

## Understanding Mobile e-Text Communication with the Framework of Orality and Literacy: Student Perception of Non-verbal Texts

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The development of mobile devices and network technology is changing the ways in which people communicate with one another. Mobile text message has emerged as one of the most frequently used form of communication, which also gave rise to various non-verbal texts such as emoticons. Nonetheless, the use of text messages has largely been denied in education because text messages often involve colloquial and non-verbal texts considered inappropriate or grammatically incorrect by the teacher. In efforts to provide a theoretical framework to better understand mobile e-text communication, this research compared the practical usages of non-verbal texts in the mobile e-learning environment. The study developed three types of text messages according to the degree of using non-verbal texts and their phraseology as instructors' messages, which were then distributed to 259 students via mobile text messaging. The perceptions of students were analyzed using a semantic differential scale and a questionnaire. The results showed clear differences in students' perceptions of non-verbal text and traditional text, and that optimally designed non-verbal texts turned out to encourage the students' interaction the most out of the three types of text messages. Following the discussion of the results, an expanded theoretical framework beyond Ong's concepts of orality and literacy is also suggested to understand the evolution of mobile e-text communication in education.

*Keywords : e-Text, Text technology, Synchronous text communication, Mobile teaching and learning, Mobile communication, Orality, Literacy, Non-verbal text*

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## Introduction

Communication between a teacher and a student is essential to education. The main medium of communication in education has always been language, which includes written text and oral language. Historically, the typical method of teaching has depended on oral lectures and written text in a textbook. The written text in a textbook is expected to be well-organized and well-structured, as a well-wrapped encoding. Teachers are then expected to unwrap and decode the content written in the textbook through oral language. In this process, teachers usually do not verbalize exactly the same written text. To explain the written content in a more understandable way, teachers often add such representation elements as rephrasing or repetition, and use various non-verbal languages like gestures, tones, facial expressions, and body languages (Manusov & Rodriguez, 1989). This implies that the nature of written text differs from that of oral language; the former is said to have *literacy* and the latter is said to have *orality* according to the framework of Ong (1982). With the development of the computer and network technology, however, communication language is evolving more rapidly than ever. In an e-learning environment, a teacher and a student communicate by *typing* the text with a keyboard of a computer or of a mobile device rather than by *writing* the text. Especially, in synchronous communication via mobile device, “the thumb-typing people” communicate totally differently from the people already having the existing pattern of text communication. As evident in this kind of communication, the synchronicity and the immediacy, which had never been imagined prior to the recent technological developments, have led to the emergence of different patterns of text usage. Historically, literacy, the nature of written text, has asynchronicity between a writer and a reader because the moment of writing is far ahead of the moment of reading. However, the mobile learning using various media technology guarantees portability and actuality, which makes it possible to have the mutual synchronous text communication. One critical difference between online e-text

communication and face-to-face communication is the use of non-verbal language. In online text communication, oral language is easily translated to text with orality which is different from text with literacy. Non-verbal language, on the other hand, is not easily translated to text because it cannot be verbalized. Therefore, non-verbal texts, such as emoticons or transformed alphabets along with their phraseology, have naturally appeared to visualize non-verbal language in the text (Choi, 2003; Dodd, 1982; Gajadhar & Green, 2003; Hwang, 2006; Kim, Kim, & Huh, 2008; Kim & Yoon, 2001; Yeoun & Park, 2007). Despite its pervasive use in everyday life, non-verbal text has not been encouraged for use in teaching and learning environments because it does not, by nature, follow the typical, traditional rules of verbal text. If students do not follow the traditional grammar rules in their text and instead break the rules and transform the grammar, punctuation, or even an alphabet letter itself, teachers are supposed to correct them because these are considered as grammatical errors. Nevertheless, in today's society where synchronous text communication via mobile media dominates everyday life, we cannot simply say that the relatively natural way of communication, including non-verbal text, should be discouraged just because it does not follow traditional text rules of instruction. Before making such judgment, current perceptions about non-verbal text in communication between a teacher and a student must be investigated. This paper, therefore, investigates how students perceive and feel text messages in e-text communication, and explores a theoretical framework for better understanding of evolving mobile e-text communication.

## **Theoretical Background**

### **Communicative e-text**

The advent of e-text communication marked a change in traditional writing of

different places and different times. It is noteworthy that e-text communication derives from the phenomenon of synchronous transmission at a distance. Unlike text typed with the typewriter, e-text is easier to edit and print. The emergence of e-text coincided with the appearance of computers. Before the invention of networks, however, e-text could not escape from the same paradigm as the one-way transmission of text as in books. In the early 1990s, with the invention of online messengers via PC (personal computer) communication, synchronous text communication emerged with new text grammar that was different from that of non-spontaneous communication. Non-verbal text with corresponding phraseology also appeared at this time. These new languages, known as messenger-language or Internet-language, do not follow general grammar or spelling. Although they are criticized for destroying grammar or destroying language, they are proliferating at an explosive rate to the extent that in April 2011, the Oxford English Dictionary officially recognized a number of Internet phrases, such as LOL (laugh out loud) and OMG (oh my god), and included them in the dictionary (Li, 2011). As Damon Brown (2010) of CNN indicated, the current world is one in which “webspeak” invades the Oxford English Dictionary.

