A comparison of empathic communication pattern for teenagers and older people in online support communities

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(Received 20 September 2010; final version received 13 April 2011)

This article reports a study that investigated the occurrences of empathy in online support communities for teenagers. Qualitative content analysis with 400 messages from a discussion board about depression was used to identify how empathy was expressed in the specific online communication. Emphasis was also placed on the comparison of this age group to older people, by comparing the results with those from a previous study on empathy in an online support community about depression for older people. Specifically, the analysis focused on the frequencies of the categories of the code scheme, linguistic characteristics of the communication content, the occurring components of empathy, and the roles as well as activities of the members. From our analysis, we concluded that young people exchanged a substantial amount of empathic emotional communication when participating in an online support community, and they communicated on a more personal level compared to older people, who tended to engage in a more formal communication. In addition, teenagers also showed a high level of understanding but lower level of concern compared to older persons when expressing empathy online.

Keywords: empathy online; teenage; age differences; online community; content analysis

1. Introduction

Since its inception, the World Wide Web has facilitated the widespread development of various online services such as e-commerce, e-learning, etc., supported by web technology and different forms of communication software (Preece et al. 2003). With computer-mediated communication (CMC) becoming more affordable and accessible, there has been an increase in social network sites such as Myspace\textsuperscript{1}, Facebook\textsuperscript{2} and Friendster\textsuperscript{3}. Kollock and Smith (1999) argued that sociological challenges are greater than technological challenges because of the impact they have on successful online communities. Researchers studying those challenges have focused on observing emotional communication online (e.g. Preece 2000) and investigating linguistic and communication patterns (e.g. Herring 2004) as well as the actual content of messages in online communities. As empathy is believed to be the root of meaningful and deep communication (Levenson and Ruef 1992, Ickes 1997), there has been an increasing interest in the investigation of online empathy (Preece 1999) since its presence has been observed and experienced in online communities (Preece and Ghozati 2001).

Previous research has explored the factors that influence the level of empathy in online communities, such as gender balance (Preece 1999a), and the level of moderation (Preece and Ghozati 2001). Empathy in online communities for older people has also been subsequently analysed in depth (Pfeil and Zaphiris 2007). In our research, we investigated the occurrence of empathy in an online support community for teenagers. The main motivation for selecting this demographic group was that teenagers have largely been overlooked in the context of online empathy despite their growing numbers in the online communities (Lenhart et al. 2005).

In general, we aimed to explore and analyse the social interaction within teenagers in online support communities by observing the emotional communication with a particular focus on empathy. Specifically, our study intended to address the following research questions:

1. What do teenagers talk about in support communities?
2. How do they support each other?
3. What forms of support do they experience and offer?

Apart from these, the study also compared the difference between the characteristics of teenagers and older people.

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The article is structured as follows: first, literature on online empathic communities and social support is reviewed and discussed. Second, the method used to collect and analyse the data is described. Third, results and findings are presented, followed by a discussion. The article ends with a conclusion that highlights the future direction of research in this area.

2. Literature review
The usage of the internet has evolved from textual archives to a communicative media, which is driven by the introduction and development of CMC. December (1997) defines CMC in the context of internet-based communication as:

‘the process by which people create, exchange, and perceive information using networked telecommunications systems (or non-networked computers) that facilitate encoding, transmitting, and decoding messages’.

CMC can be classified by modality (Chafe 1982), text or discourse type (Longacre 1996), genre (Biber 1988) as well as discourse usage in CMC environment from the perspective of medium and situation (Herring 2007). CMC has several features that can be seen as advantageous over traditional face to face (F2F) communication. The nature of CMC provides the capability to free humans from the constraints of time and distance in communication (Collins and Berge 1995), and help those who are isolated due to geographical distance, disabilities, etc., to overcome their limitations (Parks and Floyd 1996). Users of CMC are usually able to give longer responses, participate in multiple conversations simultaneously as well as allow recall of the development of each topic conversed.

