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# From Cultural Markers to Global Mobile: Using Interaction Design for Composing Mobile Designs in Global Contexts

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## Abstract

Globalization raises important questions regarding the study of digital composing practices in international environments. While traditional intercultural communication theories help explain large-scale preferences in relation to technology use, they have limitations related to understanding how cultural groups use emerging technologies to interact. This article advocates interaction design as an approach for better understanding cultural and cognitive factors affecting online composition processes. In essence, an interaction design perspective can help unpack global contexts for mobile design in terms of cognition or learning. As such learning mediates between users, interfaces, and interactive contexts, interaction design can help model designs and users, develop interface prototypes and evaluate interaction that addresses global uses for mobile design. These interaction design approaches can provide students with a better idea of how to develop more effective techniques for composing and addressing mobile design in global settings.

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## 1. Introduction

Globalization includes the increased sharing of information, ideas, capital, and goods across cultures on a global scale. It involves an ever-shifting nexus of cultural identities, social practices, and technological innovation that requires more robust approaches for composition. In addition, social networks create a culture of mobile connectivity integrated into everyday life as an evolving cultural practice. Mobile design, in particular, needs to address these shifts in new ways. Rather than rely on culture-specific translation, mobile design for global contexts must draw from a more robust set of cross-cultural composition practices. Interaction design techniques can enhance such mobile designs. For teachers of composition, these techniques may help address such cross-cultural elements in terms of mobile global composition contexts.

Mobile design requires adapting to globalization as a process. Such design represents a fundamentally different approach to cognitive processes of mediation. To this end, this article presents interaction design approaches as mechanisms writing instructors can use when teaching students about using mobile technologies to compose in international contexts. To do so, this article first overviews ways in which scholars have studied global contexts and how networks and globalization impact traditional intercultural notions of time, space, culture and identity. It then looks at digital factors that affect online global contexts, where technology use strongly alters fixed notions of identity, social behavior, and culture. The article then discusses how an interaction design approach to composing can establish global contexts by unpacking designs, users, interfaces, and interaction through modeling, developing and evaluating mobile designs.

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## 2. Mobile design and globalization

Early intercultural interface design focused on creating culture-appropriate websites by localizing designs to modify colors, words, and concepts to prevent confusion, offense, and usability problems (Gould, 2005). Such approaches, however, make it difficult to plan effectively for international mobile design where fewer culture-specific elements are used (Sun, 2012). For this reason, mobile design generally uses participatory and responsive design strategies that focus on integrating user contexts and responding to different technological constraints (Price, Davies & Farr, 2013; Warner, 2013). Mobile design thus needs to be flexible enough to accommodate these various factors while at the same time employing elements that can be recognized and reused by individuals globally.

Generally, mobile design is based on principles of interaction design, which relies on having a prior understanding of the individuals involved and the settings in which they exist. Mobile users manage flows of information by using devices and networks to link up with social information and so establishing a sense of place by coordination of activities and social information sharing (Coyne, 2010). People who use mobile designs are, essentially, engaged in a state of “flow,” where their actions are matched by input from a system, which provides a strong sense of agency in a user (Csikszentmihalyi, 1990). In this process, learning occurs when individuals use an interface to provide tactile and visual input and the interface then responds to this information. This creates a back-and-forth interaction cycle between user and technology or system. By recognizing familiar elements found on the interface, individuals can use their understanding of these elements to accomplish tasks when using an interface or to learn new functions found on an interface (e.g., when one taps an icon to see what it does).

The aim of an interaction design approach is to employ common, familiar design elements to help users better understand the purpose of a design quickly. The objective is to create a synergy among the user, the interface, and common interaction models (i.e., the ideas one has of how to use or “interact with” an interface). What is important to consider here is that mobile designs are thus not intricately bound to particular cultures or contexts; rather, they function through tactile and visual feedback provided by the individual using the interface.

Mobile design in global contexts also depends upon networks that create different expectations for social interaction—expectations that influence how people perceive culture and practice communication. Networks represent new areas of inquiry for composition because of connecting in new ways with people that is different from traditional text-audience relations (Rice, 2006). Digital networks create new contexts of self and identity by freeing the individual from connections bound to physical culture, time, space and identity. For example, digital networks create their own online cultures by increasing performance of self and identity in online contexts (Castells, 1996). Because online contexts no longer reflect a homogeneous culture, intercultural assumptions require adapting to new cross-cultural digital contexts. In these digital contexts, a medium affects how people communicate by raising their awareness of multiple means for addressing global audiences as a digital culture through networks.

