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1. Introduction

Stack Exchange is an online Question and Answer (Q&A) community where experts in different fields can share their knowledge through posting answers to questions. It is an asynchronous form of computer-mediated communication whereby users in the same discussion may not be active on the site at the same time. Stack Exchange pride themselves on the sharing of information and getting solutions to problems, setting themselves apart from other online communities (Begel, Bosch, & Storey, 2013). In 2008, Joel Spolsky and Jeff Atwood started Stack Overflow, an online community where computer programmers could ask and answer questions (Begel et al., 2013). It grew to become one of the most well-used online communities with currently over 265.5 million visits per month (Stack Exchange, n.d.-b). This soon expanded to other fields of knowledge, such as Mathematics and language learning, and the various Q&A communities came to be known as Stack Exchange. As of last year, there were approximately 424.1 million visits per month over its 173 Q&A sites, with 3.2 million questions asked and 3.5 million answers posted (Stack Exchange, n.d.-b).

New users of Stack Exchange start off by asking or answering questions. When these get positive votes by other users, the new user then gains reputation and in turn also has the right to vote for good or bad answers or questions and edit others' posts. For instance, to vote for a good question or answer, users need to have a reputation of 15 and over. As users earn reputation, they may also be made moderators to help manage the online community. Experienced users may also be awarded with a badge that is displayed on their profile. For instance, a gold badge is awarded to users whose question has 10,000 or more views by the public (Stack Exchange, n.d.-a).

2. Literature review

Research has shown that when users earn badges, they are more motivated to answer more questions, thus increasing one's engagement with the site (Cavusoglu, Li, & Huang, 2015). Earning badges were also reported to be related to an increase in other site-related activities (Li, Huang, & Cavusoglu, 2012). Furthermore, badges symbolise that the user has made helpful contributions to the site, helping users to focus on the quality rather than the quantity of their answers (Cavusoglu et al., 2015). This in turn ensures that Stack Exchange stays true to their aim of a useful site that helps users find actual answers to problems. However, it has also been reported that users who have a high reputation typically make less polite requests (Danescu-Niculescu-Mizil, Sudhof, Jurafsky, Leskovec, & Potts, 2013), but answer questions more quickly than users with a lower reputation (Anderson, Huttenlocher, Kleinberg, & Leskovec, 2012).

Answers are also arranged according to how many votes it has received by other users. Hence, the best answers will be seen at the top of the web page just below the question so that it is easily accessible for anyone who needs the answer (Stack Exchange, n.d.-a). Interestingly, long-time users may not necessarily give better quality answers. Stack Overflow users who started out as poor answerers (as determined by the difference between the number of up votes and down votes received for posts) continue to give low quality answers. Similarly, Stack Overflow users who started out as high-quality answerers continue to give high quality answers (Posnett, Warburg, Devanbu, & Filkov, 2012).

A recent analysis (Chhabra & Iyengar, 2020) on the types of behaviours (Questioners, Answerers, or Voters) that users from 156 different sites of Stack Exchange engaged in found that most users were voters. There were also great variations in the proportion of Questioners, Answerers, and Voters across sites. For example, on Stack Exchange's Latin Language site, only 4.64% of the users were Answerers, while most of the users (78.06%) were voters. This study also found that most of the users tended to mainly engage in only one of the behaviours, which is in line with another earlier study on Stack Overflow that reported that most users were either Questioners or Answerers (Wang, Lo, & Jiang, 2013), and that few users have the tendency to engage in both behaviours. In addition, active users tended to be Answerers, while less active users tended to be Questioners (Mamykina, Manoim, Mittal, Hripcsak, & Hartmann, 2011).

3. Effects of Stack Exchange on language and society

Users of Stack Exchange are encouraged to ask questions that need answers as compared to questions that are subjective and to give as many details as possible about their problems (Stack Exchange, n.d.-a). Hence, the language styles that can be seen on Stack Exchange may be more direct and to-the-point as users are urged to be specific and contribute constructive answers supported by evidence. Although the platform is used for exchange of information, informal language like contractions (e.g., couldn't and don't) are common. This could be because users are treating the platform like a chat group where communication is more informal and contractions are common. It could also be because contractions are easier to type as compared to their longer forms (Ling & Baron, 2007).

The ability for users to edit one another's posts can also make the overall language on Stack Exchange clearer and easier to understand for other users. Research done on students who were learning English as a foreign language reported that students who wrote a paragraph in pairs had fewer errors per word than those who wrote it individually (McDonough, De Vleeschauwer, & Crawford, 2018). Hence, the edit function of Stack exchange enables collaborative writing and users can correct any errors of others if needed, helping the language on Stack Exchange to be easily comprehended and free from mistakes or ambiguity.

