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DRAMATISTIC USER EXPERIENCE DESIGN: THE USABILITY TESTING OF AN
e-GOVERNMENT SYSTEM IN A NON-WESTERN SETTING

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Rhetorics, Communication, and Information Design

by
Octaviyanti Dwi Wahyurini
May 2020

Accepted by:
Dr. David Blakesley, Committee Chair
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ABSTRACT

This dissertation investigates rhetorical situatedness as a factor that culturally designates users' motives in adopting a new technology. The application of Kenneth Burke's dramatism extends the discussion about the situation where an interaction takes place to include acting and meaning-making in Non-Western settings as contextual and situated. This expansion is essential to reinforce the understanding of how cultural contexts impact users' motives, specifically users from Non-Western settings, to adopt a technology. The traditional Human-Computer Interaction (HCI) research stresses mechanical and technical aspects between a user (agent) and a technology device (agency) in order to reduce user errors. This approach isolates the rhetorical situation of interaction in a computer interface, thus eliding the cultural situatedness by regarding the situation as something fixed, such as in a laboratory. Adding a cultural context provides a fuller picture of this interaction.

Using a civic records online system called e-Lampid, which is administered by Surabaya City Government in Indonesia as a case study, I discover five elements of situatedness that contribute significantly to weave acting and meaning-making into a culturally informed interaction. User motives are shaped by internal and external situations that are collective, local, and both onsite and off. Dramatism is a tool for analysis and production that prioritizes cultural awareness. Dramatistic User Experience (UX) design offers analytical,

comprehensive, and systematic perspectives on the design process. Dramatistic UX integrates three different approaches: usability testing, rhetorical awareness of situations, and needs analysis. The synergy of dramatism, user experience, and design thinking provides a holistic approach to construct a rhetorically grounded and culturally contingent user experience design.

DEDICATION

Bismillahirrahmanirrahim,

In the name of Allah, Most Gracious, Most Merciful.

I dedicate this dissertation to my late father R. Basuki Hadijono Soewono (March 15, 1943—February 15, 1992), and my mother, Wiwik Sri Wahjuni, who have inspired me and believed in me to pursue my dreams.

This degree is for my husband, Sony, and for our son, Fabian. Thank you for your incredible support through this journey.

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CHAPTER ONE

THE RHETORICALLY GROUNDED HUMAN-COMPUTER INTERACTION

It is a common situation at the Civic Records office located in the heart of my hometown Surabaya, Indonesia, where there are more than a hundred of people are waiting in line for hours to apply for birth or death certificates. Sometimes, the application process could not be done in one day. This process could be prolonged because of incomplete required documents, or the applicants might have to visit the subdistrict office where they resided as the process could only be done there. Regardless there were many helpful and dedicated officers on duty.

There was one scene that caught my attention when I was at the civic records office. There were some touch-screen computer stations with the online civic records application called e-Lampid, displayed on the screens, ready to use. However, people were ignoring this technology as if those e-kiosks did not exist. I had a question at that time; why did nobody try to initiate using those computers and instead wait in line for hours? And why were officers not directing the applicants to use the e-kiosks? Moreover, in some subdistrict offices, the e-kiosk was found covered by thick dust, indicating that it had rarely been used. During a data collection in one of Surabaya subdistrict offices, I attempted to use the e-kiosk by myself. But one of the subdistrict officers called me from the service desk across the room, telling me not to worry about using the computer as she would be willing to help. That then led me to another question: was there a usability issue with the e-

Lampid app? A manual submission through the service desk might have made the application process faster and more convenient for both officers and applicants. But then, what was the point of promoting an online system? Is it an issue of computer anxiety or a user's computer self-efficacy¹? Or, are there cultural matters that the usability and user experience designers fail to acknowledge? Clearly, there are some situations that induce people's anxiety or uncertainty toward the e-Lampid kiosks making the technology unappealing to them.

As digital technology advances, human-computer interaction becomes more complex and its rhetorical nature—from design to user experience—more critical to understand the dynamics and to address the concerns including culturally related issues. In this dissertation, I will investigate how a rhetorical situation that happens culturally beyond the computer screen, assigns motive to users in Non-Western settings to engage with computer technology. By using Kenneth Burke's dramatic pentad, my research will analyze the establishment of identification and consubstantiality among citizens/users, designers, public officials, and possible stakeholders for better human-computer engagement in a collectivist culture. The

¹ In "Developing the Computer User Self-Efficacy (CUSE) Scale: Investigating the Relationship between Computer Self-Efficacy, Gender and Experience with Computers", Cassidy and Eachus explain that user's computer self-efficacy is the beliefs a person has about their capabilities to successfully perform a computer task.

central argument of this dissertation is that the rhetorical situation in Human-Computer Interaction (HCI) in Non-Western settings is not isolated in the interface design. In fact, the rhetorical situation is happening culturally beyond the interface, and the meaning making between human and technology artifacts is a dialogical process that exists before, during, and after the interaction.

The topic of culturally informed HCI has been the center of interests of many researchers. Culture is situated in time and space, so all performed actions correspond to any given situation. Within the context of technology design², I borrow a definition of culture from Huatong Sun:

Informed by research in anthropology and ethnomethodology, I regard culture as the meanings, behaviors, and practices that groups of people develop and share over time as well as the tangible manifestations of a way of life, such as artifacts, values, and states of consciousness (Geertz, 1973). In this sense, local culture includes broad sociocultural factors from

² Huatong Sun in *Cross-Cultural Technology Design: Crafting Culture-Sensitive Technology for Local Users* describes technology design as the embodiment of, “design process, design communication, standards and regulations, manufactured products and deliverables, and production and consumption that aims to transform our lives and surrounding contexts” (19).

national/ethnic culture (e.g., collectivism vs. individualism, universalist vs. particularist orientations) and from subgroup culture (e.g., age group, gender, and organizational affiliation), individual factors (e.g., personal background, values, and interests), ways of life, daily activities, and interpretations of these.

Whether tangible or intangible, the elements that comprise culture should not be overlooked in technology design. Indeed, these elements should be considered as necessary criteria during design development, since they offer a way to take into account a culture's dynamics, openness, robustness, dialogic, and situatedness.

However, the deployment of culture in technology design ignores the dynamic meanings in culture itself, to compensate for the internationalization and localization vision as global products, decontextualized into narrow and superficial interpretations. For example, colors, symbols, or patterns are commonly used as cultural markers for certain countries: red for China, blue and yellow for Sweden, or pictorial of pink cherry-blossoms petals for Japan. Bødker, Sun, Sullivan, Wright, McCarthy, and Dorish, to name a few, identify that this phenomenon is caused by the detachment of acting and meaning in HCI's situated action. Bødker and Andersen propose to merge acting and meaning by drawing it into activity theory and semiotics. Taking on Lucy Suchman's situated action, Sullivan and Porter focus the definition of rhetoric as "situation" to entwine acting and meaning in technology production. Wright and McCarthy see that interacting with technology as a dialogical process and the persuasion of the technology is located in its physical

aesthetics. Dourish applies phenomenology as a framework to argue that interacting with technology is an embodied action. Sun identifies that the discussion in culturally informed design are missing the context of use in technology use activity. She merges acting and meaning by using a complex approach of activity theory, British cultural studies, and genre theory.

I propose to use rhetoric in this dissertation which is inclined toward Kenneth Burke's definition in *A Rhetoric of Motives*:

For rhetoric as such is not rooted in any past condition of human society. It is rooted in an essential function of language itself, a function that is wholly realistic, and is continually born anew; the use of language as a symbolic means of inducing cooperation in beings that by nature respond to symbols. Burke posits two main aspects of rhetoric, its use as identification and its nature as addressed (45). According to David Blakesley in his book *The Elements of Dramatism*, identification is the aim of rhetoric, with consubstantiality—or shared substance being its ideal. Identification is aligned with interests or motives, which allows for an unconscious appeal (15).

A person's motives are always enigmatic; the sense of incompleteness leads a self to seek identification with others. Burke said that a self identifies itself to an object (person or something), imagines a shared belief, desires to be a part of another, and is galvanized by the commonalities. Individuals build their identities by relating themselves to other entities such as physical objects, values, idols,

characters, communities, groups, brands, and beliefs. The association formed between an individual with another object is what Burke calls consubstantiality. In *A Rhetoric of Motives*, Burke explains shared substance constitutes an identification between a person and some property or person: to identify A with B, is to make A consubstantial with B (21). However, in consubstantiality, a self still possesses its identity; that identity differentiates the self from an object the self identifies with. This divide brings value to each individual.

Burke's theory of rhetoric has the potential to be a perpetuation of the third concept of user experience design, because parties who are engaged in an experience gain a shared value, which makes them consubstantial. The tools to reach this consubstantiality is by a common language. The third concept of user experience design (UXD) refers to Sun's idea to move the focus in technology design from a technology use activity to a technology use experience. She merges acting and meaning in technology use experience by the inclusion of cultural aspects that constructs meanings in a culturally informed technology use activity (4).

Furthermore, McCarthy and Wright contend an interaction with a technology must be regarded as a dialogically and culturally meaning making process between users' past, present, and future experience. The first UXD concept is introduced by Donald Norman which he describes as an enjoyable user experience design. Norman's approach is inclined to usability and mechanical aspects. The cultural factor in the

first concept is translated as a product's affordances³. Marc Hassenzahl formulates the second concept of UXD as a systematic and detailed user experience designed through the engagement of designers and users to formulate the desired emotional and cognitive content of an experience.

Burke's dramatism will integrate acting and meaning in culturally informed interaction design. Using drama as a metaphor of life, dramatism sees people acting through language to establish all human relations, and to engage with their society within the context of time and space. In *International Encyclopedia of the Social Sciences* Burke describes dramatism as, "a method of analysis and a corresponding critique of terminology designed to show that the most direct route to the study of human relations and human motives is via methodical inquiry into cycles or clusters of terms and their functions" (445). Dramatism aligns with Suchman's concept that human interaction with technology is a situated action. In *Human-Machine Reconfiguration: Plans and Situated Action*, Suchman explains that "[E]very course of action depends in essential ways on its material and social circumstances" (70). Human action is a response to a current situation by using available resources to support actions. The action of an individual is driven by motives, to which is

³ I will explain further about Norman's idea on product's affordances in Chapter 3 of this dissertation.

highlighted in *Permanence and Change* when Burke states that situation and motives are correlated, “motives are shorthand terms for situations” (29). This definition on motives makes it possible to unfold different clusters of different motives in any given situations.

In the introduction section of *A Grammar of Motives*, Burke describes the dramatic pentad as *Act*, which asks what happens in thought or deed; *Scene*, the situation where the action takes place; *Agent*, the performer who acts; *Agency*, the means and manner by which the agent performs the act; and *Purpose*, the motive of the performer’s act (XV). Later on, he added a sixth term, *Attitude*, the state of mind that presupposed the agent to act or that substitutes for an act. In *On Symbols and Society*, Burke suggests *Circumference* to define the scope of scenes, situations, or locations where an act takes place (161). The dramatic ratios will aid in finding the resources of ambiguity that make identification possible.

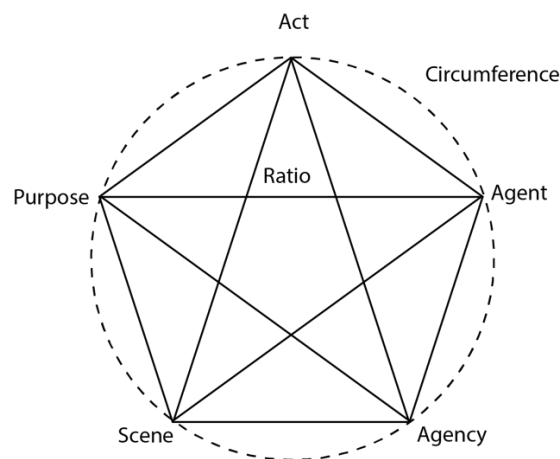


Figure 1: The Dramatistic Pentad

Blakesley explains that from the perspective of dramatism, “Words have meaning in and of themselves, but they also act together in sentences and larger formal uni[t]” (9). Words are also actors that act together with other words and sentences to generate other meanings. For example, the word “angel” refers to “a messenger of God” or “divine being.” But when it is used in a sentence, “You are such an angel,” it conveys a meaning “a savior,” “humility,” and “generosity.”

Burke notes that the use of language is a symbolic action accompanied by human motives. The vocabularies of “difficult,” “long wait,” “hassle,” “crowded,” and “stressful” are meanings entitled to the birth/death certification application process. These vocabularies function as what Burke says as terministic screens, which is a set of selected vocabularies used to interpret and represent the world. In “Terministic Screens” Blakesley elaborates:

Terms “screen” or frame the world by selecting a portion of it—the part that can be named with the particular choice of terms—and so in this way our knowledge and experience of reality is unavoidably filtered by our terministic screens—whether the terms themselves are words, numbers, images, sounds, or any other symbol system or means of representation. The bundle of meanings in the birth/death certification was emerged from people’s previous knowledge and experience through the application process. Furthermore, Blakesley points out that, “... the anxiety, the situation is over the inherent problem posed by language, that words not the things themselves, but representative of things. They function as symbols, in other words” (2). In *Language as Symbolic*

Action, Burke postulates that the way people perceive the “reality” of the self and the world is constructed by their symbol systems (5). In this sense, e-Lampid as a supporting web application was affected by the inherently negative vocabularies associated with the birth/death certification application process. The vocabulary set of “fast,” “easy,” “effortless,” and “no hassle” are terms used to reduce the uncertainty and ambiguity over e-Lampid. These terms help form the attitudes of users, with an aim of encouraging them to act (and thus use the system).

Western Hegemony in Technology Design

The narrow interpretation of a Non-Western culture in HCI problems demonstrates Western hegemony in technology design thinking. HCI has been preoccupied with its own kind: Western computer scientists, engineers, and academics who are largely white-middle-class men. In his article, “Out There,” Alex Taylor describes how these scientists and practitioners stress mechanical and technical aspects that are goal-driven and emphasize reducing user error (685). Sun adds that this engineering frame favors efficiency over cultural sensitivity, reducing the richness of culture into some confined means. Culture thus is simplified as a part of the engineering cycle, detaching culture from its context (10).

The profound Western approach that is predominant in HCI has subjugated the local engineers’ response to the usability problem by perpetuating what the dominant knowledge has been doing: decontextualizing acting from its meaning.

The problems with user anxiety that I mentioned at the beginning of this chapter could probably be addressed by the local engineers and system designers by attending HCI's traditional technical and mechanical approach that solely focuses on reducing user's error. The issues will be identified as a usability problem, examined under the widely cited Technology Acceptance Model (TAM), and described as user's self-efficacy issues. The traditional TAM by Davis et al. draws in two fundamental concepts: perceive of usefulness and perceived ease of use. Perceived of usefulness is related to a user's beliefs that the use of a particular system will boost his/her performance. Perceived of ease of use is user's belief that using a particular system will be less effort. These two beliefs determine the last factor in TAM: the attitude toward use. The potential problem solving will be varied: from holding workshops for teaching the applicants how to use e-Lampid, fixing the usability issues, generating icons and visuals to represent the local culture, adding options for local language, or promoting the use of e-Lampid through every possible channel and media. However, I argue that problem solving in a culturally situated interaction must not only focus on technology use activity but also by giving more attention to how meanings are constructed in technology use experience.

Although the interface and instructions improved significantly, the other important thing is how to make the use of technology reasonable to targeted users. Dramatism as a method of analysis is interested to examine clusters of motives of human actions. Hence, dramatism will enhance the traditional usability testing model by asking questions such as, what are cultural factors that motivate or

demotivate people to use e-Lampid? What could assure them that using e-Lampid will improve the process and thus fulfill their expectation?

The lack of cultural understanding and one-sided imposition of Western ideals correlate to the inequality of technological advancement in communities without access to technology. The aspect of colonial narrative in technology development is also evident. Paul Dourish and Scott D. Mainwaring in their article “Ubicomp’s Colonial Impulse” argue that colonialism influences the way Western researchers and practitioners think, discuss, and work on computer technology. By using the Kew Gardens as a metaphor for Western dominance as a center of power and knowledge, Dourish and Mainwaring offer several notions that form the base of the colonial narrative in ubiquitous computing (134). They explain that past colonial countries and the research laboratories as centers of powers feel the obligation to assist the transfer of knowledge to places that are still lacking in information, knowledge, and technology. This lack is seen as something that should be undertaken by the knowledgeable or powerful on behalf of those who are to be affected by it. The knowledgeable and the powerful believe that the knowledge and representations are universal⁴; they could be applied well to anywhere else as both

⁴ The universality of knowledge to be applied in any settings manifests in the internationalization of global products.

are thought and designed to have power to speak to the details of settings anywhere. The holders of powers and knowledge perceive their own circumstances as ideal and so w the rest of the world should aspire to them. The “developed” world is understood as the destiny and the most ideal model for “developing” regions, or that the world at large is destined to be the “one” that is under construction at research laboratories.

The notions of the universality of knowledge and the “developed” and “developing” binaries that are palpable in the rest of modern technology development, leave a major gap in the Human-Computer Interaction (HCI) scholarship, especially in research representing people and cultures from “developing” countries. According to Kentaro Toyama’s “Human-Computer Interaction and Global Development,” current knowledge of HCI has focused on the research and development of technologies for communities in developed and rich countries and has neglected significant members of society and constantly overlooked the marginalized yet major portion of the world’s population, which are not the focus of major computer industries (4). The problems of computer usability and technology anxiety that still occur within the communities of developing countries can be considered a result of HCI’s neglect of this marginalized yet significant percentage of the world’s population. There is a demand for major

transformations⁵ to navigate research's themes and focuses to accommodate HCI's new complexity and multidisciplinary. The idea of major transformations is reiterating calls to HCI to again place humans as actors who actively generate meanings for objects in their own environment. Hence, technology development should correspond to the cultural values of users.

Conjecture

My first premise in this dissertation is that the rhetoric of HCI is not isolated in a computer interface or embodied exclusively in its physicality, technical, and aesthetical quality. The rhetoric of HCI rests in its situatedness. Patricia Sullivan and James E. Porter in *Opening Spaces: Writing Technologies and Critical Research Practice* posit situatedness in acting with technology corresponds to the rhetoric concepts of “*kairos*,” the right time, or the opportune moment; that is subjected to “time” and “place” (25). Sun adds that situatedness refers to both action and meanings that are interwoven during technology use in local context (205). Kenneth

⁵ In “Reflecting Human Values in the Digital Age,” Sellen et al. formulate five major transformations in HCI to reconceptualize human coexistence with computers and offer different approaches to human interaction with technologies. The suggested major transformations address issues such as the rise of non-interface computers, the growth of over-reliance on technology, hyperconnectivity, concerns with internet security and digital footprints, and the proliferation of digital tools and their appropriation (61-62).

Burke's dramatism reinforces Sullivan, Porter, and Sun's definition of situatedness because in dramatism a motive of an action is described to be aligned with any given situations.

Current HCI knowledge is designed, developed, and delivered in a hegemonic Western system, neglecting the Non-Western rhetorical and cultural situation that determines or at least informs users in Non-Western settings to react to computer technology. The reactions and attitudes to information technology in a Non-Western culture and subcultures may be varied from more or less willing to adopt the technology. Unsuccessful human interactions with the computer results because users will either distrust or reject the use of computers as humans are removed entirely from the interaction. The gap in information technology adoption between the older generation, the digital migrant, and the digital natives also contributes to the ease of computer technology adoption.

Although theoretical frameworks and methodologies from social science disciplines (such as ethnography and sociology) have been integrated into HCI research to promote an understanding of people from Non-Western cultures, the issues of computer technology anxiety still occur, particularly in communities with collectivist social backgrounds. Moreover, HCI research often generalizes the issues and problems situated in Non-Western settings, thus imposing solutions that were generated in controlled environments mainly to support modern Western lifestyles. The notions of knowledge universalities and "developed" regions as the ultimate

model for the rest of the world to follow are indirectly preventing Non-Western voices from playing a significant role in the development of HCI scholarship.

My second premise, as suggested by the title of this chapter, is to use dramatism as a means of both analysis and production of a rhetorically grounded HCI. A rhetorically grounded HCI refers to HCI scholarship that is rooted in the desires of the targeted community through engagement and reciprocity, the designers' expertise, and the functionality and practicality of the scholarship⁶. Rhetorically Grounded HCI offers a different perspective on the application of rhetoric in Human-Computer Interaction (HCI) that addresses challenges within the context of Non-Western community with a collectivist culture background with Indonesia as a case study.

HCI is a dynamic, multidisciplinary field that focuses on the design of computer technology, particularly in the interaction between human and computer, and as an outgrowth of the collaboration between the disciplines of computer science and psychology. Therefore, rhetorical terms of analysis can be used not only to explain what is situated with the interface and users, but also the application of a rhetorical framework in HCI could be used to foster cultural awareness of their

⁶ I borrow the definition of “rhetorically grounded” from Erin Friess’s “Personas as Rhetorically Rich and Complex Mechanisms for Design” to contextualize my idea (111).

practice beyond the computer screen. This awareness of cultural situations will reveal the establishment of identification that happens culturally in a collectivist culture.

Significance of the Research

My research draws on rhetorical theory, user experience/user interaction design, and design thinking. The application of dramatism as a rhetorical lens offers an explanation of our understanding of the rhetorical situation that is activated in HCI as a way to unravel the intricacies of culturally situated interactions beyond the interface and aesthetic values of virtual artifacts. The scholarly conversation on rhetorics and HCI has been limited to the rhetorical interaction between users, the computer interface, and designers, leaving out the cultural situations in the space in which the technology resides that inform the interaction. The computer has been an embedded digital technology in everyday contexts, transforming the surrounding environment into a physical-digital ecosystem. This technology development makes the user experience and user interaction design no longer isolated to the computer interface. The spaces and situations where the technology resides are becoming essential elements in the design of artifacts.

There is a strong demand to reconceptualize HCI methods and research to move the focus from the interface design to the interspaces of interaction design in hopes of accommodating the need of culturally informed research in HCI, which is addressed by Terry Winograd in “The Design of Interactions.” The traditional

conception of the “user,” which used to represent *human* in HCI, has been challenged by numerous authors⁷ who stressed that the abilities of people toward technology were not merely passive and beyond “use,” but include building, modifying, maintaining, repairing, reusing, and repurposing.

As a scholar from Non-Western settings—especially with a collectivist community background, it is important for me to voice the concerns and issues on technology experience by participating in the conversation of culturally informed HCI. People with collectivist background are using high-context communication styles making the identification between individuals through face-to-face engagement and reciprocity essential in establishing consubstantiality. In high-

⁷ In *Technology as Experience*, John McCarthy and Peter Wright explain the view of users in HCI started as a cog in a rational machine in the 1970s, became the source of errors in the 1980s, and then turned to actors in the 1990s and later as consumers. In “Sustainable Making? Balancing Optimism and Criticism in HCI Discourse,” Roedl et al. suggest democratizing and empowering the users by moving the rhetoric of “users” toward “makers,” “crafters,” and “hackers” (2). Using Foucauldian discourse analysis as research method, Roedl et al. examine 191 HCI publications from the last decade under keywords “maker,” “hacker,” “craft,” “DIY,” “appropriation,” “design-in-use,” “repair,” “reuse,” and “fabrication,” to investigate how the conversation over “maker” culture has evolved over time. They claim that their research has successfully proven the construction of “the user” in HCI is leaning toward “the maker” (22). They also identify the social implications that might arise as for “the makers” is legitimated therefore will happen need elucidation and socio-technical support (24).

context communication styles, eye-contact, subtle hints like body gesture, facial expression, and tone of voice also convey meanings. Moreover, according to Rau et al. in *Cross-Cultural Design for IT Products and Services*, high-context communication style users capture messages briefly and pay little attention to details (11). For example, in a collectivist community like Surabaya, Indonesia, someone would prefer to ask their neighborhood chief or come to a subdistrict office to talk to an officer to seek information regarding civic administration matters. They could have found the information online from the internet; however, as an oral society they would be impatient with written information and would prefer to talk to someone reliable.

A computer has been spoken of as “inhuman” to users, creating the technological anxiety simply because it is a new idea of “human.” In *Rhetoric of Machine Aesthetics*, Barry Brummett explains that the surface form of a computer is an enigma to its beginner users, evoking both excitement and anxiety toward its appearance and logic (65). This situation either makes a device unable to yield its function or unable to clearly demonstrate its features. As the users become more familiar with human-to-human interaction, a computer conditioned the responses and restricted the actions. Many may argue that the identification and consubstantiality in computer interaction is still possible by a virtual assistant or an avatar. However, to some cultures, like people in Indonesia, conversing with real people is necessary to build trust and assurance.

The findings of culturally informed HCI will not always be a recommendation to modify or change the interface. In fact, the recommendation could be to change the meaning of interaction for users. For example, the recommendation to apply for a birth certification through an online system could bring rewards to future applicants, such as speeding up a birth certification application process, avoiding late fines, and building confidence toward computer technology. Changing the meaning of interaction can affect the user's motivation toward the object.