### 2.1. Networks as global culture

Networks create cultures where the local is embedded in the global. They do so by creating fragmented local and social experiences that are organized around a global culture of networks and by functioning as “nervous systems” of cultures by virtue of their integration into everyday life (Castells, 2004; van Dijk, 2012). Because humans perform activities in such networks, these activities become a part of a person’s cultural experiences. Such associations make it difficult to distinguish networks, or local and global contexts, from discrete expressions of culture tied to a specific, physical region. Global networks thus do not adhere to traditional intercultural notions of codified forms of reality because they are not tied to a specific region or physical territory in which a particular culture exists. Furthermore, due to globalization, bounded time and space are no longer a requirement for social interaction to occur (Held & McGrew, 2003). As such, traditional models of understanding culture and communication behavior do not necessarily apply to these new contexts. Instead, social, economic, and technological factors in globalization create dynamic social exchanges between humans, cultures and flows of information.

This situation creates new challenges for researchers and teachers. Commonly used heuristical intercultural models, such as those of Stewart and Bennet (1991), Hall (1976, 1982), Hofstede (2004), and Trompenaars and Hampden-Turner (1997), tend to generalize culture as forming a basis for human behavior. Globalization, however, requires us to examine how culture and cultural identity are negotiated through different intertextual factors. These involve understanding how information flows between humans, media, technologies, capital, and ideologies all influence communication patterns

(Appadurai, 1996; Hunsinger, 2006). In order for mobile design and related writing/composing practices to address these factors, cultures should be assumed to involve global and local identities negotiated in mobile contexts where flows of information enact cross-cultural exchange.

## 2.2. *Intercultural dimensions of self in global computer-mediated communication*

Traditionally, intercultural theory posits that a culture's inner beliefs directly shape outward expressions of self by impacting people's sense of time, space, and communication behavior (Hofstede, 2004, Hofstede, Hofstede & Minkov, 2010; Hoft, 1996). Computer-mediated communication (CMC), in turn, introduces the need for additional strategies for representing the self to others by creating alternate means of communication that differ from face-to-face interaction.

In essence, CMC makes collaboration independent from geographical location through technologies that allow for global mediation. CMC practices thus foreground how different implicit cultural norms, values and beliefs exposed to online communication technologies may create a hybrid identity of culture and technology (Ess, 2005; Ess & Sudweeks, 2005; Olaniran, 2007). Mobile design, for example, asks that people adapt their communication styles and behaviors to particular computer-mediated contexts such as SMS (i.e., keeping messages short). People do this due to specific perceptions of a medium's characteristics (i.e., what the medium can and cannot do) and function in society (i.e., how the medium should be used). These factors, however, have nothing to do with cultural expectations of communication. Rather, they are often connected to the benefits of SMS as a means of effective, low-cost communication. Such situations reveal that mobile design must consider these social, local contexts that inform the global use of such technologies.

## 2.3. *Social behavior in mediation*

In addition to different notions of culture and self, medium use also affects how people perform their identity as part of social behavior. Identity in CMC is related to performance in physical and digital contexts due to social interaction (St.Amant & Sapienza, 2011). In contrast to face-to-face conversations, CMC provides more strategies to represent a social identity by selecting these elements to control impressions by others during interpersonal communication (St.Amant, 2002). In this, mediation is a factor in guiding social behavior in CMC because of people's ability to contextualize communication and adapt to a medium (St.Amant & Sapienza, 2011; Thatcher, 2011).

Mediation also impacts social behavior based on human perceptions of a medium (Clark & Brennan, 1991). An example of this is when people choose a medium that resembles face-to-face communication for tasks deemed more personal, but use a medium that allows less feedback for less personable tasks (Daft & Lengel, 1986). Furthermore, evolutionary factors allow humans to develop new communication strategies in order to evolve alongside technological developments (Kock, 2005). They also develop such strategies to better address social group norms in certain online contexts (Spears & Postmes, 2015). As such, it is reasonable to see that mediation impacts human social behavior, with evolutionary factors and technological use creating different social behavior.