Within academia, online communities have been defined as 'people who come together for a particular purpose, and are guided by policies [. . .], and supported by software' (Preece and Maloney-Krichmar 2005) and are also sometimes referred to as virtual communities (Rheingold 1993, Koh et al. 2007). Examples of online communities can be found in chat rooms, discussion boards, newsgroups and wikis. The rapid increase of online communities has led to the development of social networking, and Peck et al. (2007) (in Brandtzæg and Heim 2008) stated that online communities in social networking can be divided into five different categories, namely (i) person-oriented, (ii) professional-oriented, (iii) media-oriented, (iv) virtual world and (v) mobile communities. Studies have suggested that people generally participate in more than one online community that would serve several different purposes of their needs (Wellman 2001).

Several issues regarding CMC and online communities are widely discussed and debated within the research communities. Given that text is the most important component in CMC, non-verbal cues normally expressed in F2F communication need to be represented in alternative means, and this can lead to misunderstanding (Rice 1993, Walther et al. 1994, Kruger et al. 2005). However, Derks et al. (2008) in their recent empirical study found no significant difference in emotional expression between CMC and F2F communication, and in fact identified more frequent and explicit emotional communication in CMC compared to F2F settings. The issue of identity has also caught the attention of CMC scholars. Users are allowed to create and play with their identity by providing false personal information and recreate alternative identities, and some even abuse the online communities by flaming other users (Culnan and Markus 1987, Reid 2002). Herring (2007) stated that efforts have been made to filter and control the online environment from the abusers through the implementation of reputation systems. However, this could potentially harm users with anonymous identities, who generally feel safer to act when they are anonymous (McKenna et al. 2002, Peter et al. 2005) and are more likely to speak freely with less anxiety when their offline identity cannot be recognised.

The constant availability of online communities is also seen as a huge advantage of online groups (King 1994). Even though the time delay between the responses could potentially affect the effectiveness of the communication, in an online space people tend to maintain various networks (Wellman 2001), thus increasing the likelihood of getting a response compared to F2F communication. The reliability of contents is also particularly important for online communities. Trust and honesty play a crucial role to the success of an online community (Preece and Maloney-Krichmar 2005), which can be developed from the experience and reputation of the community (Preece 2000, Walther and Boyd 2002). Widely implemented solutions to improve trust within a community includes implementing moderated environments, ensuring security and confidentiality rules, addressing codes of conduct, governance policies as well as nurturing community culture.

The social relationship in online communities is also being explored extensively. Despite the high participation rate in online communities, the turnover rate was quite high with only 44% of members posting more than one message after joining a community (Joyce and Kraut 2006). Only few users of online communities form strong relationships among each other. However, the interaction within online communities still allows for the formation of weak ties among
members of the online communities (Rheingold 1993). It is also found that, in general, it is easier to make friends in CMC environment compared to F2F even though relationships built from CMC are weaker than F2F (Wellman and Gulia 1999). However, it is still possible to develop a strong relationship in CMC environment through the investment of time (Walther 1995).

2.1. Teenagers and CMC

Today’s cohort of teenagers grow up as digital natives (Prensky 2001) and are integrating technology naturally in their everyday tasks. Studies have found that 93% of teens, aged 12–17, go online, of which 63% use the internet to receive news and 38% participate in online shopping. The study also cited that 28% of teens go online to look for information about health, physical fitness or dieting (Lenhart et al. 2007a).

Teenagers are also the most likely age group to use the internet to communicate with family and friends (Jones and Fox 2009). They adopt a multitude of online communication tools for a variety of purposes. They use email and messaging tools to communicate, social network sites to keep in touch with peers and chat rooms or web boards to find support and socialise. This exposure of teenagers to the internet from a young age gradually increases their awareness of the risks of socialising online, as 66% of teenagers participating in social networking sites set their online social website profile invisible to strangers (Lenhart and Madden 2007). The behaviour of teenagers in the online environment has also been of interest to researchers. Zaphiris and Sarwar (2006), for instance, found that teenagers are highly connected to each other, communicate often and share much information among each other using the internet. It was also found that teenagers tend to socialise online with users around their age group (age ± 2 years) (Arjan et al. 2008). The fact that some teenagers are comfortable in going online to socialise, find health-related information and are highly connected to people of their age group (Arjan et al. 2008) suggests the importance of online support groups for teenagers.