Some linguists are worried about the destruction of original language due to these forms of text that do not follow traditional grammar and spelling and include non-verbal texts. For example, in Korea, linguists worry that King Sejong (the inventor of the Korean Alphabet around 500 years ago) would be most upset if he could see this destruction of language. King Sejong would, however, also be confused if he were to read the Korean that follows proper grammar and spelling as it is recognized today because the language during the lifetime of King Sejong was considerably different from that in 2011. If we consider the birth and death of certain words and expressions, we become aware that language itself evolves; thus, we can easily accept that rules of grammar or spelling can change. In this context, Oxford, by including e-texts in their dictionaries, has recognized the evolution of language.

Non-verbal texts can fall into two categories. One is that which we cannot verbalize, and the other is that which we usually do not verbalize. The messages that we cannot verbalize, such as emoticons or punctuation marks (e.g., :D, :’(, :-/), cannot be pronounced verbally but are expressed using non-verbal language, such as gestures, faces, or tones. The other type of non-verbal text is that which we can pronounce verbally, such as *lol* (*laugh out loud*), *omg* (*oh my god*), *thx*(*thanks*), *xoxoxo* (*hugs and kisses*), but usually do not use in our traditional colloquial communication. The messages are merely contracted for verbal amusement, verbal economic efficiency or better intimacy in online or mobile circumstances. Such non-verbal texts rarely appeared in traditional educational text communication that preceded online education. (There was actually no need for non-verbal text, because the non-verbal aspects were portrayed through non-verbal language in offline speaking.) Although research on traditional text has existed long before the existence of school education, the significant differences between online e-text and traditional text have naturally been ignored. Non-verbal text accompanies its corresponding phraseology or its own unique grammar for the sake of natural expression. Non-verbal text within official or formal sentences without any appropriate phraseology is awkward. Therefore, the usage of non-verbal text also implies a change in usage for other verbal text.

The differences of e-text from traditional text are not found in text that has simply been copied from traditional books to the screen. These can be found mostly in communicative e-text. This different kind of text format typical of communicative texting could previously be found in personal or private handwritten memos, although these only circulated in the private sector, which is far from public diffusion. While the traditional text is written with a pencil and paper, communicative e-text is typed on a keyboard, sometimes with several fingers and sometimes with thumbs only (on a mobile phone), or touched on a smart phone’s touch screen. *Texting* is so utterly different from handwriting that the word *write* is an increasingly awkward way to express this form of communication. The

manner of *texting* is also varying, changing in form along with changes in texting media technology and transmission technology, such as Internet chatting on PCs, short message services via cellular phone, messenger talk, Facebook, and Twitter, all of which implement e-text communication.

## The nature of non-verbal text in e-text communication

### Orality and literacy in non-verbal text

The nature of non-verbal text can be discussed according to Ong's conceptual framework (Ong, 1982) in which *literacy* relates to the nature of written text and *orality* relates to the nature of oral language. He divided orality into *primary orality* and *secondary orality* due to the development of typography and media. Primary orality refers to the orality of people who have never experienced literacy before, while secondary orality refers to the orality of people who have experienced literacy throughout their lives and are considering literacy when speaking. "Primary orality" is a term relative to "secondary orality" which exists in highly developed technological cultures. In today's reality, primary orality cannot be found easily because most people live in a literacy culture (Ong, 1982). Secondary orality is propagated by TV, radio, and electronic media in a literacy-based culture. It is a kind of orality that can be literalized through press news or scripts. That is, secondary orality is the orality considering literacy.

The orality of non-verbal text stems from the notion that one of the major functions of non-verbal text is empathy and emotional transmission (Hwang, 2006). Like orality, non-verbal text is also empathetic and participatory, rather than objectively distanced. In addition, the orality of non-verbal text is additive rather than subordinative. Orality itself exists only temporally, but the orality of non-verbal text can be saved permanently. In online environments, conjunctions are used more often than in offline circumstances, and they are used less than in settings of pure orality (Yates, 1992). These characteristics are said to be from the

'cut and paste' function of online media-based writing (Mason, 1998). The orality of non-verbal text is also situational. In orality, a concept is situational and operational because the nature of orality is glued to reality. Non-verbal text can also be understood according to context. Whether non-verbal text is intended to deliver a certain meaning or feeling, or to emphasize or add, we should judge it according to its context. All of these show 'orality' in non-verbal text.

Meanwhile, non-verbal text also contains literacy because it is a 'text'. It is not exactly the same as literacy, however, in traditional written text. In traditional writing or literacy, the writer and reader are separated to ensure objectivity, but in orality, a speaker and a listener set up a sense of unity. Non-verbal text cannot be separated from oral text clearly, but it has orality because it is very close to our actual reality and it has literacy because it is 'text'. Furthermore, orality has communality and literacy has individuality. Non-verbal text, however, has both characteristics. In synchronous chatting, communality is a clear attribute, as opposed to the individuality found in an asynchronous online bulletin board.