## 3. **Mobile design contexts for composing**

Mobile design is different from traditional web design because mobile users have a different set of expectations of information as a result of how mobiles are used. Understanding such expectations is often a matter of focusing on the overlapping elements of human, interface, and interaction contexts:

### 3.1. *Human contexts in design*

Humans play a large role in interaction design because of their ability to learn familiar interface components and re-use these to contextualize unfamiliar functions in a design (e.g., recognizing the familiar envelope icon for email functions). Such learning takes place by acquiring and modifying schemas—mental models for what something is and how it is used—to fit a new situation by which humans build on existing knowledge of interfaces and designs (Chalmers, 2003; Rogers, Preece, & Sharpe, 2007; Zumbach & Mohraz, 2008). Furthermore, humans constantly (re)assess unsuccessful strategies and integrate successful skills in order to adapt to an interface (Kintsch, 1988).

Interaction design, in turn, uses human knowledge of an existing design to create a context for new elements when conceptualizing interface design.

### 3.2. *Interface contexts in design*

Interfaces also play a part in the process of interaction by providing individuals with rules for approaching design and by signaling specific use. Interface design uses hierarchies of relations that help individuals understand an interface by grasping its major structures, keeping things simple, emphasizing visible necessary functions, providing good feedback, recovering from errors, and reusing major components and behaviors (Constantine & Lockwood, 1999; Shneiderman, 1987). Consider, for example, the way in which file folder icons on an operating system help individuals better understand how the data on their desktop has been categorized in that system and helps them re-use these concepts in new situations.

Major elements of an interface are, broadly, metaphors that help the individual grasp the overall meaning of the program and mental models that allow individuals to comprehend specific purposes of that program in addition to navigation, means for interaction, and appearance (Marcus, 2001). Practically, interfaces present the user with a gestalt (whole) of an interface based on their discerning interface layout, functions, navigation, and content (Chalmers, 2003). Content such as text, image, video, and audio in an interface can be interacted with through different functions and navigation. Elements of navigation can be subdivided in local, global, and supplemental systems that present context-specific elements that provide specific users with more direction for accomplishing specific actions (Rosinski & Squire, 2009).

### 3.3. *Interaction as cultural context*

Interaction also involves the complex exchanging of meanings between human and interface that now involve social and global elements. For this reason, interactive situations that influence how humans perceive interface design include the

- *Immediate* context: the immediate technological context between interactor and system in an app (i.e., what appears on the screen);
- *Sociocultural* context: the past and present social and cultural frameworks humans bring to interactions with apps (i.e., expectations of what should appear on a screen);
- *Global/local* context: the local and global understandings of communication as shaped by our cultural backgrounds and our understandings of media (i.e., what others report and we know is part of screen) (Sun, 2012, p. 56).

In these ways, personal context is shaped by local and global developments that form a sociocultural awareness of expectations of mobile design and how they are used in communication and composing practices.

## 4. **Cultural dimensions of interfaces**

Traditionally, intercultural interface design focused on translating designs from one culture to another. The underlying concept is to avoid misunderstandings and errors by theorizing how culture can be incorporated into effective interface design practices (cf. Russo & Boor, 1993; Gould, 2005). This approach generally leads to “Do’s and Don’t’s” models of design centered around translating a website for localization. Other research focused on how combining culture and usability (“culturability”) could locate re-occurring elements (“cultural markers”) with strong cultural affiliation functioning across specific genres (Barber & Badre, 1998). According to such approaches, gathering specific cultural audience variables could help to identify design aspects expected by different international audiences, and doing so could help both avoid cultural mistakes and create criteria for evaluating a design (Hoft, 1996, p.42).

Mobile design, by contrast, functions across networks and cultures, which increases the importance of different cross-cultural factors on design and thus represents fundamentally different production, audience expectations, and interaction strategies that differ from traditional website design in that mobile design

- Needs to facilitate the three contexts of human, interface, and interaction by creating solid interaction design principles across cultures and networks;
- Must account for limited but diverse screen sizes, user attention, interaction speeds, and platforms, which requires more attention to differences in a heterogeneous audience;
- Is based on interaction with information on-the-go and must address ever-changing factors of time, space and culture into the newer ones of a global network society.

Mobile design must therefore be based on cultural similarities of interaction instead of intercultural differences that generalize cultural preferences but do not factor in elements of global mobile use as its own culture.