A distinct feature of Stack Exchange is its gamification. A comparison of users who use r-help mailing list and Stack Exchange found that users who use both platforms tended to answer questions more quickly on Stack Exchange (Vasilescu, Serebrenik, Devanbu, & Filkov, 2014). Hence, the gamification of Stack Exchange may have successfully spurred their users to remain active and engaged in using the site as compared to other Q&A mediums. This can positively impact society as transfer of knowledge among individuals can happen regardless of one's location in the world. Through Stack Exchange, anybody on the internet will be able to obtain answers to their problems that others have similarly faced, thus facilitating the sharing of knowledge. Experts in the various fields can also come together to share their expertise, helping to advance knowledge (Begel et al., 2013). However, Stack Exchange's guidelines discourage social interaction, making it more suited to individualistic cultures (Oliveira, Muller, Andrade, & Reinecke, 2018). Hence, users from collectivistic cultures who enjoy social interactions maybe less engaged with Stack Exchange.

Moreover, most other Q&A sites typically constitute non-factual opinions and discussions. On the contrary, Stack Exchange, in particular Stack Overflow, is the preferred site over the traditional search on the web for programmers and software developers (Mamykina et al., 2011). Hence, Stack Exchange allows experts in various topics to contribute their knowledge and enables users to vote on the best answers, offering society real answers to problems.

4. Comparison of Stack Exchange with Speech and Text

Table 1

Differences between speech and text

Speech like	Text like
time bound	space bound
spontaneous	contrived
face-to-face	visually decontextualized
loosely structured	elaborately structured
socially interactive	factually communicative
immediately revisable	repeatedly revisable
prosodically rich	graphically rich

The linguistic features of Stack Exchange will be compared to the characteristics of speech and text as described by Crystal (2006b) (See Table 1).

a. Space-bound

Interactions on Stack Exchange are like text as they are more static and permanent compared to speech. Once a user asks or answers a question, it can be viewed by anyone on the internet unless it gets deleted. There is also a possibility of users editing one's questions or answers. Nevertheless, Stack Exchange keeps all the details of the edits (see Figure 1) and the original post can still read by all users.

The screenshot displays the edit history of a Stack Exchange question. The question text is: "When learning a second language, should one focus on grammar and structure or having an environment of one that focuses on conversation?". The history shows three versions:

- Version 1:** The original question, asked on Jan 21 at 22:31. It has tags: learning-methods, grammar, and online-learning.
- Version 2:** Edited on Jan 22 at 1:00 by user Tsendoku (19.2k reputation). The edit changes "focus" to "focus choose a program focusing" and "having an environment of one that focuses on" to "having an environment of one that focuses on".
- Version 3:** Edited on Jan 22 at 6:49 by user Rebecca J. Stones (1,413 reputation). The edit changes "advise" to "advice".

Figure 1. History of edits are visible to everyone on Stack Exchange

In Stack Exchange, users create a display name that is not necessarily their real given name. Hence, users who ask and answer questions can come from anywhere in the world with

access to the internet. The addressee is anonymous and users are unlikely to know one another personally or in real life.

b. Time-bound

Nevertheless, as seen in Figure 2, users have come up with a way to directly address a specific user by using '@' followed by one's display name. Hence, this may be more speech-like as users have a specific addressee that they intend to interact with. It ensures that the relevant addressee understands that the response is directed to him/her out of the many users who may have viewed the post, helping the 'conversation' to continue. In discussions with more than two individuals, identifying your addressee also facilitates turn-taking (Savas, 2011).

I think all you have to do make this work is remove the previous featuregroup on every run of the function. @Falke, can you modify the code to do that? If you add that in, I think you'll have this spot on. This doesn't sound too complicated – [Seth Lutske](#) yesterday

I updated the code, so that the old layers are deleted on a re-call of the function f.ex. in the `movend` event, this is called after zooming and dragging the map. But I don't know if this is what @hockeyman needs. Else @hockeyman you can use canvas markers and/or the [canvas renderer](#) of Leaflet this makes the performance also better. – [Falke Design](#) yesterday ✍

Figure 2. Example of users using '@' followed by a display name to address a specific user

c. Contrived

Since posts on Stack Exchange are relatively permanent, answers to questions can come long after a question is posted on the site. For example, this answer below in Figure 3 was in response to a question that was posted in April 2016. This user posted his reply more than a year later. Hence, unlike speech whereby interaction between interlocutors is immediate, Stack Exchange is more similar to text. As can also be seen in Figure 3, the user has used paragraphs and punctuation, making Stack Exchange more text-like than speech-like.

Also, if I want language exchange, there are much more native speakers of L3 interested in exchange of L2 with English than with my native L1, so again, L2 (English) is more beneficial.

So answer is "it depends" what your L1, L2 and L3 are.

