The designers attending the children’s book reading presented the assortment of bilingual e-books to an eager young audience, reading in both Arabic and English (Figure 3). This small group of designers unanimously agreed that the event was a transformative moment in their education; where, “[their] designs came to life” in front of their intended audience (Reem Al Marri 2013). Communicating this sentiment back to the nonparticipating members of the class helped positively reinforce the use of digital tools to the group, while garnering interest in further involvement with the primary school.



Figure 3: Jumeirah Model School e-book reading, Dubai, UAE.

3. COURSE OUTCOMES

3.1. STUDENT NARRATIVES AND E-BOOK DESIGN

During the Fall and Spring 2013 semesters, students enrolled in “Design for Social Change” followed a Human Centered Design process to create an e-book for children on the topic of local resources and conservation in the UAE. The undergraduate curriculum aimed to maximize creative exchange between students and across disciplines. Students defined an issue of choice, investigated the topic to understand community value, developed an e-book to share with local schoolchildren, and evaluated effectiveness using impact assessment methodologies. Students such as Rawdha Al Ajmani, Khoulod Surour, and Amina Quraiban serve as strong examples of project outcomes from this new course curriculum. The topics of interest and design solutions of these three students are introduced in the following excerpts.

3.2. AMINA QURAIBAN

The “Unforgettable Night” by Amina Quraiban is a children’s e-book created to introduce young readers to traditional Emirati textiles. Amina writes, “[i]n the story, the main character, Shaikha, learns about local textiles and materials through her elder sister Reem. Reem takes Shaikha to a souk to buy fabric to make a dress for the upcoming Hag Elaila, held yearly in the middle of the Shabaan month” (Figure 4). For the secondary component of her project, Amina produced two packages using traditional textiles; one made out of paper and the second made out of fabric. Each package has a unique name, logo, and brochure detailing the fabric (Figure 5).



Figure 4: Amina Quraiban, "Unforgettable Night" e-book.



Figure 5: Amina Quraiban, paper based packaging (left), textile based packaging (right).

3.3. KHOULOD SUROUR

Khoulod Surour's e-book, "For Another Day," is a story about the health concerns surrounding cardiovascular disease in the United Arab Emirates (Figure 6). Khoulod introduces her story by explaining, "[i]n the year 2020, the world has succumbed to a state of chaos, with an overwhelming amount of pollution and environmental damage making the atmosphere toxic. A teenager named Khalid searches for a way to save the environment and his sister who suffers a near-fatal heart attack." For the group exhibition, Khoulod produced a series of posters to raise awareness about the negative habits attributed to the cause of cardiovascular disease (Figure 7).

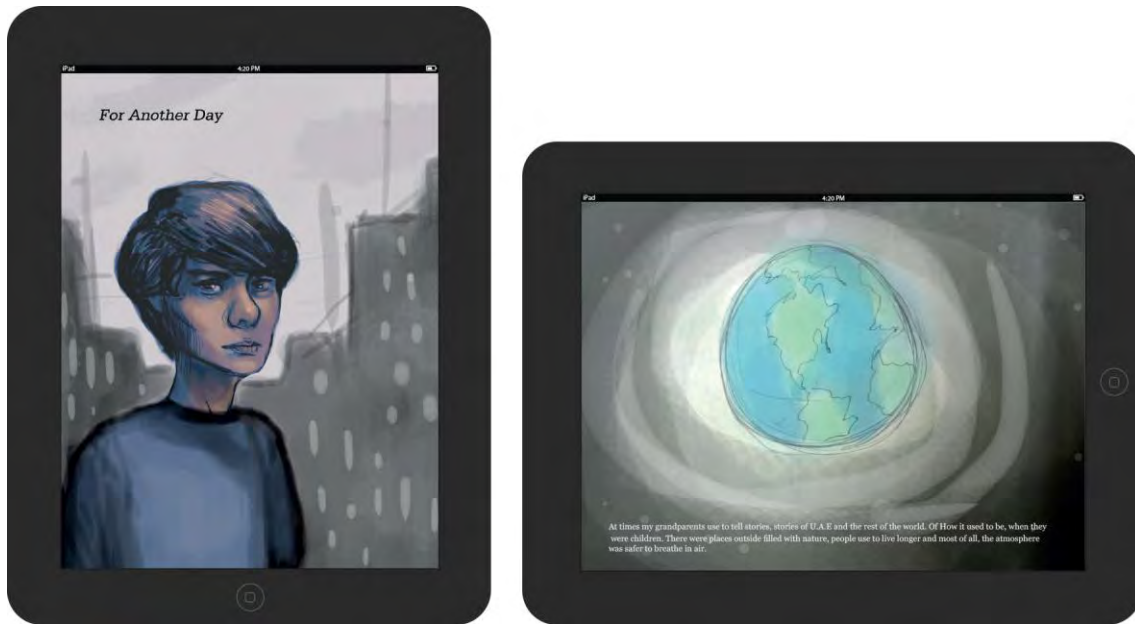


Figure 6: Khoulood Surour, "For Another Day" e-book.