Essentially, mobile design for global users requires one to understand individual, sociocultural, and global cross-cultural developments that shape the uses of mobile devices. Most intercultural models of communication and design, however, use different assumptions about how a culture is defined and how cultural differences are indicated. These models are of limited use when dealing with globalized mobile interactions where the exchange of information, capital, technology, and ideas through networks creates a blend of preferences among cultures. Furthermore, solely using current heuristic models of culture and communication to make design decisions in mobile contexts is problematic. Such models suggest that cultural differences require varying approaches and ignore the effects of global and local mobile practices different from general cultural expectations (Hunsinger, 2006; Sun, 2012).

Indeed, many current models of culture and communication have been criticized as less applicable to mobile design and writing in globalized mobile contexts, because

- They often rely on a broad theory of cultural differences in an organizational setting—a theory that cannot be applied to more dynamic contexts, such as writing via mobile devices;
- They do not allow one to extrapolate a theory's more central, abstract notions to account for communication/writing patterns via mobile devices (Gould, 2005; Eune & Lee, 2013).

These limitations have prompted some intercultural communication researchers to suggest developing an initial local model that can then be paired with technology use in global contexts (Thatcher, 2010). And while many intercultural design studies help create a statistical basis for generalizing cultural preferences, such generalizations do not help interaction design elements that function cross-culturally. Further, effective practices are needed when composing in international contexts for mobile design purposes. Interaction design, in turn, can provide cognitive techniques that researchers and educators can use in terms of creating and examining contextualized designs/compositions and composition practices in global settings.

## 5. Interaction design as an approach to mobile design/composing in global contexts

Interaction design focuses on creating products that foster effective communication and interaction. The key to such efficacy is designing products that can be meaningfully integrated into a person's life. Doing so requires one to approach design from the perspective of learning (Rogers et al., 2007). Interaction design draws on various disciplines (e.g., information science, human-computer interaction, social psychology, and usability) to study how people learn through social and embodied experiences (Nardi, 1996; Dourish, 2001). As mobile design uses universal principles of learning (cognition) and embodiment (touch, sight), the interaction design approach may help to create such experiences in mobile contexts. In so doing, it could help inform and guide international writing practices involving such devices.

For the purpose of various design/composing contexts, interaction design uses different techniques to foster interaction through designs that work for specific contexts of use and audience learning. In sum, these primary techniques are

- **Mental Models that** create mental concepts that map onto users' experience and prior learning;
- **User Personas** that address an array of users personalities and contexts with the cultural backgrounds, preferences, and technology proficiencies of different individuals;
- **Rapid Prototypes** that help cycle through designs by developing low-cost paper prototypes that visualize components of an interface and address various states and help to look at designs in use;

- **Cognitive Walkthroughs** that evaluate a chosen design by creating a specific task for an end-user to accomplish in order to assess user-friendliness based on task accomplishment and other criteria.

Each technique can be used to strengthen design ideas affecting composing practices from early concept to concrete design. They can also help with conceptualizing separate stages of mobile design that can affect composing practices.

The following parts of this section provide a more detailed discussion of the aforementioned research and design techniques associated with interaction design for mobile devices. Each discussion, in turn, contains suggestions for how writing instructors might approach or integrate that technique into a composition class in ways that could help students better understand how to design and compose in international mobile contexts.

### 5.1. Mental models: Developing/composing for cross-cultural use

A mental model is a conceptual model designers use to map an individual's understanding of a design's function and purpose (Norman, 1990). By using such models, designers can better understand how individuals think in terms of what they can and cannot do with that particular system/technology (Chalmers, 2003). A strong example of a mobile mental model is that of Twitter with its tweeting bird icon, by which users associate communication through public channels with the activity of "tweeting." A mental model thus presents the unfamiliar/new in familiar/recognized concepts. In so doing, it facilitates the learning of new things based on associating them with pre-existing objects or concepts already known to the individual.

In designing for global audiences, writing students can use mental models to conceptualize the design of a message or an item they wish to share globally via mobile media. To do so, students would begin by identifying and assessing existing mental models the members of other cultural audiences might have. In such cases, instead of focusing on intercultural differences, students can create mental models through cross-cultural concepts that are non-culture specific to match a function. These mental models are, in fact, remarkably cross-cultural when neologisms are used to describe new functions. Consider the mobile application Whatsapp. It uses the saying "what's up" – together with evolved understandings of social messaging apps (SMS, chat, image sharing, calls) – to introduce an all-in-one solution to stay in touch. Similarly, the app Snapchat, uses the understanding of "snap" and "chat" for quick social sharing of social photo with a limited window of time in one's private network. These short neologisms display an immediate awareness of network user needs (all-in-one solutions, more network sharing privacy), but also indicate that quick findability is the logic of mobile app ecologies.

