

Undergraduates' Interpretation on WhatsApp Smiley Emoji

SUBASHINI ANNAMALAI
SOBIHATUN NUR ABDUL SALAM
Universiti Utara Malaysia

ABSTRACT

Undergraduate students, who are digital native, are keen on using emoji (smileys and ideograms) frequently to express themselves emotionally in their digital communication such as WhatsApp Messenger. Nevertheless, sometimes, they got into misunderstanding due to the different emoji's interpretation between the sender and the recipient. Research investigating emoji is still relatively new and this study discusses the diverse interpretations of WhatsApp emoji specifically the smileys among Malaysian undergraduates in a public university. This study attempted to investigate 210 undergraduates' interpretations of 75 smiley (face-like) meanings in WhatsApp Messenger. The respondents were asked to give feedback in self-administrated survey questionnaire to gather information on their interpretation of the smileys used in WhatsApp. A descriptive analysis was conducted on the students' interpretations and the findings disclosed that although the students interpreted a few smileys correctly, they did not know the intended meaning of most of the smileys correctly. The results of this study suggested that the students should know the meaning of the smiley/emoji used in their digital conversation to able to understand its intended use and to avoid miscommunication in their digital communication. For WhatsApp users, the findings will be beneficial to emphasize the need to understand the emoji's intended meaning for future tolerant and wiser use.

Keywords: *WhatsApp, emoji, smiley, interpretation, undergraduate.*

INTRODUCTION

Being able to connect and communicate with others is always an important aspect of human lives and this is made easier with the digital messaging app such as Whatsapp, Line, Telegram and WeChat. Although the digital conversations are governed by the text, non verbal conversational cues such as emoji help to express emotional expressions and determine the senders' meaning to improve the efficiency of the conversation (Lo, 2008; Tigwell & Flatla, 2016). Emoji is an English adaptation of a Japanese word that means "picture" and "letter, character" (Danesi, 2017) and it has become a necessary for the digital messaging (Danesi, 2017). The use of emoji is to add an affective tone to text messages, or else to suggest refinements to the specific parts of the messages' content (SwiftKey, 2015). Although emoji extended the ways in which social messengers' users can express their affective state, they can be misinterpreted due to two reasons: (i) users' interpretation of the emoji's meaning varies; and (ii) the design of emoji differs between platforms (Tigwell & Flatla, 2016). These misinterpretations of the emoji's meaning could lead to a communication breakdown, and in some cases may damage relationships (Tigwell & Flatla, 2016).

Research investigating emoji is still relatively new and this paper discusses the diverse interpretations of Whatsapp emoji specifically the smileys among Malaysian undergraduates in a public university. The intention of this research is to evidence how people differ in their interpretation of 75 smiley emoji, and also attempts to help the users to achieve more positive digital social communication experience by reducing the negative consequences of individual differences in emoji understanding.

RELATED WORKS

It can be difficult for users to convey their emotions due to the absence of non-linguistic cues such as facial expression and body language when interacting via digital messenger application (Walther & D'Addario, 2001). This issue was resolved through the use of emoticons—graphics composed with ASCII text that portray expressive faces, such as :-)) or :-(. Recently, these emoticons were then evolved into the form of small, two dimensional pictographs known as image (Barberi, Ronzano & Saggion, 2016). Emoji provide an expanded palette that extends the capabilities of emoticons by incorporating a wide array of characters whose relevance to emotional states, such as anger, surprise or fear that can be seen in the face to face interaction but hidden in the text. Negishi (2014) indicates that the use of emoji is now popular and has earned a commonplace when communicating through mobile messaging applications such as Whatsapp, Line, Telegram and Facebook Messenger.

WhatsApp is a messenger application that has a variety of functions, like text messages, images, audio files, video files, and links to web addresses (Bouhnik & Deshen, 2014). It is a freeware, cross-platform and end-to-end encrypted instant messaging application for smartphones/ tablets and also can be used in web. It uses the Internet to make voice calls, video calls, one to one video calls; send text messages, images, GIF, videos, documents, user location, audio files, phone contacts and voice notes to other users using standard mobile numbers. It also incorporates a feature called Status, which allows users to upload photos and videos to a 24-hours-lifetime feed that, by default, are visible to all contacts. In detail, WhatsApp Messenger has the following collaborative features (Bere, 2012):

- i. Multimedia: It allows the user to exchange videos, text messages, images and voice notes.
- ii. Group Chat: It supports the interaction of up to 50 group members.
- iii. Unlimited Messaging: The number of messages you can share on WhatsApp is unlimited. The application uses 3G/EDGE internet data plan or Wi-Fi to ensure continuous data transmission across platforms.
- iv. Cross Platform Engagements: Users with different devices (personal digital assistants, Smart phones, Galaxy tablets) can message one another through various media (text messages, pictures, videos, voice notes).
- v. Offline Messaging: Messages are saved automatically when the device is off or outside coverage area.
- vi. No Charges involved: there are no charges involved in using WhatsApp as it uses same internet data plan which is used for email or web browsing.