The dramatic pentad also offers openness to the multiple perspectives from which we view motives and thus exposes the sources of ambiguity that people might use to explain complex issues. This openness will also allow multiple scenarios and possibilities to inspire users on the new motives and meanings of a technology.

This dissertation will make a contribution to the development of a theory and framework of culturally informed HCI. HCI researchers recognize the importance of culture to HCI; however, the contribution of cultural studies in HCI is still unsubstantial. Recommendations regarding interaction design for international users are still isolated in the elements of mechanism, functionality, and aesthetic appeals of interface design. Moreover, those recommendations are based on collective knowledge, personal experiences, and a few case studies.

The aim of a rhetorical approach, particularly dramatism, is to analyze cultural situations that are presupposed in the human-computer interaction in Non-Western settings. The solutions to the problem and issues related to cultural aspects

of HCI are often concerned with creating an enjoyable experience supplied by the aesthetic appeals in interface design. Creating a delightful experience through the aesthetic appeals in interface design is important; however, the loci of research in HCI also has to move beyond the interface design to address other rhetorical situations outside the interface that may affect the interaction.

This dissertation will use rhetoric as identification, user experience in HCI, and design thinking to argue for a richer and better contextualized understanding of the user experience. The outcome of this dissertation is a dramatistic User Experience design model that integrates usability testing and rhetoric. Rhetoric will function as a framework to map the meaning making which is articulated from the experience toward technology and will set a goal of user experience design in an interaction. Design thinking/design research will formulate methods and approaches to actualize findings from the rhetorical analysis. I also aim to introduce rhetoric as both analytical and practical tools for HCI, particularly to address problems and issues affected by the cultural situation. The dissertation will elaborate the role of rhetoric in HCI beyond a means to fabricate an aesthetically appealing interface design by considering the cultural situatedness of an interaction outside the interface.

As for a general audience, the acknowledgment of cultural situations in HCI will allow the development of culturally informed human-computer interactions that will minimize computer anxiety experienced by users who are not yet comfortable with modern technology. It will also allow for a better interaction

experience for first time computer users, open more possibilities of technology interaction than just a personal computer, thus increasing the degree of self-efficacy and accessibility for users to modern technology.

Methods

This research will present the Surabaya e-government web application, e-Lampid, as a case study to understand the context of collectivist culture in the use of an e-government system. E-lampid is a web application developed by the Department of Communication and Informatics Service of Surabaya City government to facilitate birth, death, and migration records for its citizens.

This research will draw on Kenneth Burke's concept of identification to analyze how the identification is established among citizens as users, the city officer as the system designer, and Surabaya City Government as the stakeholder. Burke's dramatism aligns with Liam Bannon's reconceptualization of "human factor" to "human actors,"⁸ Lucy Suchman's "plan and situated actions," and Kaptelinin's

⁸ Liam Bannon's article in 1991 "From Human Factors to Human Actors" has prompted many researchers and practitioners of HCI to search for different approaches that aim to leverage human contributions in HCI. Bannon proposes the notion of human actors instead of human factors, activating the role of a person as an autonomous agent and a conscious entity that can control and regulate his/her acts and behavior, rather than a passive component in a human-machine system (27).

activity theory. Dramatism provides a method for elaborating the situational motives that accompany any symbolic action and thus can help us better understand the rhetorical dimensions of HCI, particularly since HCI is not strictly a situation in which persuasion is a primary goal. The information will make some reference, whether explicitly or implicitly, to the dramatistic pentad: act, scene, agent, agency, and purpose.

This research began with a usability testing and interviews. The result of the usability testing and interviews were examined with dramatism. Burke in “Questions and Answers about the Pentad” states that the pentad is meant “to help a critic perceive what was going on in a text that was already written” (332). In this sense, the pentad could work as a mode of evaluation for an existing system that aligns with the goal of a usability study. Focusing on the scene-agent and scene-act ratios, the pentad applied to reveal both users’ and designers’ motives and actions in using and designing the e-Lampid system. The usability testing was divided into three parts: an interview meant to elicit the story about the users’ demography and their motives to use e-Lampid, a usability test of several tasks to submit an application for birth/ death registration with talk-aloud protocol, and an interview that meant to elicit the story of what users may do in the future based on their experiences in the usability test. This research included interviews with officials from the Department of Communication and Information Technology and the Civic Records of Surabaya City Government.

Participants

The participants of this research were divided into two groups. The first group consists of 55 Surabaya citizens who came to two designated subdistrict offices to apply for birth/death certification using e-Lampid. The second group was the Surabaya City Government officials who developed and maintained the e-Lampid system.

Procedure

This research was conducted in three parts. Interview 1 includes a set of questions designed to discover a participant's demographic details and to know their experience with computers. The second part involves tests, where participants were asked to do a usability test with the e-government device. The third part was Interview 2, meant to elicit what users may do in the future based on their experiences from the usability test. For Interview 1 and Interview 2, a field surveyor completed a semi-structured one-on-one interview with a participant, took notes on participant response, and recorded the interview on a video to capture gesture, facial expressions, and tone of voice. For the usability test, an interviewer made a contextual inquiry, observing the way a participant interacts with the device. Detail of questions for each part are included in the appendix.

Analytic Strategy

The data collected in the research was analyzed in two phases. The analysis on users' usability tests and interviews in the first phase focused on users' self-

efficacies in using e-Lampid. It looked at patterns, including whether demographic factors such as age, education, internet subscription, and jobs affected participants' computer proficiencies, and also analyzed participant motivations in using e-Lampid. Burke's dramatism used to help to understand the context for these motivations thus to support my thesis. Outliers, people who brought family or friends to help them to do the task, were also users (or agents) who must be accounted for by field surveyors as these outliers might reflect the character of collectivist cultures. The findings on the usability test used to evaluate findings in Interview 1, whether familiarity with computer technology, educational background, and monthly income corresponded to participants' abilities to complete the required usability tasks.

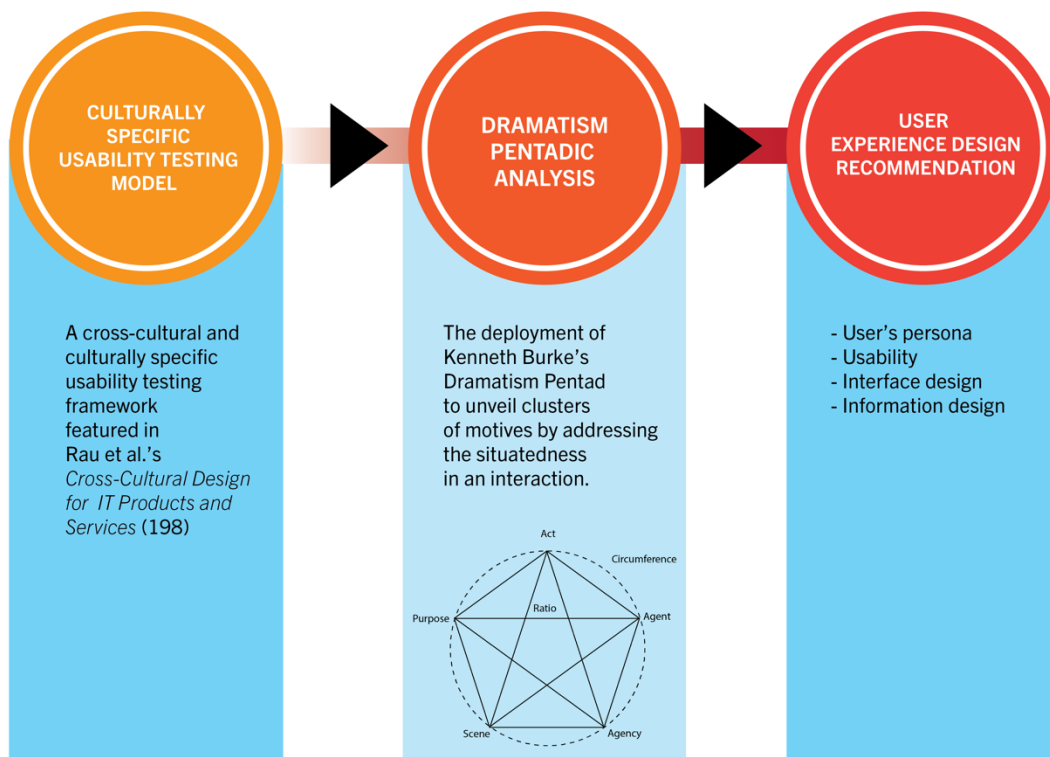


Figure 2: The culturally informed dramatistic usability testing research model

The second phase of the analysis will be to use Burke's dramatistic pentad to analyze what users and administrators as agents "say" when they talk about what they are doing and why in the interviews, and also to examine the situatedness of the interaction as a scene between agents and the e-kiosk as an agency at the subdistrict office that is not captured in the formal usability test. The kind of acts that will be analyzed with this model will be citizens digitally/manually reporting birth/death in subdistrict offices and designing and maintaining the e-Lampid system by Surabaya City Government officers. The result of the analysis also will be used to evaluate the establishment of identification between users, designers, and stakeholders.

The Structure of the Dissertation

Chapter 2: Re-imagining the New Waves in Human-Computer Interaction

This chapter aims to survey the theoretical approaches practiced within HCI through the review of the three paradigms to map and track down a progressive approach that can fill the gap of cross-cultural research in HCI. Additionally, the emergence of the third paradigm brings the hope for the voices outside the Western to be heard. Some of them have also been developing a hybrid conceptual framework by combining usability test and technical communication, and digital media theory and arts criticism. Last part of this chapter will propose the culturally informed usability testing model by integrating dramatism pentad.

Chapter 3: Burke's Dramatism in User Experience/ User Interaction Design

This chapter argues that Burkean dramatism offers a more holistic approach to User Experience/User Interaction design by unveiling the resources of ambiguity in an interaction. At the beginning, the chapter elaborates the user experience and meaning making in technology design through the discussion of primary UX researchers. Previous research mostly explores the relation between rhetoric and the two-dimensional interface system and only gives limited attention to the users' and designers' motives and actions, as well as the cultural situatedness of user interaction. Then the chapter will demonstrate the application of the Burkean pentadic method as a way to explain the cross-cultural approach to interaction design and understanding of meaning making in the user experience.

Chapter 4: Case Study: The e-Lampid System in Surabaya, Indonesia

This chapter discusses the methods and analysis of usability testing and interviews to discover users' motives and actions in using e-Lampid in Surabaya, Indonesia. The analysis draws on usability testing and Kenneth Burke's dramatism. The focus of this research is on situatedness of an interaction because it yields a better understanding of both the rhetorical nature of human-computing interactions and the responses, and scene as a location for making changes to those interactions, in the context of a collectivist culture.

Chapter 5: Designing Culturally Situated Dramatistic User Experience Design

This chapter offers the design thinking methods to develop a culturally informed using a dramatistic User Experience design approach. It will also discuss design alternatives to solve e-Lampid problems that were identified in the research.

In this chapter, I have introduced that a rhetorical approach, specifically Kenneth Burke's dramatism, is a potential framework to integrate acting and meaning in a culturally informed user experience/user interaction (UX/UI) design. In the next chapter, I will examine the variety of models and frameworks in HCI through the review of three paradigms in HCI: human factors, cognitivism, and phenomenology. The discussion is necessary to give an understanding on why the mechanical aspects have been the foreground of research in HCI which excludes the cultural situatedness of an interaction.

CHAPTER TWO

RE-IMAGINING METHODS AND APPROACHES IN HUMAN-COMPUTER INTERACTION IN NON-WESTERN SETTINGS

In my introduction chapter, I argue that Western hegemony in current theoretical approaches to HCI has ignored the social and cultural context that informs the way Non-Western users interact with technology. The burgeoning interest to deploy new methods and metaphors outside HCI's traditional science and engineering approaches following the decentralization of Western thinking should be seen as a movement to re-conceptualize interactions between human and technology from its mechanical focus to interaction as a rhetorical situation. By seeing human-computer interaction as a rhetorical situation, HCI researchers and practitioners can unfold social and cultural situatedness in interacting with computer technology, opening rooms for conversations on culturally situated computing.

This chapter aims to survey models and theoretical approaches practiced within HCI that share concepts with rhetoric. It will also help to understand the thoughts behind research in HCI that has been so woven into the relationship between Kenneth Burke's ideas about Agent (users/operators) and Agency (system, software, application, and interface) in developing a better human and computer interaction. The focus on only two elements of the pentad is limiting. By defining both humans and computers as systems, HCI often undermines the given cultural

situation that may influence how the user (agent) reacts to a form of technology (agency). In applying Kenneth Burke's dramatisitic pentad—act, agent, agency, purpose, and scene, as a framework to explore the cultural situatedness in addition to a well-rounded insight that inscribes the interaction, the role of motives for user interaction can be more clearly appreciated. The result can be a well-rounded insight that informs the designer's approach to the interaction with technology that might otherwise have gone unnoticed, since HCI's scholarships has been very much Western-centric.

I will begin with the application of rhetorical theories to explain our understanding of current human-computer interaction. Second, I will discuss a cross cultural approach in interaction design that has been used to develop a culturally based interaction design for users in Non-Western settings. I will end this chapter by reviewing of the core traditions in HCI: human factors and classic cognitivism/informational processing, followed by the new waves in HCI that represent alternative theoretical approaches from fields of humanities, feminist theories, sociology, anthropology, and design.

The Rhetorical Theory Approach in HCI

Rhetoric is not foreign to HCI. In fact, it is parallel to HCI as discussed by scholars across disciplines. Rhetoric assists the understanding of HCI as a means of

persuasive technology⁹. Aristotle defines rhetoric as, “the faculty of observing in any given case the available means of persuasion” (7). In “The Rhetorical Appeals in Interaction Design: Decolonizing Design for People of Collectivist Culture,” Octaviyanti Dwi Wahyurini explains the three rhetorical appeals: *logos* (rational arguments or the message), *pathos* (appeals to emotions of the audience), and *ethos* (character or credibility of a speaker) are subjected to computer technology as software and applications, content, messages, and interface design (*logos*), sensation, enjoyment, and emotional experiences during interaction with a computer (*pathos*), and the experience that relates to identity of an object (*ethos*). *Ethos* is closely related to brand of a computer (648-49). For example, *logos* of Apple computer products exists because of its sophisticated and sleek designs, *pathos* is embodied in the ease of use, high-quality, and durability of their products, and eventually, both *logos* and *pathos* are combined to constitute the *ethos* of Apple.

Brummett explains how the rhetoric of computers engages users in two ways; the first way is the external skin, the outer shape of the computer, and the

⁹ B.J Fogg, in his book, *Persuasive Technology: Using Computers to Change What We Think and Do*, describes persuasive technology as any interactive computer systems that are designed to change people’s attitudes and behaviors (1). He invented a study called “captology” that is derived from an acronym “computers as persuasive technology.”

second way is the software once the user interacts with the computer (2). Brummett classifies the computer and high-technology mobile device as electrodes that acquire cognitive power, in which the processes and effectiveness are working down to the human scale. Brummett further explains that the rhetoric of machines is manifested in the enjoyment of sensory and aesthetic experience of people towards the machines which can constitute further attitudes, actions, and commitments (27). Brummett's definitions on rhetoric of machines places emphasis on Pathos: the emotion, sensations, and enjoyment of the machine aesthetics. According to Brummett, the rhetorical manipulation of the machines is embodied in a meaningful aesthetic experience.

Gesche Joost develops the rhetoric of HCI by adapting rhetoric as a basic communication model to demonstrate dependencies and forces between three parties: designer, system, and user in designing user interface. In her paper "The Rhetoric of HCI: A Communication Model for the Design and Evaluation Process," Joost explains a system designer uses a set of heuristics called rhetorical techniques at a preliminary stage in the design process to address a specific user group in particular context with certain tasks. The rhetorical techniques, which are user interface design guidelines in general, and the pattern language for interaction design, help the designer/rhetor to get an overview of any available means to provide best practice examples that can be transformed to a new communication context. The transfer of the rhetorical communication model to HCI design process

can map the involved parties systematically and locate variables that contribute to a successful process (167).

Joost's rhetoric creates a knowledge base for HCI that is crucial for understanding system design and evaluation as an iterative process. The iterations' timeframes connect to a single usability engineering life cycle which also reflects the long-term evolution of rules and techniques within the rhetorical system. This model gives all parties a significant advantage to identify the recurring patterns and their application rules, discover effective methods to address certain users, and learn typical chasms in the interaction process.

Teena Carnegie in her journal article, "Interface as Exordium: The Rhetoric of Interactivity," describes that the rhetorical modes of the interface of new media are not modes of argumentation. The interface functions as an exordium to engage users and to dispose them to persuasion. Exordium is what Cicero referred to as a rhetorical means for ensuring that the audience becomes and remains susceptible to persuasion. Cicero also describes that the exordium is the beginning of speech or writing and a context becomes an essential means to create an effective exordium. The interface as exordium demands users' interactivity and participation, which it empowers a user to be a sender and creator of messages and contents. The interface is the common meeting point and place of interaction for the technological, human, social, and cultural aspects which make up computer-mediated communication, especially new media (171).

Carnegie explains that the interface as exordium uses three modes of interactivity for preparing and engaging the user, including multidirectionality, manipulability, and presence. These three modes of interactivity are simultaneously creating an experience to users. Multidirectionality refers to a mode of interactivity associated with systems that facilitates a global, network-based system with a two-way communication. Manipulability refers to the means that media can be manipulated and subject to algorithmic manipulation, defined by the degree to which users can influence or modify the form and content of new media communication. Objects such as images, sound, text, animations, videos, and behaviors transform into a numerical code unit. The last mode of interactivity is presence; presence is a product of the integration of system attributes with user perceptions. In short, how users can perceive others as present in a technology mediated environment. Along with this model, Carnegie provides a set of questions to critique the interface. She specifically puts questions to identify the effect of political culture, and economic backgrounds of the users. Those questions are including, "Does interface itself have agency?" "What are the cultural, political, and economic backgrounds invoked by the interface?" The understanding of three modes of interactivity as the means by which the interface functions, will assist researchers and practitioners to develop questions to critically examine the interface.

Boyarski and Buchanan in "The Rhetoric of HCI" explain that a practical model of persuasively effective communication is the most important rhetorical

model in HCI. HCI is similar to a persuasive speech, in which the user is guided into the computer system and provided with valuable features of its use. An effective human computer interaction is fueled by a balance of reasoning, implied voice, and feeling (haptic/emotional) (34). However, Boyarski and Buchanan note that the criteria of balance are found in the nature of the task to be performed. It makes different kind of tasks require different kinds of balance. Boyarski and Buchanan suggest that HCI as persuasive communication is powerful and practical as it focuses on specific design tasks. This model supports user-testing, collaborative design, and reflection to determine the most appropriate and feasible approach in a specific communication environment.

Omar Sosa-Tzec in his doctoral dissertation *Delightful Interactive Systems: A Rhetorical Examination*, claims a rhetorical situation in a user interface happens at the level of function, where visual artifacts communicate the action. Sosa-Tzec argues that the way a visual artifact is shaped and resonates with users navigates the degree of effectiveness of an interface design; a medium to persuade people to accomplish the designated goals. He also applies Kenneth Burke's dramastistic pentad—Act, Scene, Agent, Agency, and Purpose, to theorize his argument that identification leads to persuasion in the interface design. Sosa-Tzec calibrates Act as a change in the interface's composition, Scene as the event or situation for which that act occurred, Agent as the user, the system, and a segment of the interface, Agency as interface components, and purpose as the functional and communicational reason behind the act (Figure 2.1).

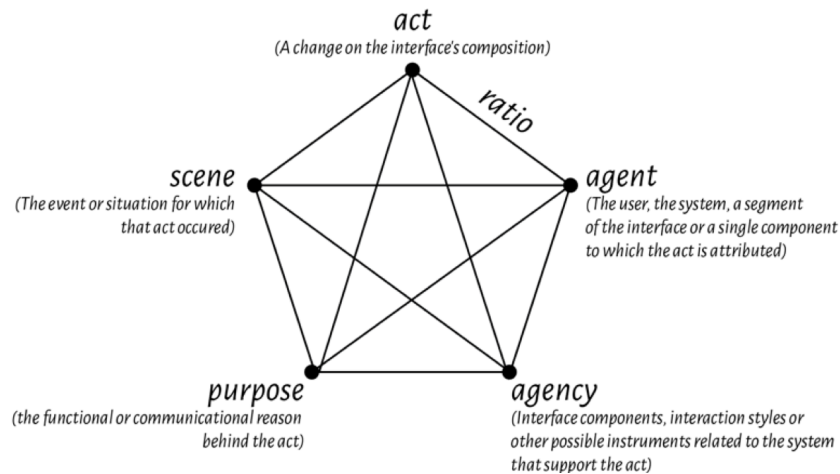


Figure 3: The UX oriented Pentad (Sosa-Tzec 261)

The discussion of rhetorics in HCI above reveals that there are diverse opinions on how rhetoric is understood in HCI. Brummet describes rhetoric in the machine is manifested in the sensory enjoyment and aesthetic experience. Gesche Joost's notion in rhetoric of HCI is by demonstrating dependencies between three parties: designer, system, and user in designing user interface. The interdependencies of three parties also corresponds to the concept of Kenneth Burke's rhetoric of identification with the interaction design as a consubstantiality or a shared substance. Boyarski and Buchanan, Carnegie, and Sosa-Tzec posit the idea rhetoric that is leaning towards as a mode of persuasion rather as an influence.

Cross Cultural Approach in HCI

The rapid growth of information technology products in the global market bring attention to the importance of the cultural characteristics of users. This trend invokes an expectation that the globally marketed information technological products need to be sufficiently accepted by local market to ensure a high usability and satisfying customer experience. By giving more attention to the situatedness of an interaction, the cultural influence in it must be included. Therefore, the deployment of rhetoric is important to accommodate this demand. As I have mentioned in the new waves in HCI section, an interaction is a rhetorical situation that has to be taking place, spaces, and time. In his book chapter, “Rhetoric: Making Sense of Human Interaction and Meaning-Making,” Doug Downs describes a rhetorical situation term as ecology: “a place defined by a network of myriad interconnecting and almost inseparable elements that all shape the rhetorical interaction and meaning that emerges from them” (466). Some researchers in human factors have recognized how psychological and physical differences across culture contribute significantly to the different meaning to usability. They discover users in one culture may give more attention to certain values than the one in the other.

In his book *Cross-Cultural Human-Computer Interaction and User Experience Design*, Jan Brejcha proposes the use of semiotics as a foundation to cross-cultural interaction and communication design development in HCI. Semiotics is focusing on

meaningful arrangement of User Interaction (UI) elements across space and time. Brejcha asserts to make semiotics effective as a method, a researcher needs to acknowledge the influence of the native language and culture informs user's thoughts and actions.

He analyzes HCI/UX with two main theses: 1) the UI as a means for sharing and interpreting information between systems and 2) every sign in HCI is cultural and therefore informational. He studied habits, mental models, and UI preferences of two different groups: Czech to represent Western culture and Chinese to represent Eastern culture through a usability test on Adobe Photoshop in a controlled environment. The study was to observe the semiotic of Adobe Photoshop visual elements: layout, color, symbols, look, and feel. This study found that layout, symbols, look, and feel are not much different across culture, however, the two groups have different association on certain colors. Chinese respondents think that teal is an ink color, while the Czech respondents associate teal with water, swimming, and relaxation. Silver is associated with cold and metal by the Chinese group, in contrast, the Czech group associates silver with Christmas decorations. Brejcha concludes that the impact of the native language grammar on the spatial and logical UI organization was not as pronounced as he expected.

Previous research in information technology and management studies also has confirmed the significant influence of national culture on e-government diffusion and technology adoption by using various cultural dimensions model such as the widely-used Hofstede's six cultural dimensions (individualistic/collectivistic,

masculine/feminine, uncertainty avoidance, power distance, time perspective, and Indulgence/Restraint) and the GLOBE index by House and Javidan. Geert Hofstede, in his classical work *Culture's Consequences: Comparing Values, Behaviors, Institutions and Organizations Across Nations*, explains that the technology built in Western individualist settings more or less presupposed an individualist mentality in entrepreneurs, managers, and workers, which is part of "Modernity" (213). He adds:

Introducing such technologies in more collectivist countries represents one of the main forces toward a shift of societal norms in those countries (exhibit 1.5). On the other hand, the collectivist value pattern in more traditional societies sets a limit on possibilities for transferring technologies; this one of the dilemmas of the economic development of poor countries.

There are a significant body of work that demonstrate the impact of individualism and collectivism in technology acceptance. Calhoun et al. in "Impact of National Culture on Information Technology Usage Behaviour: An Exploratory Study of Decision Making in Korea and the USA," study the impact of culture on information technology usage behavior by comparing two distinct cultures: Korean users as the representation of collectivist culture and users in the USA as the representation of individualist culture. Calhoun et al. uses eleven cultural variables adopted from Hofstede's cultural variables, time orientation by Hofstede and Bond, Hall's communication context, and Trompenaars and Hampden-Turner's universalism-

particularism. These variables may alter the acceptance of information technology in a working environment (295). In this case, individualism and low/high context cultures are two variables that are significant to digital technology acceptance in collective society. In individualism, each person is responsible for themselves and their immediate families, while in collective society the group welfare is paramount, the member is a part of large group of extended family, friends, and firm that demand high loyalty.