When applying such concepts in the writing classroom, instructors can ask students to come up with a mental model for a new mobile application. Instructors can, for example, ask students to first look at existing mobile designs and then differentiate their design in terms of a specific context, user and activity outcome. This approach lets students learn about existing mobile design conventions while also having to justify what informational needs their design meets in addressing a specific use or type of activity. After conceptualizing their mental models in the form of a name and some preliminary iconography, students can further examine these models by asking others in the class to identify what associations they have when they first see a new icon or symbol. Through such interactions, students can test the different associations their peers have for a given image or design and to see if the actual associations noted by peers matched the initial associations the designer had in mind when composing a particular online item (e.g., an icon). Through such activities, students both learn the value of using mental models to compose in global contexts, and learn the importance of testing these models with members of the intended audience.

In presenting their mobile concepts to peers, it is imperative that students avoid "telling" these peers how to view or understand a given design. Rather, the individual student presenter can ask his or her peers what particular purpose the concepts evoke in the audience, what needs it seems to address, and perhaps what category of existing apps it belongs to according to the audience. The questioning vs. telling approach provides a powerful learning experience for the designers/students for a variety of reasons, including

- Realizing their concepts are not theirs solely, but exist in an attention ecology of apps and existing understandings by people;
- Understanding some flexibility exists with concepts, but specific context and use are very important to end-users/the intended audience;

- Refining of core concepts by seeking user/audience-input early on in the design/composing process is fundamental, as is collecting user/audience feedback on designs.

Because many mental models are not culture-specific, students need to understand how mental models might be adopted and adapted across groups of people for specific social meanings. In this way, teaching students to use mental models forms a powerful foundation for starting for mobile design/composing in cross-cultural contexts. From this point, students need to learn how to use personas to better understand the contexts in which international audiences might be composing.

### 5.2. User personas: Develop complex personas

A user “persona” is a fictitious person developed to test the design of a technology, text, or interface according to the criteria/expectations of that persona (Nielsen, 2014). Such personas can help develop more critical understandings of intercultural interactions by having designers pay attention to cross-cultural factors in addressing how mobile designs are negotiated and used in global contexts. Generally, a persona has a name, age, expertise, culture, likes, dislikes, a specific background, and a task (e.g., Julie, a middle-aged, novice user of an app who is looking for information on how to register for classes). The reason for creating a persona and a related backstory (i.e., history for the persona) is to adopt a different perspective that helps designers identify how something will be used in various contexts. For example, this connects how, when, and where the persona of Individual X would use a mobile technology and thus helps to inform design through the perspective of the persona. In this way, personas help designers better identify how different audiences might use a given technology to compose messages and interact with others.

Within the context of writing classes, instructors could ask students to design a persona for individuals from particular cultural backgrounds. The instructor, however, needs to make students aware of the fact that personas are limited in how well they explain technology use by groups of people. In other words, while students may want to use large intercultural categories representing cultural differences to them (e.g., the Chinese), such elements may be less important when speaking about specific contexts of global use (e.g., the Chinese motorist who is stranded on the roadside and is using her/his mobile to find information on how to change a tire). Rather, the individuals represented by personas need to be able to complete tasks in a reasonable time, and such tasks must be easily understood. For this reason, instructors should advise students to avoid merely creating their own ways of completing mobile tasks, but instead to look at other existing models for accomplishing a task that global user personas working in networked contexts, can reasonably be assumed to complete.

Identifying such cross-cultural uses of technology is not a direct process. Rather, “shallow”-vague, non-culture specific iconographies—tend to be used, such as universal icons for email or attaching a document through envelope and paperclip icons (Barber & Badre, 1998). In shallow mobile designs, the binding factor is not one’s specific culture, but understanding of communication functions now shared across networks and cultures. As a result, the user personas could work to address how well a writing/composing task can be done based on various screen sizes based on different user contexts and experiences.