2.2. Online support communities

Empathy is often defined as ‘putting oneself in someone else’s shoes’ (Håkansson and Montgomery 2003) and can also be seen as ‘a form of complex psychological inference in which observation, memory and reasoning are combined to yield insights into the thoughts and feelings of others’ (Ickes 1997). Håkansson and Montgomery (2003) view empathy with four constituents, namely (i) understanding, (ii) emotions, (iii) similarity and (iv) concern. A majority of researchers agree that ‘understanding’ is an obvious aspect of empathy (Håkansson 2003) as it is crucial that the target (person that needs empathic support) provides some background knowledge so that the empathiser (person that provides empathic support) can establish some understanding of the situation. Emotions play a central role in empathy (e.g. Batson et al. 2002) and can be seen in both the target (Ickes 1997) and the empathiser (Batson et al. 2002). It is thought to be necessary in empathy for both target and empathiser to feel the same emotion (Håkansson 2003). Similarity is also considered important. If the empathiser and the target share the same experience, it promotes mutual understanding and strengthens the relationship (Håkansson 2003). It is more common to empathise between people with similar experience in comparison to people who are not (Davis 1996). As for ‘concern’, Håkansson (2003) found that the feeling of concern is crucial for seeing empathy as an interpersonal phenomenon. Hoffmann also identified a relationship between empathy and empathiser’s feeling of concern towards the target (Hoffman 2000).

The existence of online or virtual communities has been greatly influenced by Rheingold’s (1993) study of Whole Earth Lectronic Link (WELL), where he found that people maintain strong relationships in online environments by supporting each other’s suffering from health problems (Rheingold 1993). This has led to the term online support communities, where people tend to share a common interest online (Herring 2004). Online support communities existing today provide support on a variety of topics and have been claimed to be effective in increasing the overall well-being of participants, by providing emotional relief (Barak et al. 2008). Teenagers in particular have taken advantage of the anonymity, easy access and availability of such online communities to receive advice and support on topics such as sexual health, interpersonal relationships and even eating disorders (Subrahmanyam 2008). The fact that a person’s offline identity is hidden in online support communities reduces the anxiety and allows participants to reveal their emotions and thoughts to others more freely (Peter et al. 2005). Also, people can write and read messages whenever they want and can put in as much time and effort as they wish (Coulson et al. 2007). In addition, people can concentrate on what they want to write in a message without having to listen to another person at the same time. This might enhance the quality of the social support as more time and effort can be put into a supportive reply (Walther and Boyd 2002).

Often, people turn to online support communities because they cannot find the kind of support that they need in their offline relationships (Walther and Boyd...
2002, Winefield et al. 2003, Buchanan and Coulson 2007). For example, Turner et al. (2001) found that members participate more in online support communities when the depth of online support is high and the depth of offline support is low. Similarly, Cummings et al. (2002) state that people who experience a low level of offline support are more likely to participate in online support communities.

Studies have also shown that many of these online communities contain a high proportion of empathic content (Preece 1999). Empathetic accuracy or ‘the ability to accurately infer the specific content of other people’s thoughts and feelings’ has been shown to be related to the development of interpersonal trust, which has been identified as a vital component of successful online communities. In addition, factors, such as gender balance, have also been shown to influence empathetic communication as women were found to be more empathic than men (Preece 1999a). However, in support communities, gender balance was found to have less influence as support communities tend to be highly empathic regardless of gender balance (Preece and Ghozati 2001) when compared to other online communities such as religious, sports, cultural or social communities.

In addition to users’ characteristics, the medium that is used for the communication impacts on the kind of social support and empathy that is exchanged. In order to study the influence of three different types of CMC (chat room, one-to-one instant messaging and online forum) on the kind of support that older people exchange in these settings, Xie (2008) studied an online community for Chinese older people, which accommodates for all three communication types. She interviewed 33 older people and observed the communication activities on the online forum and in the chat room. Her findings show that chat rooms are primarily used for companionship, whereas online forums are primarily used in order to exchange informational support. Moreover, one-to-one instant messaging was found to be used in order to exchange emotional and instrumental (practical) supports (Xie 2008).