Another variable is low/high context cultures, which relates to perceiving the meaning in communication. In low context cultures the meaning of numbers, words, and symbols will explicitly be coded based on the context of the message. In a high context culture, subtle hints such as body gesture, facial expression, a tone of voice, words choices, etc. also convey meaning. People in high context cultures tend not to care about the information in printed materials (296). For example, a person in Indonesia will automatically ask others how to operate a vending machine instead of carefully studying the step-by-step instructions that came with the machine. Even when the person able to complete the task independently, they would still require a justification from a human being whether they did the required task correctly to get peace of mind.

Hofstede's classic four cultural dimensions — power distance, uncertainty avoidance, individualism-collectivism, and masculinity-femininity should be understood as formulations for societal attributes. As culture plays a role in technology acceptance at individual level, therefore, Rau et al offer a cross-cultural

design framework in *Cross-Cultural Design for IT Products and Services*. They explain “culture” includes values and attitudes, preferred communication style, and cognitive style (5). Rau et al add self-construal theory that focuses more on the individual level of cultural differences to inform culturally ascribed unique individual characteristics specifically how they understand themselves and their relation to others. There are two categories in self-construal identity: independent and interdependent. In the independent self-construal, behavior is mostly influenced by an individual’s own internal motives, preference, thoughts, feelings, and actions rather than by reference, thoughts, and feelings by others. As for interdependent self-construal, an individual’s preferences on a matter would be pretty much influenced by how that matter perceived by others in the community thus this category would experience more interdependent motives.

Motives are attributed to the technology adoption, which makes people interacting with technology is rhetoric. To investigate the individual self-construal motives in technology adoption for Non-Western community, Kenneth Burke’s dramatism pentad is a suitable framework to assist us to understand and to unfold all around statement about motives. “Motives” is prominent theme in Burke’s works. As he describes in *A Grammar of Motives*, the understanding of “cycles or clusters of terms” that attributes motives begin with a question, “what is involved, when we say what people are doing and why they are doing it (xv)?” Burke indicates motives are culturally influenced, as he explains in his work *Permanence and Change: An Anatomy of Purpose*, “In the society in which he was raised, there were prescribed

and proscribed rules of conduct, and a terminology of motives to go with them. He was not only conditioned as regards what he should and should not do, but also as regards the reasons for his acts” (32).

Burke suggests there are two kind of motives: internal motives and discursive motives. The internal motives come from the inner-self of the actor who acts, while the discursive one is an interpretation coming from other party after the acts are completed. For example, three years ago, my mother who is also a Department of Finance retiree, was not planning to purchase the latest model of a mobile phone. But since her children live far away from her—including me who is studying in the US—she found the urgency to buy a mobile phone that would allow her to access a high-speed mobile internet to do a video call with me regularly. My mother does not know how to use a computer, so doing Skype on a computer was not an option for her. As she now connects to the internet on her mobile phone, she is not only able to do a video call with me via WhatsApp, but also able to connect with her former friends from work, to watch videos on YouTube, and to reserve taxis in a mobile application. The discursive motives will be people would perceive my mother as very much techno-savvy for a woman at her age.

Several bodies of work in Information and Computer Technology for Development (ICT4D) and participatory design demonstrate that self-construal motives are significant to the technology adoption among Non-Western community. Rau et al present a case study of this approach in technology acceptance model for culturally specific groups in rural China by comparing between users in North China

and East China regarding mobile entertainment adoption (186). The discovery reveals that “social influence” plays as the most important factor in technology adoption for the Northern Chinese users and “self-efficacy” for the East China users. Rau et al. assert this heterogeneity was probably caused by the differences in socioeconomic structures between the two places. The North China is identified as an agricultural-based economic structure where values such as the social insurance, social responsibility, and collective collaboration are making people to be more interdependent to each other. On the other hand, the sample in East China is described as a manufacturing industry economy and a small family. This background makes people think about themselves and how it will benefit them when accepting new things. These findings align with Zhao et al.’s “Effects of National Culture on e-Government Diffusion—A Global Study of 55 Countries,” which finds a negative impact of in-group collectivism on e-government diffusion (e-government development and e-participation) in countries with strong collectivist culture. They also note that the result may vary across different economic environments (1015).

Indonesia — the country which I use as a case study in this dissertation, is categorized as a collectivist country. Scoring 14 in individualism level in Geert Hofstede’s six cultural dimensions’ index report, Indonesians are described to work in groups and less individualistic (Hofstede). Hence, Indonesians may show interdependent self-construal qualities with interdependent motives are being

dominant compare to independent people. Zulaikha et al.'s findings in "Communication Choices to Engage Participation of Rural Indonesian Craftspeople in Development Projects" demonstrate a strong evidence of collectivism behavior in a group of glass bead craftspeople in rural Jombang, East Java, Indonesia, with face-to-face interaction as an effective way to convey message than by texting/short message service (SMS) or by e-mail (785). Zulaikha et al also report the interdependent motives such as willingly follow a respected person or persons, affiliation, beliefs, and similance exhibit within the dynamics of rural craftspeople group through her research (787).

From the discussion of cross cultural HCI above, the understanding of culturally prescribed motives that play in technology adoption covers mostly from the side of users through a usability testing protocol. Research that investigates the impact of technology adoption in Non-Western settings is used primarily to unfold motives from developer/administrator/stakeholder's perspective and will convey a fair amount of well-rounded information elaborating on how to improve the engagement and development of technology. In Chapter 4 of this dissertation, I will demonstrate how Burke's dramatistic pentad is a useful framework to disclose all around motives playing in human interaction with technology.

The Core Tradition

Human-Computer Interaction (HCI) emerges in the early 1980s following the computer's transformation from a calculation and typing tool into something more ubiquitous and mobile, touching every aspect of human life. A computer system today transforms into a medium for human collaboration and interaction. The conversation within this discipline is expanding beyond its hard sciences and engineering nucleus and is starting to engage theories and practices from social sciences, such as sociology, arts, and anthropology.

To respond to various concerns about human aspects of interacting with computer systems, researchers rely on three paradigms to explain HCI: human factors, classical cognitivism/information processing, and phenomenologically situated. Classified according to a set of practices and expectations of HCI, each paradigm represents a set of a world view of its own unique approach that sometimes overlaps with other approaches. Therefore, we cannot talk about one paradigm without recognizing the existence and use of other two paradigms. In "The Three Paradigms in HCI," Harrison et al. explain that each paradigm uses a different metaphor of interaction (1). These interactions yield different goals, which leads to a variety of questions that each paradigm finds important to answer through the exploration of different approaches for knowledge creation.

Yvonne Rogers in *HCI Theory: Classical, Modern and Contemporary* discusses theoretical approaches that circulate within the three paradigms. She classifies

these theoretical approaches into three major groups: 1) classical theories or cognitive modeling which draw from cognitive psychology which include the interface gulfs, GOMS (Goal, Operators, Methods, Control Structure, Selection Rules), and mental models; 2) modern theories: alternative cognitive approaches (external cognition, distributed cognition, ecological psychology), social approaches (situated action, ethnomethodology and ethnography, Computer-Supported Cooperative Work (CSCW), and other imported approaches (activity theory, grounded theory, hybrid theories); 3) contemporary theory, that engages different human values (manifested in Action Research) and cultural perspectives such as feminism, multiculturalism and critical theory. However, the appropriation of theories outside HCI's computer science and engineering canon in each paradigm also draws a number of concerns among HCI researchers as this practice may have led HCI to an eclectic discipline rather than a well-defined one (Rogers xi).

Human factors is the core of traditional HCI which focuses on man-machine fit coupling. It is rooted from disciplines of the industrial engineering tradition which emphasized the human-machine optimization in order to reduce human error in maximizing industrial productivity. The goals of this paradigm are centered in optimizing the fit between humans and machines by identifying concrete problems in the real-world settings that intervene with the interaction. It also identifies phenomena that underlie the interaction but not leads to substantial problems.

Not until the 1970s and 1980s that the researchers and practitioners in human factor recognized that the understanding of human, technical, social, and

institutional strengths and weaknesses is imperative to design reliable and resilient systems. Researchers and practitioners later discovered that human error was not the only cause of failure in complex and high-risk safety critical automated systems such as a nuclear power plant operating room, air traffic control systems, or battlefield systems.

The other paradigm that is identified as the core tradition of HCI is classical cognitivism/information processing, which its central metaphors lays on the human cognition and computer as coupled information processors. The interaction task in this paradigm is to enable communication between the machine and the person since actions performed by one in pursuit of a goal impact the state of the other. The early practice of HCI promoted a user-centered approach to interface design through an information-processing mechanism that primarily focused on the individual human user. The term of information-processing models is to describe the relation within the computer, between the computer and the person, and within the person. This model starts by formulating problems in the real world that are then abstracted into a general model. Designs are evaluated systematically by measuring the accomplishment of goals and take consideration of the psychological state of users that can be modeled and optimized. The questions are derived from a set of information processing issues in computers and users such as 'how does information get in,' 'how can it be communicated efficiently,' etc.

An example of the classical cognitivism paradigm is the development of a payment system for mobile e-commerce in Indonesia. The e-commerce business in Indonesia is flourishing rapidly, following the enormous growth of the mobile internet users in Indonesia. forbes.com reports 76% of all internet users in Indonesia make purchases from their phones, the highest rate of mobile e-commerce of any country in the world. However, at the same time it is also facing a challenge as less than a half of the population do not own a bank account. Furthermore, the customers are hesitant to link their bank account directly for on-line purchases or to use a credit card as payment method due to the high instances of credit card fraud. As a result, online shopping companies create partnerships with third-party money services and major banks to provide in a form of a virtual account which a customer can transfer their money from ATM, mobile banking, or internet banking to complete their purchase. Those who do not own a bank account can complete the purchase by paying at the nearest convenience store chain.

The interface design must be able to inform a customer how much money they must pay, when the payment is due to avoid order cancellation, and what kind of payment methods are available. The other users of the system are merchants who can be identified as small-medium enterprises, home businesses, and housewives. As for merchants, the information must include whether the buyer has placed the order so that merchants need to send the goods and how they can cash out the funds.

Another example for cognitive model approach in HCI is the Go-Jek application, a widely used ride-hailing mobile phone application in Indonesia. Go-jek began as an application to reserve a moped taxi in Jakarta area—the locals call a moped taxi as *ojek*— as a moped is considered to be a more reliable type of transportation due to its high maneuverability in Jakarta's notorious traffic jams. Later on, the developer adds more exciting one-stop services such as Go-Car (car taxi reservation), Go-Food (food delivery), Go-Send (sending small goods to addresses within 15 miles), Go-Glam (beauty salon service on your front door), Go-Clean (a domestic cleaning service), Go-Auto (a house-call carwash), Go-Tix (movie tickets reservation), and Go-Shopping (grocery shopping; it was like having UberEats, InstaCart, Grabcar, and UPS in one).

Go-jek is not only a response to the busy life in big cities in Indonesia but it is creating a new lifestyle as well as changing the way people use a mobile phone. The urban people in Indonesia discover that they can avoid a long line and long wait for ordering a popular street food by a GoFood delivery. My 67 years old techno-savvy mother who used to drive her own car finds out that it is more convenient for her to go anywhere by moped or car taxis she orders with Go-Jek or Go-Car. It is because she does not have to worry about buying gas, searching for parking, and maintaining a car. The expansion of Go-Jek services is not an impulsive decision. A psychological state and actual needs of a customer that are contingent with the abundant availability of human resources are taken as considerations on what kind of menu or options that should be available in the application.

Researchers and practitioners of HCI, therefore, recognize that conceptualization of cognition is externalized, distributed across people, so technologies and environments are more appropriate to address concerns in interacting with computers in the real-world contexts. The concept of HCI is thereafter altered to a social phenomenon, which invited the social science sociologist, anthropologist, and others to bring new theories and frameworks to contribute to HCI research about technology use and system design. The situated action (SA) and ethnography are the most notable among modern theories in HCI (Rogers 52). The SA approach emphasizes to answer the question, “how people use their particular circumstances to achieve intelligent action.” Rogers mentions R.J Anderson’s work on ethnomethodology as the early ethnography approach in HCI that offered new ways of understanding the informal aspect of work such as social relations in workplace and “locally specific skills required to perform any task” (52). Early adaptation of ethnography approaches to HCI was used to understand interactions situated in a workplace that employed technological intervention in jobs like air traffic control, media spaces, augmented paper and hospital in a pursuit to improve employees’ work performance.

However, the integration of ethnography into HCI was not without controversy, drawing concerns from system design researchers. It was particularly when the computer technology was moved out from working-situated space into homes and everyday life that shifts ethnography approach in HCI back to its cultural study roots. One strong criticism comes from Crabtree et al. in their paper,

“Ethnography Considered Harmful”, which argue that the trend might cause methodological danger in system design as it is considered no longer appropriate within the design context and much of the study derived from ethnography perspective have no direct contribution and less relevance to design development (880). Regardless the criticism, the exposure of HCI to culturally inspired ethnography methods and studies provides fresh and different insights into everyday practices and produce the understanding of diverse technologies.

New Wave(s) in HCI

The two paradigms in HCI, human factors and classical cognitivism/information processing emphasize the mechanical configuration of technological artifacts by positioning humans as another component in system design. This notion of human as a passive entity is challenged by Bannon’s “human actors” instead of “human factors.” Bannon highlights that in human factors canon, the human is conceptualized as “a passive, fragmented, de-personalized, unmotivated individual, the latter connoting an active, controlling one,” thus neglecting important issues like “individual motivation, membership in a community of workers, and the importance of the setting in determining human action” (27). The reconceptualization of human factors to human actors also mirrors to Kenneth Burke’s dramatism that uses acts in drama as a metaphor of life with humans as actors/agents acting in a scene/situation.

The notion of “human actors” has reinforced the need for other metaphors, new approaches, new paradigms, and new waves in HCI. Susanne Bødker also calls out for an alteration to the first and second paradigm, since computers are more ubiquitous, as new technologies, such as pervasive technologies, augmented reality, virtual reality, small interfaces, and tangible interfaces; they converge new elements in human-computer research such as culture, emotion, and experience with the focus on cultural level (through aesthetics), expansion of the cognitive aspect to emotional aspect, or cultural historical focus on experience (2).

Harrison et al.’s proposal about the third paradigm with interaction as phenomenologically situated as the central metaphor contains a variety of new frameworks and approaches. The concept of human body in the phenomenologically situated paradigm is very much grounded in Paul Dourish’s embodied interaction as a theme to unite tangible interaction, ethnographic, and ethnomethodological approaches that emphasize the fundamental shift in the way the nature of an interaction is understood (Harrison et al. 9). Dourish explains in his book *Where the Action Is*, “Embodiment is not a property of systems, technologies, or artifacts; it is a property of interaction.... In contrast to Cartesian approaches that separate mind from body and thought from action, embodied interaction emphasizes their duality (189).” The notion of embodiment interaction is opposed to the idea of thinking in the second paradigm as cognitive and abstract-cognitive based which leads to the development of Graphic User Interaction (GUI) that emphasizes seeing, hearing, and motor control of hands.

Furthermore, Harrison et al. define the phenomenologically situated approach as follows:

The goal for interaction is to support situated action and meaning-making in specific contexts, and the questions that arise revolve around how to complement formalized, computational representations and actions with the rich, complex, and messy situations at hand around them.

Harrison et al.'s definition of the phenomenologically situated paradigm aligns with what rhetorical principles organize and explain: human communication, interaction, and experience. Moreover, Harrison et al. describe third paradigm consists of three interlocking elements that are subject to rhetoric: focus on meaning and meaning creation, based on human experience, and thus represented through multiple perspectives and the relationship amongst those perspectives. The understanding HCI as embodied interaction and phenomenologically situated thus suggests rhetoric to navigate research in HCI to explore cultural situations that inscribe the interaction. Therefore, rhetoric can bring the human-to-human interactions related issues that are marginalized in the first and second paradigm to the center of attention; specifically, the situatedness of an interaction which is pretty much reinforced by human interaction.

In HCI tradition, the term “situated” can be interpreted at least in three definitions from three different lenses and traditions: interactionist (ethnomethodology), ecological (sociology), and a cultural approach. In the

interactionist tradition, the term “situated” is derived from Lucy Suchman’s “situated action” which explains how people use their material and social circumstances to achieve an effective action. In the ecological perspective, “situated” means that part of the actions is taken care by the environment, or at the contrary, the actors could exploit the environment and/or actively create their own resources for their actions. The meaning of “situated” in cultural approach could be done in both cultural and cognitive reading as culture and history determine the human cognitive capacities. The cue of action/reactions to an object could not be disconnected from its cultural variables. For example, people in Indonesia use banana leaves as food wrap such as for *lemper* (savory rice cake) and *nasi bakar* (steamed rice in spicy herbs and chicken wrapped in banana leaves and grilled to perfection). Indonesians affirm that banana leaves is not edible but it is solely used to preserve and to enrich the flavor. Meanwhile, Japanese use *nori* seaweed to wrap and add savory flavors to *onigiri*—wrapped rice, and it will be eaten altogether with the rice. Those examples are echoing the notion that cognition is solicited differently depending on the available resources and technology.

The discussion of the term “situated” in HCI as above conveys the notion of HCI as a rhetorical interaction that is determined by a place and/or multiple places, moment, and time. Using a drama as a metaphor, Burke calls place or situation as scene: a fit “container” for the act (*A Grammar of Motives* 3). Burke emphasizes the relation between scene, act, and agency as “the scene contains the act” and “the

scene contains the agents” and that the nature of acts and agents should be consistent with the nature of the scene. More importantly, rhetoric as a context covers the exigence of interaction, or the need, desires, and motives of involved parties for a given rhetorical interaction to occur to begin with. Other element in a situation is events or in rhetorical term is known as *kairos* or “lucky timing.” Kairos is described as circumstances beyond the rhetors’ control that can intervene to change the moment. Thus, it makes sense to say or to act in that moment. Exigence and *kairos* are very much subjected to local and cultural perspective. Some researchers in HCI acknowledge the rhetorical quality in interaction to address the research problems and challenges in the Non-Western and ex-colonialized countries through ICT4D and postcolonial computing.

Although there is some methodological overlap between ICT4D and HCI such as qualitative research and user studies, design and iterative prototyping, evaluation, and reflection, there are characteristics that distinct the two. In his book, *Human-Computer Interaction and Global Development*, Kentaro Toyama explains that ICT4D emphasizes on practicality and potential for genuine impact, while HCI stresses on “the newness” of technological ideas. In contrast with the common HCI practice, ICT4D will appropriate the technology that is possible on the site, instead of solving the problem by imposing the use of the latest technology that may be yet unavailable and costly to the community (25). In regards of work scale, the typical HCI researchers project their work for vast commercialization through a partnership with big industries or start-up businesses, while the ICT4D researchers

expect their work to have a large-scale impact through government policies or by convincing their agenda to multilateral organizations such as United Nations to implement the policies.

In a setting where technology is developed and advanced, the usability testing and prototyping stages are simulated in a controlled research lab. In contrast, the ICT4D encourages usability research and prototyping process to be conducted “in-situ” or in the actual situation, therefore, the research could reveal problems that may happen in the real world such as material and human resource availability, and whether it is practically achievable. One of the most notable ICTD body of work is the use of mobile health (mHealth) technologies. Researchers are striving to improve the quality of health service to vulnerable populations, such as maternal and infant mortality, immunization rates, and prevention of communicable disease by deploying ICT4D methods around the globe. For example, a mobile phone adoption to support health services with a case study of midwives who use mobile texting to promote maternal health in rural areas in Aceh Besar, Indonesia.

The postcolonial approach to a culturally informed computing is another stream in HCI to address ICT4D research. The postcolonial supporters promote the understanding of how all design research and practice are rhetorically situated as they are subscribed to local culture and situated knowledge. In a paper titled “Postcolonial Computing: A Lens on Design and Development,” suggest that by seeing the ways of an object is designed in regards for a specific culture, it allows a broader conversation what other practices can count as good design (1312).

Additionally, in a paper "Postcolonial Computing: A Tactical Survey," Philip et al. offer postcolonial computing as "a bag of tools that affords us contingent tactics for continual, careful, collective, and always partial reinscriptions of a cultural-technical situation in which we all find ourselves" (5). The insights of the postcolonial and the science and technology studies speak at once to the highly local and contingent practices that they see at work in different specific sites of technology design and use. While at the same time they are recognizing the ways that those localisms are conditioned and embedded within global and historical flows of material, people, capital, knowledge, and technology (par 36). In the notion of postcolonial computing, Irani et al. suggest an alternate formulation of design work; engagement, articulation, and translation. "Engagement" means connecting with users or an application domain in order to understand relevant work or activity; since HCI design is primarily "user-centered" this is most commonly a form of engagement with people and their material worlds. "Articulation" concerns how properties of this domain are formalized and transformed into a series of requirements for technological support. The last formula, "translation" concerns how these requirements, possibly through a series of steps, are transformed from statements about a domain to statements about technology and eventually into specific pieces of technology designed to support the application domain (1317).

Philip et al. explain that postcolonial computing concerns on three premises by highlighting the challenges in transferring HCI technological knowledge across culture particularly in ICT4D (7). They are : 1) see the cultural difference as a

possible productive and creative means, 2) take into account the purposeful, partial, and situated work that translates ways of life into technological needs and mandates, and 3) does not solely subscribe to computational design products including games, computer software, applications, and so on. Philips et al. reject the idea of the universality of HCI method and argue methods are always trans-nationally produced *in-situ* congregate by planners, makers, designers, diverse users, and objects they shape.

Another stream in HCI offers the deployment of humanistic epistemologies and methodologies to respond to problems that are related to normative values. In “Humanistic HCI,” Jeffrey Bardzell and Shaowen Bardzell propose another approach to HCI through the arts and humanities disciplines under the umbrella of Humanistic HCI. Humanistic HCI draws from growing concerns on normative aspects in HCI, such as how Western technologies and research should respond to the problems in the Global South. practices, rituals, etc. that in some cases may be contrary to Western values. They argue the Non-Western cultures have different values, customs, practices, and rituals that can be different with the Western one. For example, the effect of uncertainty avoidance in Indonesia will be a person who comes to a subdistrict office to apply for a birth certificate for not using the available computer station to input the data by themselves unless they are being asked and directed to. Bardzell and Bardzell describe the ongoing definition of Humanistic HCI as “any HCI research or practice that deploys humanistic epistemologies (e.g.,

theories and conceptual systems) and methodologies (e.g., critical analysis of designs, processes, and implementations; historical genealogies; conceptual analysis; emancipatory criticism) in service of HCI processes, theories, methods, agenda-setting, and practices” (30-31).

Bardzell and Bardzell recognize that the work in HCI today faces problems that reflect sociocultural norms. They suggest that the humanities have tools and competencies that can serve as resources for researchers and practitioners to develop alternative approaches in responding to problems related to normative values (2). They provide a set of criteria so that a research subject or a product could be categorized in Humanistic HCI. Some of the criteria are 1) consideration of objects of inquiry holistically, 2) reliance on traditionally humanistic methodologies, including critical analysis, interpretation, history/genealogy, and conceptual exploration and analysis, 3) reliance on and/or develops one or more mainstream humanistic theories (Dewey, Heidegger, or Foucault) in a central or substantial way, and 4) embracement of the humanist’s expert subjectivity over scientific objectivity (31).

Feminist theoretical lenses promote objectivity in limited location and situated knowledge by understanding how a system work, technically and socially, giving a significant contribution of gender perspectives in HCI. In “Feminist HCI: Taking Stock and Outlining an Agenda for Design,” Shaowen Bardzell investigates the intersectionality between gendered patterns of work relations and the design of

ICTs and brings into questions how gender differences undermine the design and development of interactive systems. The feminist theories address the inadequate use of family as unit analysis in the development of domestic technology since male and female members use technology in diverse ways. Furthermore, feminist theories bring into question how gender differences—in particular, a deficit model of women and technology—undermine the design and development of interactive systems. Bardzell suggests a more systematic integration of feminist theories in HCI's pedagogy, textbooks, and everyday practice (1304).

The ICTD/ICT4D and postcolonial computing advocate the aspects of Scene and Agent in the HCI, that are presented in the significant body of work of mobile technology interventions in mobile health to improve maternal, newborn, and child healthcare globally. A recent study by Cruse et al. in “Barriers to the Use of Mobile Health in Improving Health Outcomes in Developing Countries: Systematic Review” reviews 30 articles out of 2224 studies of the use of mobile health technologies in several developing countries in Asia, Africa, and Latin America. This study reveals that short text messaging (SMS) as the dominant tools as mobile phone is more affordable compare to personal computers or tablets. Cruse et al's study demonstrate the urgency to improve the quality of technology intervention by unfolding the top 3 barrier categories: infrastructure, lack of equipment, and technology gap.