To summarize, the dichotomy of literacy and orality by Ong is not enough to explain the text used in e-learning or mobile environment. This dichotomy no longer applies because the desire for synchronous e-text communication combines physical motor typing using the text technology. In addition, symbolic visual signs, such as graphics or images that are beyond oral language, are becoming more critical to e-text communication (Offer, Lev, Lev, Barth, & Shteinbok, 2004; Yoon, 2004). It is therefore necessary to expand the conceptual framework for this dichotomy of literacy and orality to understand and explain e-text or m-text in synchronous e-text communication.

### **Beyond orality and literacy**

As synchronous communication via mobile is getting popular, researchers suggest the extended conceptual framework beyond orality and literacy. Ong (1982) named it secondary orality which is intended orality supposed to spread through

TV and radio in literacy-based culture. McLuhan (1964) also proposed extended conceptual framework as highlighting media, saying “the medium is the message”. Presenting the media as a key concept for extending theoretical framework can be found in Debray (1992)’s as well as Yoon (2004)’s research. Debray (1992) classified three regimes of the human progress in ‘Vie et mort de l’image’ at the cost of the tried and tested value of the ‘logosphere’ where the literacy is supreme, ‘graphosphere’ where the printed word is supreme, ‘videosphere’ where the image reigns. In the Debray (1992)’s perspective, the extended concept was the video image beyond literacy. Yoon (2004) also presented his perspective as dividing orality, literacy and video image as similar to Debray’s view. Yoon (2004) suggested that the collapse or union of the language components was originated from media environment changes, and indicated non-verbal text as a paralanguage or an icon. Paralanguage is a symbolic language which can not belong to typical oral language or literal language. For example, ‘oh my god!’ can be presented as ‘omg,’ laugh out loud’ can be contracted as ‘lol,’ and ‘I don’t know’ can be expressed as ‘IDK’. Icons indicate various emoticons such as , :-) X) ^^, etc.

Many researchers, as mentioned above, suggested various conceptual frameworks beyond orality and literacy for communication in this technology era. However, studies hardly aware the core feature of paradigm in this technological era, ‘synchronicity’. Considering that non-verbal text is coming from the context of synchronicity, the more fundamental research should be investigated.

## **Research Procedure**

### **The development of messages with non-verbal text**

Messages with non-verbal text and its phraseology were developed by three professors who teach in universities. The messages consisted of an academic

message and a procedural message. According to previous literature, the messages in teaching and learning can be classified into academic, social, and procedural messages (Henri, 1992; Oren, et al., 2000; Lee, 2009). The academic message was related to learning content, and the social message was dialogue intended for socializing.

A procedural message described the procedure of the course. In this research, we examined only academic and procedural messages with reference to Gilbert and Moore's perspective (1998), which includes procedural interaction into academic category but excludes social interaction from academic category.

Teachers usually generate academic messages related to learning knowledge and skills and procedural messages related to the course procedure. These are essential messages rather than social messages.

Social messages, therefore, were excluded in this research due to their intervening effect.

The procedure of the message development is as follows; first, a procedural message and an academic message were picked from a web class of a professor at S university (Prof. A).

These messages were used in an online environment through mobile or web-based communication and written in a typical, traditional way with no non-verbal text. Prof. B, who used non-verbal text with its phraseology sometimes, then translated Prof. A's message according to Prof. B's own way of wording with some non-verbal text and its phraseology. Prof. C, who often used non-verbal text as much as the student generation, then translated Prof. A's message to his own way of texting, using a significant amount of non-verbal text.

The final versions of procedural and academic messages are shown in Table 1.

Finally developed messages were verified in feasibility and generality by three Ph.Ds in Educational Technology and four students taking the course. The verification score was from 4.29 to 5.00 in a 5-point Likert scale with 5 being strongly valid and 1 being not valid at all (Table 2).