Pfeil and Zaphiris (2007) took a more specific look at how older people communicated in online support groups and developed a code scheme by analysing 400 messages from an online support community (Table 1). They suggested that empathic communication could be triggered by ‘self disclosure’ that was followed by empathic responses, which could be either ‘self disclosure’ of others or support. Through the use of Social Network Analysis (SNA), research has found that teenagers were highly connected, communicated more and had higher reciprocity (Zaphiris and Sarwar 2006) but had more negative emotions when compared to older people (Gross et al. 1997).

3. Methodology

3.1. Online community selection and data collection

For the purpose of this study, we needed to find a suitable data source to investigate empathic content in online communities for teenagers. We selected the online discussion forum TeenHelp.org as our data source.

<table>
<thead>
<tr>
<th>Table 1. Code scheme for empathy online.</th>
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<tr>
<td><strong>Category</strong></td>
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<tr>
<td>Light support</td>
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<tr>
<td>Community building</td>
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<tr>
<td>Technical issues</td>
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<tr>
<td>Deep support</td>
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<tr>
<td>Self-disclosure</td>
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<tr>
<td>Medical facts</td>
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<td>Slightly off</td>
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source. Teenhelp.org is an anonymous support community managed by a group of volunteers to provide help and advice to teenagers on the internet. This community was chosen for several reasons. First, all contents can be accessed publicly without the need to login, and it is stated clearly on the front page that this site is completely anonymous. This helps to ensure that ethical issues related to virtual ethnography can be successfully resolved. Second, the community is very active with new contributions posted every day by its members. Also, one of the topics in the discussion forum is depression and suicide, which can be highly empathic. The first 400 messages from the earliest threads were extracted from the discussion forum and analysed with the help of a content analysis tool MAXqda (Verbi GmbH 2005). All messages were imported into the tool as a chunk of text, organised in groups of threads and in the same order as on the discussion forum.

3.2. Data coding
To turn the data into meaningful codes for analysis, a deductive analysis approach (Mayring 2000) was used. A code scheme and a slightly reworded version of a rule sheet developed by Pfeil and Zaphiris (2010) were employed as basis for textual coding. The code scheme consists of 23 codes, which were grouped into seven categories, namely light support, community building, technical issues, deep support, self-disclosure, medical facts and slightly off (Table 1). The messages extracted from the discussion board were divided into text units that share common meaning. The unit must fit into one of the codes or must be further separated until it does and must also be smaller than the message. Once the unit is identified, it would be coded (assigned a code from one of the 23 codes) using the rule sheet, which is a decision chart, to promote consistency in the coding process.

In order to ensure that the tools and guides in the coding process provide reliable and consistent results, an inter-coder reliability test was undertaken. In our test, two researchers used the code scheme and the rule sheet independently to code a sample of 10 messages. The reliability of the coding depends on the agreement level of both researchers, which can be measured by the segmentation as well as coding reliability using Cohen’s KAPPA (Cohen 1960) score. In our inter-coder reliability test, we calculated a Cohen’s KAPPA (Cohen 1960) of 0.67 for the codes, while we achieved a segmentation reliability of 76%. The Cohen’s KAPPA scored a substantial level according to Stemler (2001) in terms of strength of agreement, which considered a score in the region of 0.61 to 0.80 to be satisfactory.

3.3. Data analysis
After inter-coder reliability was established, the codes were analysed from several perspectives. The frequency of codes and categories was calculated to give an overall impression of the kinds of conversation that had been taking place in the online community.

Linguistic Inquiry and Word Count (LIWC), a text analysis software that examines word categorisation in communication (Pennebaker et al. 2007), was used to analyse the text that was coded into each of the seven categories. This is to determine the frequency of words belonging to LIWC word categories, namely (i) self-references, (ii) social words, (iii) positive emotions, (iv) negative emotions, (v) overall cognitive words, (vi) articles and (v) big words. An example of the words in each category is shown in Table 2.

