Assessing the Possibility of a Social e-Book by Analyzing Reader Experiences

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Abstract. A social e-book provides not only the original text but also other readers' comments, and it enables social interactions inside the book. We posited that a social e-book could be a useful tool for collaborative learning, and it could provide new opportunities for classic humanities texts. The research objective is to find the tendencies of reader generated annotations during two social reading projects. For theoretical background, "the significance of the text - social interaction model" was used for the analysis conducted in this study, and we classified user generated annotations into three different types. As a result, participants had a tendency to make more annotations about their understanding and appreciation than regarding text interpretation. In addition, the result shows that the social e-book can promote fine-grained interactions. Regarding the comparison of the genres of the contents, the group of people who read the classic and humanities genre is more active than those who read the popular literature genre. For future study, more specific ways to improve interest and understanding will be examined for effective collaborative reading experiences through the social e-book.

Keywords: social reading, social media, e-book, collaborative learning, CMC.

1 Introduction

Social media such as Facebook and Twitter have permeated everyday life, and a combination of e-books and social media can provide new opportunities for social reading. Social reading involves sharing reader's thoughts and ideas with others during the reading process. A "social e-book" provides not only the original text but also other readers' comments, and it enables social interactions inside the book. Before we create this service, there are some questions we should resolve. Is a "social e-book" really helpful to promote reader's level of interest and understanding? What kind of content is proper for a social e-book? Which purpose is better for a social e-book – entertainment or education?

We posited that a "social e-book" could be a useful tool for collaborative learning, and it could provide new opportunities for books that ordinary people have turned away from because they consider them difficult and boring, such as classic humanities texts. We suggested that using a social e-book, readers who have different levels of knowledge can help each other to interpret difficult texts. We also assumed that if a

group of people set a common goal, members can be motivated to finish reading more than if they were reading individually.

There have been many attempts to combine e-books and SNS in both academic and industrial fields [1] [2] [3]; however, most efforts have on focused new service ideas from a technical approach without considering readers' text understanding process. Because most people consider reading as a personal activity, we need to observe readers' behavior very carefully before adding new social services to e-books. This paper focuses on the reader's experience and investigates the possibility of a social e-book as a useful reading tool, especially for learning difficult texts.

2   Research Objective

The research objective is to find the tendencies of reader generated annotations while reading books in the classic humanity genre using a social e-book. Through an analysis of two social reading projects, this research will prove how reader generated annotation can show the level of understanding and degree of fine-grained interaction. In addition, we will compare user-generated annotations during the social reading of the classic and humanities genre and the popular literature genre.

3   Research Method and Process

3.1   Social Reading Project 1 - "The Analects of Confucius"

We conducted two social reading projects. The reading material of the first project was the "Analects of Confucius." After the project, we analyzed reader generated annotations created during a social reading. Thirty people who were interested in Confucius participated voluntarily, and they read "the Analects of Confucius" together for 27 days. We used a web-based e-book "Readbuild" [4]. Using this tool, readers could make comments under each paragraph, highlight on sentences and make comments, and mark on the interesting paragraph (similar to 'like' button in Facebook). The number of people who wrote annotations was 22, and the total number of annotations was 298. After the project period, 16 people were interviewed to share their experience.

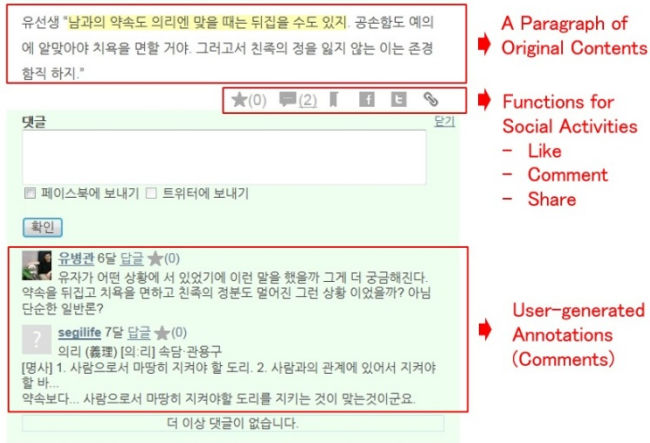Fig. 1. A screen shot of the project main page (The web-based e-book service "Readbuild")

Fig. 2. A screen shot of the reading page & Composition of a social e-book service

3.2   Social Reading Project 2 – "Classic and Humanities vs. Popular Literature"

From the second project, we would like to determine if there is a difference in the reading activities depending on the genre of the reading materials. Thirty university students who were taking the same class participated in this project. We divided them into two groups, and each group read different reading materials for seven days. They used the same web-based e-book "Readbuild" used in the Project 1. One group read the classic and humanities genre, and the other group read popular literature genres such as SF and fantasy books. The participants were encouraged to read the given texts for 30 minutes per day during the seven days. Considering the period of the project, we chose short stories or an extracted chapter from a book. We started with 15 people in each group; however, two people in each group dropped out, leaving 13 people in each group. We collected 154 annotations from the project and analyzed them.