- vii. Pins and Users Name: WhatsApp user need not to remember passwords or username as it works via phone numbers and integrates with users' address books.

WhatsApp has become highly addictive and can create a great impact on regular user, especially students (Bansal & Joshi, 2014). Bere (2013) examined the use of WhatsApp in a South African university and he stated that the students gave the positive feedback and claimed that it was an easier way to communicate with their teachers and the rest of the class and that it was also fun. The research conducted by Amry (2014) demonstrated the effectiveness of WhatsApp social networking in comparison with face-to-face learning in the classroom. Overall, WhatsApp has become an important aspect of students; live and has become a shared platform that enhances accessibility, encourages cooperation, and intensifies motivation to take an active part in academic assignments (Bansal & Joshi, 2014; Bere, 2013).

Emoji are "picture characters" or pictographs that are popular in Whatsapp Messenger. Emoji are visually and emotionally expressive and has become a core aspect in a digital world. An emoji conveys its meaning through its graphical resemblance to a physical object (e.g., a smiling face). Emoji were first created in the late 1990s in Japan, but not officially added to the Unicode Standard until 2009 (Davis & Edberg, 2012). They are often described as a successor to emoticons (Novak et al., 2015), which are typographical symbols that represents facial expressions (Walther & D'Addario, 2001). Emoji enable people to be more expressive in conveying their feelings and moods via a text-based communication (Tauch & Kanjo, 2016). It is a powerful way to express emotions or a hard to write notion effectively (Kelly and Watts, 2015). This is due to a richer set of 722 graphical representations of emoji in WhatsApp Messenger such as smiley, occasions, objects, travels, food and drinks, animals, religious, countries and activities (Tauch & Kanjo, 2016). They help to improve the reader comprehension of the digital message in a fresh, visual and condensed way.

Emoji has become a powerful way to express emotions that are hard and subtle write effectively (Kelly & Watts, 2015). Emoji conveys its meaning through its graphic resemblance to a physical object (e.g., smiling face, food, vehicles), however it is not well understood how people interpret the meaning of the emoji (Miller et al., 2016). Emoji are visually-detailed graphics that are more open to interpretation and may be rendered differently by the sender and recipient. The use of emojis strongly depends on both the context and the community to which the same emoji is addressed (Barbieri, Ranzano & Saggion, 2016). The use of the emojis is unpredictable and socially determined. It is argued that how people interpret the meaning of emojis are not well understood (Miller et al., 2016). There are potential for misconstrue when using the emoji in digital communications.

Research has been done on the usage of Whatsapp emoji (Barbieri, Ranzano & Saggion, 2016; Logan, 2015; Muhammad, 2017; Tigwell & Flatla, 2016) but little was done on the undergraduate students' interpretation on the emoji meaning especially smileys. The current undergraduate students are digital natives who basically evolved together with digital messenger such as WhatsApp. A study done by Muhammad (2017) mentioned that the young adults use emojis frequently, and the most reasons of using emojis were to express their

feelings and emotions through the emoji chosen, to make the conversations more interesting, to strengthen what they meant in texts, and make the conversation less tense. Gullberg (2016) research which focuses on the interpretation and usage of emojis among Swedish university students, stated that that emoji are used as a divider between clauses. They compensate for the lack of non-verbal cues in written communication, and that they are efficient emotional enhancers (Gullberg, 2016). In addition to this, the results also show that emojis can help manage the conversation and younger people use more emojis than older people. She suggested that the emojis are needed to convey additional information in messages, and helps prevent misunderstandings.

The question is whether the students know and understand the meaning of these emoji before using it. Are they using the correct emoji that is suitable for their intention in their communication? What is their degree of understanding of these emoji? In order to investigate these aspects, a survey was conducted on the students' interpretation of the Whatsapp emoji meanings. Although there are almost 1282 emoji, this research will concentrate on the interpretation of 75 smileys (human-looking) emoji used in Whatsapp Messenger. Smiley features a rounded face form, represents the conceptual expression of a human face and displays various emotional state and facial expressions. The results of this analysis will highlight the advantages of understanding the intended meaning of the emoji and the usage of proper emoji in pursuit of meaningful communications in digital messaging applications.