Then, the relationship between the analysed codes and the ‘offline characteristics of empathy’ was explored. As aforementioned, research has found that empathy constitutes four components, namely (i) understanding, (ii) emotions, (iii) similarity and (iv) concern (Håkansson 2003). Codes in the category deep support could serve as indication of understanding. Emotions on the other hand, can be detected from emotional codes (reassurance, deep emotional support, light encouragement, etc.), which occurred more often than any other factual codes (factual information, factual question, technical problem, etc.). Similarity can be detected from the code ‘similar situation’ and sometimes can be seen in the code ‘togetherness’. The last constituent, concern, can be detected from codes ‘community building’, ‘own activity’ and ‘togetherness’.

The overall participation level of members was then interpreted by analysing the average number of messages posted per user, while the number of messages posted by each member indicated individual participation. The social role of the participants as either target, empathiser or a mixture of both was also explored. The targets usually posted trigger codes (medical story, general feeling, narration and ask for help), while empathisers replied with empathic responses (similar situation, general feeling, deep

<table>
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<tr>
<th>Dimensions</th>
<th>Examples</th>
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<tbody>
<tr>
<td>Self-references</td>
<td>I, me, mine, we, us, our</td>
</tr>
<tr>
<td>Social words</td>
<td>Mate, talk, they, child</td>
</tr>
<tr>
<td>Positive emotions</td>
<td>Love, nice, sweet</td>
</tr>
<tr>
<td>Negative emotions</td>
<td>Hurt, ugly, nasty</td>
</tr>
<tr>
<td>Overall cognitive words</td>
<td>Cause, know, ought</td>
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<tr>
<td>Articles</td>
<td>An, a, the</td>
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<tr>
<td>Big words</td>
<td>Words with more than six letters</td>
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emotional support, reassurance, give help, light encouragement, best wishes, humour and interest). Trigger and empathic responses code posted by members can indicate their role either as target, empathiser or both.

3.4. Ethical considerations

It is generally agreed that consent is not required for every research project, as the distinction whether the data collected is private or public has a great influence on determining whether consent is required or not (Frankel and Siang 1999). At the time of data collection (summer 2008), the content of TeenHelp.org was publicly available to all internet users. Therefore, it can be argued that people interacting in such an open online forums and ‘chats’ can be subject to scientific study without their consent. Nonetheless, ethical consideration was carefully taken into account when carrying out this study. In specific, the user names of the members were not revealed in the study. By focusing on roles and categorising the users’ behaviour and structural positions, we analysed our data independently from the person who sent the message. It was impossible to identify the users’ identity, and their anonymity was thus strictly protected.

4. Findings and discussion

As suggested earlier, the results from data coding were analysed from the frequencies of the categories and codes, and the categories identified from the LIWC tool. The results were also compared to the components of offline empathy, and the roles of the members in the community were also investigated. In addition, the results from each analysis were compared to the results we obtained from online support communities for older people (Pfeil and Zaphiris 2007) whenever relevant.

4.1. Code frequency

An average of 2.04 codes were found in each message, supporting the finding that people tend to include several topics in one message (Herring 1999). This was less than the average 2.57 codes per message from online support communities involving older people (Figure 1).

From Figure 1, the category ‘deep support’ appeared to occur most frequently in the messages. In the ‘deep support’ category, emotional support had the highest proportion followed by ‘give help’. This shows that members of the community were keen to provide support to others and rather than just reassuring the target, they strove towards a solution to a problem.

The ‘self-disclosure’ category was second in the frequency of occurrence. Delving into its codes, ‘general feeling’ contributed to the largest proportion of ‘self-disclosure’ category. This was consistent in the case of online support communities for older people, where it occurred commonly in the context of emotions. This suggested that ‘self-disclosure’ was often expressed emotionally. The category ‘community building’ was found to be lower in frequency than the results from the study involving older people. This showed that teenagers tended to help each other in a direct manner by providing ‘deep support’ rather than expressing the importance of the community. Perhaps, it was due to the difference in prior experience in using technology. Teenagers are often considered as ‘digital natives’, and therefore, the idea of virtual community comes naturally as part of their daily life. On the contrary, being ‘digital immigrants’, older users need constant reassurance regarding the presence of community in a virtual setting (Prensky 2001).