Regardless the ample evidence of how this approach has been significantly improve the quality of health care in communities in the Global South and/or ex-colonized countries, it seems ICTD/ICT4D practitioners and researchers still could not yet escape from their Western mindset that the Agency in the developing countries has to meet the standards of developed countries in order to excel in mobile health. Instead of trying to match the technological standards in developed world, the ICTD practitioners should be tenaciously enhancing the quality of available technologies while developing for the future direction, curating what would be applicable within certain situation and certain community, fostering the research collaboration with local practitioners, and ameliorating the synergy between private parties, local government, and participating community.

The Designerly Approach

HCI design researchers show great interest in addressing the challenge for research in remote and economically poor settings which are not always exposed to Western culture and technology. A field research becomes an important tool to study the people in this area that aims not to change them but to understand them. As it has been discussed previously in this paper, HCI designers have been adapting ethnography as a strategy to survey the needs of people hence framing the problems that need to be solved by design. Nevertheless, due to the rapid pace of product realization cycles, HCI professionals see ethnography as a somewhat ineffective method. Moreover, it is sometimes difficult for designers to play the role of the

privileged ethnographer as an observer and investigator, which requires investing large amounts of time living and being accepted into a culture in order to understand and articulate it.

In response to this problem, David R. Millen in his paper, “Rapid Ethnography: Time Deepening Strategies for HCI Field Research,” introduced “rapid ethnography,” which is based on three key ideas: 1) narrowing the focus of the field research by narrowing the research questions, zooming in on the important activities to reveal useful data and using key informants with access to broad range of people and who is also knowledgeable to identify activities and behaviors that relates to the research; 2) using various interactive observation techniques that include structured interviews, contextual inquiry, and activity walked-through to increase the opportunity of discovering exceptional and useful behavior, and to have multiple researchers to observe multiple activities and groups at the same time; and 3) using collaborative and computerized iterative data analysis methods to allow transcription of the preponderance interviews, online discussion, and field notes by coding, searching, subsetting and contrasting the text-based data using tools such as FolioViews™, and AskSAM™ (281-83). Millen uses rapid ethnography approach to study the use of the Internet in changing the way people work and how they would run their business in the future. This “Thinking Spaces” project was done by observing thirty-one businesses that were technological pioneers in the use of Internet technology in three months. Involving consistently two to three persons per field visit team, this project involved interviewing a principal manager as the

key informant, observing various workers, collecting both paper and electronic artifacts ranging from forms brochures, company publications, and web documents.

However, in “Beyond Ethnography: Engagement and Reciprocity as Foundations for Design Research Out Here” Brereton et al. recognize that in many settings ethnography or rapid ethnography is not the best or the most appropriate method for several reasons. They identify that design permeated by rapid ethnography struggles with the difficulties of gaining access to do ethnography in different cultural settings and the implied power relations between the knowledge gatherer and those studied which is historically inscribed in ethnography. In many cases, ethnographic investigation may not significantly contribute to design. It is also difficult translating the resulting ethnographic knowledge into useful and sustainable design, since the relationships and learnings that take place over time makes design sustainable. The third person perspective is problematic since people who are designed for do not gain the skills or access to technologies to design for themselves. In addition, the research may produce designs that the designers “aspired,” not the designs that the people actually “need” (1184). Accordingly, Brereton et al. propose engagement and reciprocity first within participatory design and co-design framework as alternatives to rapid ethnography. They assert, “By working together, building upon locally used and available technologies, designs can fit within cultural practices and locals can maintain and extend them” (1185). They also claim that engagement, learning and reciprocity may usefully apply to design in any local context and culture (1186).

Brereton et al. use their work designing a digital noticeboard for the Warnindilyakwa people, a remote and discrete Aboriginal community located in the Northern Territory in Australia. Reciprocity is a core tradition in the Aboriginal culture which is manifested in “yarning” or a dialogue circle where people sit together and talk each other by forming a circle. Understanding this cultural value, the researchers approached the Anindilyakwa, people of the Warnindilyakwa, through yarning to facilitate in-depth discussion in a relaxed manner. By investing time to be with the community and through a series of yarning, the researchers established the engagement and reciprocity, gathered aspirations and insights with the local community in various activities such as helping the Anindilyakwa to address pests invasion and facilitate the digital and computer technology learning. The dialogue with Elders to seek suggestions and feedback and to pitch the ideas preceded the digital noticeboard making. The design process also involved the Linguistic Center staffs, Indigenous Land and Sea Rangers, the school principals, and other groups on the Island. Brereton et al. point out that the digital noticeboard project was originated from this series of engagement, which they stress was initiated by the community and did not come from the researchers (1185).

Another designerly approach that is also widely popular among HCI designers is the use of personas. In “Personas as Rhetorically Rich and Complex Mechanisms for Design,” Erin Friess describes personas as “fictional representations of actual end users that are developed only after intensive user-based research, could possibly function as a mechanism to merge the expertise of the designer with the data of the

user and balance the process for experience development” (111). Friess argues, the personas benefit the designers to keep the user needs at the vanguard of design, which is the core of User Centered Design (UCD), while also allowing personas to be a tool they can use in a rhetorical decision-making space (119). Daniel G. Cabrero’s “User-Created Persona: Namibian rural Otjiherero speakers” also adds the technical definition of personas as “commonly agreed as a surrogate of a group of users that strives to convey technological needs, requirements and desires typically by a name, a picture and a written narrative” (par 4).

Moreover, personas are viewed as an ineffective approach by Heather Christiansen and Tharon Howard in their text “‘Constructivist’ Research Methods for Experience Architecture and Design.” Christiansen and Howard assert that personas are speculative representations of users portrayals who may not actually exist (132). Christiansen and Howard are critiquing the current interaction design as too much foregrounded in an effort to accommodate user’s needs and goals and as a result, neglect the ecology where the interactive system exists. Inspired by Bourdieu’s *Distinctions* (1986), they propose “habitus” that will provide the interpretive framework through which users interpret the world around them and which drives the choices they make. In his research, Bourdieu discovered that a social position is shaping French citizens’ aesthetic tastes in art and music. A French individual who came from the upper-class society has a preference for classical music as they have been educated and exposed to it, while another individual who came from a working-class society has a cultivated habitus for pop music.

Christiansen and Howard state, "Analyzing the habitus that actual users ascribe to will provide a description with which multiple personas may associate. Thus, this shift in focus from persona to habitus allows experience architects and user-experience designers to understand the identity of the company or brand better and aids them in developing experiences that are specific to that habitus" (132). Therefore, it is important to construct the habitus that a particular brand or company needs to address in order to gain a holistic approach in the development of interaction design.

The designerly frameworks as discussed above display rhetorical qualities in its approach with the focus on human communication, experience, and meaning making. Furthermore, Brereton et al. and Christiansen and Howard put a place in the interaction as the center of attention in design development. Brereton et al. emphasis on Agent and Scene by taking account the aspect of targeted users' cultural insights and customs to develop a digital sign board for an indigenous community in the northern territory in Australia. Christiansen and Howard offer Bourdieu's habitus in user experience design that is inclined with the concept of ecology in the rhetoric tradition.

I have laid out the methods and approaches that are actively circulating in HCI throughout this chapter and it is apparent that each framework from the three paradigms assigns rhetorical qualities. Although the available approach and methods have been taking account a user as an active element in system design, the

discussion of cultural situatedness as a component that constitutes a rhetorical situation in interaction is still at the edge of the conversation, narrow, and in the surface level. Referring to the UX Oriented Pentad by Sosa-Tzec in Figure 2.1, the human factors and classical cognitivism paradigms emphasis research aspects on Agent (the user, the system, or elements of the interface) and Agency (the tools, interface components, applications, or systems that support the interaction), leaving out the situation and event where the action takes place (Scene). Moreover, most of scholars prescribe to mechanical and functional features in defining rhetoric of HCI by suggesting that a rhetorical situation rests solely in the screen interface and having less consideration on the place where the interaction occurs. In next chapter, I will explain how rhetorical principles inform the context of use in user experience design.

CHAPTER THREE

RHETORICAL PRINCIPLES IN USER EXPERIENCE DESIGN

The goal of interaction design is to create an enjoyable experience, a feel of satisfaction, and pleasure toward a product. I argue that a rhetorical situation in human-computer interaction rests in the situatedness of interaction and users' previous experiences— things that they have done or attitudes they have toward the technology, even before users are exposed to the aesthetic appeals situated in the interface. The user's past experiences—either good and bad, are means of persuasion and identification, and respond to the given situation of using the technology. Previous research done by Sosa-Tzec, Carnegie, and McCarthy and Wright claim that experience in UI/UX is produced from the enjoyment of aesthetic appeals that are located in the physicality of the medium tie to persuasion. Through the arrangement of visual elements including texts, font types, and images, the interface evokes aesthetic pleasure to its users. The notion of the interface as the only locus of rhetorical situation has segregated users from their social world which is rich with histories and cultural values that determine, or at least inform, their reactions to technology.

HCI has demonstrated its interests in the importance of culture in technology design, however, the implementations of culture often result in a narrow and surface level, missing its context of use. Sun reminds that "Culture is situated in concrete use activities within concrete contexts, which should be approached in a

dynamic fashion and in a broad way” (144). When user experience design omits the cultural situation of an interaction, the design outcome will miss capturing the use moment of certain kinds of local uses that are originated from adjustments to the sociocultural situation.

This chapter aims to demonstrate how user experience design is contextualized in rhetorical principles and uses dramatism to analyze the rhetorical and cultural situatedness in the interaction. Humans establish experience and a meaning making in their interaction with technology, which is a rhetorical process¹⁰. Experience is situated and holistic; therefore, the application of a rhetorical lens can address cultural matters in situations of an interaction that contribute to meaning making. Situatedness is often sidestepped as the traditional HCI approach has mainly focused on the use activity between the human (Agent) and the technology (Agency).

Kenneth Burke’s dramatism as a rhetorical analysis, complements User Experience/User Interaction (UX/UI) design to elaborate the attributing motives in a meaning making process by interweaving acting and meaning. Blakesley points out that Burke views rhetoric as a symbolic action: “the words as an act in a scene

¹⁰ Kenneth Burke in *A Rhetoric of Motives* explains, “Wherever there is meaning, there is persuasion, and wherever there is persuasion, there is rhetoric.”

written or spoken by a person for a reason” (8). In “Kenneth Burke’s Pragmatism—Old and New,” Blakesley reinforces that as symbolic actions, words act to transform and reclassify the objects of thought, allowing experience itself to be changeable, thus susceptible to rhetorical manipulation (86). Sullivan and Porter add, “Rhetoric complicates discourse study in computers and composition by involving matters related to situation and process—the setting for discourse as well as the means by which it is produced and received” (28). In *Rhetoric of Motives*, Burke highlights that, “a rhetorical motive is often present where it is not usually recognized or thought to belong” (xiii). Dramatism articulates the relationships among ideas, explaining how words about motives provide information about human actions.

I will begin this chapter by discussion of how an experience is explained, derived, and built upon a rhetorical event. Drawing on Kenneth Burke’s dramatism, this chapter will demonstrate the experience of enjoyment, satisfaction, and trust in interacting with a technology as the shared substance that both users, technology designers, and possible stakeholders can identify with, thus establishing a consubstantiality. This concept of consubstantiality highlights that the rhetorical

situation in HCI is active dialogically¹¹ before, during, and after a user encounter with an interface. Therefore, it is important to extend the concept of the rhetorical situation in user experience design beyond a two-dimensional and a screen-based interface and start to think of culturally informed user experience/user interaction as means for identification.

Experience and Meaning Making in Culturally Informed Interaction with Technology

User experience exemplifies the dynamics of people's expectations in current use and design of information technology. The emotional consequences evoked from an interaction between human interaction with technological products lead to meaning making. As noted by Lenz et al. in "Exploring Relationships Between Interaction Attributes and Experience," today's interaction has to induce sensations

¹¹ Citing Mikhail Bakhtin, McCarthy and Wright describe that the unity of felt experience and meanings made from it are accomplished dialogically (18). Furthermore, Sun asserts that the dialogical view of culture allows for further and deeply situated in local practices with ongoing process of construction between structure and agent, and between the context and the individual (26).

of “feel good” and “beautiful,” sensations which they call the “aesthetics of interaction” (126). They also stress that interaction and experience are intertwined (133).

According to Burke, our collection of experiences contributes to our orientation, which is the way we look at the world (Permanence and Change 18). Orientation affects our judgments—which connects to motives, determines what is proper response in certain situations, assists us to interpret our interpretations, and shapes our expectancies in matters of meaningful events. Our expectancies thus help us to select the available meanings that we would see most fit with the context of a situation. An orientation is also identified as the larger frame of motives, to which Burke also adds, “motives are subdivisions in a larger frame of meanings” (19). Piety is another concept that establishes orientation. Piety is described as a “schema of orientation, since it involves the putting together of experiences” (75). Piety generates an interpretative network, formed by “linkages” of experiences that integrate all the significant details into coordination, connecting them one to another.

People acting cannot be separated from action, feeling, thought, and value, and the social situation that involves collective cultural historical forms of located, conflictual, and meaningful activity. According to Jane Lave in “The Practice of Learning,” people acting and the social world of activity cannot be separated (7). People acting in a situation know different things and speak with different interests and different levels of experience. She emphasizes the unit analysis in situated

action is the person-acting-in-setting through cultural resources for learning and sense making.

In Chapter 2, I have cited Rau et al. 's finding that the independent and interdependent self-construal¹² motives play a significant role in culturally informed technology adoption specifically among Non-Western users. According to Burke, human actions arise from motives which responses are in accordance with any given situation. Burke also explains that motives are “a term of interpretation” (25). Therefore, a past experience (whether it was a first-hand experience or someone else’s) will be used to interpret a situation. Burke also reinforces the temporality and dynamics of motives by clarifying, “motive is not a fixed thing, like a table, which one can go and look at...” (PC 25). Thus, both situation and motivation are congruent to the user's experience toward artifacts.

The notion of technology experience as a dialogical process resonates with the sense of piety in Burke’s concept of orientations. Piety guides people to develop a consistent set of interpretation that generates a set of judgments on “how things

¹²Rau et al. introduce self-construal motives that are derived from the self-construal theory. In “Toward a Better Understanding of Self-Construal Theory: An Agency View of the Process of Self-Construal” Voyer and Franks explain that the self-construal theory is to understand individual consequences of cross-cultural differences, in regards their implications for the construal of the self (101).

were, how they are, and how they may be” (PC 14). The discussion above demonstrates how the openness of a situation is a rewarding element in human interaction with technology. A human mind cannot be separated from his/her experience that is informed by their local social and cultural values. User's' reactions to technology are determined or at least informed by their previous experiences.

Emotional consequences toward technological products, such as satisfaction, pleasure, or appeal, are momentary and involve usage situations. In “The Thing and I: Understanding the Relationship Between User and Product,” a prominent user experience researcher, Marc Hassenzahl, critiques HCI's superficial definition of satisfaction as merely “positive attitude towards the products” (8). Experiences are produced differently among users, due to different personal preferences and expectations. Therefore, people's satisfaction regarding artifacts will vary, depending on how the artifacts fulfill the needs corresponding to those situations. Hassenzahl also explains that attitude and emotions are different in several aspects. Satisfaction for a product comes as the expectations toward it are fulfilled, while joy and pleasure are derived from unexpected events. For example, a woman is satisfied by the ease of a shopping experience with an app (expected experience), becoming more excited as she finds out that she received a higher discount during the checkout (the pleasure).

Instead of projecting experience as an outcome in interaction with technological products, experiences before things must be designed. In “Experience

Before Things: A Primer for the (Yet) Unconvinced,” Hassenzahl’s view on experience is through lenses of customer satisfaction in which he posits:

... experiences are stories told through the product, and designers become foremost the authors of those stories. Only after having outlined the desired emotional and cognitive content of an experience, the action involved, its context and temporal structure, a designer should start thinking about how to convey the experience through a thing or system of things.

He emphasizes that experiences will be the most important effect of a product; therefore, the engagement between a designer and a consumer in formulating an experience becomes crucial (2063-66). By shaping an experience through things, the true value of an object will no longer reside in its materiality, functionality, or aesthetic styling, but will, instead, remain in experiences. The linkages of experiences form what Burke calls “orientation,” which assists humans in selecting available meanings to meet a situation’s context. Hassenzahl’s idea on experience design resonates with Christiansen and Howard’s experience design approach adapted from Bourdieu’s “habitus,” which I discuss in Chapter 2. These two statements support Sun’s argument that the meaning in technology design is culturally circuitized; it arises from the users and is not prescribed by designers or embedded in the technology structure.

Philosophical traditions—such as Dewey’s pragmatism, Mikhail Bakhtin’s dialogism, and Heidegger’s phenomenology, have been adopted in HCI as holistic approaches to gain better understanding of meaning construction in user

experience. Phenomenology, dialogism, and pragmatism focus on everyday experience and investigate the relationships between meaning and action. Citing John Dewey, the American philosopher, Paul Wright and John McCarthy in *Technology as Experience* postulate that experience is the totality of people acting, sensing, thinking, and meaning making, including the sensation and perception left from an object (54). Aligned with these approaches, Kenneth Burke's dramatism assists the technology designers to examine what happens in existing technology artifacts¹³ to which a situation has implicitly supplied the answers. In *Counter-statement*, Burke explains, "[E]xperience arising out of a relationship between an organism and its environment, the adjustments of the organism will depend upon the nature of the environment" (150). His statement also suggests that human physiology and behavior will adjust to the environment over time. The adaptation also applies to the way people act with the available technology.

For example, twenty years ago, not all people in Indonesia had access to land-line phones. They would go to a place called "*warung telepon*" or translated literally as "the payphone shop," to make local, long-distance, or international calls. A payphone shop would have several booths which each of them equipped with a desk

¹³ In "Questions and Answers about the Pentad," Burke asserts, "My job was to ask of the work the explicit questions to which its structure had already implicitly supplied the answers" (332).

phone, a chair, and a small display showing the duration and the price for an on-going call. After making a call, people then would pay at the register, whose price would depend on the duration and the distance of the call. As mobile communication technology becomes more affordable and ubiquitous, people become accustomed to using a messaging app on their mobile phones to make either a voice call or a video call with friends, family, and colleagues. Not only as basic communication, a messaging app also evolves into a marketing tool for small businesses. This example demonstrates how people adapt to the evolving communication technology has to offer overtime, to which fits Burke's idea about experiences and adjustments.

McCarthy and Wright argue that the experience of technology is holistic and situated, suggesting to something larger than usability, satisfaction, or attitude toward an object. The action in HCI was isolated in the idea of human response as another system in a computer that is scripted and planned. Nodding to the metaphor "users as actors," introduced by Liam Bannon in "From Human factors to human actors: the role of psychology and human-computer interaction studies in system design", the plans and situated actions theory by Lucy Suchman is considered as one of many significant attempts in HCI to address the scarcity of non-task-oriented computing and socially situated activity research that are marginal in HCI. The plans and situated actions asserts that the situation of interaction can be defined as the range of resources that the actor has available to convey the significance of his/her actions, and to interpret the actions of others. Suchman notes

that the openness of situations contravenes carefully planned responses, and any regularity emerges not as a result of plan-based action but as local responses to contingencies (70). The situation is crucial to an action's interpretation, since actions are always situated in particular social and physical circumstances.

The situated actions also resonates with what Huatong Sun calls user localization; "energetic user efforts of using a technology within meaningful social practices and incorporating the technology into one's life" (39). User localizations often determine the market success or failure of a technological product. Using mobile text messaging as a case study, Sun discovers that users adopted text messaging for instrumental convenience that other technologies were unable to offer (e.g., communicating silently and discreetly) for their daily routines. Users have been building a new communication mode and a new form of social relations through use.

Communication in groups mediated by technology is culturally situated. I learned that email is widely used as the main and official medium for formal communication in American universities. On the other hand, back in my home university in Indonesia—and in other social and work settings, people use WhatsApp, a powerhouse mobile messaging application for work coordination and for sharing and exchanging information among faculty and staff. The popular view among the users is that WhatsApp facilitates an immediate response for texting, sending official documents, and making a phone call or a video call in a timely manner. In terms of usability and practicality, this situation illustrates how

Indonesians in such a work setting are more accustomed with using a messaging app as the main technology for work coordination and administration than taking time to sit at their desk responding to email on a computer.

In terms of meaning, Whatsapp gives an agency for Indonesians to stay connected with their friends, relatives, and colleagues, allowing them to celebrate their nature as a collectivist community. For Indonesians, to stay in touch with others is necessary. Therefore, it is common for a WhatsApp user in Indonesia to have multiple group chats dedicated for certain groups and connections that would range from a group chat for a neighborhood community, a group chat for family and cousins, a group chat for PTA, to a group chat for business or work. The variety of group chats illustrates how a messaging app creates a social affordance to its users. Based on the WhatsApp example, the cultural technology appropriation for sociocultural activities makes a meaning of technology evolved and it becomes significant in users' everyday practice. This user localization, by integrating technology into a user's everyday life after adoption, socially, and emotionally, makes a technology both usable and meaningful (Sun 239).

Suchman's situated actions and Lave's notion of acting in the world correspond to John Dewey's and Mikhail Bakhtin's models of action. Dewey defines action as emotional, volitional, and imaginative. For him, experience is a process of sense making. As for Bakhtin, the unity of felt experience and the meaning produced from it must always be accomplished dialogically. A dialogically situated perspective orients us to the idea that meaning is a process of bringing together different

perspectives in a creative event that is forging understanding. With the influence of Dewey and Bakhtin, McCarthy and Wright introduce the concept of the experience to technology as a dialogical process between a person's rich histories of experience that engages with the technology about what the technology is and could be and what the person is and could be. This dialogue is subjected to emotional, volitional, and intellectual and points to the aesthetic quality of experience.

Bonnie A. Nardi in "Studying Context: A Comparison of Activity Theory, Situated Action Models, and Distributed Cognition" adds that the foundations of actions are not plans, but actors' responsiveness to produce local interactions with the environment informed by reference to abstract representations of situations and of actions (71). Activity theory corresponds to the plans and situated action theory as it emphasizes human's motives and consciousness that sees people and things as fundamentally different. In "Activity Theory as a Potential Framework for Human-Computer Interaction" Kari Kuutti states artifacts are mediators of human thought and behavior; they do not occupy the same ontological space. In activity theory, the activity must be understood with the understanding of the role of artifacts in everyday existence, specifically the way artifacts are integrated into social practice. Furthermore, activity theory considers the computer as a tool that mediates human interaction with the world, in order to help them reach their goals and not to specially have a "dialogue" with the computer (27). Hence, activity theory suggests the interactions between humans and computers should include the

meaningful context of the user's goals, environment, available tools, and interactions with other people.

As I have discussed previously, many researchers advocate the importance of constructing meaningful experience in technology design. However, Huatong Sun notices that the investigation of meaning has not received enough attention. She contends:

Design tends to prioritize interaction over interpretation, and thus designing for the mediation of action usually precedes designing for the mediation of meaning in practice. This often leads to use breakdowns when only tasks, usually lower-level, are modeled in design without considering other social and cultural factors in use contexts.

Thus, the lower-level tasks design outcomes will be isolated in overcoming the usability issues, such as the attempts to improve page navigations and easier flows, cut some steps, provide more languages options, apply correct meanings and metaphors in icons and beautification in buttons. This approach only supports the lower-level tasks as they develop from metaphors that culturally make sense to the system designers. The design focus on the lower-task misses the higher-order activity which might not be understood by the users who are unfamiliar with the cultural background of the metaphors. In a study about consumer behavior and characteristics toward smartphones in a rural area in East Java, Agatha Dinarah discovers that emoji pictorials are found confusing to her participants because they are foreign to the culture

The use of emoticons in messaging apps to convey meanings is varied across cultures, having different styles, variants, and context. In “Emoticon Style: Interpreting Differences in Emoticons Across Cultures,” Park et al. discover that emoticons are not restricted to express emotions, but rather sociocultural norms, whose meanings can vary depending on the background of the user (466). This study also finds that Eastern and Western countries employed different emoticon styles with vertical styles are more popular among Eastern users and horizontal styles are popular among Western users and English speakers. This study confirms that facial expression may not be universal. The vertical style features expressions based on the eye shape and the horizontal style features expressions based on the mouth shape. Easterners smile and frown with their eyes, whereas Westerners do with their mouth. Japanese use *kaomoji*, a set of vertical emoticon styles mimicking facial expressions made up of Japanese characters and grammar punctuation which are to express feelings in text messaging. Happy is expressed in horizontal style as :), while in vertical style is expressed as ^^.

In designing technology for users in Non-Western settings, the interaction is not solely an activity between a technology and users but also a meaning-making process between users, technology, and their social interactions. Sociocultural situations and motivation are contingent with user’s experience and meaning making in culturally informed interaction. Neglecting the construction of the meaning in situated use of interaction could regard technology use as merely a use activity instead of a use experience. Sun suggests, when a technology gives a

meaning to a user, the user experience has come into being (218). By perceiving that the interaction is culturally situated, technology designers will unfold the dialogical process between users' identity and their previous experiences interacting with a different or similar technology.