Share Improve this answer Follow

edited Dec 29 '17 at 14:49

answered Dec 28 '17 at 20:26



Peter M. - stands for Monica

1,499 ● 5 ● 19

Figure 3. Example of answer that was posted long after question was asked

d. Visually decontextualized

Stack Exchange is an online community. Hence addressees will not be physically present and there is no immediate feedback. Although immediate feedback is not possible on Stack Exchange, on Stack Overflow, one of Stack Exchange's most well-used sites, questions may be answered minutes after they are posted. Research on Stack Overflow based on user activity from 2008 to 2010 found that it took only a median of 11 minutes for over 90% of the questions to be answered (Mamykina et al., 2011). This lag may be due to the need for users to read and type out a response. Hence, answers or comments can be obtained in a few

minutes if users who would like to contribute answers are active at the time when questions are posted.

e. Elaborately structured

Users do craft their posts in complete and grammatical sentences. Hence, Stack exchange would bear more resemblance to text. Since Stack Exchange is largely for communicating information, profanity is also absent. Misspellings and grammatical errors are also rare possibly to ensure that information transmitted is not ambiguous to other users, thus allowing other users to give constructive answers.

f. Factually communicative

Stack Exchange is also typically less socially interactive as compared to speech. When users post questions, they go straight to the point, excluding any form of greeting. In turn, users who answer the question also skip out on the greeting, answering the question directly. Hence, Stack Exchange seems to be a platform for exchanging information and knowledge rather than building relationships with others. Because Stack Exchange is mainly for communicating information, discussions do not stray from its original focus, further differentiating it from speech whereby interlocuters can easily change the topic of discussion (Crystal, 2006a).

g. Repeatedly revisable

Stack exchange allows users to preview how their post would look like before it is officially posted on the site. This allows users to correct any errors or mistakes. Therefore, Stack Exchange would be more like text as other users would never know of one's errors unless it has been posted. Even if a user has made a mistake, he/she can also edit it again. Thus, errors on posts can be corrected, although the edits can be seen by all users (see Figure 1).

h. Graphically rich

Stack Exchange is also more similar to text as it allows users to input complex text/formulae that may be difficult to read aloud. For example, on Stack Overflow, users can include codes of their programming language (Figure 4) and ask other users for advice. Presenting such codes in a text would be easier for the addressee as compared to verbalising them.

Code thus far:

```
gList = ["094G.016", "094G.019", "094G.005", "194G.015"]

for x in gList:
    lGrid[i].rstrip("0")
    print gList
else:
    pass
```

Figure 4. Users can include their codes in questions and answers

Stack Exchange also allows users to organise their posts into paragraphs with distinct headers and bodies of text. As can be seen in Figure 5 below, this user has also bolded some parts of his text for emphasis.

▼ **Learning L3 using L1**

✓ You will **understand things better** when they are explained to you. If you try to learn tricky grammar rules and the definitions of obscure vocabulary you will likely not understand the explanations as well in L2.

🔄 Your **native vocabulary is almost certainly better** than that of a second language. It's hard to learn L3 vocabulary using L2 if you don't know the same vocabulary in L2. In fact you may subconsciously revert to L1 to understand it.

If L1 and L3 are similar, you'll be able to **take advantage of cognates and other similarities** more than L2 and L3 because you'll be less likely to confuse your native language with another.

Learning L3 using L2

However, if you would like to challenge yourself, there are benefits to learning L3 using L2, such as the simple fact that **you'll strengthen both languages** whereas if you learn using L1 your L1 proficiency probably won't be improved much. However, this multi-tasking will slow your progress in L3 compared to learning with L1.

If L2 and L3 are related, you'll be able to see the similarities between them perhaps more easily than if you're learning from L1. However, this may be problematic as **you may also confuse similar words or grammar constructs** (more likely to happen than with L1 and L3).

Most of this I know simply by experience. Most prominently I've learned Portuguese (L3) using both Spanish (L2) and English (L1); more easily with the latter. I'm also learning German (L4) using English (L1) and it's a struggle. I can't imagine learning German using Spanish or Portuguese.

Figure 5. Example of how users can organise their posts using headings and paragraphs

5. Conclusion

Stack Exchange is an online Q&A community where individuals can contribute their knowledge, helping others with questions. This positively impacts society as sharing of information can happen from anywhere in the world. Turn-taking in the form of an adjacency pair (Crystal, 2006b) is also present in Stack Exchange. When a user asks a question, he/she expects an answer in return. Hence, in this respect, interactions on Stack Exchange may also be speech-like. Nevertheless, as discussed above, the linguistic features of Stack Exchange are largely more similar to text than speech. Future research should examine the linguistic differences between the technical sites (e.g. Stack Overflow) and non-technical sites (e.g. Mythology & Folklore) of Stack Exchange.