Table 1. Procedural and academic messages

<b>Procedural message (notice)</b>	verbal text only formal message (Prof. A)	You are required to upload the answer on the discussion board after watching the video clip. Korean assisted reading material is attached for your reference. The deadline is 10:00pm Oct. 31st. Late submission is not admitted since the time track is recorded.
	message with some non-verbal text and its phraseology (Prof. B)	Please upload the answer on the discussion board after watching the video clip~. Korean reading material is attached for service :) Deadline is 10:00 pm Oct.31st, so don't be late ^0^. Late does NOT count.-.-;;
	message with more non-verbal text and its phraseology (Prof. C)	Watch the clip and put the answer up on the DB. There's a korean helping material thingy, if that helps. XP u kinda HAVE to put the answer up before 10:00 Oct. 31st!! cuz if ur late the answer wont count..=.;;;;;;;;;;
<b>Academic Message</b>	verbal text only formal message (Prof. A)	The key point of the self-regulated learning theory is that every learner has the potential to reach a significant learning goal from managing and controlling one's own learning process, and that this maximizes learning effectiveness. But this assumption is not realistic and limited to just a possibility. Learners' self-regulated learning is criticized as being too optimistic.
	message with some non-verbal text and its phraseology (Prof. B)	The main point of the self-regulated learning theory is "any learner can reach a meaningful learning goal by managing and controlling their learning process, and this maximizes the learning effectiveness". But this is just a possibility lol. It's not that realistic. So, to say it again, learner's self-regulated learning is criticized that it is too optimistic. O.o
	message with more non-verbal text and its phraseology (Prof. C)	The point of the self-regulated learning theory is~!! The learner controls & manages their learning process-> they reach their learning goal so the learning effect shows in biig~!!But!!! This is only a teenie weenie poshibility!!! -.-;;its not that reeaaal... :?((( T^T so this theory is criticized that the learner's self-regulated learning theory is tooooo rosy and optimistic...Bleh...T^T;;;

Table 2. Verification of the messages

Partici- pants	Feasibility						Generality					
	pA	pB	pC	aA	aB	aC	pA	pB	pC	aA	aB	aC
Average	4.43	4.29	4.29	4.57	4.29	4.86	4.29	4.43	4.29	4.43	4.43	5.00

(p: procedural message, a: academic message, A/B/C: professors)

### The development of a Semantic Differential Scale

To analyze the perception of non-verbal text with its phraseology, a semantic differential scale was used.

A semantic differential scale is a method used to analyze an individual's feelings or opinions that cannot be easily measured.

This method is widely used to analyze and measure the images, impressions, and psychological effects of emotions (Brace, 2004; Osgood, Suci, & Tannenbaum, 1957; Rha & Jin, 2008).

To develop abstract adjectives for a semantic differential scale for non-verbal text messages, three researchers made use of a brain-writing method. Each of the researchers wrote down adjectives that occurred to them based on their experiences of non-verbal text, and then they shared whole adjectives through several meetings. The final thirty-four adjectives were paired off in opposition to previously abstracted adjectives. These were verified by three experts in Educational Technology ( $r=.89$ ).

In the survey, final adjectives were randomly arranged for the semantic differential to determine the students' perceptions, as shown in Table 3.

The components in the final survey were as follows: 1) demographic information, including major, age, gender, and active use of an online blog, and 2) the adjective scale for a procedural and academic message.

Table 3. Final adjectives developed for the semantic differential scale

Positive adjectives	7	6	5	4	3	2	1	Negative adjectives
smart								dumb
stable								unstable
reliable								unreliable
polite								rude
easy to understand								difficult to understand
easy to understand overall structure								hard to understand overall structure
reader friendly								reader unfriendly
easy speed read								hard to speed read
easy to scan								hard to scan
long to see								not long to see
like								dislike
not tired								tired
encourage learning								discourage learning
familiar								unfamiliar
lovable								unlovable
want								not want
modest								arrogant
feel good								feel bad
comfortable								uncomfortable
close								far
intimate								distant
warm								cold
friendly								unfriendly
soft								hard
humane								inhuman
kind								unkind
open								conservative
individual								social
light								dark
humorous								serious
lively								lifeless
active								passive
creative								uncreative
passionate								dispassionate

## Experiment Implementation

Two hundred and fifty-nine students in three age groups participated in this research. The eighty-four participants in the first group were junior high students in 10s, the seventy-six students in another group were those in their 20s taking a course in educational technology at K University, and the ninety-nine students of the third group were adult learners between their 30s and 60s taking a course in instructional design at K Open University. All students have been exposed to web-based or mobile-based teaching and learning in their school, so they were familiar with e-text communication.

Students received the three types of non-verbal texts of a procedural and an academic message via mobile phone MMS (Multimedia Messaging Service). First, each of the three types of a procedural message - a verbal text-only formal message (Prof. A), a message with some non-verbal text (Prof. B), and a message with more non-verbal text (Prof. C) - was transmitted to the student's mobile phone. Each message was transmitted approximately at the time intervals of 10 minutes. The time intervals were given to allow the students to evaluate a text message with the semantic differential scale before receiving the next message. The same process was repeated for the other two messages. When the students had evaluated all of the three types of text messages, they were asked to complete a questionnaire on the comparison of the three types. Then, the same procedure was repeated for the three types of non-verbal texts of an academic message.

## Results and Discussion

### Messages with appropriate non-verbal text are preferred the most

Students' perceptions of instructional messages with non-verbal text according to

the types of non-verbal text usage in synchronous text communication were investigated using a semantic differential scale. The message types were pA, pB, and pC, which are procedural messages, and aA, aB, and aC, which were academic messages.

As shown in Figure 1 and Figure 2, students' perceptions toward the message from Prof. B (pB and aB) were all positive on every 34 adjective scale. As for the procedural message, the lowest score toward pB was 4.26 on item #1 (*smart-dumb*), and the highest score was 5.92 on item #29 (*light-dark*), and the average score was 5.26. For the academic message, the lowest score toward aB was 4.62 on item #28 (*individual-social*), and the highest score was 5.78 on item #24 (*soft-hard*), and the average score was 5.24.