To address such factors, instructors could have students create three personas that represent a beginner, medium or advanced user of a given mobile device within a particular culture. When creating these different personas, writing students can create persona descriptions (i.e., third-person narratives) that examine how each group of individuals within a given culture might use a technology to compose based on the background of the persona. Such an activity can help writing students understand how the needs and expectations of different groups *within* a culture affect composition practices and writing expectations. This activity also helps students understand how there can be different ways in which the members of a culture use technologies to compose texts and interact with others via writing. Finally, it helps students realize that there is no single approach to using a particular technology to compose for all of the members of a culture at once.

### 5.3. Rapid cross-cultural prototyping

A prototype is an ideal representation of what the members of a specific group expect something (e.g., an interface, message, or image) to look like in order to consider that item both recognizable and credible (Aitchison, 1994; Rosch, 1978; St.Amant, 2005, 2015). In interaction design, rapid prototyping (e.g. rough sketches that draw out an interface

and its features) is used to develop design options and ideas without having to commit to one particular design. During the process of creating a technology, interface, or message, prototypes are often used to create initial designs that will (ideally) be tested with the intended audience. This is called “wireframing” or “boxing,” because it uses boxes in which the interface is drawn/framed. A later and more detailed mockup is then often created based on feedback and upon audience members using the prototype to perform a specific activity. Again, the idea is to test this revised design and modify it accordingly based on feedback. Because a prototype design is altered very quickly, development is agile and fixed on solving problems first with design then based on what best addresses a given problem. Through such an iterative design/composition process, prototyping helps individuals to think through layout and design/composition for communicating via mobile devices.

For cross-cultural purposes, creating rapid paper prototypes with cultural markers in mind can help issues of localization, screen real estate, functions and sequences from the start of the development/design/composition process. Two methods of cross-cultural prototyping can help students better understand writing and composing practices associated with mobile communication in global contexts. They are interface prototyping and task prototyping that lead to a better understanding of a final design.

In having students create initial interface prototypes, instructors should first ask them to draw several boxes to represent what they think a given mobile interface or context for writing/composing/communicating in global contexts should look like. In this exercise, each box represents the interface as a grid reflecting a particular state. General elements of an interface grid must feature navigation, content (text and audiovisual elements), a carousel (search function for selecting major categories in an interface), social networking sharing icons, pop-up elements, and labels representing particular function, state or task-sequence.

For this initial process, instructors should ask students to consider specific “cultural markers” (culture specific icons and metaphors with strong affiliations). These markers are items that might impede how individuals from different cultures use their proposed mobile interface to compose messages. For instance, students might need to consider elements such as reading-direction, language, layout, specific symbols, information content, navigational structure, multimedia, and colors when designing effective mobile interfaces/composition spaces for individuals from other cultures (Cyr & Trevor-Smith, 2004).

In creating such prototypes, students also need to consider task completion. This involves how the members of a specific culture might use a given technology in a particular sequence to complete a specific task. Task completion, in turn, is based upon both how technologies are used and what writing practices are used in a given cultural context. Through this use of prototyping, writing students gain a better understanding of how factors of technology, design, and culture can affect the organizational structure of mobile composing practices in global contexts. Furthermore, they learn to integrate interface and task elements as part of an overall mobile design context.

#### 5.4. Cross-cultural cognitive walkthroughs

A cognitive walkthrough (CW) is when designers evaluate the success of a design by observing how the members of the intended audience perform a particular task using a given interface/design/composition (Mahatody, Sagar, & Kolski, 2010). In essence, a CW is a usability test in which task performance is used to assess the design/composition of an interface or message. The idea is to employ a combination of observing and follow-up questioning to determine how to modify a given design/composition. The objective of these modifications is to better address audience needs and expectations associated with using a given technology to perform a certain task. In this way, audiences—and their expectations—become increasingly involved in the design/composition process. Such an audience-driven approach, in turn, can be of great value when designing/composing for audiences from other cultures.

For students, a CW-related assignment could involve using think-aloud protocols. While considered problematic in composition (cf. Berkenkotter & Murray, 1983), it is an important design method for mobile design, for it allows students to experience how users may behave in particular contexts and so identify potential problems in a design. Such protocols involve having a member of the desired audience talk through/verbally explain what she or he is doing and why while using/reading an interface or text. Through this approach, students can better determine how well the members of an intended cultural audience understand initial student designs/compositions for members of that culture.