Previous research has investigated that emoji, which has been used frequently in social contexts, increases perceived enjoyment during conversation. Emoji have the ability to influence people's perception (positive or negative) of messages. Evidence suggested that people have different preconceived ideas of what each emoji represents (Logan, 2015; Miller et al., 2016) and therefore people's overall understanding of a message may not be consistent (Tigwell & Flatla, 2016). Cramer et al. (2016) studied the sender-intended functionality of emoji using a group of 228 individuals who used emoji in text messages and reported on functional differences in emoji use and that it is complex. Similarly, Tigwell and Flatla (2016) surveyed 436 people about their use of emoji and investigated the variation in their interpretation of emoji. They too found the differences in emoji interpretation between individuals, and there is disagreement towards the level of intensity the emoji have. The use of emoji strongly depends on both the context and the community. Barbieri, Ronzano and Saggion (2016) claimed that even if the official meanings of the emojis are decided, the use of emojis online is unpredictable and socially-determined. A study by Lebduska (2014) showed that emoji are culturally and contextually bound, and are open to reinterpretation and misinterpretation. Emoji show vagueness in its meaning and only few are assumed to be universally understood (Wicke, 2017). Wicke (2017) stated that emoji tend to be used metaphorically (symbolic) and metonymically (conceptual). While some of the Emoji are interpreted almost entirely metaphorically, others developed their very own interpretation.

A smiley (sometimes simply called a happy face or smiling face) is a stylized representation of a smiling humanoid face. There are almost 75 smileys (human-looking) emojis used in Whatsapp Messenger. Smileys have become increasingly popular within texting and social media conversations. Communication via texting, social media, email and other online

channels differs to face to face communication for a number of reasons. In daily face-to-face conversation, humans mimic each other expressions and emotions when we're talking in person (Seiter, 2015). This emotional contagion is a big part of how we show empathy and build relationships. However, on digital conversation, that crucial element of empathy and emotion are missing if it is text-based alone. This issue has been resolved by using the smiley. Research (Churches et al., 2013) have discovered that when the users look at a smiley face online, the same parts of the brain are activated as when they look at a real human face. The introduction of smileys can provide visual 'signals' of how the user feels without the need to expressly describe this in words (Beckingham, 2014).

The variability of interpreting 22 of the most popular smiley (human-looking) emoji was demonstrated by Miller et al. (2016), suggested that people do not always have the same understanding of emoji and it can lead to misunderstanding. They have found that some smileys are interpreted as representations of different emotions, which meant completely different concepts to different people. The researches on the different usages of emoji also reveal the differences among people, as it is suggested that countries have their specific preferences to emoji (Barbieri et al., 2016). These preferences imply the cultural and regional features of the countries in many aspects (Lu et al., 2016).

METHODOLOGY

The purpose of this research is to investigate the undergraduate students' interpretation of the WhatsApp's smiley meaning. It is to evidence how Whatsapp users, especially students who are the frequent users of this social messenger differ in their interpretation of 75 smiley emoji. This research attempts to help the users to achieve more positive communication experience by reducing the miscommunication due to misinterpretation of the Whatsapp emojis especially the smileys.

This research employed a survey research design that was assessed through three sets emoji questionnaires. The researchers used a random sampling method to select the samples and the rationale of using this method of sampling is that the researchers believe that the chosen sample is the representation of the undergraduate population. A sample of 210 undergraduate students from a public university in Malaysia was chosen to be the respondents in this research. The respondents were chosen from several departments; Art and Sciences, Business and Law, Governance and International Studies. For this research, the respondents were given a set of questionnaire to explore convey their perception on the meaning of Whatsapp smiley emojis. The data collected was then analyzed using SPSS software.

The procedures for this research involved four primary steps: (i) identification of subjects, (ii) design and development of the research instruments, (iii) conduct of research, and (iv) data collection and analyses.

The first step is to know the particular information needed to conduct the research. The second step was to design and develop the research instrument. Prior to the process, the researcher had gathered information about the Whatsapp emojis, especially smileys information which was essential to aid the development of the instruments. The third step was





to conduct the survey. The survey was carried out within two months, involving a total of 210 undergraduate students in a public university in a Malaysia. The reasons these undergraduates are chosen were because they are the digital natives who are the frequent users of Whatsapp Messenger. The purpose was to investigate the respondents' perceptions of the smileys' meaning are investigated in the questionnaire. The role of the researcher was to provide technical assistance during the survey. The final step was to analysis the data collected. The researchers gathered the survey results of 75 total smileys' rendering from 210 respondents using three sets of self-administrated questionnaires. The purpose of using self-administrated questionnaires was to determine the meaning of the smileys based on the respondents' perception and not to restrict them with any constraints. Each respondent received a random questionnaire of the 25 smileys. The survey began with a section to solicit background information about the respondents such as their age, gender, Smartphone platform they use, their frequency of Whatsapp and emoji usage. Next, the 25 emoji renderings were displayed and the respondents are required to elicit their interpretations of the smileys in text form.








