Wong, L.-H. et al. (Eds.) (2013). Proceedings of the 21st International Conference on Computers in Education. Indonesia: Asia-Pacific Society for Computers in Education

Encouraging Each Other in the Community Site for Habit Development

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Abstract: We have developed a prototype community site for building up a good habit. A user can join in the prototype site together with a family or a close friend as a partner, and thereby the user and the partner can encourage each other while they receive an alarm of the beginning of the plan to practice the objective activity. In this paper, we discuss the effect of encouragement for habit development from the results of an evaluation experiment. The results of the short-term experiment were not so good. However, it suggested that a user should send an encouragement message to the partner that has low motivation.

Keywords: habit development, informal communication, community site, encouragement

1. Introduction

We are now developing the community site as a support system for activity promotion of education, learning and/or lifestyle habit. In designing the community site, we are also conscious of a social capital. The study by Eng et al. (2002) shows that socially isolated people had an increased risk of disease because they spoiled a healthy lifestyle. The social isolation probably has a bad influence in not only the lifestyle habit but also the learning habit. The sociological definition of the social capital is as the resources embedded in social networks accessed and used by actors for actions (Lin, 2001). We expect that the value as the social capital is included in the network between the users in the community site such as SNS. Therefore we propose a support method for motivation development by using the potential of social capital of the community site. The types of social capital are commonly divided by the distinction into bridging and bonding. An anonymous community is easy to become the bridging type because it is little affected by a family and a parent organization. Our community site has the property of bonding by being registered a relation of a family or a close friend as a partner, although most of the users in our community site are anonymous. In this paper, we describe a function of encouraging a partner each other for developing a good habit, and then discuss the effect from the use of the function.

2. Motivation Development

The ultimate purpose of our study is to let users keep up their objective activities by developing internal incentives (intrinsic motivation). We think that our community site has to let users keep their motivation high by giving external incentives (extrinsic motivation) while waiting for the intrinsic motivation to rise. We propose some methods to support for raising users' motivation for habit development. *Self-monitoring*: A user can look back on own activity with a calendar and graphs. The user would feel sense of accomplishment and a fret, and thereby improve the motivation for next opportunity. *Competition*: A user can get the points when s/he achieves objective action, and compete the number of points between friends. It seems that a factor of the competition with others more strongly affects the extrinsic motivation. *Information Sharing*: A user can share information such as objectives, methods and continuation states of activity on the bulletin board in most community sites. Intrinsic motivation would be affected by interacting with the friends aspiring for each other's accomplishment and enjoying the stimulation from other users. *Encouragement*: A user can send an encouragement message for other user that is going to practice the objective activity. It seems the encouragement is for the extrinsic motivation, but it is not a main purpose to get an encouragement.

3. Prototype System

There is, of course, considerable preceding study to send a personal message for improving the motivation such as MVEM (Motivational and Volitional Email Message) by Kim & Keller (2008). We would like to treat the personal encouragement message that is more casual and frequent. In addition, from the viewpoint of social capital, we would like to let a user send a message by the hand of the user, in order to be able to be conscious of human relationships. Therefore we propose a personal encouragement message function. We have designed it to cooperate with the alarm function for scheduling because the alarm is the scene that wants to attract attention most. Herewith it becomes possible to encourage by an appropriate timing. A user registers the activity that wants to be habit, and decides practical plans (date, start time and period of time) as a schedule. Our prototype system notifies the user's mobile phone via the alarm email by the following timings: 1) short time ago of the planned start time, 2) planned end time, 3) when no plan is registered, 4) about before half day of the start time of the partner's plan. When the partner of a user registers an encouragement message in response to an alarm email 4), the user will receive the alarm email 1) saying that "You got a personal encouragement message from your partner". We have developed a prototype community site as a web application. We assumed the site to be used with almost any smartphone. As for this prototype system, a function to compete the number of points between friends and/or other users and a function for sharing information such as objectives, methods and continuation states of activity are not yet implemented.