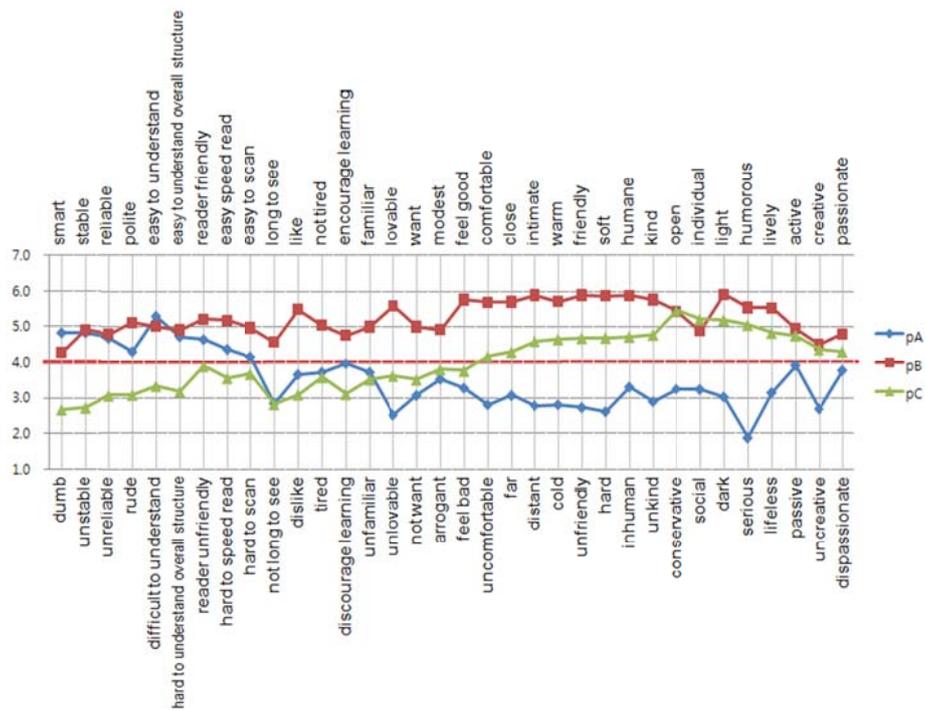


Figure 1. Semantic profile for students' responses to the procedural messages of Prof. A(◆), Prof. B(■), and Prof. C(▲)

Consequently, the messages from Prof. B were overwhelmingly perceived in a positive way by students. The messages from Prof. A (pA, aA), on the other hand, drew the averages 3.53 and 3.33, which were the least positive perceptions, and the messages from Prof. C (pC, aC) had average ratings of 4.0 and 3.96, which fell between those of Prof. A and Prof. B. The noteworthy result is that students did not respond that much positively toward Prof. C's messages, which included much more non-verbal text with which they were familiar. This might be understood as students distinguishing teachers' instructional language from their own communicative language.

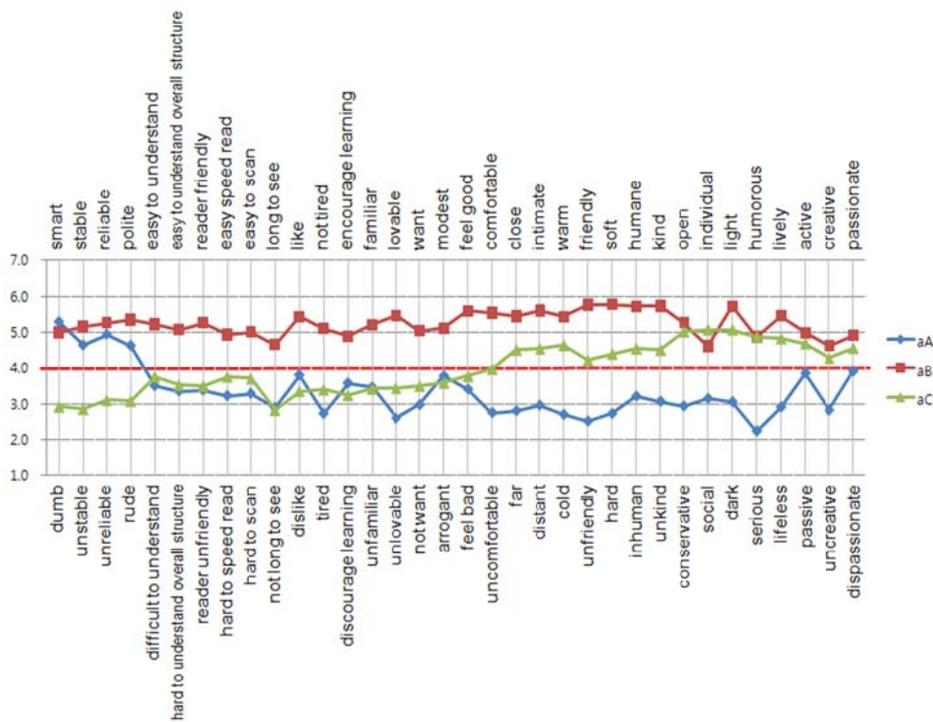


Figure 2. Semantic profile for students' responses to the academic messages of Prof. A (◆), Prof. B (■), and Prof. C (▲)

## Non-verbal text with its phraseology shows definite perception differences

There is a clear distinction between the adjective items students perceived positively in the messages from Prof. A and Prof. C. The items students perceived positively from Prof. A drew negative responses toward Prof. C. Likewise, the items students perceived positively from Prof. C drew negative responses toward Prof. A.