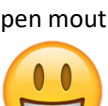
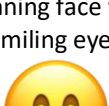
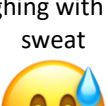
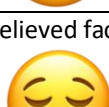

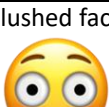
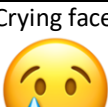

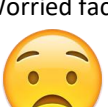

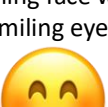

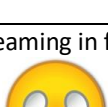
RESULTS













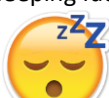





This research survey 210 respondents; 84 were male and 126 were female. The average age was 20.6. 90% of them used Google/Android smartphone platform, 1% Microsoft and 9% of the respondents used Apple. The respondents also reported that their Whatsapp and emoji usage, on a scale from "Always" to "Never". 84% of the 210 undergraduates gave their feedback of the Whatsapp and emoji usage as "Always", 14% as "Sometimes" and 2% as "Rarely". All of them stated that they use Whatsapp Messenger because it is free of charge (no extra cost to message), convenient and user friendly (e.g., sharing multimedia like videos and photos easily). They also stated that they are able to communicate instantly, even with a group of people at any time at anywhere. They also mentioned that they can express their feelings through emoji.



















The findings of this research have suggested that the respondents interpret the emoji differently than its intended meaning. Table 1 illustrated the emoji rendered, intended meaning and the interpretation and the percentages of the students' interpretation of each smiley emojis' meaning.





Table 1: Emoji Interpretations

Emoji	Interpretation (Percentage)	Emoji	Interpretation (Percentage)
Smiling face with a halo 	Blessed (60.0) Others (40.0) Being nice (10.0) Dizzy (8.6)	Zipper-mouth face 	Keeping secret (34.3) Keeping mouth close (25.7) Not talking (22.9) Shut up (17.1)
Winking face 	Winking (85.7) Funny (4.3) Feeling sexy (10.0)	Grinning face 	Grinning (78.6) Happy (21.4)

Smiling face 	Joyful (64.3) Happy (28.6) Shy (7.1)	Hushed face 	Hushed face (45.7) Shocked (35.7) Surprised (10.0) Blur face (8.6)
Face with head bandage 	Headache (52.9) Injured (21.4) Beaten up (8.6) Feeling bad (7.1) Sick (10.0)	Loudly crying face 	Loudly crying (80.0) Crying (20.0)
In love 	Love (100)	Sleepy face 	Sleepy (74.3) Helpless (14.3) Feeling dumb (11.4)
Blowing a kiss with love 	Kiss (100)	Smiling face with open mouth 	Laugh (88.6) Happy (11.4)
Grinning face with smiling eyes 	Grinning (57.1) Smiling (25.7) Happy (17.2)	Laughing with cold sweat 	Guilty conscious (47.1) Stressed (34.3) Tired (14.3) Sweating (4.3)
Relieved face 	Relieved (61.4) Relaxed (38.6)	Unamused face 	Unhappy (38.6) Unamused (35.7) Annoyed (14.3) Bored (11.4)
Flushed face 	Surprised (40.0) Flushed (32.9) Shocked (27.1)	Crying face 	Crying (100)
Disappointed face 	Disappointed (94.2) Sad (2.9) Sick (2.9)	Worried face 	Moody (32.9) Worried (30.0) Boring (12.9) Upset (24.2)
Dizzy face 	Died/ dead (68.5) Sleepy (11.4) Dizzy (2.9) Drunk (11.4) Boring (2.9) Shocked (2.9)	Smiling face with smiling eyes 	Shy (22.9) Smiling (12.9) Blushing (17.1) Pleased (14.3) Happy (21.4) Pleased (11.4)
Imp/ Revengeful 	Devilish (42.9) Angry (14.3) Hatred (31.4) Annoyed (11.4)	Screaming in fear 	Terrified (32.9) Scared (24.3) Shocked (30.0) Screaming (12.9)

Face with tongue stuck-out and winking eyes 	Feeling naughty (50.0) Trolling someone (27.1) Feeling crazy (22.9)	Kissing face with smiling eyes/ Friendly kiss 	Kissing (62.9) Whistling (17.1) Pouting (20.0)
Face with tears of joys 	Tears of joy (87.1) Funny (12.9)	Face with look of triumph 	Triumph (52.9) Feeling bad (17.1) Annoyed (15.7) Irritated (14.3)
Slightly smiling face 	Smile (51.4) Happy (17.1) Being polite (31.2)	Angry face 	Angry (40.0) Grumpy (34.3) Hatred (25.7)
Disappointed, but relieved face 	Feeling guilty (32.9) Disappointed (27.1) Scared (12.9) Exhausted (15.7) Restless (11.4)	Face savouring delicious food 	Yummy/ Delicious/ Tasty (100)
Pouting face 	Angry (72.9) Bad mood (8.6) Hatred (4.3) Annoyed (15.7)	Pensive face 	Pensive (47.1) Sad (44.3) Disappointed (8.6)
Smiling face with horns/ Cheeky 	Devilish (41.4) Revengeful (34.3) Naughty (11.4) Evil (10.0) Cheeky (2.9)	Smiling face with sunglasses 	Cool (40.0) Happy (25.7) Enjoying (11.4) Relaxed (12.9) Stylish (15.7) Holiday mood (8.6)
Sleeping face 	Sleepy (100)	Drooling face 	Drooling (100)
Fearful face 	Surprised (25.7) Shocked (21.4) Worried (18.6) Nervous (17.1) Scared (17.1)	Smiling heartily 	Laugh (62.9) Happy (28.6) Feeling awesome (5.7) Feeling good (2.9)
Face with medical mask 	Sick (41.4) Fever (20.0) Having flu (38.6)	Face with open mouth 	Shocked (55.7) Calm (2.9) Surprised (41.4)