Rhetorically Informed User Experience Design

Rhetoric in UX is traditionally viewed as means of persuasive technology that leads users to an action to reach designated goals. The means of persuasion are located in the visual elements of an interface: images, layouts, sounds, font types, texts, animation, avatars, and videos. The arrangement of those elements is what the UX design is most concerned with. In *Mobile Web 2.0: Developing and Delivering Services and User Interaction Design*, Syed A. Ahson and Mohammad Ilyas quote the User Experience Professionals Association (UXPA)'s definition of a user experience (UX) as follows: "Every aspect of the user's interaction with a product, service, or company that makes up the user's perceptions of the whole" (6). Dirk Knemeyer and Eric Svoboda add the definition of UX as, "the quality of experience a person has when interacting with the specific design." UX was largely restricted to the Human-Computer Interaction (HCI) communities in the early 1980s, but now it has expanded to larger issues of competitive differentiation. UX was also often mistaken with the two other similar terms. They are the "User-Centered Design" (UCD), which is a specific process and approach for product design development, and "Experience Design," which refers to a hybrid design discipline to address environmental and

multi-sensorial design within or without the context of digital displays and installations. Experience Design also is evolving as a popular practice across disciplines, such as to enhance consumers' experience in business and marketing, education, and healthcare.

Ancient rhetorical concepts of *kairos*, *techne*, and *metis* are embodied in UX as interface, design, and usability uniting the most ancient knowledge with emergent media. Classical rhetoric was predominantly applied in speech, and later in written texts, visual arguments, objects, and audio-visual rhetoric. In "A hoot in the Dark: the Evolution of General Rhetoric," a rhetorician, George Kennedy, states that rhetoric is working as the possessed energy that drives the rhetor (speaker) to speak, the energy that is embodied in the utterance, the underlying energy in messages, and the energy exposed to the recipient in interpreting the message (4). Kennedy contends that a mental effort and expenditure of energy are required in order to respond effectively to rhetorical assertions (7-8). In *Rhetoric of Machine Aesthetics*, Barry Brummet also suggests that design and engineering could offer strategies to construct an intentional rhetoric of machines, and specific premises for a social change; in other words, to prepare users psychologically to decode the message. Brummet argues the meaning making on the computer exists on people's social and psychological reactions shaped by their interactions experience with the given technology.

To weave rhetoric and user experience, Michael J. Salvo and Liza Potts introduce Experience Architecture (EA) as an umbrella term integrating rhetoric as

approaches and frameworks enriching research and development in the newest technologies. User experience architecture has its ground in study of language specifically rhetoric as persuasion. In *Rhetoric and Experience Architecture*, Salvo and Potts describe, “Rhetoric sustains the technology-rich discussion of language and design that characterizes the contemporary exploration of emerging practice and enriches UX’s research and methods” (3). EA brings issues and concerns related to usability, user experience, mobile apps, and software applications.

UX practitioners are interested in studying the relationship between human users and computer-based products, such as websites, applications and operating systems. UX is not about what is in the inner workings of a computer, but it is about how people feel when they use it. The questions toward it are probably, “Is it easy or is it difficult?” “Is it easy to learn?” “How do you feel about the product or service?” Baxter et al. in *Understanding Your Users* explain that the user should be involved in the product’s development. The User Experience design begins with collecting user experiences to gather the understanding of what targeted users really want and need, how they currently work and how they would like to work. The linkages of experiences form what Burke calls an “orientation,” that assist humans in selecting available meanings to meet a situation’s context. In *Language as Symbolic Action*, Burke also explains that the way people perceive the “reality” of the self and the world is constructed by their symbol systems (5).

UX design is about recognizing products and services to inform the culture and identity of users and vice versa. In addition, Benyon et al.’s “Spaces of

Interactions” posits UX as a felt experience that is emotional, physical, thoughtful, and meaningful. To some extent, it is also social and useful. Donald Norman, a prominent product and UX designer, states that the job of a designer is to create an enjoyable experience when a user uses a product. In his book *The Design of Everyday Things*, Norman stresses that human error is solely caused by a bad design. The depth (software and operating system) and the surface (outer physical appearance) of present computer technologies are of a different quality with boundaries and dualisms, which is encapsulated in the Interaction Design canon through affordances appeal.

Donald Norman defines the term affordance in interaction design as what the feature offers the user; what it provides or furnishes. He explains there are two types of affordances: Real Affordances: a physical appearance of an object, and Perceived Affordances: characteristic in the appearance of the object that gives clue how to make the object be functioning. H. Rex Hartson details affordances in the context of HCI and usability engineering into four types of Affordances: 1) Cognitive affordance: a design feature that enables thinking and/or knowing about something, 2) Physical affordance: a design feature that enables physical response, 3) Sensory affordances: a design feature enables the user in sensing –seeing, hearing, feeling something; helping users with sensory affordances, and 4) Functional affordances: a usefulness feature of a system.

I have explained elsewhere how three rhetorical appeals in computer products draw in physicality of a product (*logos*), experience and meanings while

using a product (*pathos*), and experience that relates to identity of a product (*ethos*). Affordances are not solely translated as pathos in the computer technology, instead, as ethos relates to character and identity of an object, therefore, the four affordances will simultaneously generate ethos of a computer. The cognitive and physical affordances embodied in the surface of the computer-outer appearance; are both pathos and ethos. The physicality of a computer must be able to deliver hints and clues on how to use the machine (*pathos*), and the left impression from the experience in operating a computer will become a character reference of a computer (*ethos*). The logos and ethos also happen in cognitive, sensory, and functional affordances in the depth of computer, in which the logos is subjected to software and applications, content, messages, and interface design of the object, and the ethos will be left as the experience using the content of a device.

Norman goes on to explain that discoverability and understanding are substantial in creating good design. Discoverability refers to the ability of users to identify what kind of actions are possible, and where and how to perform them. Understanding relates to how the product could be understood by users effortlessly in regard to its use of panels, settings, knobs, buttons, etc. The interpretation of a perceived affordance is a cultural convention. Norman mentions that cultural constraints are a powerful clue. Failing to understand cultural cues will offend the culture and cause uncomfortable situations.

To create a good design, a designer must carefully deploy four cues to avoid usability problems. Those four cues are namely affordances, signifiers, mappings,

and constraints, which can simplify users' encounters with everyday objects.

Norman describes that affordances and signifiers are knowledge in the world; cues that designers inject in a product, mappings between the parts and the places that appear to be controls or manipulate to make an action, and the physical constraint that limit what can be done. Cultural, semantic, and logical constraints on behavior plays as knowledge in the head; analogies between the current situation and previous experiences with other situations. Constraints are important cues to limit the set of possible actions which must be used thoughtfully to let people readily determine the proper action, even in a novel situation.

In another book *Emotional Design: Why We Love or Hate Everyday Things*, Norman explains that cognition is about understanding the world and emotion is about interpreting it. He investigates the relation between cognition and emotion to explain a person's reactions towards a product in three levels: visceral design, behavioral design, and reflective design. Visceral design is explained as the way humans act instinctively towards initial impact with a product by its appearance, tactile, or others (65). Behavioral design translates as an all-in control subconscious feeling that includes usability and understanding but also the feel and heft (69). For example, driving a car is an automatic action upon a driving experience. The last one is the reflexive or contemplative level where people interpret a product by involving levels of emotions, feelings, and cognition. For example, I wear a smartwatch to get motivated to exercise more (behavioral design). I have two smart watches, a Fitbit and an Apple Watch. Both of them are so versatile in terms of colors and design.

Each of them offers bands customization, so that I could change the bands to suit the occasions that I would like to attend (visceral design). Both Fitbit and Apple iWatch keep track of my daily exercise. A Fitbit has longer battery life compared to an iWatch, but it has limited display options. In contrast, with an iWatch connected to my iPhone, I can control apps, check on my messages and email, and make and answer calls (reflective design).

Another concept to create enjoyable experience is the pleasure-based design that revolves around the importance of product creation and use to always please users. In *Designing Pleasureable Products, An Introduction to the New Human Factors*, Patrick Jordan defines pleasure as the emotional, hedonic, and practical benefits associated with the products. Jordan's concept on the pleasure-based design is described in the relationships among three levels of pleasure: functionality, usability, and pleasure (63). To be qualified in the first level of pleasure, a product must have necessary qualities to function, therefore, it will be useful. Once a product is in function and useful, it has to be easy to use, thus be qualified in the Usability level. On the highest level, a product gives the pleasure in which people can relate and be loyal with. Indonesian consumers' view on buying vehicles can be categorized into this theory. Indonesian consumers—who are price conscious, will purchase Japanese vans based on practical benefits and functionality, such as best gas mileage, powerful machines, low-cost maintenance, and the best resale value.

From a rhetorical lens, the interface is understood as a place of interaction for human, social, technological and cultural aspects in computer-mediated communication. In “Interface as Exordium: The Rhetoric of Interactivity” Teena Carnegie specifies the interface as an exordium—rhetorical means, to engage users and to dispose them to persuasion. Interactivity in new media increases with the degree to which the user experiences presence, both socially and spatially. There are three modes of interactivity in a new media for preparing and engaging the user into exordium, including multidirectionality, manipulability, and presence. Multidirectionality refers to the global two-way communication mediated by a network-based system, manipulability refers to the degree by which users can modify the form and content of media such as images, sound, videos, etc., and Presence refers to a higher level of interactivity that relates to the experiences of strong social and spatial presence.

Presence is considered as a product of the integration of system attributes and user’s perception. Such attributes includes speed, range (the number of actions that the system makes available for users), mapping (the ability of the system to map its controls to changes in the mediated environment in a natural and predictable way), responsiveness (the system’s ability to perceive user’s actions and respond intelligently), and time flexibility (the degree of timing responds to the demands of the situation rather than immediacy). User’s perceptions include immediacy, movement, and connection.

Carnegie's notion of an interface as exordium allows critiques towards the interface and to question about user's experience derived from the understanding of three modes of interactivity. By asking these set of questions, it will reveal how interface as exordium defines user's actions, determines the extent to which users can participate in dialogue and creation of content and meaning, and to identify user's position in social, political, economic, and cultural schemes.

Carnegie's discussion of multidirectionality and manipulation are dependent on mechanical and technical aspects of an interaction. Her question examples for presence align with Brejcha's idea to elicit the effect of cultural backgrounds in a usability test. However, she does not give detailed guidelines on what kind of variables that can help researchers to identify the effect of culture, political, and economic backgrounds to usability whether it is explicitly or implicitly presented as symbols, icons, or languages in the interaction design.

Marcos Buccini and Stephanie Padovani in "Typology of Experience," create a more holistic approach in defining experience. They formulate six experience categories based on emotional design, by Donald Norman; pleasure-based design, by Patrick Jordan; and experiential marketing, by Bernd Schmitt. The categories of experiences consist of six modules: experiences related to the senses, experiences related to the feelings, social experiences, cognitive experiences, use experiences, and motivational experiences. The experience related to the senses happens faster and instinctive, straightly related to sensory organs. In design, this experience is related to appearance stimulus, touch, smells, or to product sensations. For example,

the smell of a brand new car, a sophisticated look of a product, or a touch sensation of a very fine fur. The experience related to the feelings are emotional reactions originated from the use of a product. It is a higher cognitive level and it varies a lot from person to person. For example, a lady who is tearing up after hearing a song that reminds her of someone special in the past.

The social experiences happen among individuals intermediated by a product. The experience will be varied a lot according to people involved, the technologies used, and to the context in which the experience occurs. In this category, the reactions occur because of actions of other participants that are also related to the product. For example, an online game which has suddenly experienced an error due to a system down, will cause frustration to the players. Another example of social experience is discussed in the later part of this chapter. The cognitive experiences are related to the thought and to the interpretation of an object by a user, such as people come to an exhibition admiring Andy Warhol's *Campbell's Soup* painting.

In the fifth category, experiences are related to the usability and functionality of the products. Different to other categories, the degree of subjectivity in this category is lower. The last category, the motivational experiences is derived from Bernd Schmitt's experiential marketing theory. A motivational experience happens when owning or using a product motivates a certain behavior. For example, owning a Fitbit can motivate people to have a routine exercise to maintain a healthy lifestyle.

K-pop Experience to foster an Identification

The social experiences and motivational experiences are close to Kenneth Burke's idea of identification. Identification is aligned with interests and motives, which allows for an unconscious aspect of any rhetorical appeal. People are identified themselves to each other through a shared substance thus establish a consubstantiality. In this section, I will discuss identification arises from the interaction between a Korean Pop (K-Pop) idol girl group with their fans mediated by communication technology. Using the pentad, I will show that the experience of fans supporting their idol in K-pop entertainment industry is designed in detail and systematic to create the best experience by always feeling connected to the idols.

I use a K-pop idol girl group named Iz*one (pronounced as eyes-one) to demonstrate my argument. Iz*one is a binational South Korea-Japan K-pop girl group formed through a South Korean reality TV show called "Produce 48." Ninety-eight contestants were participated in Produce 48 who were trainees from South Korean entertainment agencies and artists from the Japanese 48 groups. Through a voting system, only South Korean viewers could vote for their 1 favorite contestant to be the member of Iz*one. At the end of the show, 12 girls were selected, consisted of 9 South Korean contestants and 3 Japanese contestants. The show was well-received by the global fans thus making Iz*one to have a strong international fanbase ever since the reality show started. Both South Korea and Japanese have the reputation as the epicenter of the pop idol industry in Asia. Each of them has their

own distinct fans culture which allows Wiz*ones— the name of Iz*one’s fandom, to experience the best of two worlds of idol culture. For example, Iz*one private mail is adopted from the 48 Group’s *mobame* (mobile mail), a platform where fans can subscribe a private message sent by their idol. Japan, South Korea, China, and South East Asia countries have a significant number of Wiz*ones.



Figure 4: The Iz*one Private Mail. A fan can subscribe to all Iz*one members’ private mail, or they can subscribe to some of them. [source: https://twitter.com/IZONE_DAILY/status/1086466030405185536/photo/2]

Fan sign meetings are events where fans can interact in person with their idols. The advanced information technology makes possible for Iz*one to actively interact with their worldwide fans across social media platforms. Iz*one uses a live broadcast menu available in mobile applications such as Instagram Live, Vlive,

Twitter's Periscope, YouTube Live, and Showroom. With the interaction through social media, Wiz*ones can leave comments, send emoticons or stickers, interact through private mail hashtags on twitter, show their admiration and appreciation to their idols by tapping hearts symbol. There are also K-pop related applications for smartphones that allow international fans to vote for their idol; therefore, they can be in the top of music charts or winning awards for certain categories. Some K-Pop idols have their own variety shows and reality shows which allow their fans to know about the idols daily live off camera. Fans are really important to Korean entertainment industries, because a strong fan base will go above and beyond to boost their idols' popularity, not only by purchasing both digital and physical albums, but also creating various projects such as giving a food truck with their idol's signs on it, buying a large digital billboard ad space in downtown Seoul or in Times Square New York, or making donation under the idol's name.

The strong bond between pop idols and their fans which I illustrated with Iz*one as above can be explained through dramatism pentad. Technology facilitates the ease of engagement between the idol and their fans, creating a great K-Pop experience that is rewarding to identification. K-pop fans identify themselves with the name of a fandom which establishes consubstantiality among them. We can draw the dramatisitic pentad to analyze this case as follows:

<i>Act:</i>	An engagement between K-Pop idols and their fans
<i>Scene:</i>	Today's present
<i>Agent:</i>	K-Pop fans and K-Pop idols

- Agency:* Live broadcast in social media applications, live vote in various K-Pop applications, play/download digital music on online streaming media and subscribe to private mail.
- Purpose:* to support their favorite idols or interacting with their global fans, therefore, the idol group can have the chance to win music awards or topped at all music charts, and to gain more popularity.

This example shows how K-Pop entertainment industries maintain the identification between idols with the fans to make the consubstantiality sustainable through interactions intermediated by technology. In Iz*one case, the identification has established since the voting system at the reality show, which is even before the group was formed. This pentad analysis is not a rigid framework; in fact, it offers openness to the multiple perspectives from which we view motives, thus, to expose the resources of ambiguity people might use to explain complex issues.

I am using the K-Pop case study to argue that the creation of experience is not limited to the usability of technology that mediates the interaction. I have demonstrated as above that the need to connect and to identify with an idol group through technology mediated engagement is a profound motive. Designing the experience that exists before and after the interaction is necessary to make the engagement sustainable. In the K-Pop case study, the dramatistic pentad views modes of activities to maintain the engagement between K-pop idols and their fans as means of agency, instead of the technology that facilitates the interaction.

However, this view can be changed by reapplying the pentad to a new act and thus gaining a multiple perspective to unveil other motives.

The application of the dramatism pentad is not only as simply as developing ideas about motives. According to Burke, the dramatism pentad assists in explaining how broader systems of belief shape and even determine the possibilities of acting. A designed experience through a thing or system of things must be started by drawing a detailed outline of the desired emotional and cognitive content, the action involved, its context, and temporal structure. The dramatisitic pentad will help us to analyze the current experience, planning the experience and then set the user experience design goal in interaction, thus, to evaluate the designed experience.

In this chapter, I have explained the ways in which rhetoric informs User Experience/User Interface Design. An interaction between humans and technology is a rhetorical situation; this interaction is also a dialogical process of meaning making between a user's rich histories engaging with a technology about what the technology is and could be and what the person is and could be. The meaning making on the computer technology also exists in people's social and psychological reactions, which are shaped by their interactions and experience with the given technology.

The dramatism pentad works to unveil the assigned motives that inform a rhetorical situation of an interaction that is also happening culturally beyond the digital screen in Non-Western settings. In regards of e-Lampid case study that I will discuss in the next chapter, the "situation" of e-Lampid use can be analyzed as a

cluster of motives. In addition, the deployment of circumference in the pentad will make it possible to explain the miscellany of situatedness of actions in e-Lampid which is not confined in one particular situation only.

CHAPTER FOUR

CASE STUDY: CROSS CULTURAL USABILITY TESTING OF CIVIC RECORD SYSTEM THE e-LAMPID, SURABAYA, INDONESIA

In previous chapters, I have discussed how methods and approaches in HCI are fueled by a Western tradition of individualism, low-context communication style, and uncertainty avoidance, which fosters self-reliance and individual problem solving. This Western hegemony influences the way HCI researchers and practitioners approach a problem by primarily focusing on mechanical and functional frameworks. The current rhetorics of HCI often undermine the situatedness of an interaction that is rich in cultural information when an interaction occurs in Non-Western settings. This approach makes users with collectivist and communal ways of life in Non-Western settings have difficulty producing expected actions. The negation of culture in an interaction design is also a challenge for Non-Western researchers and practitioners to respond to those problems as the available framework and theory were mainly derived from problems in cultures foreign to them.

I offer Kenneth Burke's dramatism pentad as a framework to disclose all around motives and situatedness from both users and administrators that occur in HCI. I argue that the investigation of motive from the developer/administrator insights and also the situatedness that accompanies it will help to reveal the ambiguity that is hampering the adoption of technology. In Chapter 2 of this

dissertation, I discuss several bodies of work in ICT4D and cross cultural technology design confirming the significance of independent and interdependent self-construal motives in the technology adoption among Non-Western communities. In Chapter 3, I have demonstrated that dramatism as a rhetorical analysis assists to unfold motives that are tied to situations thus locating resource of ambiguity that fosters the identification. The discussion about the situatedness of interaction that informs technology use is limited in previous cross-cultural technology design and usability studies. Most studies provided tools to reveal motives only from one side—either from the side of the user/operator through usability testing protocols or the side of the developer, but less discussion that are covering both parties.

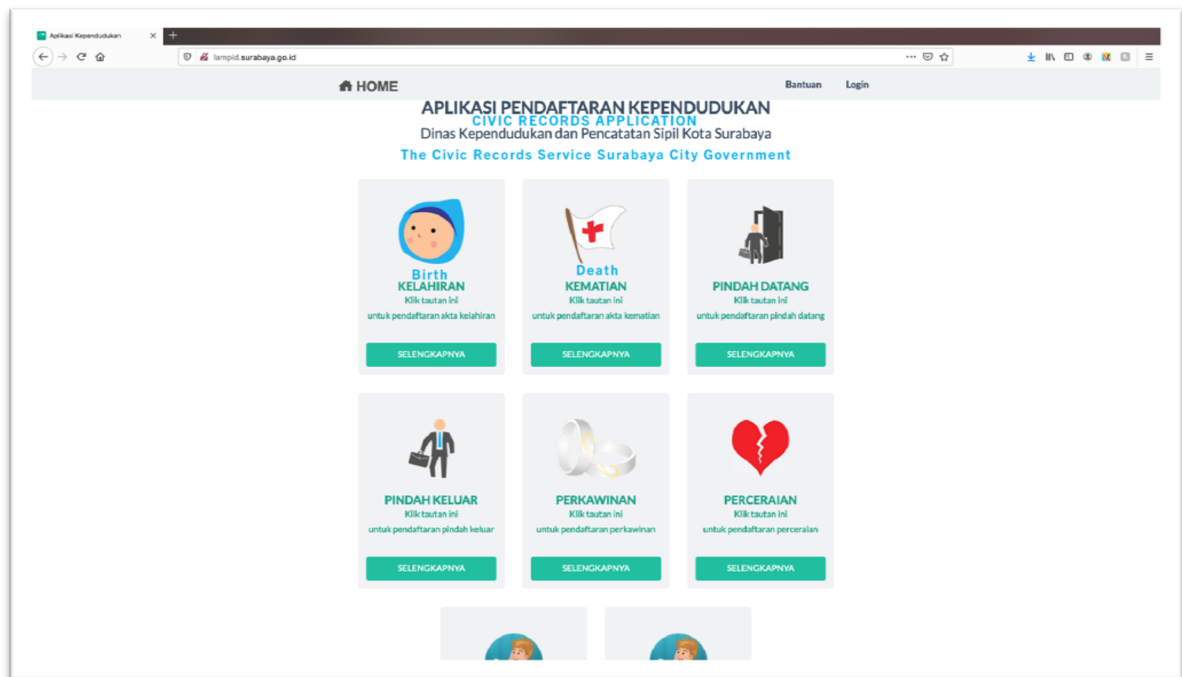


Figure 5: The e-Lampid web application interface

To achieve my goals, I am using the e-Lampid— an e-government system for collecting user information to provide virtual civic records for the Surabaya City Government of Surabaya, Indonesia— as a case study. The e-Lampid is an acronym of the digitized civic records system administered and maintained by the Surabaya Registry of Inhabitants and Civil Registration Service/Civic Records Service (*Dinas Pendaftaran Penduduk dan Pencatatan Sipil*). It stands for e: electronic/digital, La-: *lahir* (birth), m: *mati* (death), pi: *pindah* (moving), and d: *datang* (arriving). Aside from offering birth and death registration, the e-Lampid also provides migration check-ins and check-outs, marriage and divorce registration, and an alien registration system.



Figure 6: An e-kiosk with a touch screen computer, a keyboard, and a scanner.

I use a mix-method that underpins the user experience design framework with a culturally specific user-centered usability testing model and contextual inquiry techniques and rhetorics as an analysis tool. To understand the motivation behind the e-Lampid development and maintenance as a rhetorical action, I interviewed Surabaya City government public officials from the Registry of Inhabitants and Civil Registration Service/Civic Records Service (*Dinas Pendaftaran Penduduk dan Pencatatan Sipil*) as the administrator and policy makers of the the e-Lampid system and officers from the Communication and Information Technology Service (*Dinas Komunikasi dan Informatika*) as the e-Lampid system developers. The user experience design portion in this study is a usability testing with talk aloud protocols to discover the user's self-efficacy and individual self-construal motives in using the e-Lampid. Fifty-five people participated in the usability testing held at two subdistrict offices in two of the most populated subdistricts in Surabaya; Pacar Kembang and Petemon. The data was collected for three weeks in June 2019.

The application of rhetorics that is inclined to Kenneth Burke's dramatism as methods of analysis in this case study aims to reconceptualize the development of user experience by informing a holistic and philosophical approach to the situatedness of human-computer interaction as rhetorical means. Different from Aristotelian rhetoric, which emphasizes the notion of "what to say" to create persuasive composition, in "Questions and Answers about the Pentad" Burke says

that dramatism is a mode of evaluation that tells us “what to ask” (332).¹⁴ He adds in the following: “My job was not to help a writer decide what he might say to produce a text. It was to help a critic perceive what was going on in a text that was already written” (332). The dramatistic pentad will disclose the well-rounded information about motives that shape user actions within the e-Lampid. The deployment of the pentad is to analyze motives thus locating the resource of ambiguity. This resource of ambiguity can be used to foster the identification. Hence, it will be rewarding to HCI’s traditional aesthetic appeals and functional orientation.

