

Emojis: The Evolution of Pictographic Languages and the Implications on Technology

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For centuries, societal needs have perpetually shaped the language and written communication humans use to exchange information. Early forms of written language represent the need for accounting in trade and commerce, which then evolved into the documentation of historical accounts and, eventually, into written language that conveyed creativity and self-expression. The word emoji, literally translated from the Japanese language, meaning picture (‘e’) character (‘moji’), has changed our present mode of self-expression, in pictorial form, to fulfill the social need to communicate human emotion and to be understood. This paper will briefly outline the evolution of pictographic languages, their connection to emojis and their use, and examine the implications emojis can have within the field of education, specifically in literacy and social and emotional learning.

Writing is thought to have developed about 5000 years ago in four distinct regions around the world: Western Asia (Mesopotamia), Egypt, China, and South Asia (Indus River Valley). The emergence of writing in Mesopotamia was not rooted in the representation of language, but rather as a reflection of the needs of society at the time. Dating back to 3200 BCE, one of the earliest forms of written language was cuneiform, which originates from Mesopotamia, a region that corresponds to include present day Iraq. Rapid changes in society, particularly in regards to increasing wealth, labour specialization, the exchange of goods, and the establishment of social classes necessitated a system of record keeping (Kern, 2015). As their society continued to grow in size and complexity, a writing system evolved from earlier forms of mark making on clay tokens and was used for keeping accounts of goods and counting, eventually evolving into a more complete logographic language by 3000 BCE (Schmandt-Besserat, 2014).



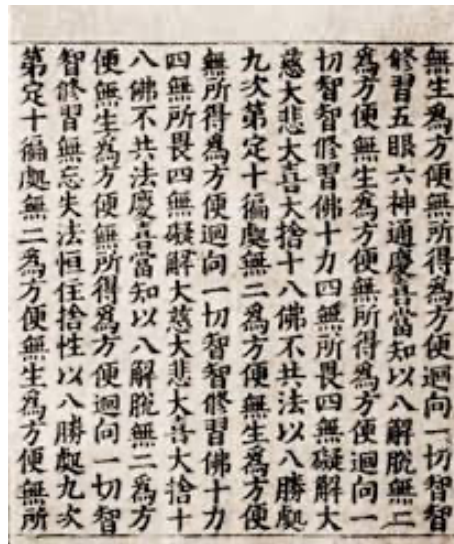
(Fig. 1) Sumerian Cuneiform Writing system

The figurative symbols of Egyptian hieroglyphics also emerged around 3200 BCE. Initially, with thousands of hieroglyphs representing words, sounds, and ideas, unlike complete alphabets, these characters were eventually reduced to about 750. They were primarily used in the accounting for goods and other economic activity and were also found in art, pottery, and in tombs to represent the achievement of Pharaohs, or monarchs, of the time (Scoville, 2015).



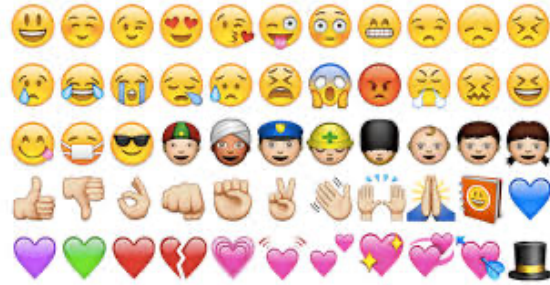
(Fig. 2) Egyptian Hieroglyphics

Chinese writing is a logographic system that dates back to around 1600 BCE and originates from the early markings on oracle bones used for divination purposes. The Chinese writing system has evolved over thousands of years, until the early 1900s, when the unified national language of Mandarin was established, in part to remedy social inequality. The characters found in Chinese writing developed from pictures of objects and the representation of concepts and quickly became part of the economy through trade (Mark, 2016).



(Fig. 3) Ancient Chinese Writing

It can be argued that emojis sprouted from the roots of emoticons, which were developed by Scott Fahlman in 1982, a computer scientist and Professor Emeritus at Carnegie-Mellon University. Fahlman created a typographical sign to help support the understanding of subtleties in messaging, such as sarcasm and wisecracks, in the early stages of electronic communication within the message board at Carnegie Mellon. These emoticons were comprised of a series of characters found on a standard keyboard, specifically a colon, hyphen, and opening/closing parenthesis, and depicted a happy and sad face respectively :-) :-(. Eventually, Fahlman foresaw the replacement of his emoticons by an improved version to add expression to written communication (McIntyre, 2016). The invention of emojis can be credited to Japanese interface designer Shigetaka Kurita in the late 1990s. Their purpose was to provide more contextual cues and emotional context in communication between users of mobile devices. Kurita explained that in Japanese culture, brief email exchanges often led to miscommunication and people needed a method to assess mood or feelings through digital communication. In 2010, Apple and Google standardized 722 emoji symbols through the Unicode Consortium (Alshenqeeti, 2016).