Figure 7: Khoulood Surour, Cardiovascular disease poster (1 of 3).

3.4. RAWDHA AL AJMANI

"Kiko's Adventures to Burj Khalifa" is a children's e-book, written and illustrated by Rawdha Al Ajmani, addressing the UAE's declining use of Khaleeji Arabic – also known as Gulf Arabic. Rawdha writes, "[t]wo little birds want to visit the Burj Khalifa in Dubai, but only have directions in Arabic to guide their journey. They do not speak Arabic and ask a series of animals who speak different languages to help them translate the directions" (Figure 8). Rawdha also created an exercise component of the e-book, introducing children to the basics of writing Arabic letters. Each page in the workbook contains a single Arabic letter, a word

that starts with that letter, and an illustration to color with interactive finger-paint. Additional activities include a maze, a word search, and a matching game.



Figure 8: Rawdha Al Ajmani, "Kiko's Adventures to Burj Khalifa" e-book.

4. MITIGATING CULTURAL CONSTRAINTS

Digital communication tools have the ability to dissolve boundaries of location and distance in both regional and global terms. Never before has the use of media been so beneficial to those with physical restrictions or limitations. In locations where respect to cultural, religious, and/or regional conventions is essential to effective teaching, digital tools can virtually connect students with external collaborators. Moreover, these unique constraints should not impede learning outcomes in social design courses where community involvement is paramount to instruction. Instead, viewing limitations as opportunities for creative innovation can, therefore, support a nimble curriculum; specifically, one able to respond dynamically to the cultural nuances for each unique environment.

Effectively, the iBooks app was the sole distribution channel for e-books created by students unable to take part in face-to-face meetings at Jumeirah Model School. In this case, the four participating students uploaded the complete collection of e-books onto four iPads, allowing the work of the entire class to move beyond the university walls. Not only were the schoolchildren attentive, engaged, and interested in the topics, but the schoolteachers also expressed interest in pursuing ongoing partnerships with the burgeoning social designers.

Interestingly, the (all-female) Emirate schoolteachers wanted more face-to-face interaction with the contributing design students; but were willing to collaborate using video-conferencing tools, if necessary. This valuable feedback encouraged students – originally unable to participate in face-to-face meetings – to begin a fruitful relationship with the schoolteachers using digital technology. These students used various synchronous and asynchronous approaches to initiate new projects and develop content with the schoolteachers.

Significantly, some of the students received professional engagement and internship opportunities from schoolteachers and non-profit organization upon course completion. These outcomes suggest that students trained in digital technologies can increase professional readiness, while operating within cultural constraints of a region. Moving forward, this holds

exceptional global relevance, particularly, with regards to the high unemployment rate for females within GCC countries.

5. CONCLUSION AND OPPORTUNITIES

This study aimed to understand the benefits of digital communication tools in support of social design pedagogy in the MENA region. Throughout the research, digital technology has proven to be an efficient medium for collaboration, spanning generations and locations. Digital devices, such as Apple's iPad, help designers overcome age and language barriers, providing new avenues to reach both young and elderly generations alike. For instance, the strength of iBooks stems from its ability to hold and share numerous e-books on a single device, making it an ideal tool for project dissemination amid limited member participation. For future generations eager to embrace technology, social design e-books offer promising educational opportunities to capture their imaginations.

As noted in this research, the use of asynchronous and synchronous communication tools can support project distribution to participating audiences while maintaining community engagement, when restrictions to physical presence occur. Despite the preference for face-to-face meetings of some community members, the tools referenced in this case study may counteract a lack in participation from female designers throughout the MENA region. Ongoing development of digital collaboration tools for students in the Gulf Region indicates continued mitigation of cultural constraints and capacity building across international boundaries. The results of this case study emphasize the need for further research into digital tools for social design; overwhelming positive responses from local participants and course feedback supports this need.

Further study will examine the use of blended learning as a new educational model for increased community involvement regionally. When appropriate, face-to-face meetings can occur within the safety of the university structure and help redefine the role of education in the Gulf as a hub for social initiatives. The construction of virtual teams surrounding a particular social topic can act as a catalyst for innovation from a culturally appropriate standpoint. These virtual teams could access highly skilled professionals and researchers, whom may have been previously inaccessible because of both physical and temporal boundaries. Once implemented, regional and international participants would contribute to the growth of these hubs, furthering the value placed on blended learning models. Moreover, students residing in rural areas could also access these hubs using the same asynchronous and synchronous tools presented in this research. In this way, rural communities can connect with urban areas while maintaining the value of local practices and cultural heritage.

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