Hupet et al. (1993) in their study compared the way in which the young and the elderly co-operated to achieve mutual acceptable reference and found that the elderly were more likely to be idiosyncratic in their interpretation of their referents. This is further supported by our study that showed teenagers sent fewer messages containing text units coded into the category ‘slightly off’ codes compared to older people. Finally, the lower percentage of codes in the ‘technical issues’ category when compared to the older people study suggests that older people generally faced more technical difficulties in finding their way in using computer, as one would expect.

4.2. Linguistic Inquiry and Word Count

The results of LIWC analysis were presented in respect to the seven dimensions, namely self-reference, social words, positive emotions, negative emotions, overall
cognitive words, articles and big words. Frequencies of each category were compared to average frequencies of the overall messages, as well as ‘standard personal message’ frequencies and ‘standard formal message’ frequencies derived from LIWC Inc. (2008). A comparison of the frequencies of the words in each dimension and category between the online support communities of teenagers and older people can be seen in Table 3.

Low percentage of ‘self-references’ (words I, me, myself, etc.) indicates insecurity, nervousness and anxiety due to low self-confidence of the poster (LIWC Inc. 2008). When compared to the study with older people, in the category ‘self disclosure’, the percentage of self-referencing words used by teenagers (13.8%) appeared to be above the standard personal frequency (11.4%), while older people (10.32%) were below the personal frequency. This implied that teenagers were more confident and felt at ease when they talked about themselves in a virtual environment.

High percentage of words in the ‘social words’ category (i.e. you, they, someone) is related to social connectivity (LIWC Inc. 2008). The percentage of social words found in the overall messages of teenagers (12.58%) was higher than the standard personal (9.5%) and formal frequencies (8.0%), suggesting the relationship between them was quite social-oriented. The percentage of social words in the messages was considerably lower in the case of older people (8.49%). This suggested that messages appeared to be more personal for teenagers, while for older people it was more formal. In addition, as teenagers tended to have a larger online social network compared to older people (Arjan et al. 2008), the results may suggest that teenagers were much more comfortable when socialising online, thus resulting in highly personal social words rating. Another difference when comparing to older people was that in resolving technical issues, teenagers showed high percentage of personal social words, while older people tended to be very formal. This again might be a reflection of young people being digital natives who feel more personally close to technology than older users.

The dimension ‘positive emotions’ categorises the occurrences of words and often relates to positive behaviour or feelings. The overall messages of positive emotions words (3.29%) were higher than the standard personal frequencies (2.6%). This showed that young people treated online support groups with personal positive emotions. Categories of messages that encourage positive thinking especially ‘community building’ can be seen to have high positive emotions. Findings in positive emotions were shown to be consistent with finding from older people (2.83%), which is also higher than the standard personal frequencies, thus indicating that there were no apparent age differences when it came to the positive emotions content in online support groups.

The dimension ‘negative emotions’ groups the occurrences of words associated with negative behaviour and feelings. High percentage in negative emotions indicates pessimism in the poster (LIWC

<table>
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<th>Table 3. The frequency of words (in percentage) of each category from the LIWC analysis. Data of older people is shown in the following table.</th>
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<tbody>
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<td><strong>Category</strong></td>
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In a support community that deals mainly with depression, the negative emotions words in the overall content (3% for teenagers) were found to be higher than the average personal standard (2.6%), which was expected. Similar to positive emotions, this indicates that emotional content was presented in a personal way. In comparison to negative emotions of older people, the results were quite similar except that older people provided deep support with much more pessimism. Although there were slight differences in its personal text, the results still suggested that both young and older people were personal when posting emotional content.

