

Proposal for a Computer System with Structured Chat and Social Stamp Functions to Support Social Reading for High School Students' Essay-Writing Process

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Abstract: This paper describes the development of a computer system to support high school students in writing short essays. In recent years, more universities have adopted these essays in their entrance examinations. Many examinations test applicants not only on reading comprehension but also on their ability to write an essay in response to a question. To support this reading and writing process, we have developed a system called SCSS (Structured Chat and Social Stamp), which supports students to perform social reading (reading and commenting on what is read individually and in groups, and applying stamps to indicate information about what is read). SCSS consists of five stages. The first stage is understanding the question at hand, while the second stage is achieving reading comprehension. In both these stages, students first think of ideas by themselves and then share their thoughts with their classmates. The third stage is where students express ideas to answer a question. Though at this stage students cannot comments or exchange ideas with their peers, they can see other students' ideas through the system interface. In the fourth stage, students pick their favorite ideas and comments from the previous stages and arrange this content into the material for a short essay. In the fifth stage, they write the essay, in the first person.

Keywords: *Social Reading, Structured Chat, Social Stamp*

1. Introduction

In recent years, more universities are using short essays in their entrance examinations. These examination essays test applicants not only on reading comprehension but also on their ability to write an essay in response to a question.

To aid in tasks like this, social reading tools to share reading experience with colleagues have been developed (Sono 2012). In social reading, readers share what they have noticed during the reading process and bring up points they thought important, hard to understand, or otherwise notable. Social reading does not necessarily lead to critical reading or deep discussion; however, it does help students compare their own ideas with those of others, because their ideas are visualized. Bingham and Conner (2010) state that it is very important in education to share ideas through social learning, because people can learn effectively through collaboration achieved by means of human networks. They also mention that we can learn more by sharing various topics through such activity. Their basic idea is that the activity to communicate with others and share ideas becomes part of the motivation for learning.

However, Tsuruda and Yukura (2007) indicate that Japanese high school students tend to have negative impressions of critical thinking like that which occurs in social learning, because it is culturally difficult for them to discuss matters critically in class while still keeping good relationships with their classmates.

In this study, the authors focus on LINE, which is one of the most popular social media applications for Japanese high school students. LINE features the use of stamp functions. A stamp is a little larger illustration presenting figures with rich facial expressions than a conventional picture language used in such applications. It has been argued that this stamp function is one of the main factors involved in increasing the number of users of a social media application (NTT Data Institute Of Management Consulting, 2012).

2. System

We developed a computer application called SCSS (Structured Chat and Social Stamp). SCSS supports social reading for high school students' essay writing, using structured chat and social stamp functions. SCSS consists of five stages.

1. Understanding the questions
2. Achieving reading comprehension
3. Expressing ideas to answer the question
4. Picking favorite ideas and comments
5. Writing a short essay in the first person

2.1 The Social Stamps

The system uses two owl characters. One is a father who gives instructions, the other is a son, named Echo, who is studying alongside the user. The social stamps represent Echo. At every stage, the father gives instructions, and some functions can be employed using the social stamps.

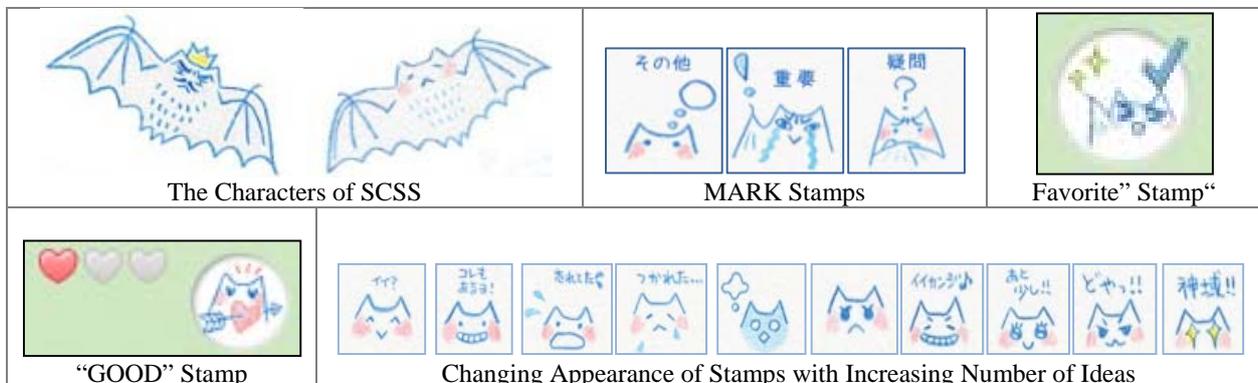


Figure 1: The Social Stamps

2.2 The First Stage

The first stage is to understand the questions. In this stage, students first think of ideas by themselves (personal mode) and then share their thoughts with their classmates (social mode). In personal mode, students read questions and draw lines (Figure 2). When they draw the lines, a window pops up. In this window, they can write comments and check any of three stamps (Figure 3): “important,” “interrogative,” and “other.” After they write comments and apply stamps, article appears on the right of the screen.

In social mode, students share their thoughts in groups of three. Participating users are shown in the upper right of the screen, and the numbers in each user area show the number of stamps applied by that user. They can see the other student’s lines on texts and their comments in right area. From the lines and comments applied by their peers, students can gather ideas that they did not think of themselves or alternative views. Furthermore, students can mark favorite comments or comments that they think important.