References:

- Anderson, A., Huttenlocher, D., Kleinberg, J., & Leskovec, J. (2012). *Discovering value from community activity on focused question answering sites: A case study of stack overflow*. Paper presented at the Proceedings of the 18th ACM SIGKDD international conference on Knowledge discovery and data mining.
- Begel, A., Bosch, J., & Storey, M. A. (2013). Social networking meets software development: Perspectives from git hub, MSDN, stack exchange, and top coder. *IEEE software*, 30(1), 52-56.
- Cavusoglu, H., Li, Z., & Huang, K.-W. (2015). *Can gamification motivate voluntary contributions? The case of StackOverflow Q&A community*. Paper presented at the Proceedings of the 18th ACM Conference Companion on Computer Supported Cooperative Work & Social Computing, Vancouver, BC, Canada.
- Chhabra, A., & Iyengar, S. R. S. (2020). *Activity-selection behavior of users in StackExchange websites*. Paper presented at the Companion Proceedings of the Web Conference 2020, Taipei, Taiwan.
- Crystal, D. (2006a). The language of chatgroups. In *Language and the Internet* (2 ed., pp. 134-177). Cambridge, United Kingdom: Cambridge University Press. Retrieved from <http://ebookcentral.proquest.com/lib/ntusg/detail.action?docID=274901>. doi:10.1017/CBO9780511487002.007
- Crystal, D. (2006b). The medium of Netspeak. In *Language and the Internet* (2 ed., pp. 28-30). Cambridge, United Kingdom: Cambridge University Press. Retrieved from <http://ebookcentral.proquest.com/lib/ntusg/detail.action?docID=274901>.
- Danescu-Niculescu-Mizil, C., Sudhof, M., Jurafsky, D., Leskovec, J., & Potts, C. (2013). *A computational approach to politeness with application to social factors*. Paper presented at the Proceedings of the 51st Annual Meeting of the Association for Computational Linguistics (Volume 1: Long Papers).
- Li, Z., Huang, K.-W., & Cavusoglu, H. (2012). *Quantifying the impact of badges on user engagement in online Q&A communities*. Paper presented at the International Conference on Information Systems, ICIS 2012.
- Ling, R., & Baron, N. S. (2007). Text messaging and IM: Linguistic comparison of american college data. *Journal of Language and Social Psychology*, 26(3), 291-298. doi:10.1177/0261927X06303480
- Mamykina, L., Manoim, B., Mittal, M., Hripcsak, G., & Hartmann, B. (2011). *Design lessons from the fastest Q&A site in the west*. Paper presented at the Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, Vancouver, BC, Canada.
- McDonough, K., De Vleeschauwer, J., & Crawford, W. (2018). Comparing the quality of collaborative writing, collaborative prewriting, and individual texts in a Thai EFL context. *System*, 74, 109-120. doi:<https://doi.org/10.1016/j.system.2018.02.010>
- Oliveira, N., Muller, M., Andrade, N., & Reinecke, K. (2018). The exchange in StackExchange: Divergences between Stack Overflow and its culturally diverse participants. *Proceedings of the ACM on Human-Computer Interaction*, 2, Article 130. doi:10.1145/3274399
- Posnett, D., Warburg, E., Devanbu, P. T., & Filkov, V. (2012). *Mining Stack Exchange: Expertise is evident from initial contributions*. Paper presented at the 2012 International Conference on Social Informatics, Alexandria, Virginia, USA.
- Savas, P. (2011). A case study of contextual and individual factors that shape linguistic variation in synchronous text-based computer-mediated communication. *Journal of Pragmatics*, 43(1), 298-313. doi:<https://doi.org/10.1016/j.pragma.2010.07.018>

- Stack Exchange. (n.d.-a). Welcome to Stack Exchange. Retrieved from <https://stackexchange.com/tour>
- Stack Exchange. (n.d.-b). The world's largest programming community is growing. Retrieved from <https://stackexchange.com/about>
- Vasilescu, B., Serebrenik, A., Devanbu, P., & Filkov, V. (2014). *How social Q&A sites are changing knowledge sharing in open source software communities*. Paper presented at the Proceedings of the 17th ACM conference on Computer supported cooperative work & social computing, Baltimore, Maryland, USA.
- Wang, S., Lo, D., & Jiang, L. (2013). *An empirical study on developer interactions in StackOverflow*. Paper presented at the Proceedings of the 28th Annual ACM Symposium on Applied Computing, Coimbra, Portugal.

Screenshots:

Figure 1: <https://languagelearning.stackexchange.com/posts/5075/revisions>

Figure 2: https://stackoverflow.com/questions/66008311/here-traffic-incidents-integration-in-leaflet-js/66059516#comment116875456_66059516

Figure 3 and 5: <https://languagelearning.stackexchange.com/questions/436/what-is-the-impact-of-studying-a-third-language-in-a-second-language/3253#3253>

Figure 4: <https://stackoverflow.com/questions/11352740/how-to-loop-through-list-evalute-first-char-of-each-item-of-list>