Table 4 and Table 5 show the items students responded positively to the messages from Prof. A and Prof. C, respectively.

**Table 4. Adjectives showing positive responses to the procedural messages from Prof. A and Prof. C**

To the procedural message from Prof. A	To the procedural message from Prof. C
<i>smart, stable, reliable, polite, easy to understand, easy to understand overall structure, reader friendly, easy to speed read, easy to scan</i>	<i>comfortable, close, intimate, warm, friendly, soft, humane, kind, passionate, creative, active, lively, humorous, light, individual, open</i>

**Table 5. Adjectives showing positive responses to the academic messages from Prof. A and Prof. C**

To the academic message from Prof. A	To the academic message from Prof. C
<i>smart, stable, reliable, polite</i>	<i>comfortable, close, intimate, warm, friendly, soft, humane, kind, passionate, creative, active, lively, humorous, light, individual, open</i>

## Are we discouraging students' motivation for interaction?

In addition to the semantic differential scale, the research team also asked students additional questions about their perception of each message: 1) If you were a professor, which type of message would you like to use? 2) Which one is the

easiest to answer? 3) Which one motivates you to reply the most? 4) Which one do you think is the most appropriate?

The results showed that most students overwhelmingly perceived the messages from Prof. B to motivate more interactions between a teacher and students rather than those from Prof. A or Prof. C.

Table 6 shows that 74.9% of the students chose the messages from Prof. B as being the best for promoting interactivity. On the other hand, only 10.1% of the students chose the messages from Prof. A, and this ratio is the lowest among the message types.

**Table 6. Student responses on the interactivity of each message**

Questions on Interactivity		Prof. A	Prof. B	Prof. C	sum
procedural message	If you were a professor, which type of message would you like to use?	32	204	23	259
	Which one is the easiest to answer?	24	195	40	259
	Which one motivates you the most to reply?	10	211	38	259
	Which one do you think is the most appropriate?	45	203	11	259
academic message	If you were a professor, which type of message would you like to use?	26	192	41	259
	Which one is the easiest to answer?	17	170	72	259
	Which one motivates you the most to reply?	15	180	64	259
	Which one do you think is the most appropriate?	41	197	21	259
%		10.1%	74.9%	15.0%	100%

Given that most professors still send instructional messages like those of Prof. A, it could be said that most instructional messages from teachers possibly discourage interactivity in learning, even though they are intended to encourage student interaction.

This result indicates that appropriate non-verbal texting with its phraseology encourages students to interact and that we might be discouraging students' interaction with professors rather than encouraging it due to our texting manner. Therefore, teachers should consider their manner of texting in e-text communication to motivate student participation.

Meanwhile, while Prof. A used only formal messages with no non-verbal text and Prof. C used a significant amount of non-verbal text, Prof. B used some non-verbal text in his message. In this sense, it can be easily postulated that the nature of the messages from Prof. B might be biased toward neither literacy nor orality and are somewhere in the middle of literacy and orality. If this assumption is valid, then it should be natural that the score of student perceptions of the messages from Prof. B would be thought to be neither the highest nor lowest, but right in between the messages of Prof. A and Prof. C. The results, however, indicate that the messages from Prof. B were perceived most positively in the entire adjective scale. These results cannot easily be explained by Ong's conceptual framework, nor by literacy and orality. These results implies that message types like Prof. B's may contain a different sort of property from literacy or orality, and that another concept that explains the nature of Prof. B's message type is necessary.

### **Secondary literacy as the nature of non-verbal text**

The dichotomic concept of orality and literacy suggested by Ong (1982) has served as a useful theoretical framework for interpreting human culture, including manners of thinking in the preliterate and literate ages. In addition, Ong (1982) has suggested an expanded concept, secondary orality, for interpreting and explaining

the nature of language in the electronic age, where electronic media, such as telephones, radio, and television, mediate among us. *This new orality has striking resemblances to the old in its participatory mystique, its fostering of a communal sense, its concentration on the present moment, and even its use of formulas (Ong, 1971). But it is essentially a more deliberate and self-conscious orality, based permanently on the use of writing and print...Despite their cultivated air of spontaneity, these media are totally dominated by a sense of closure, which is the heritage of print (Ong 1982, pp.134-135)*<sup>1</sup>. In this sense, secondary orality is both similar and dissimilar to primary orality. In short, the language delivered through electronic media is verbal language; thus, its nature is basically orality. Because it is based on writing and printing, however, it is also influenced by the nature of literacy.