(Fig. 4) Standardized Emojis

It is a straightforward task to extract the functions from written communication systems of early languages. Ancient visual pictorial languages helped to support day-to-day activities that primarily centered on the economy. Generally speaking, these written systems helped to record information for trade and commerce, government activity, and for accounting purposes.

As mentioned earlier, societal needs shape the manner by which people exchange information. In the case of emojis, the need for self-expression and to be understood on an emotional level dictates the development and usage of this device. The purpose of emojis, although very different from the purposes of earlier forms of pictographic languages, has an established and widespread use in our modern society. In *Semiotics of Emoji*, Danesi (2016) writes that from the outset of civilization, writing has been considered to have great social value and the purpose of the emoji is to add a visual tone to a message. This means that there is a cultural importance to providing contextual cues and emotional context to a message. Furthermore, Danesi argues that emojis are expanding linguistic ability, as they are an innovation to traditional writing and communication, suggesting a return to more creative forms of language. Kaye et al. (2017) states that research has shown using and interpreting emojis disambiguate intent behind messages, serve important verbal and non-verbal functions in communication, and provide insight into a user's personality.

In 2015, the Oxford Dictionary word of the year was the ‘face with tears of joy’ 😄, which reflected the ethos, mood, and preoccupations of the time (Skiba, 2016). As a reflection of societal needs, it shows a multimodal approach to expressing complex ideas. Kress (2005) outlines the assumptions of multimodal approaches to representation and communication: 1) communication is always multimodal, and 2) each of the modes available for representation in a culture provides specific potentials and limitations for communication. Up until the advent of emojis, current modes of communication lacked the ability for users to express their emotional states. The emoji addresses this cultural limit as a device that can allow the injection of emotion into a message. More and more, people are looking to sum up their feelings and emotions in a concise manner that is to the point. Robb (2014 as cited in Moschino, 2015) describes the widespread use of emojis as a new method to punctuate a message and potentially breakdown language barriers.

The growing and evolving trend of using emojis in digital and social communication has many societal implications particularly in the field of education. Education systems will need to adapt certain areas of the curriculum to ensure that students are well versed in the newest form of digital communication. There are two specific areas of the curriculum that would benefit from the inclusion of deciphering and interpreting emojis; these are the areas of communication and social and emotional learning.

The British Columbia Ministry of Education’s (2020) new curriculum defines the Core Competency of communication as the set of abilities that students use to impart and exchange information, experiences, and ideas; to explore the world around them, and to understand and effectively use communication forms, strategies, and technologies. The new curriculum further explains that communicating provides a bridge between student’s learning, their personal and

social identity, and the world within which they interact. Presently, using and understanding emojis is a central part of social communication by providing insight into a person's emotional state through contextual cues in a messaging exchange. Furthermore, emojis are a communication form that students can use as a strategy in digital technology. It becomes of paramount importance for students to gain a level of competency using and interpreting emojis as much as their competency in traditional literacy. With its ever-increasing popularity and widespread use, emojis can become the mode by which bridges are built to engage student learning, interpersonal communication and the way students interact with the world. Emojis have the potential to evolve into a worldwide standard for communication, essentially eliminating the need for text to be translated into other languages. This follows a trend of global connectivity and collaboration that our students will be required to participate in as interconnected citizens.

The Collaborative for Academic, Social, and Emotional Learning (CASEL) defines social and emotional learning as the process through which children and adults understand and manage emotions, set and achieve positive goals, feel and show empathy for others, establish and maintain positive relationships, and make responsible decisions (CASEL, 2020). Each of these facets represents each of the five Core Competencies that make up social and emotional learning. The purpose of using emojis to express one's emotional state and interpret another's is central to several competencies.

Self-awareness is the ability to recognize one's emotions, thoughts, and their influence on behaviour. As part of a process of communicating emotions, a student must first have the ability to recognize emotions within themselves and then find a way by which to express it. The option of using emojis opens up more possibilities for a student's ability for self-expression.

Social awareness is another social and emotional competency where emojis can play a part. Social awareness is defined as the ability to take the perspective of and empathize with others from diverse background and cultures, and to understand ethical and social norms for behaviour. As emoji usage becomes part of our social fabric, interpreting other people's emotional state provides necessary contextual cues for a messaging exchange. Students will need to be able to recognize how others are feeling to develop their own sense of empathy. Emojis provide an interface through which users can engage with in order to initiate this process of empathy development.

As written communication evolves with societal needs, the use of emojis provides users with the opportunity to self-express beyond words. The early forms of pictographic communication systems offer insight into the evolution of communication based on the changes in society. Initially used for trade and commerce, written communication eventually found a place in the process of documentation of daily administrative activities and then, lastly, for self-expression. Limits in written communication for self-expression led to the development of a visual system for emotional expression that evolved into emojis. Emojis provide greater context for communication and message exchange that has propelled its widespread use. It becomes a societal responsibility to educate and prepare students for the newest addition for self-expression. Already a large part of the educational curriculum in British Columbia, communication and social and emotional learning can only benefit from teaching students the ability to read and interpret emojis. As societal needs perpetually change and develop, our communication systems will also continue to evolve in order to provide the members of our society the ability to interact with greater effectiveness and emotive value.

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