Worried face with cold sweat 	Confused (30.0) Nervous (21.4) Scared (17.1) Frustrated (18.6) Disappointed (12.9)	Confounded face 	Worried (40.0) Confounded face (27.1) Annoyed (17.1) Stressed (15.7)
Face without mouth/ Speechless 	Speechless (64.3) Blank (27.1) Quiet (22.9)	Upside down face/ Feeling silly 	Feeling silly (47.1) Fake smile (24.3) Smiling (15.7) Uncomfortable (12.9)
Hugging face 	Hug (28.6) Feeling content (27.1) Waving (8.6) Blessing someone (21.4) Greeting someone (14.3)	Lying face 	Lying (95.7) Pinocchio (4.3)
Smirking face 	Smirking (48.6) Teasing (25.7) Tricky (12.9) Feeling naughty (8.6) Curious (4.3)	Kissing face 	Sulking (25.7) Whistling (20.0) Kissing (18.6) Flirting (14.3) Tempted (8.6)
Sticking out tongue/ Teasing 	Feeling silly (35.0) Joking (24.3) Joyful (8.6) Funny (17.1)	Widely frowning face 	Unamused (37.1) Sulking (32.9) Feeling gloomy (24.3) Very sad (5.7)
Face with cold sweat 	Feeling sorry (54.3) Awkward (17.1) Sweating (11.4) Awry (2.9) Disappointed (14.3)	Frowning face with open mouth 	Worried (37.1) Shocked (24.3) Feeling blur (20.0) Frowning (18.6)
Thinking face 	Thinking (91.4) Focus (5.7) Curious (2.9)	Sneezing face 	Having flu (60.0) Sneezing (34.3) Smelly (5.7)
Expressionless face 	Annoyed (22.9) Speechless (20.0) Poker face (10.0) Expressionless (31.4) Awkward (15.7)	Rolling on the floor laughing 	Laughing loud (51.4) Too funny (49.6)
Face with rolling eyes 	Annoyed (25.7) Confused (21.4) Feeling bored (24.3) Gossiping (12.9) Disgusted (15.7)	Face with thermometer 	Feverish (71.4) Sick (28.6)

<p>Nerd face</p> 	<p>Nerd (21.4) Happy (15.7) Smiley with teeth (20.0) Smiley with glasses (8.6) Chill (20.0) Smart (14.3)</p>	<p>Tired face</p> 	<p>Tired (28.6) Lazy (28.6) Regret (21.4) Irritated (7.1) Weary (2.9) Annoyed (11.4)</p>
<p>Kissing with closed eyes/ Passionate kiss</p> 	<p>Kiss (74.3) Happy (11.4) Shy (14.3)</p>	<p>Money-mouth face/ Money minded</p> 	<p>Money face (92.8) Greedy (7.2)</p>

Emojis are very popular among undergraduates who are digital natives. They are the diverse users of digital messaging applications such as Whatsapp, Line, WeChat and Telegram. However, this finding of this research has shown that these digital natives, although are common users of such emoji, they do not interpret the smileys in the same way individually. They also interpreted the emoji differently that its intended meaning. Overall, the findings of this study indicated that there is plenty of meaning interpretation for each smiley. Out of the 75 smileys used as the variable in this research, only seven smileys which are Love, Kiss, Lying, Drooling, Sleepy, Crying, Delicious, were interpreted similarly by all the respondents (100%), whereas the rest was interpreted differently according to their understandings of the smileys' meaning. These smileys could be interpreted correctly as it is a common emoji that has been used regularly and the visual representation itself resembles the face expression of the emotional state. It could also be due to a specific symbol that is embedded in the visual representation that emphasize on its meaning. Nevertheless, some smileys are not yet well understood by the users of its intended meaning causing them to interpret the smileys based on their perception and understanding. The lowest percentages of correct interpretations (lesser than 50%) are mostly the smileys that has same intended meaning as other common smileys but has different visual expressions such as zipper face, hushed face, cold sweat, smiling face with halo, screaming with fear, unamused, flushed face, disappointed face, confounded face, fearful face, hugging face, teasing face, widely frowning face, nerd face, tired face, rolling eyes face, expressionless face, frowning face with open mouth, pouting face that looks like kissing, and worried face. The reason might be that users have their own perception of how certain affective state will be shown on facial expression, and the above mentioned smileys may not be what they have in mind.