After the initial think-aloud observation, students would interview subjects to determine what aspects of a given design/composition worked well (and perceptions of why). They would also use this interview to determine what



aspects did not work well (and, again, perceptions of why not). The related design/composition could then be modified based on this information, re-crafted, and re-tested with other members of the related culture to check efficacy.

For such think-aloud processes to be successful, students need to

- Require participants/audience members to achieve a particular function/specific task with no input or information from the observer;
- Offer only the absolute minimum information if the participants ask questions or request clarification when trying to perform the assigned task.

The goal is to mimic actual usage/composing conditions as much as possible in order to revise materials to meet the needs and expectations associated with interacting in such contexts. After the observation period is over, students need to conduct a follow-up interview in which they ask participants to note what aspects of the process needs modification. Through such processes, students can gain greater insights into how cultural expectations can affect uses of mobile technologies for composing. They can also gain a greater understanding of how to work with members of an intended cultural audience to improve mobile-based composition practices for international audiences.

## 6. Reconsidering composing practices for mobile design in global contexts

Because interaction design involves ideas for designing interfaces, it enhances student awareness of using mobile technologies to compose in global contexts. It does so by providing instructors with mechanisms they can use to help students explore culture and technology from new and integrated perspectives within the context of a writing class. Through an interaction design approach to writing/composing, instructors can make students more aware of how their own mobile use is constantly evolving as a result of social, economic, technological and cross-cultural developments in globalization. Instructors can use this increased awareness to help students re-evaluate their own mobile composing and communication practices by making them aware of the cognitive processes that underlie such practices. Doing so also helps students better understand how their uses of mobile technologies differ from other kinds of composing and communication practices.

In using the aforementioned approaches to interaction design to teach writing and composition, instructors should consider—and think of how to expand or build upon—certain factors including

- Global user personas, cross-cultural rapid prototyping, and cognitive walkthroughs should be based on designing for social networks and user-customizable interfaces rather than more conventional translation-based approaches;
- Mental models factor greatly in mobile design—particularly in global settings—and are usually based on embodied interaction principles and universal experience concepts (along with technology based neologisms);
- Mobile design is situated in a global context and requires we re-asses our designs in terms of global networks and evolving media practices and functions vs. static approach to composing based on one-way perceptions of communication technologies;
- Mobile design employs a different interaction model in which technologies are experienced as extensions of self, and as such, identity and culture;
- Mobile content sharing is increasingly the norm for interacting/composing in global contexts, and this interaction is short, and time and space are redefined in people’s managing their social experiences through mobile networks—factors that affect composing practices;
- Screen size of mobile devices asks for greater usability where access to content is more important than aesthetics—factors that require increased customization and personalization of interfaces and information, and these aspects can markedly affect composition practices in global settings.

As noted, researching interaction design approaches to understanding audience can help students better understand and address such factors.

## 7. Conclusion

As mobile design exists in the context of networked global culture, it is important to embrace a cross-cultural perspective when composing using such technologies in these contexts. Simply put, for mobile design/composing in global contexts, it is less useful to design/compose for each particular culture. Rather, it makes more sense to focus on the shared psychology of mobile users. Interaction design may facilitate cross-cultural mobile exchanges across different platforms, cultures and networks, because it focuses on mediation in terms of learning through cognition. Perhaps because intercultural theories focus on face-to-face communication between individuals (Gould, 2005), such theories might not map well onto interface-based human-computer interaction. As different factors of mediation impact identity, social behavior, and ideas across cultures, new approaches are needed to explain the results of cross-cultural mobile use and mediation in a global network society.

This article has examined how principles from interaction design can help with addressing such factors when teaching writing students about composition practices involving mobile technologies in global contexts. In so doing, the author has described how writing teachers can adapt and adopt aspects of interaction design that include modeling designs and users, developing interface and task prototypes, and evaluating specific interaction. These elements provide writing students with a richer understanding of composing in such contexts by focusing on the interconnected nature of users, interfaces, and interaction contexts. By using such ideas from interaction design, writing instructors can help students understand how aspects of culture and technology can converge to affect their communication practices and expectations. They also provide writing instructors with new foundations for teaching students how to re-think ideas of audiences for such contexts. In this way the ideas presented here can provide individuals with a foundation for considering and addressing the ever-changing composition practices created through emerging and evolving communication technologies in an age of globalization.

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