Interview with Surabaya City Government as e-Lampid administrator

A birth certificate and a death certificate are two vital documents for Indonesian citizens as the main requirement to apply for other civic documents such as Civic Identification Number, Passport, school diploma, bank account, marriage certificate, inheritance, and so on. As for a birth registration, there is a one-hundred thousand rupiahs —or equal to USD 7—late fee if parents/individuals fail to register within sixty-days after the individual’s birth date.

¹⁴ This question takes us back to the first sentence in the introduction of *A Grammar of Motives*, “What is involved, when we say what people are doing and why they are doing it?” (XV).

Previously, applying for a birth certificate and/or a death certificate was perceived as a tiring and time-consuming process, starting from getting a letter of reference from a neighborhood chief then bringing it to the subdistrict office along with all supporting documents. Afterwards, the applicant had to go to the Civic Records office, joining in a notoriously long line and a long wait. In addition, if there were any documents missing, they would have to go back and forth to the office. And once the paperwork was submitted, the citizens would still need to wait up to two months to receive the birth/death certificate. This situation inspired the development of the e-Lampid system.



Figure 7: Interview with the officials of the Surabaya Civic Records Service.

According to Reza Santa Pratiwi and Rossi Arif from the Surabaya Civic Records Service, the idea of developing a civic record web application or the e-

Lampid came from the head of the Civic Records Service in 2014 and was approved by the Surabaya Mayor, Tri Rismaharini. It aspired to provide a better and more accessible civic records service for the community, to eradicate scalpers, to reduce long queues and waiting time at the Civic Records office, and to establish a more environmentally friendly system by going paperless. In the early stages of the e-Lampid development, the Civic Records Service invited the Suwandi Hospital—a city government owned hospital—which has the patients' birth and death health records, the Bank of East Java as a partner for late fees payment, and the Procurement Division to provide and maintaining the e-kiosk/computer station. In 2016, certain private hospitals, local health department offices, private midwife clinics, and the Funeral Service were added as facilitators. The birth and death registration in the the e-Lampid web application was developed by a team formed by the Information and Technology Service Surabaya City government.

By implementing the e-Lampid as an online civic records registration, the birth/death registration process is shortened, simplified, and more accessible. Previously, the Civic Records Service required seven days to verify and to approve birth/death applications. Currently, this process must be cleared in 3 days according to the city regulation, hence the applicant would receive the certificate in three weeks. Surabaya citizens no longer have to come to the Civic Records Service office that is located in downtown Surabaya for birth/death registration. All application processes can be done by visiting the subdistrict office where they reside and completing the registration through e-kiosks that are available in 49 subdistricts

offices and 10 district health offices in Surabaya. A subdistrict office is considered the nearest point between government service and its citizens. When the certificate is done, it can be delivered to the applicant's address or it can be picked up at a subdistrict office. Moreover, applying for a birth certificate also can be processed from hospitals and private midwife clinics that are partnered with the Civic Records Service. As for private midwife clinics, providing birth certificate application service is important as it is considered good marketing for the midwife clinics. In addition, citizens will also receive an updated family card along with the birth/death certificate.

Besides the Civic Records Service, there are other services and divisions in the Surabaya City government that play roles as facilitators of the e-Lampid system. The parties are the Civic Records Service, the Information Technology and Communication Service, the head of Governmental Section service in all Surabaya subdistrict offices, hospitals, the district health offices, and the Procurement Division. The Information Technology and Communication Service is responsible for the information system maintenance and the Procurement Division is for e-kiosk maintenance. The real-time data is pooled in the Civic Records System's server while the Information Technology and Communication Service has the mirror data. There are also the Civic Records Service technicians who go visit every subdistrict office to do routine field check.

The Surabaya City Government defines the the e-Lampid users as the citizens of Surabaya and Civic Records Service and its partners that login as administrators.

All parties that have an administrator login for the e-Lampid are in a WhatsApp group text message to monitor technical issues that happen daily. The most common occurring problem is related to citizens who are registering online from home but do not go to the local subdistrict office to verify uploaded documents. As a result, when the applicants come to the subdistrict office to get an update of their application status they will be disappointed since the application is not processed yet and the uploaded documents have not been verified by the subdistrict office. There are some possibilities why the situation could be taking place. First the subdistrict office may not have sent a reminder to the applicant or the applicant may not have known that they still needed to do a document verification as they do not receive a notification from the application, or they may not have read the instructions about further procedures that are available on the receipt. To avoid the same issues in the future, the e-Lampid system will be advanced to a mobile application as mobile phones are more widely used and the mobile internet connection is more affordable. Personal computer ownership is very low in Indonesia compared to mobile phones.

Both the Civic Records Service and the Information Technology and Communication Service have never conducted a formal usability test to evaluate the e-Lampid system. According to Tito Rahmanto, the head of Public Information Technology section of The Information Technology and Communication Service, his office did an internal usability test with the login administrators, but they have not conducted a usability test with the citizens as users. The Information Technology

and Communication does not have enough authority to conduct customer satisfaction research for the e-Lampid since the system itself is administered by the Civic Records Office and their role is mainly to support the application development. The closest thing to a usability test was done at the subdistrict office level where officers helped the citizens to apply for birth/death certificates online through the e-kiosk.

The Surabaya City government announced and communicated the e-Lampid system through hospitals that partnered with the Civic Records Service and through neighborhood chiefs. The service desk for birth/death certificate service is no longer available at the Civic Records office as the application process has to be done through online registration. However, the Surabaya City government acknowledged that most citizens are not familiar with computer and internet technology. Therefore, the head of the Civic Records Service established a policy in which the citizens are allowed to register manually by submitting all required documents to a subdistrict office or to a local health facility that also has the authority to verify required documents. Moreover, each subdistrict office has a Broadband Learning Center (BLC) that provides computer and the internet workshops for citizens, including the e-Lampid workshop. However, for future applicants who have access to a computer and to the internet, they can register birth/death certificates from anywhere. Afterwards, they need to bring the registration number and the uploaded documents to a subdistrict office to have their documents verified. A verification is required to avoid forgery.

The Civic Records office still takes care of some special cases that relate to a death certificate application. For example, the estate of a person who has been dead for years and did not have a *Nomor Induk Kependudukan*—National Identification Number or NIK, will require a judgment from the court to certify the death. For deceased individuals who owned NIK, their family has to apply for the death certificate online through the e-Lampid.

Arif explained that the process for the death certification is more meticulous because it relates to buying and selling the inheritance under the deceased's name. Detailed inquiries are made to examine the relation between the applicant with the deceased, as the person who applies for a death certificate must be within the family with a specific hierarchical order: the legal spouses, then the legal parents, and then the legal children. This regulation is made as a precaution to possible future legal cases. Arif and Reza mentioned that there was a case when the applicant for death certification was a son of the deceased, and he was the one who held the registration receipt. Then the younger child of the deceased came to the Civic Records office to collect the certificate. He claimed that his older brother had given him an authorization to pick up the document. Later on, his brother who had the receipt came to pick up the document and he became angry because he was the one who was supposed to receive the certificate. This case was brought to the court and ombudsman and the court said the Surabaya City government was guilty due to negligence. There was also another case where the deceased was the father, and the one who registered for his death was his son. The wife came to the Civic Records

office with anger because the son already registered the death of the father, hence the death certificate was taken by him.

The e-Lampid Usability Testing

The usability testing was conducted with talk-aloud protocols and a contextual inquiry approach at Petemon and Pacar Kembang district offices. There are three stages in this usability testing: first, an interview to collect participants' demography, to investigate their motives for registering a birth/death of a family member, and what they perceived about the e-Lampid after using it. The second stage is a usability testing to observe user's efficacy towards the e-Lampid, and the last stage is a post-test interview to discover what participants' think after using the e-Lampid.



Figure 8: An e-kiosk at the waiting room in Pacar Kembang subdistrict office, Surabaya



Figure 9: Interviewing a participant

The data were collected at Petemon and Pacar Kembang subdistrict offices where the birth/death on-line registration takes place. Petemon and Pacar Kembang are identified as the most populated subdistricts in Surabaya with the number of residents in Petemon being 38,933 people in 2018 and Pacar Kembang having 43,328 people in 2018. Both of the subdistricts recorded the highest number of registered new babies born in 2017 according to a data released by the Surabaya Central Bureau of Statistics. I coordinated with each of the head of Governmental Service section of both places in recruiting participants by asking consent and participation from the citizens who walked-in to apply for a birth/death registration in usability testing. I observed participants during their interaction with the e-Lampid to register a birth/death certificate. No compensation was given to

participants in this test as suggested by the head of each subdistricts. They said the compensation might be perceived as practice of gratification.

Contextual inquiry is a semi-structured interview method to gain information about the context of use, where participants are first asked a set of standard questions and then observed and questioned while they are working in their environments. The application of contextual inquiry in this usability test is aligned with the objective of this study which is to understand the context of use of the the e-Lampid by observing the users operating the computer within its actual site. Collecting data in a real-life situation on an actual site to understand the context of use of the e-Lampid will give the researcher an opportunity to explore cultural situatedness that informs an interaction.

I translate the four principles of contextual inquiry techniques—focus, context, partnership, and interpretation in this usability testing as follows:

1. Focus - the purpose of usability testing in this study is to understand human relations and motivations in interacting with an information system, which is the e-Lampid as a case study. The usability testing is not to evaluate the aesthetics and mechanical elements of the e-Lampid's user interface design but it is to observe citizens' self-efficacy towards the e-Lampid. The degree of self-efficacy will be shown by whether the participants could successfully perform each task scenario.

1. Context - This research aims to understand the participant's motives in the context of the use of the e-Lampid through an interview before and after the interaction.
2. Partnership - I did a second interview to ask the participants about their thoughts after using the e-Lampid to register for birth/death certificate and whether they would recommend the e-Lampid to others.
3. Interpretation - Develop a shared understanding with the participants about the aspects of the e-Lampid that matter.

The usability testing model conducted in this study was adapted from the user-centered design archetype model that was applied in India. This template is one of the templates of cross-cultural and culturally specific usability testing framework featured in Rau et al.'s *Cross-Cultural Design for IT Products and Services* (198). This framework particularly inserted "motivation" as one of the usability test context variables which is compatible with the independent and interdependent self-construal motives¹⁵ that dramatism were attempted to reveal. Once the officer confirmed that all supporting documents were verified and complete, the applicants would be asked to input and upload their data themselves using the available e-

¹⁵ Please see footnote 11 to revisit the definition of the independent self-construal motives.

kiosk performing task scenarios. The e-kiosk consisted of four components that are accessible to the users: a touchscreen computer, a keyboard, a scanner, and a printer.

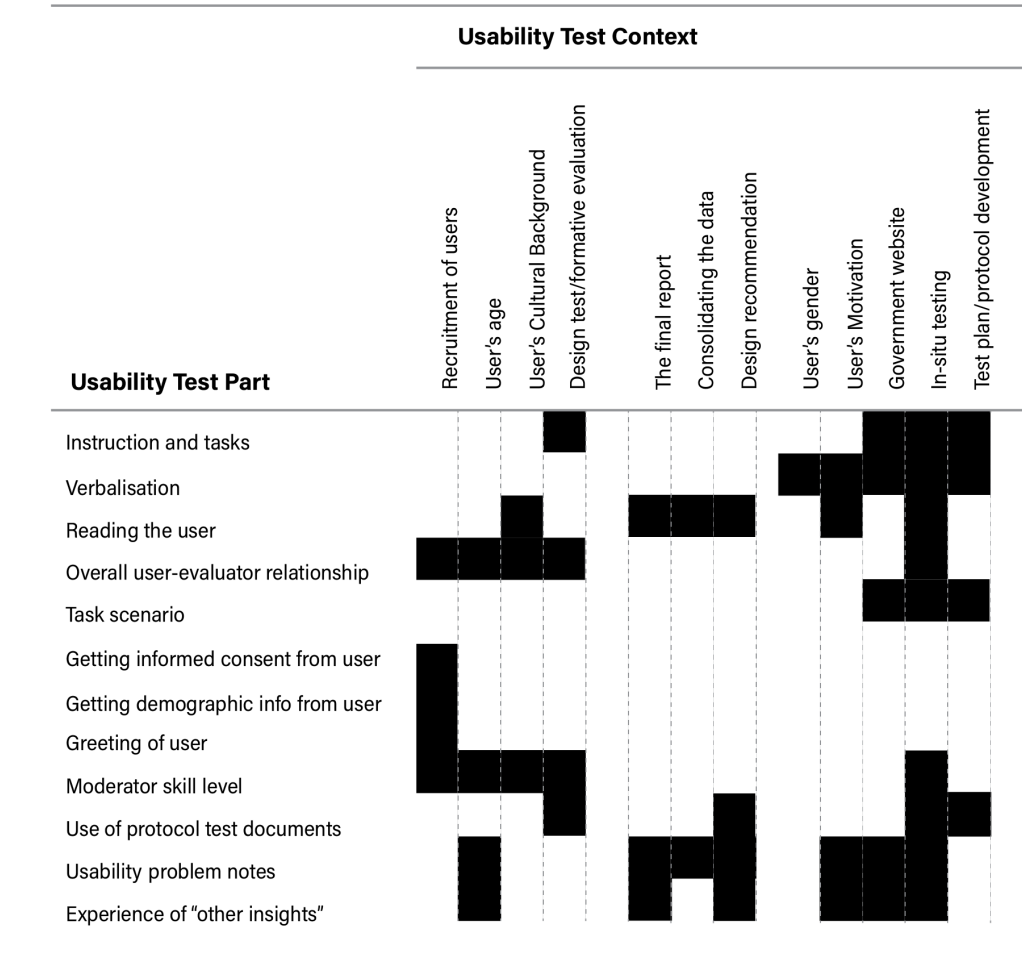


Figure 10: The e-Lampid Usability testing model

Demographics of Participants

Fifty-five people with a composition of 28 males and 27 females participated in the e-Lampid usability testing (average age is 36, *median* 33, *SD* 10.6, minimum age of participant is 22 and maximum is 68). Most of them were working in private

companies, some were entrepreneurs, and some were housewives, while the rest were unemployed. Most of them did not use a computer in their job and did not own a computer. 92.7% of participants stated that it was their first time using the e-Lampid. Previously, the participants applied manually by submitting all the required documents to an officer. All participants had a mobile phone and most of them were connected to the internet through mobile data plans and some of them had internet Wi-Fi connection at home. The officer at Petemon gave full assistance to all participants by helping them to locate buttons on the screen, to clarify instructions, and to scan and upload documents. In contrast, the officer at Pacar Kembang encouraged younger participants (under age 50) to input data and upload documents with minimal assistance but still gave full support to older participants.

Table 1: Sample Demographics (N=55)

Variables	Values	Count	Percentage
Gender	Male	28	50.9
	Female	27	49.1
Age	20-25	6	10.9
	26-30	14	25.4
	31-35	12	21.8
	36-40	9	16.4
	41-45	7	12.7
	46-50	2	3.6
	51-55	0	0
	56-60	2	3.6
	61-65	1	1.8
	66-70	1	1.8

Education	Elementary School	2	3.6
	Junior High School	6	10.9
	Senior High School	28	50.9
	Vocational High School	9	16.4
	Bachelor's degree	10	18.2
Occupation	Unemployed	3	5.4
	Private companies	24	43.6
	Public servant	4	7.3
	Housewife	12	21.8
	Entrepreneur	11	20
Monthly earnings	Less than US\$ 100	15	27.3
	US\$100- US\$250	14	24.4
	US\$250-US\$500	7	12.7
	Above US\$500	1	1.8
	Refused to tell	20	36.4
Internet subscription	Not subscribe to an internet service	8	14.5
	Mobile data only	32	58.9
	Wi-Fi only	1	1.8
	Mobile data and Wi-Fi	12	21.8
	Unidentified	2	3.6
Personal Computer Ownership	Have a computer	29	52.7
	Do not have a computer	26	47.3
Require a computer for doing their job	Required	17	30.9
	Unrequired	35	63.6
	Unidentified	3	5.4

The Dramatistic Analysis

Using dramatism as an analytical lens, I identify two major acts that are happening in the e-Lampid in regard to the Agents: acts of applying for the birth/death certification by citizens and acts of administering and maintaining birth/death registration services by Surabaya City Government. In a common practice of usability testing, the discussion of human interaction with computer technology mostly puts the relations between the users/operators (agents) and the system (agency) at the center of attention. The scene or a situation is perceived as something controlled and fixed such as in a laboratory.

I add scene as the third trope or ratio to make exploration of other situatedness of the interaction possible. In *A Grammar of Motives*, Burke describes scene as not simply a place, but as a background context, such as society, environment, particular places, particular situations, particular momentum, or eras (12). In addition, Huatong Sun explores the situatedness of activity in technology use as defined through the user's immediate contextual factors, factors from communities, and impacts from broader sociocultural contexts (204). Immediate contextual factors relate to agents' particular situation, while community factors are efforts to engage with a community through technology use. The broader sociocultural factors are influences from national/ethnic culture and from the subgroup culture (gender, age, and organizational relations). By moving a rhetorical

situation beyond the interface, it elucidates that a situated action of an interaction as also a part of larger act(s) and situation(s).

The first pentad as displayed on Figure 4.7 is to illustrate the dramatic view of the birth/death certification application process that is facilitated by the e-Lampid system and performed by citizens of Surabaya.

<i>Act:</i>	applying for a birth/death certification in Surabaya,
<i>Agent:</i>	the Surabaya citizens
<i>Agency:</i>	the e-Lampid web application through an e-kiosk/ the e-Lampid Mobile Web application
<i>Scene:</i>	subdistrict offices/the Surabaya City Government Civic Records Office in Surabaya, Indonesia
<i>Purpose:</i>	to avoid fines, a high awareness on the importance of civic documents, a mandatory document to apply other civic documents such as: school diplomas, marriage certificate; or to make a data change in a family identification card.

I am naming the act as an activity to apply for a birth/death certification. Blakesley points out, naming the act explicitly is important in the pentad analysis to minimize the uncertainty by making specific assumptions of the nature of the act itself (35).

The naming also determines the description of other ratios. The e-Lampid is specifically developed to serve Surabaya citizens; therefore, the agents are defined as applicants with Surabaya identification (ID) card as they are the only group who can proceed the application. Agency is referring to tools/systems for a birth/death

certification process. There are two modes of application available for a birth/death certification: the manual submission through the service desk and the e-Lampid web application. Agents who do not have access to a personal computer and the internet can come to a subdistrict office to apply from an e-kiosk. Agents can also access the e-Lampid from their smartphones' internet browser.

The apparent scene in this pentad is defined as subdistrict offices and/or Surabaya Civic Records. Purpose refers to reasons that drive agents to apply for a birth/death certification. The data shows that the agents have a high awareness of the importance of civic records document.

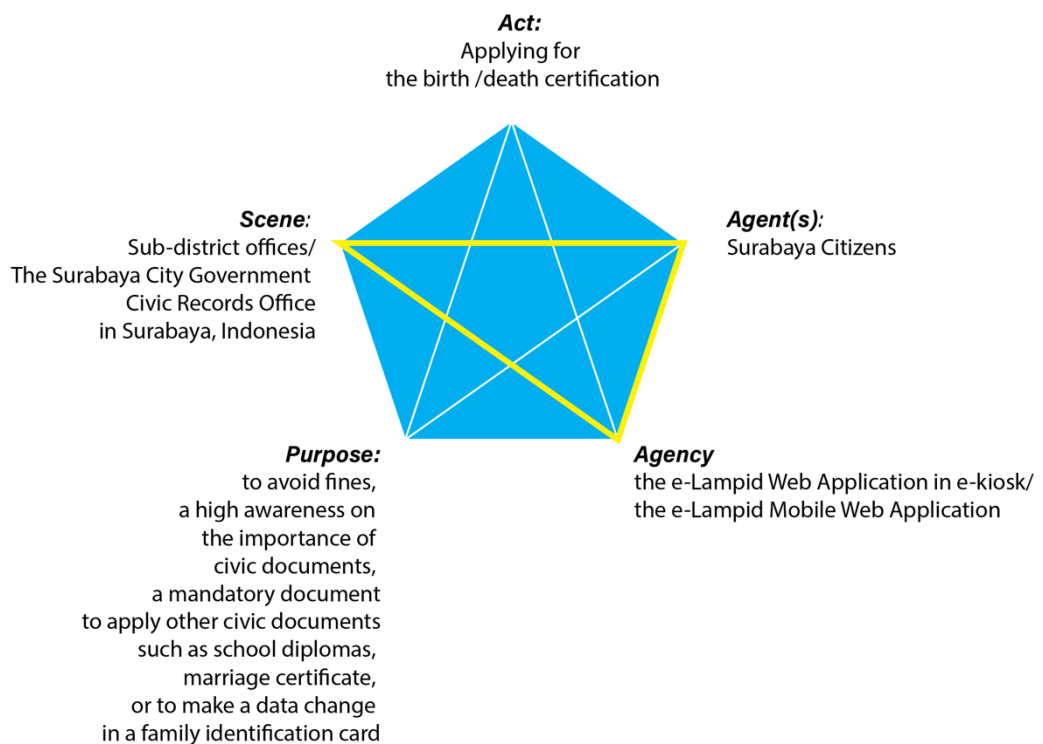


Figure 11: The e-Lampid Citizens Pentad

Burke contends that motive is affected by orientation, which Burke elaborates as “a bundle of judgments as to how things were, how they are, and how they must be” (14). Orientation is also affected by past experiences which makes Burke’s concept on orientation connect to Bakhtin’s dialogism. In the e-Lampid case, the notion of the birth/death application process as a tiring and time-consuming process was still retained among the agents. The agents had an idea that the process would need some efforts based on their own previous experience or what they heard from others who had already done it. From the interview, they said that they had not heard about the e-Lampid before, and they had not heard that the application could be done online. Some of them searched for the information on the internet, while others heard about the e-Lampid from their neighborhood chiefs who then directed them to the subdistrict offices. Thus, visiting the civic records office or to a subdistrict office was perceived by the agents as the best way to start the application process.

Through my observation during the data collection, most agents who were first timers would go straight to the service desk asking for assistance or have queries about the application procedures. Some of them had heard about the e-Lampid and had completed the application steps at some point. However, they did not go straight to the e-Lampid kiosk. The way most agents acted, by walking directly to the service desk, resonates with what Burke talks about Veblen’s “trained incapacity,” which affects the orientation. Burke illustrates:

Veblen generally restricts the concept to the case of businessmen who, through long training in competitive finance, have so built their scheme of orientation about this kind of effort and ambition that they cannot see serious possibilities in any other system of production and distribution.

Simply put, an individual who is trained for specific circumstances, will consciously seek for familiarities in one situation that is completely different. Thus, trained incapacity becomes a strategy embedded in our orientation to select means that helps us to achieve our ends (PC 7, 10). Furthermore, Burke explains that much of our orientation toward objects is connected to being related to other human beings, because humans are acting with purpose (PC18). In this case, the agents have understood that the best place to get the information they need was by talking to the officers at the service desk first. Notwithstanding, there were some agents who had tried to apply for birth/death certificate through the e-Lampid by themselves at home. They came to the subdistrict office with inquiries about the e-Lampid as they encountered some issues. One agent had filled out the forms, but he stopped at the documentation step because he did not have a scanner at home or a mobile phone with a good quality camera. Another agent told me that she attempted to apply for a birth certificate for her children; however, she failed to upload the documents. She guessed that it was due to the slow internet connection at her house. She was hopeful that the internet connection would be better at the subdistrict office.

Motives and Situatedness of Interaction

Acting and meaning cannot be separated. Acting is driven by motives, with a motive as a response to any given situation. The dramatic pentad unfolds layers of acts and situations that are scaffolding participant's motive (s) to apply for birth/death certificate. One of the agents told me that he needed to get a birth certificate as a requirement for a job application. He was in his thirties and it was a rare opportunity for him to get a good job. In this case, the pentadic analysis of him under the act-scene/scene-agency ratios would be described as act: getting a job, agency: birth certificate, and scene: unemployed, in need for a more stable job (internal). Another agent was applying for birth certificates for her children so she could claim the health insurance and allowance for dependents from her husband's workplace. Therefore, her act-scene/scene-agency ratios would be described as act: claiming for health insurance and school dependents benefits from husband's workplace, agency: a birth certificate, and scene: in need for additional income for her household (internal). A young man was coming with his uncle to apply for a death certificate under the name of his late father. When I asked why it was important to apply for a death certificate, his uncle, who was interjecting the interview, said that the death certificate was important so his nephew could take care of the inheritance as the legal heir. His act-scene/scene-agency ratios would be described as act: getting an inheritance, agency: a death certificate, and scene: settling an inheritance from his father (internal).

The meaning of interaction is revealed to give effects to purpose of other clusters of actions. Using the e-Lampid as an agency became reasonable for the agents because it enhanced their other experiences. The meaning of their interaction with the e-Lampid has extended to an experience in applying for a job, an experience in settling for an inheritance, and an experience in claiming dependents' health and school benefits. Mapping the interaction into the pentadic terms has changed our understanding of meaning in the agents' interaction with the e-Lampid.