However, because e-text with non-verbal text and its phraseology, although literal, is not actually literal by nature, this type of language does not meet the criteria of Ong's framework. While the nature of the message without non-verbal text that was generated by Prof. A qualifies as literacy, those with non-verbal text from Prof. B and Prof. C are more similar to orality than to literacy. For instance, the adjectives to which students gave higher scores, such as 'close (rather than distant),' 'intimate,' 'open,' 'individual,' 'light,' 'active,' and 'friendly,' seem to represent the nature of orality. Although the messages with non-verbal text were expressed literally, they gave readers the feeling of orality rather than a sense of closure, as specified in Ong's (1982) sense of literacy.

Since Ong's publication of *Orality and Literacy: The Technologizing of the Word* (1982), many subsequent studies have been conducted concerning Ong's conceptual framework. Especially because of the recent and explosive increase in synchronous e-text communication using non-verbal text, which Ong did not mention in his work in 1982, a number of attempts have been made to apply Ong's concept to the attributes of this e-text communication. As Ong expanded his own theoretical

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1. Ong(1982) said that print encourages a sense of closure, a sense that what is found in a text has been finalized and has reached a state of completion.

dichotomic framework to 'secondary orality,' Lèvy (1990) suggested the concept of an 'information-media axis' as an expansion to Ong's framework to explain the nature of language in a new communication environment mediated by computers. Kim et al. (2008) tried to expand the theory to include the concept of 'digital language' to explain the phenomenon that arose from the environment of communication via WWW. These attempts, however, suggested a third concept different from Ong's. It seems that the nature of non-verbal text is synthesized obscurely into these new concepts. That is, the effort to make clear distinctions from, or expansions of, Ong's argument is difficult. Lee (2010) suggests the notion of 'tertiary orality', including the characteristic of multimedia text, and Davidson (2007) expresses secondary literacy as a new form of literacy ushered in by all of the print that bombards us online. According to Wegner (2010), Alan Moore has said that secondary literacy is essentially a more deliberate and self-conscious literacy that is based permanently on the use of the new electronic forms of secondary orality. Like these descriptions, ambiguity still exists in our understanding of the recent synchronous text communication environment and our lack of a systematic conceptualization of it. Although the term of 'secondary literacy' was mentioned a few times before, some provide different meanings for the same notion, while others use different terms for similar concepts. In an informal interview, Ong mentioned in passing that "it can't be secondary orality or tertiary orality since it's written discourse. So let's call it secondary literacy." Because he did not give any details, however, his comments on secondary literacy have not been officially published.

In the critical view, 'secondary literacy' has now been suggested as an expansion of Ong's framework to interpret the results of this research. The necessity of a new conceptual expansion is drawn from the change from Ong's era into the recent communication environment in which synchronous text communication via mobile media dominates everyone's everyday life. The synchronous text communication with non-verbal text is likely to be the representative phenomenon of WWW

mobile communication because it gives us a new communication experience that has never before been experienced. It would be helpful to cite Lunsford's definition of secondary literacy as conceptualized in this research: "a literacy that is both highly inflected by oral forms, structures, and rhythms and highly aware of itself as writing, understood as variously organized and mediated systems of signification" (Lunsford, 2007, pp. 170). Lunsford's research, however, focused primarily on rhetoric and did not provide a fundamental conceptualization that considered core attributes of e-text communication.

Secondary literacy refers to oral literacy, while secondary orality refers to literate orality. According to a study by Yoon (2004), expressions that emerge from non-verbal text, such as pseudo-language and emoticons, bring ambiguity to the borderline between discrete types of language, namely literacy and orality. He also pointed out that expressions, such as pseudo-language, are examples of implementing orality using literal text in online chatting and on electric bulletin board systems. The text itself is not used in direct conversations but in a synchronous communication environment. The non-verbal text has therefore become an instrument to convey speakers' contexts through visual messages.

In this vein, from the point of view that non-verbal text has the nature of orality, non-verbal text, which is a textual (literal) expression for dialogue, can be conceptualized as 'secondary literacy,' as opposed to Ong's concept of 'secondary orality,' which is the nature of oral expression based on literacy. While the nature of secondary orality has limitations in the sense of closure that is typical of literacy, secondary literacy implies the nature of textual language, which aims for users to talk with each other. Table 7 shows the comparison between Ong's concepts (primary orality, secondary orality, and literacy) and the secondary literacy newly suggested in this research. The concept of secondary literacy enables us to overcome our stereotypical idea that non-verbal language can only be expressed in face-to-face communicative situations. With the emergence of secondary literacy, we have entered a new cultural environment that we have never before experienced.