Table 1. Social Reading Project – "Classic & Humanities vs. Popular Literature"

Subject	**Group A** - Classic & Humanities	**Group B** – Popular Literature
Reading Materials (Author)	- Chapter 1 of "Confucius" - "Kriton" (Platon) - Chapter 1 of "Death" (Shelly Kagan)	- My father's Space Trip (Mi-hyun Yang) - Golem (Young-do Lee) - Murderers' Room (Ra-hyun Hwang)
Reading Quantity	11,688 words	15,538 words
Total Participants	13	13
Total Annotations	89	65
Total Like	146	106

3.3   The Significance of the Text – Social Interaction Model

For theoretical background, "the significance of the text – social interaction model" was used for the analysis conducted in this study. [5] In this model, there are three

steps in the reading process: grasping the meaning of a text, interpreting significance, and understanding significance. This model separates the concepts of "interpreting" and "understanding". A reader first interprets the meaning of the text. The reader then finds underlying meaning, extends the idea, and applies it outside of the book: this is the "understanding" level. This theory suggests that the social interaction of readers is essential for moving up to the next level.
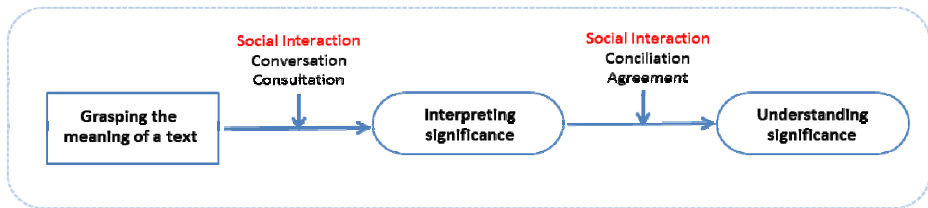

Fig. 3. The significance of the text – social interaction model

First, applying this model, we classified the user-generated annotations into three different types, as follows:

- **Interpretation leve**l: Annotations that show a reader's interpretation by means of facts, information and the reader's suppositions
- **Understanding leve**l: Annotations that show a reader's opinions, appreciation, and extended ideas after understanding
- **Other:** Comments that are not related to the original text (Chatting, how to use the service, etc.)

Second, among the annotations of the understanding level, we extracted short annotations that only combined the subject and verb and included simple expressions by the readers. If there was a difference in the percentage of these "short expressions" in the different genres of the texts, we assumed that this would show the tendencies of user-generated annotations.
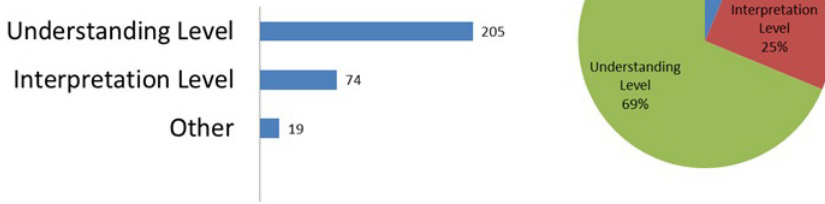
Lastly, we compared the number of annotations that refer to a specific paragraph and the number of annotations that refer to the full text and general ideas. This comparison can show the degree of fine-grained interaction in the social e-book.

4   Results

4.1   Three-Pronged Analysis

Regarding the project 1 "the Analects of Confucius", annotations of "understanding level" were 69%, and annotations of "interpretation level" were 25%. Although the content was not easy to interpret, the interpretation level percentage was quite low.

Fig. 4. Three-pronged Analysis for project 1 – "the Analects of Confucius"

It is assumed that readers tended to make more annotations about their understanding and appreciation than regarding text interpretation. However, we found that readers tried to find the correct interpretation and shared the information, especially when they did not know the meaning of a word or when they could not interpret the meaning because they did not have sufficient background information, such as knowledge about the characters, history, or region. They asked questions, and some of them copied the results that they found from online search engines.

When we compared the three-pronged analysis of "Classic & Humanities" and "Popular Literature" in project 2 regarding the annotations of the "interpretation level," we found seven annotations in the classic & humanities genre and no annotations in the popular literature genre. We assume that this transpired because when readers read popular literature, they can easily move to the understanding level and therefore did not need to make annotations regarding their interpretation.

Table 2. Three-pronged Analysis for project 2 – "Classic & Humanities vs. Popular Literature"

Subject	**Group A** - Classic & Humanities	**Group B** – Popular Literature
Interpretation Level	7	0
Understanding Level	56	50
etc.	26	15
total	89	65

4.2   Length of Annotation and Profundity of Thought

When we compared the average number of letters in the annotations, we found that group A (classic & humanities) made longer annotations than group B (popular literature). In order to determine the tendency of the annotations concretely, we extracted short annotations that only combined a subject and a verb and included the reader's simple expressions. Examples of annotations such as "That's so funny" "Interesting!" and "It's like a cautionary tale" belong to this category. As we supposed, the percentage of "short expressions" in group B (popular literature) was higher.