Figure 2: The First Stage (personal mode)

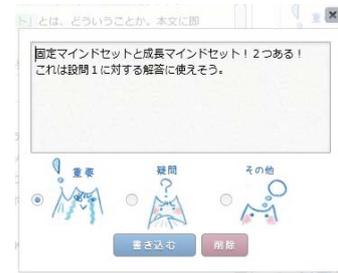


Figure 3: Pop-Up Window



Figure 4: Favorite Stamps

2.3 The Second Stage

The second stage is achieving reading comprehension. In this stage, both personal and social modes are used, with the same functions as in stage 1.



Figure 5: The Second Stage (Social Mode)

2.4 The Third Stage

The third stage is where students express their ideas to answer the question (Figure 6). They can put “Idea Pin” buttons on comprehension, and then they write their thinking to write essay. Though students cannot exchange comments with anyone, they can see other ideas through the system. By extensively expressing their ideas and viewing those of others, they prepare to write the essay. As the student express more ideas, the stamps will change in appearance (Echo will become strong).



Figure 6: The Third Stage

2.5 The Fourth Stage

In the fourth stage, students pick their favorite ideas and comments from the previous stages and arrange them in order to produce an essay. All comments that they have selected appear on a separate screen (Figure 7). Then, they arrange them in preparation to write their essays.



Figure 7: The Fourth Stage

2.6 The Fifth Stage

In the fifth stage, students write an essay in the first person. They can take notes in a text area at upper right and sentences in a text box below (Figure 8). The number of Japanese characters used is tracked.



Figure 8: The Fifth Stage

3. Experiment

An experiment was conducted to evaluate the usability and effect of SCSS. A total of 48 second-year high school students participated in this experiment. The students were separated into two groups: 24 students wrote a short essay using SCSS, in accordance with the time schedule shown in Table 1.

Table 1: Time Schedule of the Experiment

PHASE	STAGE	MODE	TIME (min)
Reading	1. Understanding the questions	Personal mode	5
		Social mode	5
	2. Reading comprehension	Personal mode	10
		Social mode	5
Writing	3. Expressing Ideas	Personal mode	15
		Social mode	5
	4. Picking up and arranging content	Personal mode	5
	5. Writing a short essay	Personal mode	50

After finishing writing, the students were asked to fill out a questionnaire concerning their impressions regarding the system. This questionnaire included 19 questions assessing various functions of the system, on a five-point Likert-type scale: (1) *Totally untrue*, (2) *Somewhat untrue*, (3) *Neither true nor untrue*, (4) *Somewhat true*, and (5) *Totally true*. These five choices were then grouped binomially; 1–3 were considered “No” answers and 4 and 5 were considered “Yes” answers.

4. Results

The results of the binomial questionnaire are shown in Table 2. According to the responses, most students

felt that SCSS satisfied them and felt that its usability was good ($p<0.1$). In particular, they felt that its stamp function was useful for writing comments ($p<0.5$). One student said that the stamp function made it easy to write essays and that it was good to be able to freely reply to the comments of others. In stages 1 and 2, the line and comment functions were useful ($p<0.1$), as, in stage 3, was the ability to view other students' ideas ($p<0.1$). One of the students said, "I feel that writing the essay was difficult at first, but it became easy to write the essay because I could view others' ideas. I could enjoy reading and writing through this system. I want to use this system in school." In stage 4, the functions of retaining and arranging chosen comments were also useful ($p<0.1$). Finally, in stage 5, they felt that the system helped them arrange their thoughts to write essays ($p<0.1$) and that the character-counting function was useful ($p<0.1$). Overall, the students enjoyed communicating with each other through the system.

Table 2: Questionnaire about SCSS

System			Stage 1				
	Yes	No		Yes	No		
1	Satisfied with SCSS	21**	3	1	Lines/comments are useful	21**	3
2	Usability is good	20**	4	2	Others' comments are useful	21**	3
3	Stimulating and innovative	24**	0	Stage 2			
4	System reaction is speedy	22**	2	1	Lines/comments are useful	22**	2
Social Stamps <td colspan="3">Stage 3 </td>			Stage 3				
	Yes	No		Yes	No		
1	Stamps feel friendly	17	7	1	Idea pins are useful	17	7
2	Stamps are useful for learning	17	7	2	Others' ideas are useful	23**	1
3	Stamps are useful for reading	14	10	Stage 4			
4	Stamps are useful for comments	19*	5	1	Retaining comments is useful	21**	3
5	Stamps are useful for ideas	13	11	2	Arranging comments is useful	18*	6
			Stage 5				
				Yes	No		
			1	Function of arranging thinking/writing is useful	18*	6	
			2	Character count is useful	23**	1	

Note: N=24 * $p<.05$, ** $p<.01$

5. Conclusion

We developed a system called SCSS to support the process of reading for essay writing as well as the subsequent writing itself. SCSS facilitates social reading and has structured chat and social stamp functions. SCSS was evaluated experimentally, and the experimental participants found it useful for essay writing; furthermore, the structured chat and social stamp functions were useful for social reading. Sharing ideas and writing essays became easier, and SCSS increased students' enjoyment and concentration.

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