Table 7. A Theoretical Framework of e-Text Communication in Education

	Primary orality*	Secondary orality*	Literacy*	Secondary literacy
Mode of expression	oral	oral	verbal text	verbal & non-verbal text
Main intention	for dialogue	for record	for record	for dialogue
Features	synchronous, immediate	asynchronous	asynchronous	synchronous, immediate
	empathetic, participatory	empathetic, participatory, objectively distanced	objectively distanced	empathetic, participatory
	situational	situational, abstract, decontextual	abstract, decontextual	situational, contextual
	emotional	rational	rational	emotional
	hearing-dominance	hearing- & sight-dominance	sight-dominance	sight-dominance
	redundant	somewhat concise	concise	redundant
	flexible	solid	solid	flexible
	implicative	implicative, explicit	explicit	implicative
	incomplete	complete	complete	incomplete
	intimate	Distant	distant	intimate
	shared	closed, isolated	closed, isolated	open, liberty

\* Suggested by Ong (1982).

What is the nature of this new culture that has been brought forth by the synchronous text communication environment? McLuhan (1964) explained how the development of media technology has brought fundamental changes into our lives: *All media and technology have brought change in the size, speed, or types of our life style. The railway did not introduce movement or transportation or wheel into human society, but it accelerated and enlarged the scale of previous human functions, creating totally new kinds of cities and new kinds of work and leisure. The airplane, on the other hand, by accelerating the rate of transportation, tends to dissolve the railway form of city, politics, and association, quite independently of what the airplane is used for (pp.8-9).*

In the context of McLuhan's argument, it can be said that the grammar and nature of the text have evolved along with the writing and media technology through which written text is delivered. The early appearance of writing technology took the form of a brush dipped in Chinese ink and traditional cloth or paper. The next form of print technology enabled us to make print editions and copies. This printing technique brought forth a historical revolution. After that, typewriters were invented, and we started typing instead of writing. The typewriter was irreversible, however, because it did not allow free editing, deleting, and so on. The uncorrectability of the typewriter led people to take writing as a very serious job. In the East, people used to sit properly with sincere attitude in a calm environment when writing calligraphy. Computer and Internet technology in recent days allows for the physical activity of typing with the freedom to edit in a synchronous way. All of these changes have influenced our way of thinking, communication, attitude and perceptions based on the transition from literacy to secondary literacy.

## **Conclusion**

In recent days, synchronous text communication via mobile technology became one of the mainstreams and the importance of mutual communication has been enhanced. This phenomenon also has had an effect on communication in teaching and learning. We are living in a transition period where the natures are varying in the types of language for communication. The feelings of awkward and embarrassed are experienced into us because different generations are using different types of language in synchronous text communication. These natures of the language in mobile communication become clear according to the degree of using non-verbal text for their messages in text communication (Yoon, 2004; Kim et al., 2008). Therefore, this research was conducted to explore how students perceive the text message in synchronous e-text communication and to get

implications on message design in a mobile teaching and learning environment.

Significant implications of this research are as follows; first, this research suggests and elaborates on the concept of “secondary literacy” to expand the theoretical framework suggested by Ong (1982). Secondary literacy refers to the nature of the message with non-verbal text and its phraseology, which originated from synchronous e-text communication and then expanded to asynchronous e-text communication as well. It is based on literate expression which connotes orality for dialogue. Through this conceptual expansion, the nature of synchronous e-text communication can be understood more clearly.

Secondly, this research also implies that not only verbal factors but also non-verbal factors play important roles in effective synchronous text communication for teaching and learning. Non-verbal text is a result of evolving language in synchronous text communication. The rapid progress in communication and its subsequent environmental change have been exposed in this research. Nonetheless, the generations of teachers and students do not share common culture in communication language. For instance, while a majority in the teachers’ generation has little experience playing online games, students are so-called “digital natives,” and the majority of them have several portable online games. Accordingly, they have a significant amount of experience in online digital activities. This online environment directly impacts their experiences in using non-verbal text. Because of their lack of experience in using non-verbal text, most teachers would not be aware of this rapid evolution in language. The results of this research point out that although we try to communicate to promote interaction between teachers and students, we may unintentionally discourage student interaction because of the discrepancy in the usage of communication language. Consequently, it is necessary to reflect seriously on whether teachers’ resistance to the evolution of language hinders interactivity.

Non-verbal text stands at the center of tremendous changes that are being brought forth through the developments in technology. The Web has progressed

from the “read only” era to the “read AND write” era (Richardson, 2006). The age of Web 1.0 has passed, while the age of Web 2.0, which focuses on “participation, sharing, collaboration, and openness”, has arrived. With the beginning of the age of Web 2.0, “collective intelligence” is being discussed as a major characteristic of the change. That is to say, the Web has transcended the level of serving merely as a space to search, collect and read given information, and has now become a space to participate, share, and write together to generate collective intelligence, and this environment is positioning itself as a staple of daily life. In such an age, communication has become one of the most important learning capacities, as writing was in the age of literacy. This research, therefore, will contribute significantly to the comprehensive understanding of e-text communication in teaching and learning, if we reinforce the strengths and compensate for the weaknesses of this new language of e-text communication.

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