Table 2: Motives and situatedness in the e-Lampid

Situatedness	Motives
Internal/Immediate contextual factors	In need of a stable job; in need of an additional income; to settle inheritance; to apply for school
Collective: factors and influences as members of community.	Following the neighborhood's chief suggestion to come to the subdistrict office to apply for the birth/death certification; helping relatives/family member
Local: The Surabaya City Government Regional regulation	A compliance to the regional law
On-Site: A long line, power outage, technical errors, filing application through e-Lampid	To reduce the wait time and long line.

Off-site: Collectivist society, high power distance, industrial urban community	Follow staff's directions to file the birth/death certification through e-Lampid, independent self-construal motives
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A traditional usability studies in HCI would name the act as an activity of operating the e-Lampid and would define an e-kiosk as the agency. Therefore, a situation or a scene will be defined solely as the location where the action takes place and the activity is isolated in the user interface. However, the outer layers of acts and situations beyond the subdistrict office or a computer screen that might have culturally and dialogically informed the interaction are unseen with this traditional approach. In a traditional usability approach, the pentad is illustrated as:

- Act:* operating the e-Lampid,
- Scene:* subdistrict offices,
- Agent:* citizens of Surabaya *and* subdistrict officers,
- Agency:* an e-kiosk,
- Purpose:* identifying usability issues to reduce human errors.

I italicized the “and” at the agent’s ratio as the citizens were working together with the officers to complete the usability test. The officers’ presence during the usability test has helped to boost the agents’ confidence at the earlier stage of the interaction. The purpose is specifically focusing in identifying usability issues that were causing human errors.

The discussion above demonstrates that the pentadic terms unravel the clusters of motives, especially to identify the cultural independent self-construal motives that were concealed in the traditional usability testing model. The independent self-construal means that agents' actions are mostly influenced by their own internal motives, preferences, thoughts, and feelings, rather than by reference to the thoughts and feelings of others. This finding is confirming the characteristics of the agents as urban society in which their motives were less affected by others, hence the communication strategy to direct agents to adopt the e-Lampid can be more straightforward and highlighted to their individual motives.

The majority of agents told me they applied for a birth/death certificate because they were aware the importance for obtaining civic documents. Their responses were, "because it is the law," "as a requirement to apply for school," "to receive benefits as Surabaya citizens, such as free education and health care," "for administrative purposes," "it is important for their (children) future," or "to take care for inheritance" and "to remove the deceased's data from the family card."

Table 3: Independent Self-Construal Motives for applying birth/death certificate.

Response	Count	Percentage
Refused to answer	9	16.4
It is the law	8	14.5
<i>Birth certificate:</i>		
As a required documentation for a school application, to claim child	33	60.0

benefits, to apply for a job, to apply for a passport, and other administrative matters		
<i>Death certificate:</i> For taking care of the inheritance of the deceased, to remove the deceased data from the Civic Records system	4	7.3
Helping the community to apply for birth/death certificate	1	1.8

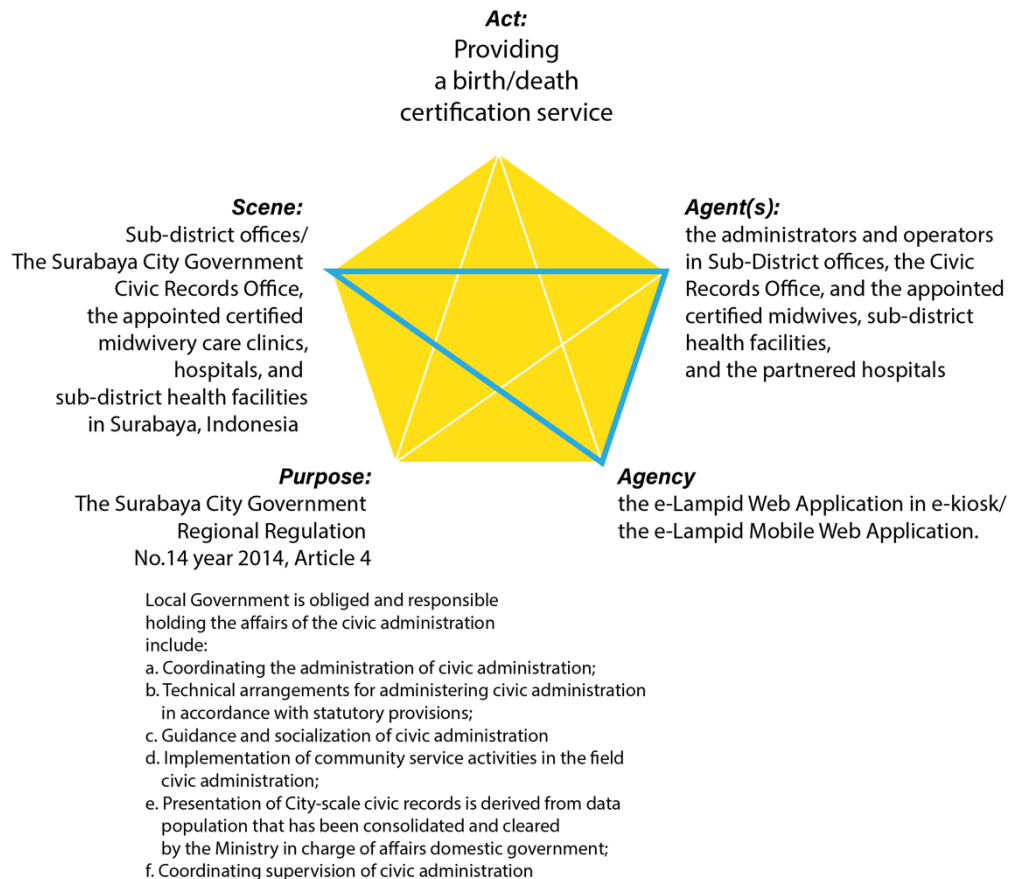


Figure 12: The e-Lampid Administrators Pentad

The pentad as shown on the Figure 4.8 is to explicate the dramatistic view of providing the birth/death certification service administered by the Surabaya City government and its stakeholders. The dramatism pentad ratios are described as:

<i>Act:</i>	providing the birth/death certification application service
<i>Agents:</i>	administrators and operators in the subdistrict offices and the Civic Records Office, appointed certified midwives, the subdistrict health facilities, and partnered hospitals
<i>Agency:</i>	the e-Lampid web application and e-Lampid mobile web Application
<i>Scene:</i>	the subdistrict offices, the Civic Records office, certified midwifery care and clinics, partnered hospitals, and subdistrict health facilities within Surabaya metropolitan area
<i>Purpose:</i>	the Surabaya City Government Regional Regulation No. 14, year 2014, Article 4

The Surabaya City Government defines the e-Lampid users as the citizens of Surabaya, and the Civic Records Service and its partners as administrators. The administrators, who are the agents in this dramatistic view, have the authority to facilitate the birth and death registration, to upload and to verify required documents. The governmental service section of the subdistrict office is the nearest point to the civic records service. The scene is particularly defined as the subdistrict office.

An easier and faster birth/death registration process is the ethos of the e-Lampid system. Despite the existence of the e-Lampid, the officials of Civic Records still could not escape from an assumption that citizens were unable to operate a computer. Moreover, teaching an applicant to use the e-Lampid would take time, thus increasing the wait time. The technology anxiety is perceived as the main issue that was hampering the e-Lampid adoption. With this notion in mind, agents did not direct applicants to use e-kiosk to proceed the birth/death application. Instead, the common practice was for agents to direct applicants to do manual submission, then they would complete the online registration on an applicant's behalf. The dramatistic view of this process will be, act: assisting the citizens to apply for the birth/death certification through manual submission, agency: the e-Lampid web application, scene: the subdistrict office, and purpose: helping the applicants to complete the e-Lampid process. Although the motivation of the agents was to give the best civic service to the citizens by taking care of the process, the low adoption of the e-Lampid for Surabaya citizens was fortuitous. Thus, the e-Lampid computer station in subdistrict was mainly for an office-used.

User's Self-Efficacy

The dramatistic pentad analyses the findings in usability testing to highlight issues in the user's self-efficacy to supply design recommendations. The agent's judgements toward the available situation matter to execute necessary responses when the problem of user's self-efficacy emerged during the usability testing. Santoso, who was the head of the government section service of Pacar Kembang,

encouraged applicants in their 20s and 30s to proceed the application through an e-kiosk with a minimal assistance. The result shows that participants' experience using the e-Lampid was positive because the officers were very helpful.

The majority of agents admitted that they were not used to using a computer. However, they could do the usability testing tasks by themselves with minimum assistance as their confidence built-up along with the interaction. Scanning and uploading the documents were steps that agents found as most confusing. All agents had trouble locating the application for scanning the documents, placing a document on the scanner, and selecting the folder where the scanned documents were saved. Other comments mentioned that there were too many steps and tasks to perform. In general, all agents showed a positive response to the e-Lampid. In the second interview, agents stated that they would share their positive experience in using the e-Lampid to their friends, families, and neighbors.



Figure 13: The e-Lampid usability testing

The usability issues in the e-Lampid system I mentioned above can be addressed with several design recommendations. First, many agents did not understand what information needed to be filled in on a form. For example, in a form in which the agent was required to fill in the name of the mother, the agent instantly interpreted it as if it referred to themselves, and not the mother of someone else (such as the mother of person who died or has been born). A help button will be necessary to explain that the name on “mother’s name” section refers to the mother of the registered individual. Help buttons with a description need to be applied to each form.

Second, the usability testing revealed that the most confusing part in the e-Lampid process was uploading documents. A diagram or an animation can be an

agency to demonstrate steps to upload required documents which starts from scanning, saving, locating the document, and uploading the document to the server. Third, the most detected problem by the public administrator was that the applicants did not finish the document verification to complete the registration process. The dramatisitic view explains that it is due to the purpose (completing the form) overriding the larger purpose (complete the form AND provide the documentation). To respond to that, a text message sent by the public administrator would work as a receipt for the e-Lampid online registration with a transaction number, further instructions, and a link to monitor the application process.

Collectivist Cultural Traits

The display of collectivist cultural traits, such as bringing the family or friends and face-to-face engagement, were apparent during the data collection. Some participants came with their family members. We can situate the act in the dramatisitic pentad as:

- Act:* bringing family members to the subdistrict office
- Agent:* the citizens of Surabaya
- Agency:* the family member (s)
- Scene:* the subdistrict office
- Purpose:* moral support, or company, during the birth/death application

An agent came to the subdistrict office with his mother, who did the birth certificate application for his first two children. He explained to me that he used to

drive his mother to the subdistrict office, and she would complete the application processes. However, as they were asked to register online through the e-kiosk, he had to fill out the form online because his mother did not know how to operate a computer. The agent did all the steps by himself effortlessly, and with confidence. There was also a family who came to apply for a birth certificate for their second child. I interviewed the wife, but her husband did the usability testing because his wife did not know to operate a computer. Another agent came with his wife. He did the interview sharing his motives to apply for a birth certificate which was to apply for a job. Considering he was not young anymore, to get this job was very important for their family. His wife showed her full support by performing the online registration through the e-Lampid and her husband was assisting her.



Figure 14: Collectivist traits: A participant (red jacket) came with his mother: the woman who is sitting on the bench.

There were siblings who came together and each one of them was there to apply for birth certificates for their child. During the usability testing, the sister was doing better than her brother with the e-Lampid tasks, such as filling out the forms and scanning the documents. Another agent came with her sister in-law to apply for a death certificate for her late mother. In the interview, the sister in-law told me that she took a day off from work to accompany and give a moral support to the agent. It was a very difficult time for their family due to their mother's death a week ago. But, they had to do the registration since the dead certificate was an important legal document. In addition, they also wanted to avoid late fees.

Most agents were applying for birth/death certificates as parents of a child, as the parents of the deceased, or as children of the deceased. But there were also agents who were the grandparents of a child, and the auntie of a child. It is to ask someone for help in applying for a birth certificate, like grandparents or an uncle/auntie. But it will be more difficult to ask someone who is not the immediate family to apply for a death certificate since the applicant has to be a member of the core family of the deceased. Due to this struggle, some people are offering their service to assist with the birth/death application process. There was a woman who was there to help people with their birth/death application. She did not request a service fee, but she would happily receive a tip.

Conclusions

This chapter has demonstrated the use of dramatistic pentad to disclose all around motives and situatedness from both users and administrators in e-Lampid birth/death application system, as a case study of this dissertation. The definition of situatedness of an interaction has moved beyond the interface and the evaluation of the situatedness has proven to be the significant factor to the adoption of the e-Lampid.

I describe the situatedness of use of the interaction as individual, collective, and local, also on-site and off-site. Individual situation refers to agents' immediate, contextual, and internal situation that drives them to apply for birth/death certificate: the need to find a stable job, the need to apply for schools, or the need to

settle an inheritance. Collective situation refers to the influence of social community to adopt a technology. For instance, the decision to adopt the e-Lampid is suggested by the neighborhood chief. Local situation refers to a local policy that encourages agents to apply for birth/death certificate, as not doing so will cause legal consequences. On-site situation refers to a scenic situation where the interaction took place: an agent was directed to apply online using an e-kiosk instead of handling the documents to the service desk, or an agent was asked by the duty officer to register online through his/her mobile phone as the internet connection at the subdistrict office was down.

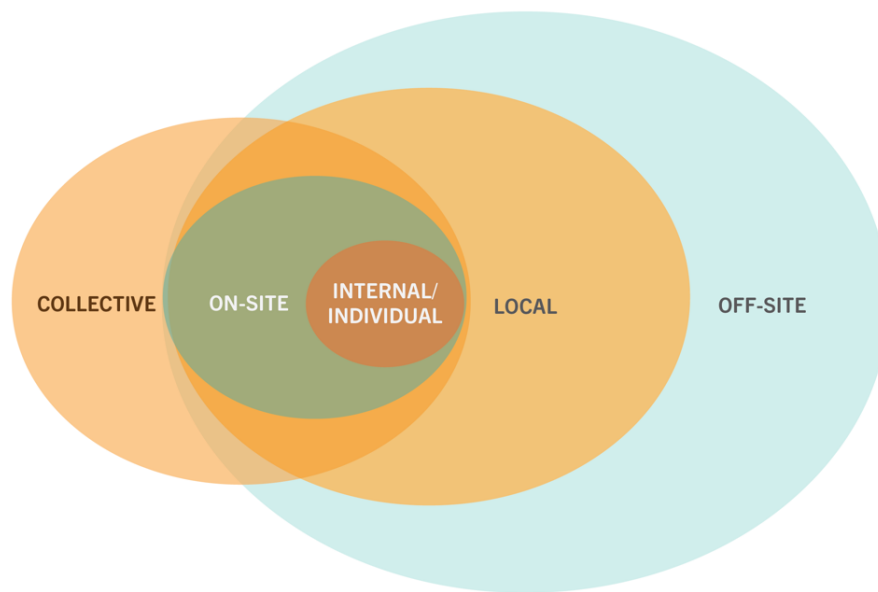


Figure 15: The situatedness of interaction

An off-site situation/motive includes influences from broad sociocultural national/ethnic group culture, socioeconomic traits, and subgroup culture that characterize the actions. The collectivism and power distance cultural dimensions

formulated by Hofstede are apparent as off-site situation factors in the e-Lampid adoption. Some of the agents had looked for information related to birth/death registration from the internet prior to their visit to the subdistrict office. But they were more assured by talking face-to-face with the officers at subdistrict office as the information they had gathered was confirmed. The presence of an officer during the usability testing was also significant to boost their confidence to complete the e-Lampid task's scenario. Some of the agents came with a family member who then helped them to do the online registration on an e-kiosk. Bringing a family member was also a moral support for the death certificate applicants who were in grief. One agent who came alone, shed his tears during the interview because of the death of his daughter few days before. Thus, he received a full assistance during the usability test. The power distance¹⁶ also manifests as the factor that influence the e-Lampid adoption. The agents came to the subdistrict office with the manual registration process in mind. Some of them had heard about e-Lampid system but did not take

¹⁶ Hofstede's 2015 six cultural dimensions' index report characterizes Indonesian power distance styles as "being dependent on hierarchy, unequal rights between power holders and non-power holders, superiors in-accessible, leaders are directive, management controls and delegates." Therefore, the implementation and the adoption of the ICT-based civic records system will mostly depend on the government policy.

the initiative to use the e-kiosk to access the e-Lampid until an officer directed them to do the online registration with an e-kiosk.

This research has confirmed collectivist cultural traits in citizens of Surabaya. It also reveals the notable impact of socioeconomic structures to the e-Lampid adoption. Surabaya is known as a city with a manufacturing industry economy thus citizens' decision to adopt new things will depend on the perceived immediate benefits of the objects for them and their family. The independent self-construal motive is visible and affects the e-Lampid adoption. As a government civic record system, the e-Lampid does not offer features for a social affordance. However, the expansion of the concept of situatedness beyond the interface and the location where the interaction takes place, may unfold the possibility of using the e-Lampid as an indirect agency for agents to gain a social affordance. The velocity of e-Lampid in facilitating the birth/death certification helps citizens for other affairs such as school applications, job applications, or an inheritance arrangement. Therefore, the citizens could have education, be in a stable income, or be affluent.

The consubstantiality that would have made identification possible in the birth/application process is through the existence of the e-Lampid. The e-Lampid is supposed to project the embodiment of the ease of the birth/death registration process which is the mutual orientation of both citizens and policy maker/public administrator. However, the e-Lampid was the resource of the ambiguity as this system was perceived as a new matter to most participants. The participants did not have an experience as a reference to construct a meaning toward the e-Lampid thus

to proceed an expected action. The subdistrict office and the Civic Records Service are the identification apparatuses of the birth/death registration. Their dedication for excellent services is means to foster identification and to promote the e-Lampid adoption effectively.

The meaning making toward the e-Lampid as means to foster identification in the birth/death certification process is a continuous process evolving through the agent's interaction with the technology. This ongoing process connotes Bakhtin's dialogism that expected new meanings will be added and created within the interaction. Hassenzahl stresses, "The apparent character [of a product] can also change within a person over time. This change is due to increasing experiences with the product" (3). The agents started with certain ideas about the birth/death certification process: tiring, time consuming, and manual submission only. However, their engagement with the e-Lampid changed the way they perceived the certification process into swift, easy, helpful, and high technology. They also identified the e-Lampid as an agency to the birth/death application process. The agents took those meanings to their own context of situation because the system and the officers had helped their affairs.

To make the migration possible from manual registration to online registration for citizens, it was more effective to ask them directly at the venue. Asking them on-site allows the officer to examine the situatedness of the vicinity before asking applicants to adopt the technology. The situatedness can be described as the readiness of applicants in regard to their psychological state and computer

self-efficacy. It can be including an evaluation to the proportion between the officers on duty with numbers of applicants who were present at the office that day. In addition, the population density is varied at each subdistrict. In populated subdistricts, a shortage of e-kiosks could cause a long line. Therefore, an officer has to make correct and fast assessment in any given situation. For example, there was a time when many applicants were coming when there were technical issues few days before in Pacar Kembang subdistrict. Some of the staff were not available to assist the applicants with e-kiosk. A staff took the initiative by asking some applicants to do the online registration from their mobile phones, but he was also still taking manual registrations. He did that so the applicants did not have to wait too long to for the process.

The implementation of the dramatistic pentad as an analysis tool in this case study validates that the technology use is cultural and situated. The addition of scene as a third ratio explains the rhetorical situatedness of an interaction as not as simply an entity that is prescribed and localized in the interface as means of persuasion. The cultural situatedness in an interaction is described as dynamic, open-ended, and dialogic. In the next chapter, I will show how the findings from the usability testing and pentadic analysis are contextualized to in dramatistic user experience design.

CHAPTER 5

DESIGNING A CULTURALLY INFORMED DRAMATISTIC EXPERIENCE

DESIGN

The application of Kenneth Burke's dramatism in the case study presented in Chapter 4 has painted assorted motives of interaction in e-Lampid that are both situated and constructed in the agents' cultural context. Based on the study, in this chapter I extend the discussion of culturally situated dramatistic user experience to inform the design process to better address user needs and expectations.

Following the previous chapter, which established the understanding of clusters of situatedness and motives in culturally situated interaction, this chapter aims to contextualize the findings into the user experience design process. I deploy Burke's dramatistic pentad as a design framework to develop a dramatistic user experience that is cultural and situated.

I developed an advanced studio-based design course which I named "The Culturally Informed Dramatistic User Experience Design." The dramatistic user experience design is a user experience design drawing on Burke's dramatism, user experience design, and design thinking to enable an interaction designer to envision designing as a meaning-making activity that takes place through interactions that are rhetorically grounded and culturally informed. Dramatistic UX design stresses designing a totality of experience on human interaction with a technology. This approach also welcomes every possibility of both digital and non-digital technology-

driven artifacts and beyond to create an integrated user experience design within the context of a targeted community's situatedness and needs. It emphasizes a multidisciplinary approach, with the intersection of rhetoric, basic practices of user experience/user interaction design, creativity, and visual communication design.

The design outcome is not specifically limited to digital and mobile technology products. In fact, it transcends digital and non-digital design solutions that are feasible and practical to the targeted community. Furthermore, the intersection of interaction design and rhetoric allows designers to produce rhetorical, creative, intuitive, and culturally contingent design ideas to conceptualize and generate robust, compelling, and complex experiences across digital and physical spaces.

Design thinking is important in the dramatistic UX design since prioritizing user's needs is the core of this approach, and it is also essential to navigate the application of dramatistic experience to pedagogical knowledge. IDEO, a design company that is known for its human centered and interdisciplinary approach, publishes the *Human-Centered Design Toolkits* as a practical guideline for designers and business CEOs to conduct design thinking processes. IDEO's human-centered design (HCD) method has three lenses: desirability, what do people desire; feasibility, what is technically and organizationally feasible; and viability, what can be financially viable. Design thinking that starts with the people instead of the technology is focused on formulating the desirability aspect. The solutions that emerge at the end of HCD needs to be desirable, feasible, and viable.

The principles of situatedness and motives in culturally informed dramatic UX offer a guideline to UX designers in conducting interviews and observation on users in design thinking's empathize phase. The design thinking process—which is not a linear; includes empathize, define, ideate, prototype, and test. Empathize is a process where a designer gets the understanding of user's needs and insights by several techniques, includes usability test, persona, and diary review. Define is a process where a designer formulates user's needs because of a surprising insight. Ideate is a phase where a designer does a brainstorming through design sketches to address the problem. Prototype is an important phase of a design process as it actualizes the design ideas and speed up learning. And the last is to test the prototype to the targeted users to receive a feedback.

Advance Level Design Course: Dramatistic User Experience Design Studio Project

This studio course is an advanced design course for third-year undergraduate students who have completed basic and intermediate studio-based design projects, a design methodology, a design research, a user experience/user interface design, an intermediate level of computer graphics, and advanced computer graphics. This course is a core design studio that is worth five credit hours. Each credit hour is converted to three hours of design work; therefore, a student is expected to spend 15 hours each week on researching, analyzing, and developing a user experience design.

This course expects students to apply analytical lenses in conducting research in design.

This course is a one-project studio class, embracing the design thinking process that covers a human-centered approach, comprehensive research, concept generation, prototyping and modeling, and refinement. Drawing on dramatism and contextual inquiry approach, discerning the targeted users' cultural and social values is the anchor of this course. Students must work effectively both as individuals and as a member of their team to design an interactive, culturally informed, and technologically feasible experiences. Assignments approach design on four levels: specific user interactions, contexts of use, cultural situations, and larger systems. Students will become more advanced in employing and composing design elements, enrich their research findings, and use their designer's sensibility to generate an interaction design solution.

Learning Objectives

Students who have successfully completed this course will be able to do the following:

- Translate research findings into contents to meet the needs of multiple stakeholders
- Produce a design recommendation that is technically feasible by appropriating the available resources
- Use visual elements to generate informative, appealing, and enjoyable user experience/user interaction design

- Gain an ample understanding in applying rhetorical theory and approach in a design process
- Produce a competitive analysis
- Develop a prototype that meets industry requirements
- Select appropriate research methodologies for engaging in a human-centered design process
- Understand how designers think in order to collaborate on interdisciplinary teams

The Culturally Informed Dramatistic User Experience Design

The dramatistic pentad works both as a tool for analysis and creation. In Chapter 3 and 4, the dramatistic pentad explicates clusters of situatedness and motives in an interaction and locates the source of ambiguity that fosters identification. The openness of cultural situatedness will also allow multiple scenarios and possibilities to inspire users on new motives and meaning of a technology. The dramatistic pentad will help students to analyze how cultural situatedness assigns users' actions toward a technology in an existing interaction, thus constructing the user experience design by contextualizing the findings from the analysis. The findings lead to recommendations to modify or change the meaning of interaction for users. Changing the meaning of interaction can influence user's motivation towards the object.