A high percentage of the overall ‘cognitive words’ could imply high level of member participation in terms of relevance to the topic of the discussion group. A high percentage of cognitive words were found in categories such as ‘self disclosure’, ‘light support’ as well as ‘deep support’. This was crucial to the depression topic as it was an indication that the members were well engaged. On the other hand, non-depression-related chat such as ‘slightly off’ category overall appeared to have low cognitive words (6.68%). The findings were consistent with results from older people except in the category ‘medical facts’ (6.05% for teenagers and 8.14% for older people), which can be explained through the fact that more medical-related concerns come with aging. Overall, there seemed to be no age difference in terms of the quality of engagement for both older people and teenagers.

High occurrences of articles (a, an, the) suggest ‘concrete and impersonal’ writing style of the poster (LIWC Inc. 2008). The messages of online support communities for teenagers appeared to have a low percentage of articles (3.74%), suggesting that the content of this discussion group was presented in a rather personal manner. When compared to the findings from older people (5.64%), the percentage of articles in the overall content for teenagers was below the standard personal (5%), while for older people it appears to be slightly higher than standard personal percentage. Again, this implies that teenagers supported each other in a more personal manner compared to older people.

The ‘big words’ dimension groups words that have more than six letters and can be seen as less rich in its emotion (LIWC Inc. 2008). The overall content (12.07%) was slightly below the standard personal level (13.1%), which indicated the presence of emotional content. The results were very similar when compared to results from older people (13.63%), thus indicating the similarity in terms of emotional content exchanged in the online communities of both age groups.

4.3. Components of empathy

In this section, we investigate the occurrences of empathetic components with teenagers according to the four components identified by Håkansson (2003), namely understanding, emotions, similarity and concern. ‘Understanding’ can be seen to take place in online discussion boards when an empathic response follows a message posted by a target (person that needed empathic support). The degree of understanding can be further interpreted from the category ‘deep support’. Our result suggested that teenagers showed a higher degree of ‘understanding’ (the percentage of messages containing ‘deep support’ was 85% for teenagers and 38% for older people) when compared to older people. This might be because teenagers were able to set conversation context more quickly with familiar counterparts as opposed to older people (Horton and Spieler 2007).

The online support community for teenagers also had a slightly higher percentage of emotional codes (reassurance, deep emotional support, light encouragement, thanks, humour, best wishes, general feeling, similar situation, ask for support and togetherness). A large proportion of the emotional codes in the online community for teenagers was contributed by the code ‘deep emotional’ support. In the case of older people, the code ‘general feeling’ was the major contributor with other categories contributing quite evenly. This may suggest that older people expressed their emotions quite evenly in various ways, while younger people tended to express their emotions via fewer channels.

Occurrences of concern can be seen in some components within the category ‘community building’ (such as the codes ‘togetherness’ and ‘own activity’). Teenagers scored a lower percentage (older people’s percentage was 26% and in the teenagers’ case 8%) in terms of concern, and this showed that teenagers, when communicating online, did not show too much of their empathy by concerning about each other. It was interesting to note that teenagers expressed their concern more often through the code ‘togetherness’, while older people via the code ‘own activity’. This may suggest that older people could be a little egocentric compared to teenagers when communicating empathically online.

As for similarity, there was no significant difference between older people and teenagers in the overall percentage (older people 20% and teenagers 19%), but older people did seem to express similarity through the code ‘togetherness’ (12%) rather than the code ‘similar situation’ (8%), while for teenagers it was the opposite (the code togetherness constituted 7% and similar situation 12%).
4.4. Activity and roles of members

Of the 142 members investigated, only nine members posted more than 2% of the messages, while the majority posted less than 1%. Members who posted more than 2% of messages could be regarded as active members, and they contributed mainly with the codes ‘give help’ and ‘deep emotional support’. The less active members on the other hand posted a mixture of codes.

Of 63 members who posted trigger codes, 36 of them posted only trigger codes, while of 101 members who posted empathic support, 64 of them posted only empathic codes. This meant that 25% of members (36 of 142 members) were targets, 45% of members (64 of 142 members) were empathisers, while the remaining (30%) were both targets and empathisers. This was similar to the online support community for older people, where members did not stick to one specific role. This could be because 81% of the members posted less than 1% of the messages, thus reducing the chance of members having multiple roles. However, active members (posted more than 2% of messages) were more likely to have multiple roles.