Table 3. Length of average length of annotation in each project & Number of annotation in category of "Short Expression"

Subject	Project 1	Project 2	
		Group A	Group B
Average number of letters in each Annotation	114.6	69.9	39.4
Number of "Short Expression"	27	6	17
Total Number of Annotations	298	89	65
Percentage of "Short Expression"	9%	7%	26%

In the interviews after the project, one participant reported that he read the popular literature genre for entertainment purposes and he did not have a reason to muse about the text and make long annotations. Another participant in the popular literature group said that he was anxious to find a spoiler from others' comments.

4.3 Degree of Fine-Grained Interactions

Regarding the degree of fine-grained interactions, almost 90% of annotations were based on a specific paragraph in the project 1. This result shows that the social e-book can promote fine-grained interactions. Realizing fine-grained interactions is difficult in previous methods of discussion such as book community websites and offline book clubs.
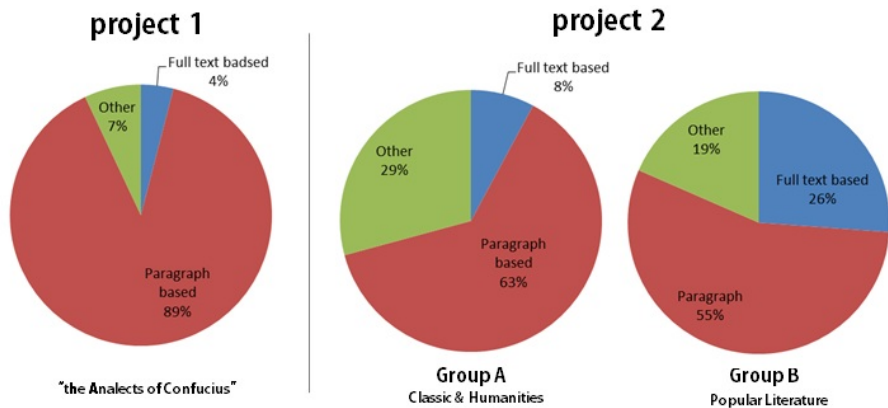
Fig. 5. Rates of Paragraph based annotation & Full text based annotation

When we compared group A (classic & humanities) and group B (popular literature) regarding the degree of fine-grained interactions, the rate of annotations that refer to the text overall was higher in group B. We found that readers have a tendency to make annotations after finishing reading and refer to their appreciation of the whole story when they read the popular literature genre.

5   Discussion

Among the 42 participants who were interviewed after the projects, 85% reported that they were willing to use the social e-book again and that they had positive responses regarding the use of the social e-books. However, six participants said that they did not want to use it anymore, and their reasons were various. One participant stated that because it is a web-based e-book, there were too many temptations to use other websites, also stating that it was difficult to concentrate on the book for this reason. Another participant reported eyestrain from electromagnetic waves. These are problems that all e-book services have to overcome. Another participant reported that social e-books had lower legibility than other types.

In addition, most participants indicated that the social reading experience raised their interest in the book. Participants said that they could learn about other people's thoughts from the social reading activity, but some were not sure if it was helpful to better understand the original text. When we started these two projects, we did not designate a group leader or 'information intellectual'. In order to promote more active participation, it may be helpful to have a group leader who can set up a reading schedule and encourage other members. Moreover, it may be even better if the group has an intellectual who has plenty of knowledge about a chosen book and who can therefore help other members to understand the book. During our projects, there were many questions and assumptions among the annotations, but it was unfortunate that there were not many people who gave correct answers.

Many participants had a tendency to write many subjective perspective annotations, and some participants stated that they were interested in their acquaintances' comments but not interested in stranger's comments. If annotations include subjectivity, knowing who wrote the given annotation could be important for other readers, as the readers might be more interested if they know the other reader personally. Therefore, we could assume that a group with a strong-tie relation would be more suitable for this type of social reading, and this aspect could be applied in school classes.

From this study, we found the possibility of a social e-book as an effective tool for collaborative learning and competitiveness in the classic & humanities genre, which has been thus far ignored as successful e-book content. However, limitations of this study are that we conducted too few projects of social reading and that the number of participants was not high enough to make conclusion. In order to develop a successful service, we need more studies using finer designs.

For future study, more specific ways to improve interest and understanding will be examined for effective collaborative reading experiences through the social e-book. Many experts feel that the end of printed books is not at hand, but we hold that various types of books will appear in the digital era. We expect that a social e-book can promote a reading culture and suggest new directions for future book clubs.

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