Overall, the findings of this research indicate the use of smileys strongly depends on both the context and the community to which the same emoji is addressed similarly to the findings of Barbieri, Ranzano and Saggion (2016) research. The use of the smileys is unpredictable and socially determined. Smileys convey meaning through the graphic resemblance to human face emotions. It is understood that using smileys to convey nonverbal information that is often minimal in social media communication, however it is not well understood how people interpret the meaning of these emoji. It is based on the users' perception of the smiley meaning. The interpretation toward the smiley meaning used in the

digital messaging plays an important role in making impression about the text received. This finding of this research proves that there are a potential for misconstrue when using the smiley and emoji in general in digital communications.

DISCUSSION

Whatsapp Messenger is one of the popular social messenger applications that has replaced the traditional short messaging system (SMS) and contributes the mode of digital communication at present. It allows users to send real-time text messages, voice notes, videos, document as long the application is connected to the internet. It is a highly addictive application that could create a great impact on digital communication as a whole (Hashim, Abdullah, Isa & Janor, 2015). WhatsApp Messenger allows its' users to create profiles, upload status (images and video) to interact with each other, build and maintain connection, invite others to join a community group, and share user-generated content quickly and easily with up to 100 users in the same group (Hashim, Abdullah, Isa & Janor, 2015). In the aspects of the students' usage of this digital communication medium, they used its four main purposes: communicating among students; nurturing the social atmosphere; creating dialogue and encouraging sharing among student, and as a learning platform (Bouhnik & Deshen, 2014).

Although Whatsapp is considered as an innovation advancement in communication technology (Shamare, 2014), it does have some drawbacks, especially the exposure to false or unregulated information or media contents (Ahad & Lim, 2014) and the possibility of miscommunication as a result of misinterpretation of messages and visual cues (Ling, 2016). Moreover, the misinterpretations of the visual cues such as emoji's meaning could lead to a communication breakdown, and in some cases may damage relationships (Tigwell & Flatla, 2016).

Using emoji in digital text communication via Whatsapp gives the users a highly expressive manner to represent their feelings. There are two types of emoji; smiley and pictogram. Smiley is the face symbol used to indicate the sender's emotional state and pictographs are various visual metaphors such as hand gestures, vehicles, food, animal and many more. As noted before, smileys are thought to supplant facial expressions, which are absent in digital communication. This can also be observed in the WhatsApp conversations, where the smileys fulfill the function of the absent facial expressions. However, it is to be noted that many of the smileys offered by WhatsApp cannot really be used to visualize the sender's actual facial expression at the moment of sending the message (Hinz, 2015). Some of the smileys have been called "unrealistic" due to the fact that they cannot be produced by the sender or recipient in the very short time period of sending or reading the message (Hinz, 2015). Not only that, these smileys use may be intentional and acquire an ostensive status leading to a specific interpretation based on their own understanding. In general, human is often bad at assessing their own feelings and emotions, at least in a fine-grained way, and are even worse at putting these feelings and emotions into emoji such as smileys (Yus, 2014).

This research was done to investigate Malaysian undergraduates' interpretation of Whatsapp emoji especially smileys. These undergraduates are digital natives, who are the

diverse users of social media (Mustaffa & Ibrahim, 2015) and digital messaging applications such as Whatsapp (Mistar & Embi, 2016), for the purpose of education, relationship, communication, entertainment and information resources (Mustaffa & Ibrahim, 2015). It is stated that these students rate WhatsApp as a great societal connection that connects them to get and share the humongous worldwide information rapidly. It is also as part of their social media growth (Mistar & Embi, 2016).

The finding of this research has shown that these students, although are common users of Whatsapp and an ardent user of the smileys, they do not interpret them in the same way and sometimes differently from its intended meaning. Therefore, there are potentials of misconstrued intention when using these emoji in digital communication that causes miscommunication just because of the variation in emoji interpretations. This research's findings are similar to other researches. There are increasing fragmentation of smileys which may lead to misunderstanding and misuse due to the diversity and inclusiveness in emoji (Hu et al., 2017). Miller et al. (2016) stated that emoji especially smileys play increasingly important roles in digital communications, however its' use has resulted in compromised communication experiences, social awkwardness, and even cultural offenses due to the ambiguity, misinterpretation, and cultural difference (Miller et al., 2016). All these issues point to the meanings of emojis, and they may either appear as a result of the misinterpretation of its' intended meaning. This cause of this misinterpretation could be due to the usage of different mobile operating platform, cultural and belief perceptions of the users.