For the online community for older people, there was an average of 8.5 messages per person. Compared to this result, teenagers seemed to exchange fewer messages in online support communities as the average messages per person was 2.8. This was supported by the study by Horton and Spieler (2007), which concluded that teenagers tended to exchange fast and shorter descriptions.

4.5. Discussion

In analysing the code frequency, teenagers seemed to converse in a smaller range of codes when compared to older people, but the conversation was highly emotional as evident from the high frequency of ‘deep support’, ‘self disclosure’ and ‘light support’ codes. The fact that the amount of codes in categories such as ‘light support’ and ‘community building’ was lower than ‘deep support’ and ‘self disclosure’ could mean that young people expressed their purpose more precisely and tended to help each other directly by providing deep support rather than through ‘community building’ codes. We also found evidence to support the notion that teenagers were less idiosyncratic than older persons in their interpretation of their referents due to the lower amount of ‘slightly off’ codes.

The LIWC analysis showed that teenagers often communicated at quite a personal level compared to older people, who were much more formal. They approached each other with confidence (based on high self-reference score) and socialised with each other in quite a relaxed manner (based on high social words score). Teenagers also treated online support groups with personal positive emotion (based on the high positive words score). Pessimism could be seen when they were asking for help, while others provided help with high optimism. Overall, the LIWC result showed that there was a personal level of communication, with high emotional supportive content being exchanged. The findings were consistent with results from older people except for the category ‘medical facts’. This could suggest that there was no difference in terms of the quality of engagement between these two age groups, but there was a different priority given to the type of topic discussed.

Looking at the components of empathy, teenagers showed higher level of ‘understanding’ than older people as indicated by the higher percentage of deep and light support codes. This was opposite when it came to ‘concern’, where we found that teenagers showed less concern when expressing empathy in online communication. Both ‘emotions’ and ‘similarity’ could be seen consistent between the two age groups with the exception that the ‘emotions’ of teenagers consisted of less sub-codes compared to their elderly counterparts, who expressed emotions through more sub-codes (thus, older persons express emotions evenly in various ways). This may suggest that older people had better control of their emotional expressions online than teenagers.

In terms of activity and roles, teenagers exchanged fewer messages among themselves, and there were not a lot of active members. This could support the notion that teenagers tended to exchange shorter and faster messages when communicating with comfortable partners. The majority also joined the support community to either give or receive help, but only a small number did both.

5. Conclusion

In this study, we carried out a comprehensive study to understand how teenagers expressed empathy in online environment by extracting and analysing more than 400 messages from the online discussion forum TeenHelp.org on the topic of depression. The content was analysed from a variety of perspectives and methods, such as from the frequency of codes, LIWC analysis, the components of empathy and the role and activities of the members.

From this analysis, we found that teenagers exchange a substantial amount of empathic emotional communication when participating in online communities. They support each other in a rather personal level but with a high level of emotional support. We have confirmed that the model of empathy online developed by Pfeil and Zaphiris (2007) can also be seen in younger people, with the exception that external factors that influence empathic communication are
different for younger people when compared to older people. These factors along with the differences in empathic communication patterns for teenagers and older people have been identified and discussed.

The findings from our research would hopefully benefit researchers in the research area of online community by further building on and validating work that has been done so far. We have shown how teenagers support each other in online communities and identified the nature of the support being exchanged. We have also shown how empathetic communication patterns in online communities were different between older people and younger people. The methodology used in this study can also be used as a guide for further research in a similar context. Using the same methodology, the empathetic communication patterns of a different user demographic or a different type of online community can be easily investigated.

We believe that more similar studies, on other demographics, replicating the methodology are required to further validate the model of empathy. In addition, discussion forum for teenagers with different topics should also be investigated. Other forms of methodology such as SNA, interviews and surveys can also be used to further investigate the characteristics of teenage in online support groups. Finally, a longitudinal study can also be carried out to understand the patterns of participation over time.

Notes

References