The culturally informed dramatistic UX design framework resonates with Blakesley’s communication methods derived from Burke’s terministic screens. The methods generate a visual metaphor to convey certain meanings through a systematic and strategic arrangement of symbol systems. The communication methods of terministic screens consists of the visual, verbal, and rhetorical. The dramatistic UX specifically aligns with the visual method of terministic screens, which refers to a strategic framing of visual elements—such as in arts, video, photography, posters, logos— to grab viewers’ attention directly.

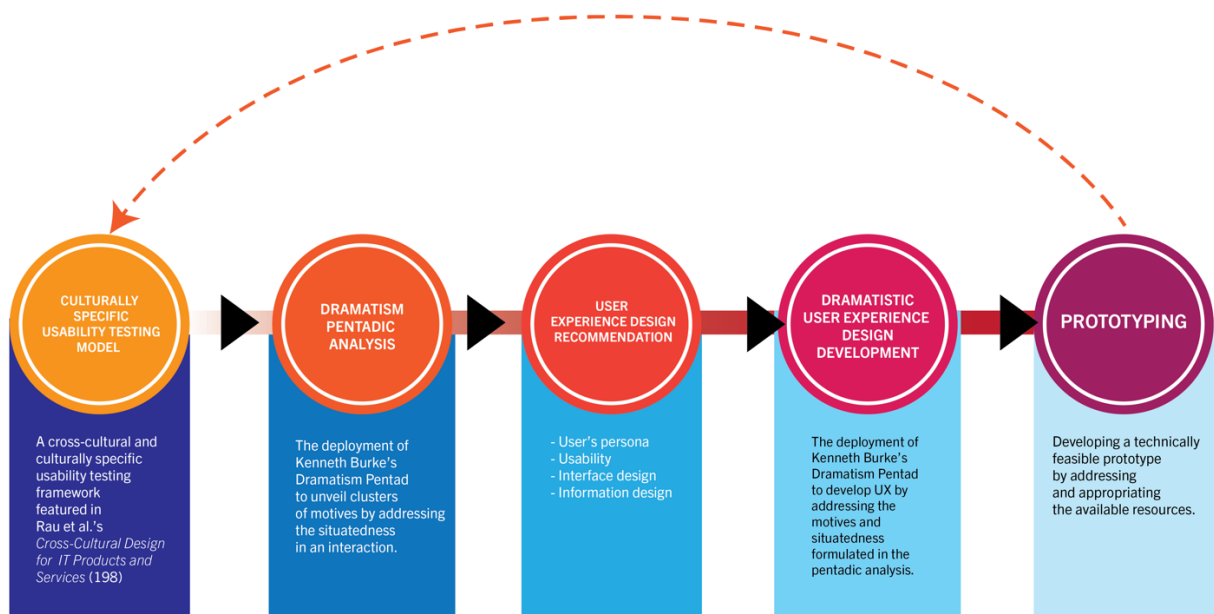


Figure 16: The Dramatistic User Experience Design process

The dramatistic UX pentad is not intended to discover the clusters of motives. Instead, the pentad is to actualize the clusters of situatedness and motives found in

the usability testing into design. The dramatistic UX design development process as shown in Figure 16 is an advancement of the culturally informed dramatistic usability testing research model portrayed in Figure 2 in Chapter 1. Therefore, the motives and situatedness in an interaction must be defined in the second phase. Those findings are essential to the dramatistic UX design development.

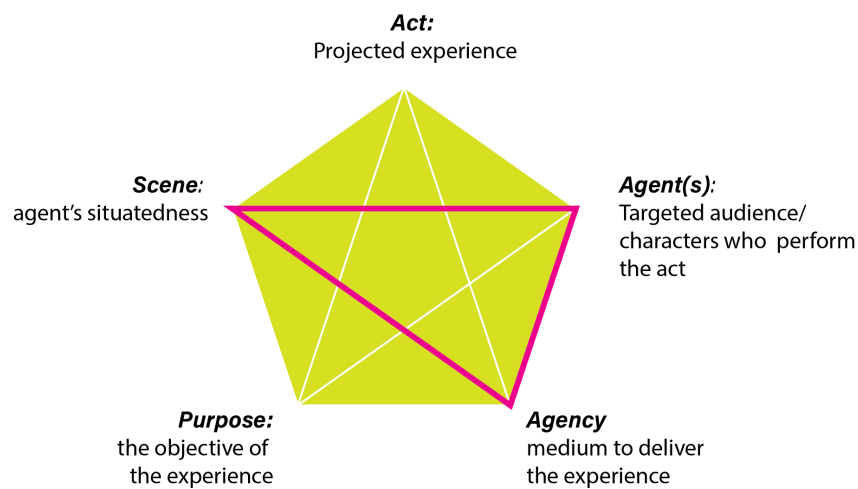


Figure 17: The Dramatistic UX design development framework

The description of each ratio in the dramatistic pentad are modified to:

- Act:* What is the projected experience(s)?
- Agent:* Who is the targeted audience / the characters depicted in the act?
- Agency:* What is the medium to deliver the experience?
- Scene:* What kind of situatedness to address the experience?
- Purpose:* What is the objective of the designed experience?

The situatedness and motives collected from the usability testing will be contextualized as the *scene*. The *scene* addresses the act or the projected experience, as the *act* is a consequence of the situation. *Agent* is described as the targeted audience or the targeted user of the act. *Agency* is a medium to deliver the experience, which also works as a terministic screen that will guide the targeted users to the designed shared meanings and thus optimize their experience toward an object. The agency will not always be in a form of interactive technology to solve the issues of technology adoption. Therefore, a student must do a thorough assessment of what will be the most feasible medium to address the situatedness of the act. The agency could be varied from a single medium, such as a procedure, a diagram, an infographic, a user interface, icons, or a video tutorial, to a strategy that incorporates multiple mediums including an integrated campaign strategy. Purpose is described as the objective of the designed experience.

Developing the e-Lampid Dramatistic User Experience

The culturally informed dramatistic UX allows designers to construct multiple acts as it is not only attending to one particular situatedness. In this section, I will demonstrate how to teach students to develop a culturally informed dramatistic UX by using findings from the e-Lampid case study. The construction of experience can be augmented into multiple situations to establish integrated and systematic clusters of experience. Situatedness, motives, and acts are intertwined, so the designer has to observe the findings comprised from these three elements. The e-Lampid case study reveals clusters of motives and situatedness to explain contextual technology use

activities in a culturally informed interaction. The clusters of situatedness are individual, collective, and local, both on-site and off-site.

The clusters of motives and situatedness of e-Lampid can be laid out as shown in Figure 18.

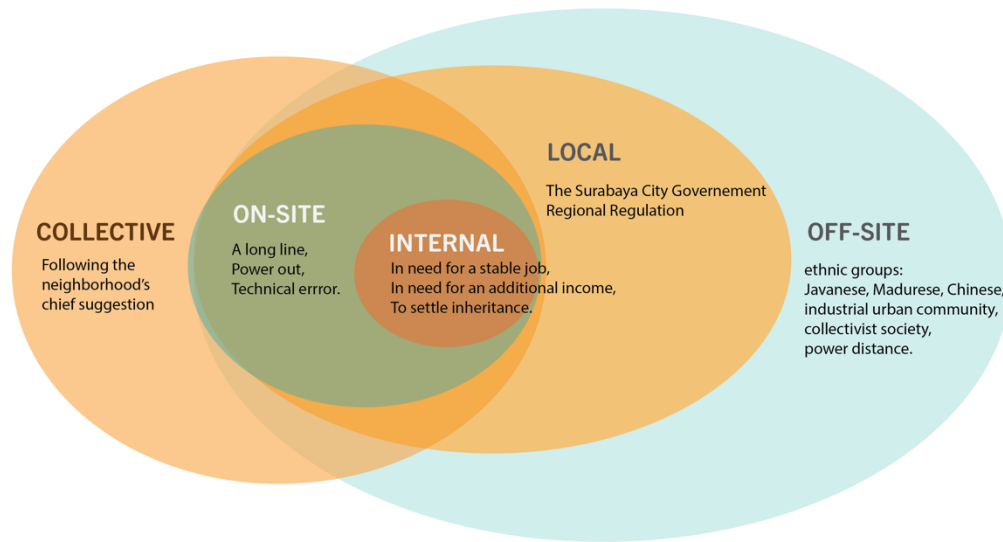


Figure 18: The e-Lampid clusters of motives and situatedness










Within the dramatistic perspective, the low adoption of the e-Lampid system is due to the inability of targeted users to locate the source of ambiguity that fosters identification with the birth/death certification process.

Before developing the design outcomes, UX design students will have to contextualize their findings in the usability testing into five acts, in which each of acts can be manifested in multiple agencies and are open to be placed in multiple scenes. The dramatistic UX design matrix as visualized in Figure 19 below contextualizes the situatedness and motives in Table 2 into the designed experience (act) and the medium (agency) that encapsulates the experience. The development

of dramatic UX design revolves around three ratios: act, agency, and scene.

Regarding implementation of the system, the experience toward e-Lampid can be introduced to the targeted users even before they are directly exposed to it.

Dramatism as a design framework makes it possible to create a strategy that is dialogically maintaining the experience and identification of the e-Lampid before, during, and after the interaction. To create a linkages of user experience, the design development must bind the act and the agency together in addressing the situatedness and motives found in the analysis as shown in Figure 15.

Act	Agency				
	An integrated communication strategy across digital and non-digital platforms	Text messages, customer service number, a link to track application progress	The information menu next to each the e-Lampid form	An animation/a diagram to demonstrate the documentation process on e-kiosk	Procedures, a video tutorial
The e-Lampid makes the application process transparent, accessible, and faster					
Receiving updates on the e-Lampid application process					
Providing the help menu/ feature next to each of the e-Lampid form					
Demonstrating steps for a documentation process on e-kiosk					
Direct the applicants to file their application on e-kiosk					

Scene

INTERNAL

LOCAL

COLLECTIVE

ON-SITE

OFF-SITE

Figure 19: The dramatic UX design matrix

1st Act: the e-Lampid Integrated Campaign Strategy

Design students can use the dramatistic design matrix to construct an overall communication strategy. The e-Lampid field research discovered that many of the applicants did not know about e-Lampid. Therefore, an integrated communication strategy will be a platform to inform future applicants about e-Lampid before they interact directly with the system. An integrated communication strategy is a simple concept that makes sure messages are carefully linked together and working in harmony despite being transmitted through different channels. The internal/immediate contextual factor supplies information about agents' assorted motives to apply the birth/death certification, such as being in need of a stable job or an additional income; wanting to settle inheritance; and applying for school. The identification with e-Lampid can be established by an act that delivers the internal situatedness as a scene. In regard to agents' internal situatedness, an act is to generate an experience that informs e-Lampid as an agency to facilitate their needs. Therefore, the act will be outlined to convey e-Lampid as a civic record application system that makes the birth/death application process more transparent, accessible, and faster.

<i>Act:</i>	creating a campaign for the e-Lampid
<i>Agent:</i>	the citizens of Surabaya the birth/death future applicants, the Surabaya City government officer
<i>Agency:</i>	a series of public service announcement videos, digital and printed flyers

Scene: internal situations of the applicant, a subdistrict office

Purpose: to inform future applicants about the e-Lampid as a system that enhances the birth/death application process

The dramatistic UX design matrix shows that an act can be applied to multiple situatedness and be distributed through multiple agencies. An integrated communication strategy can be deployed to multiple scenes, such as internal, local, on-site, and off-site. The agency, which is a vessel to transmit the experience, is manifested in multiple media of an integrated communication strategy. This strategy can be implemented across digital and non-digital platforms, such as the e-Lampid public service announcement broadcasted on social media, both digital and printed flyers, a standing banner, a campaign logo, and so on. The collectivist community traits, such as bringing family members, can be depicted in the storyline of main characters in a public service announcement.

The e-Lampid Public Service Announcement Series

In this section, UX design students will create a scenario for a series of public service announcement (PSA). The e-Lampid PSA as the agency consists of three episodes, in which each episode depicts a different story with different characters as the agents and different situations of the scene. The agency highlights the Surabaya's cultural foreground that informs the motives for a technology adoption, such as collectivism, power distance, and a manufacturing industrial society. The agents in those three episodes are illustrated as: 1) a Madurese couple who just had

their baby; 2) a Javanese man who applied for a job; and 3) a Chinese woman who just lost her mother. The three different ethnic backgrounds represent Surabaya's diverse communities. The PSA will be delivered in Indonesian mixed with Surabaya's Javanese local dialect called *Suroboyoan*. The representation of three different ethnic groups as agents and the use of Surabaya's dialect will foster an identification with the targeted e-Lampid users because the system is solely for Surabaya citizens. The agency also highlights essential information about the birth/death application, such as the application procedure and required documents. The duration of each episode is sixty seconds, and the episodes are distributed through social media platforms.

The first episode is about agents who just had their first baby. Situated in their home, the couple was surrounded by their friends and family who were joyfully welcoming the baby. One of the guests raised a question about whether the agents had applied for the baby's birth certification. The couple said that they had not done it yet, since they had been busy taking care of the baby. Another guest was telling them to register the baby within 60 days after he was born, or they would have to pay fines. Other guests who had previously completed the process suggested that the registration could be done through the e-Lampid web application and it could be accessed through their smartphones. The guest then guided the agent through the application process and the couple received a registration number and further instructions via a text message. He told the couple to come to the subdistrict office to scan and upload the documentations on an e-kiosk, and also to verify all

documentations. The scene then changed to a sub district office where the agents came to finalize the application process and had the documents verified. Two weeks later, they received another text message informing them that the birth certificate was ready to collect.

The second episode is about an agent who wanted to apply for his dream job. He was in early thirties, married, and had a daughter. His wife was very supportive and encouraged him to apply for the job. One of the job requirements was to show a birth certificate. Together with his wife, he came to a subdistrict office to process the birth certification through the e-Lampid application system on an e-kiosk. At the end of the story, the man got the job and his family was so happy and proud of him.

The third episode is about an agent who just lost her mother. While she was mourning, her family told her to register her mother's death to the civic records office within 60 days to avoid fines and also for future purposes such as settling the estate of her late mother. Her sister in-law helped her to learn the certification process by visiting the e-Lampid web page and watching the e-Lampid registration video tutorial on social media. After completing the online registration, they received a confirmation text with a registration number and further instructions to verify the documents at the subdistrict office. When they arrived at the subdistrict office, an officer (who is also considered an agent) was asking the agent's relation to the deceased. To be eligible to proceed with the death certification, the agent had to show a family documentation as a proof that she is the core family member of the

deceased. The agent was able to obtain the death certification and then was seen using the certificate to settle the estate of her mother.

The three videos will be best possible primary agency to deliver the message because they provide the directions in the context of a story, with agents, actions, and a scene. Other agencies to support the PSA are digital and printed flyers/posters and standing banners. The digital version of these flyers can be shared through social media and instant messaging. The printed versions are placed in the subdistrict office; therefore, the targeted audience could study the process while waiting for their turn. The placement of printed media is also necessary to create the ambience of the e-Lampid experience to foster the identification. These two mediums will specifically inform the future applicants about e-Lampid application procedure for the birth/death certification through e-Lampid:

- 1) The applicant has to proceed the application online through the e-Lampid website by visiting <http://lampid.surabaya.go.id> from smartphones or a personal computer. The applicants can also visit the subdistrict office where they are residing to proceed the application through an e-kiosk by bringing all required documentation,
- 2) The applicant must come to the subdistrict office to verify all the required documentation,
- 3) After all documents are verified, the applicant will receive a notification by text message to inform that the application has been received. The applicant can monitor the application progress at “view progress” menu.

- 4) The applicant can collect the birth/death certificate from the subdistrict office within twenty-one business days.

The interview with the officials also reveals that many applicants who did registration at home did not submit the documentation to the subdistrict office. This issue can be solved by sending a text message to applicants that will work as a receipt with further instructions and also a link to track application progress. A slight modification to the e-Lampid interface by adding a logo will be necessary to form unity with the e-Lampid campaign.



Figure 20: the e-Lampid logo

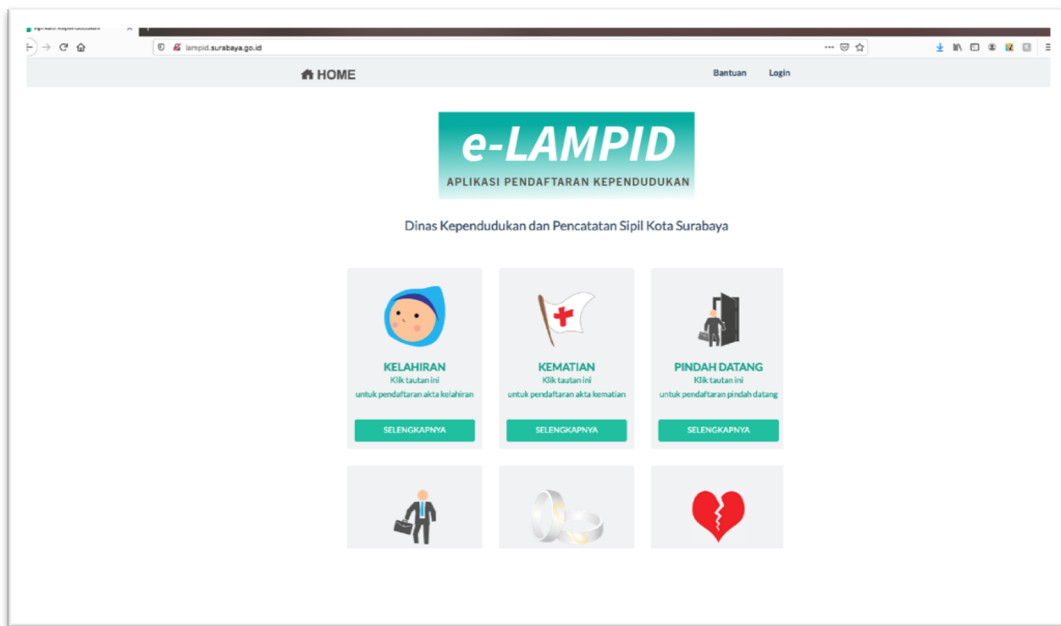


Figure 21: A modified version of e-Lampid interface



Figure 22: An e-Lampid digital flyer displayed on a smartphone.



Figure 23: A simulation of an e-Lampid standing banner placement at Pacarkembang subdistrict office.

Students can also use the Dramatistic UX to explore design solutions to address usability issues and other on-site problems. The e-Lampid usability testing in Chapter 4 identifies several usability issues, which include problems scanning and uploading documents, and questions regarding clarity of some forms. The problems in scanning and uploading documents can be solved by providing an infographic, a diagram, or an animation demonstrating the documentation steps. Adding a help button next to the form in the e-Lampid interface design will clarify what information is to be filled in on the form (Figure 24).

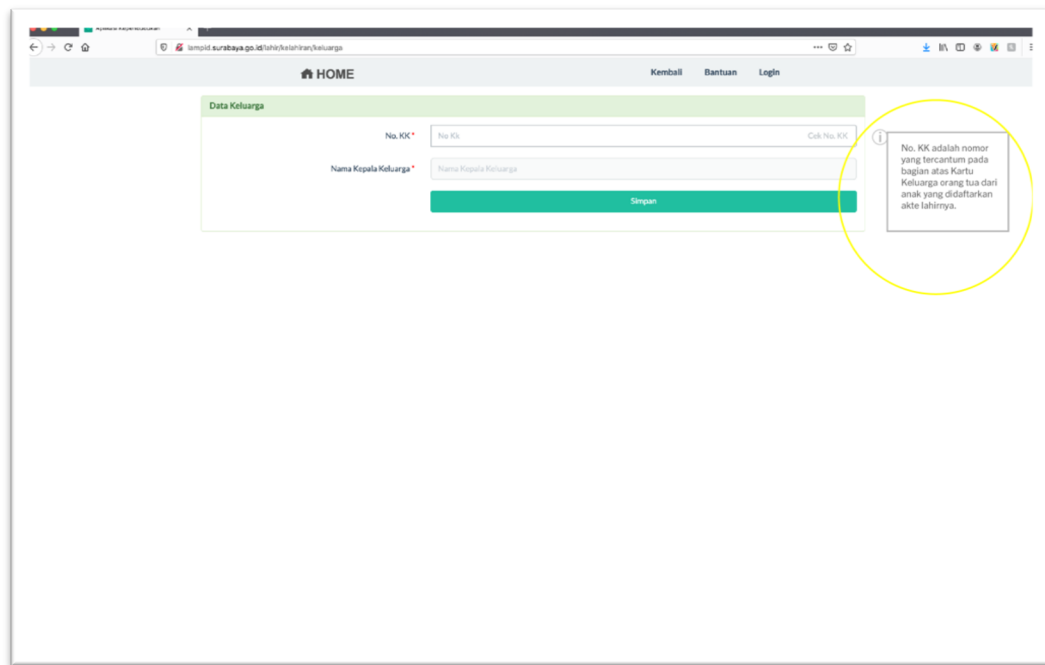


Figure 24: The addition of information button next to a form

In this chapter I have argued that the dramatistic pentad facilitates both analysis and the production process in Dramatistic UX design. I have translated recommendations from the dramatistic analysis into an integrated and systematic user experience design. Each of the proposed agents, such as a campaign strategy, a logo design, and a public service announcement is designed to foster identification of e-Lampid with targeted users. Therefore, targeted users will be exposed to the e-Lampid experience before, during, and after their actual interaction with the system.

Conclusion

At the beginning of this dissertation, I argue that the rhetorics of HCI rest in its situatedness with an intention to reinforce the notion of technology use and meaning making in Non-Western settings as acts that are contextual and situated. Dramatism reconceptualizes rhetorics in HCI as something that are beyond its physical aesthetics and mechanical boundaries. The situatedness of interaction is often ignored in HCI research, which is a consequence of the internationalization of global products. By revealing the clusters of situatedness and motives in interaction, dramatism interweaves the acting and meaning to explain a culturally informed interaction.

Chapter 2 provides a rigorous review of HCI's framework and approach. It explains that the integration of rhetoric and other disciplines outside HCI's traditional human factors and cognitivism cores transcends HCI tenets thus realigns the issues of human-to-human interactions related research to the center of attention. In Chapter 3, I demonstrate that dramatism as a rhetorical principle elucidates user experience design as a shared substance that fosters identification in an interaction. The e-Lampid case study in Chapter 4 delivers the understanding of an interaction in Non-Western settings as culturally situated, with meaning making circuited in its contextual technology use experience. The gamut of situatedness in culturally informed interaction is influenced by user's internal/immediate contextual factors, collective factors, and local factors, as well as factors arise from

on-site and off-site. Each situatedness is attended by clusters of motives to construct meaning making of interaction.

Through the amalgamation of dramatism, user experience design, and design thinking approach, Chapter 5 completes the picture by translating the dramatistic framework into design pedagogical knowledge, followed by actualizing the findings from the e-Lampid usability testing into a culturally informed dramatistic user experience design proposal. As a graphic design teacher for ten years, I have recognized that rendering research findings into design is challenging for student designers because of the rigorous process of data collection. Student could be so engrossed during the first half of the process that they lose time to developing design artifacts. Therefore, future research will be directed to teaching dramatistic UX design in a classroom setting.

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APPENDICES

Appendix A

The Usability Testing Questionnaire

Pre-test Interview Questions

Demography Profiles

Respondent ID :
Age :
Sex :
Occupation :
Education :
Subdistrict :

Stage 1

1. What is your purpose to come to the subdistrict office?
2. Are you applying for your own or for someone else?
3. Why do you need to apply for the birth/death certificate?
4. How did you apply a birth/death certificate previously?
5. Did you know that you could have done the application online?
6. Have you heard about the e-lampid system?
7. Did you know that the birth/death certificate will be ready in three days once all documents are verified?
8. Did you know that you could get a penalty for a late registration?
9. Did you apply through e-Lampid before?
10. Do you feel confident to proceed the application online through the e-Lampid?
11. Do you own a personal computer or a laptop?
12. Does your job require a computer?
13. Do you subscribe to an internet provider?
14. How do you access the internet?
15. Do you have a mobile internet on your phone?

Stage 2: Usability test

1. Selecting registration menu
2. Locating the form
3. Filling in the form/typing with keyboard
4. Saving each data
5. Scanning and uploading document

Stage 3: Post-test Questions

1. What did you like most from the e-Lampid?
2. What did you dislike most?
3. What did you think most exciting?
4. Which one is the most difficult part?
5. Which one is the easiest part?
6. Will you ask people to use the e-Lampid? Why?

Appendix B

The Interview Questionnaires for the Surabaya City Government Officials

1. What was the background and the objective of the e-Lampid system?
2. Who was the initiator?
3. Which departments do have the key roles in the e-Lampid?
4. Are there any rewards offered to the citizens who are applying through online system?
5. Was there a usability test prior the establishment of e-Lampid?
6. Was there an evaluation toward the e-Lampid system?
7. What is the future plan for the e-Lampid?
8. Who did develop the system?
9. How do you describe the e-Lampid users?
10. How has the implementation of e-Lampid been so far?
11. What kind of issues and concerns regarding the e-Lampid have been reported to your office?