CONCLUSION

The finding of this study supports previous researches' output and the result suggests that, there are clear opportunities for miscommunication to occur because of the undergraduates' misinterpretation of the smileys' meaning. Psycholinguistic theory suggests that a message's interpretation must be consistent between two people in order to avoid communication outdare. In this research, the authors have surveyed 210 Malaysian undergraduates of their interpretation of the 75 smileys used in the Whatsapp Messenger and it was found that there is animosity in terms of the interpretation. Many respondents mentioned that there were some cases of miscommunication or confusion that arose due to the different interpretation of the smileys. These cases provide further evidence that using emojis in digital communication are prone to miscommunication if the sender and the receiver of the social message did not interpret the emoji similarly. Even though the official meanings of the emojis are decided, the use of emojis online is predictable and socially-determined by community context and culture.

Therefore, this research would suggest that it will be very informative and useful for Whatsapp Messenger users if each emoji is given a 'touch' pop-up notification or a guide section on the Whatsapp application that indicates their intended meanings. This will help the users to understand the actual meaning of the emoji and use it in proper context to avoid misinterpretation in the digital communication. It is hoped that this study will make some small contribution to understanding the meaning of the emoji especially the smileys, and as aids in generating desired implications in digital communication.

The authors also suggest that for future research, the respondents should be on a larger scale. This research involved a relatively small sample of the undergraduate students and that might not be representative of the whole population. A more comprehensive instrument that could encompass more adjective should also be used for future studies. Further research should also emphasize on the reasons the emoji interpretation differs between users. This could bring greater understanding of emoji usage as a medium in the human computer interaction.

The findings of this study will redound to the benefit of the society, considering that Whatsapp and emojis plays an important role in the digital conversations today. Thus, it is hoped that this study will make some small contribution to understanding the role played by emojis as signifiers, and as aids in generating desired implications of conversations in our technological age.

ACKNOWLEDGEMENT

The authors would like to express their gratitude to the College of Arts and Sciences (CAS), Universiti Utara Malaysia for the College grant support provided to complete this paper. The authors would also like to thank the students who voluntarily participated in the research and provided sincere feedback in the survey.

BIODATA

Subashini Annamalai currently serves as a senior lecturer at the School of Multimedia Technology and Communication, Universiti Utara Malaysia. She obtained her bachelor degree in Information Technology from Universiti Utara Malaysia and her Masters in Instructional Multimedia from Universiti Sains Malaysia. She has received her doctorate specializing in Instructional Multimedia Technology from Universiti Sains Malaysia. Her research interests include multimedia application development, human computer interaction, programming and educational technology. Email: subashini@uum.edu.my

Sobihatun Nur Abdul Salam is a Senior Lecturer in Universiti Utara Malaysia and a PhD holder from Universiti Sains Malaysia. Her area of expertise is in Persuasive Multimedia Learning Environment. She is interested in Persuasive Technology, Educational Multimedia and Interaction Design field. She has done research under the Fundamental Research Grant Scheme, Research Acculturation Grant Scheme, Knowledge Transfer Program funded by the Malaysia Ministry of Higher Education, research grant funded by Malaysian Communications and Multimedia Commission, and also by Universiti Utara Malaysia. Email: sobihatun@uum.edu.my

REFERENCES

- Amry, A. B. (2014). The impact of WhatsApp mobile social learning on the achievement and attitudes of female students compared with face to face learning in the classroom. *European Scientific Journal*, 10(22), 116-136.
- Bansal, T., & Joshi, D. D. (2014). A study of students' experiences of mobile learning. *Global Journal of Human-Social Science*, 14(4), 26-33.
- Barbieri, F., Ronzano, F., & Saggion, H. (2016). What does this emoji mean? A vector space skip-gram model for Twitter emojis. *Proceedings of Language Resources and Evaluation Conference* (pp. 3967-3972).
- Bere, A. (2013). Using mobile instant messaging to leverage learner participation and transform pedagogy at a South African University of Technology. *British Journal of Educational Technology*, 44(4), 544-561.
- Bouhnik, D., & Deshen, M. (2014). WhatsApp goes to school: Mobile instant messaging between teachers and students. *Journal of Information Technology Education: Research*, 13, 217-231.
- Churches, O., Nicholls, M., Thiessen, M., Kohler, M. & Keage, H. (2014). Emoticons in mind: An event-related potential study. *Journal of Social Neuroscience*, 9(2), 196-202.
- Cramer, H., de Juan, P., & Tetreault, J. (2016). Sender intended functions of emojis in us messaging. *Proceedings of the 18th International Conference on Human Computer Interaction with Mobile Devices and Services* (pp. 504–509). Florence, Italy.
- Danesi, M. (2017). *The Semiotics of Emoji: The Rise of Visual Language in the age of the Internet*. London: Bloomsbury Publishing Plc.
- Gullberg, K. (2016). *Laughing face with tears of joy: A study of the production and interpretation of emojis among Swedish University Students*. Retrieved from <http://lup.lub.lu.se/luur/download?func=downloadFile&recordId=8903284&fileId=8903285>
- Hashin, N. A., Abdullah, N. L., Isa, M. R., & Janor, H. (2015). WhatsApp messenger application among business students in Malaysia -an exploration. *Jurnal Personalia Pelajar*, 18(2), 130-141.
- Hinz, L. (2015). The functions of emoticons and pictograms in instant messengers. *10plus1: Living Linguistic*, 1, 92-103.
- Kelly, R., & Watts, L. (2015). *Characterising the inventive appropriation of emoji as relationally meaningful in mediated close personal relationships*. Paper presented at European Conference on Computer Supported Cooperative Work (ECSCW), Oslo, Norway.
- Lebduska, L. (2014). Emoji, emoji, what for art thou? *Harlot: A Revealing Look at The Arts of Persuasion*, 1(12). Retrieved from <http://harlotofthearts.org/index.php/harlot/article/view/186/157>
- Ling, H. Y. (2016). *Investigating the perceptions of Secondary School students in Kuching, Sarawak in using Whatsapp for Communication and Learning Purposes* (Unpublished Masters Dissertation). Wawasan Open University: Penang.
- Lo, S. K. (2008). The nonverbal communication functions of emoticons in computer-mediated communication. *CyberPsychology & Behavior*, 11(5), 595-597.
- Logan, M. (2015). *Where to find that missing emoji you needed*. Retrieved from <https://www.wired.com/2015/06/find-missing-emoji/>

- Lu, X., Ai, W., Liu, X., Li, Q., Wang, N., Huang, G., & Mei, Q. (2016). Learning from the ubiquitous language: An empirical analysis of emoji usage of smartphone users. *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing* (pp. 770–780). Heidelberg, Germany.
- Miller, H., Thebault-Spieker, J., Chang, S., Johnson, I., Terveen, L., & Hecht, B. (2016). “Blissfully happy” or “ready to fight”: Varying interpretations of emoji. *Proceedings of the 10th International Conference on Weblogs and Social Media* (pp. 259–268). Cologne, Germany.
- Mistar, I., & Embi, M. A. (2016). Students’ perception on the use of WhatsApp as a learning tool in ESL classroom. *Journal of Education and Social Sciences*, 4, 96-104.
- Muhammad, G. (2016). *The intention of using emojis in WhatsApp messages among young* (Unpublished bachelor thesis). Universitas Negeri Malang, Indonesia.
- Mutaffa, C. S., & Ibrahim, N. Z. M. (2014). Persepsi dan penggunaan media sosial dari perspektif ibu bapa: Satu analisis kualitatif. *Jurnal Komunikasi - Malaysian Journal of Communication*, 30(Special Issue), 43-74.
- Negishi, M. (2014). Meet Shigetaka Kurita, the father of emoji. *The Wall Street Journal*. Retrieved from <http://blogs.wsj.com/japanrealtime/2014/03/26/meet-shigetaka-kurita-the-father-ofemoji/>
- Novak, P. K., Smailovic, J., Sluban, B., & Mozetić, I. (2015). Sentiment of emojis. *PloS one*, 10(12), 1-21.
- Oxford Dictionary*. (2015). Oxford Dictionaries Word of the Year 2015 is...Retrieved from <http://blog.oxforddictionaries.com/2015/11/word-of-the-year-2015-emoji/>
- Seiter, C. (2015). The psychology of emojis. Retrieved from <http://thenextweb.com/insider/2015/06/23/the-psychology-of-emojis/#tnwuEimTNbx>
- SwiftKey. (2015). *SwiftKey Emoji Report* (April 2015). United State: TouchType Limited.
- Tigwell, G. W., & Flatla, D. R. (2016). "Oh that's what you meant!": Reducing emoji misunderstanding. *MobileHCI '16 Proceedings of the 18th International Conference on Human-Computer Interaction with Mobile Devices and Services Adjunct* (pp. 859-866). New York.
- Touch, C., & Kanjo, E. (2016). The roles of emojis in mobile phone notifications. *Proceedings of the 2016 ACM International Joint Conference on Pervasive and Ubiquitous Computing* (pp. 1560-1565). Germany.
- Walther, J. B., & D’Addario, K. P. (2001). The Impacts of emoticons on message interpretation in computer mediated communication. *Social Science Computer Review*, 19(3), 324–347.
- Wicke, P. (2016). *Ideograms as semantic primes: Emoji in computational linguistic creativity* (Unpublished Bachelor Thesis). University of Osnabrück, Germany. Retrieved from https://www.researchgate.net/profile/Philipp_Wicke/publication/316168050_Ideograms_a_s_Semantic_Primes_Emoji_in_Computational_Linguistic_Creativity/links/58f4b823aca27289c21c9336/Ideograms-as-Semantic-Primes-Emoji-in-Computational-Linguistic-Creativity.pdf
- Yus, F. (2014). Not all emoticons are created equal. *Linguagem Em (Dis) Curso*, 14(3), 511-529.