4. Evaluation Experiment

10 subjects in their twenties consisting of undergraduate and graduate students are 5 sets of pairs, and used our prototyping system for a week. At first the subjects registered one objective activity that they wanted to continue. Next, they registered a schedule that is one plan a day for the experiment period. The subjects can register a performing result of the objective activity by following the link in the email of alarm 2) of the chapter 3. The planned total number of 10 subjects was 70, but it was only 37 times that the subject sent a personal encouragement message for the partner's plan. Figure 1 shows a change of the performed results. It seems to need further support because performed rates and registered rates decrease in a short term. And also, there is not the difference between the active pairs, which exchange the many encouragement messages, and inactive pairs. The active pairs' characteristic is that they are on good terms enough to share a joke within personal encouragement message, and also each other's positivity is about the same. For example, they are the close friends of coterie. On the other hand, the inactive pairs are, for example, seniors and juniors from the laboratory, and there were not the unique contents of encouragement messages by the partner. In addition, each other's positivity of inactive pairs is not same, because one subject sent encouragement messages well, but another one did not send much them. None of active pairs and inactive pairs sent an encouragement message related to the partner's objective activity directly. By the friend relations, the subjects could not send a message such as suggesting a reward for raising extrinsic motivation.

In the case of sending or receiving an encouraging message, the whole of the subjects performed 26 times and did not perform (includes unregistered) 26 times. In the case of handling no message, the whole of the subjects performed 6 times and did not perform 12 times, but the result of Chi-squared test for given probabilities showed that there was no significant difference ($\chi^2 = 2$, df = 1, p = 0.157). And also there are no differences with the sending and receiving of the encouraging message, and with the active pairs and the inactive pairs. Furthermore we separated one week for former half (3 days) and latter half (4 days), and then we confirmed difference between both halves, and difference between the sending and receiving of the message. Table 1 shows that there was significant difference between the former half and latter half, when a subject sent a message to the partner, in the frequency of performing her/his objective activity. When a subject sent a message, in both halves, there were significant differences between the performed times and unperformed times. The subjects often carried it out in former half ($\chi^2 = 5.4$, df = 1, p = 0.020); conversely they in latter half did not often carry it out ($\chi^2 = 4.54$, df = 1, p = 0.033). There was no significant difference between the both halves, when the subjects did not receive a message from the partner. However, in latter half, there was significant difference between the performed times and unperformed times when they did not receive a message ($\chi^2 = 5.55$, df = 1, p = 0.018).

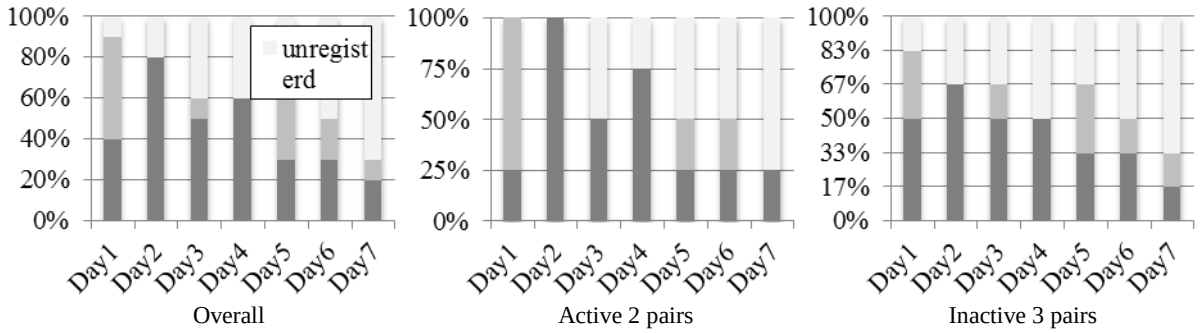

Figure 1. Results of objective activity performing rate

Table 1: Comparing the frequency of subjects' performance from the perspective of elapsed days.

Sent an Encouraging Message						Did Not Send an Encouraging Message					
Days	Performed	Unperformed	χ^2	*df*	*p*	Days	Performed	Unperformed	χ^2	*df*	*p*
1-3	12	3	7.927	1	0.004 **	1-3	6	9	0	1	1
4-7	6	16				4-7	8	10			
Received an Encouraging Message						Did Not Receive an Encouraging Message					
Days	Performed	Unperformed	χ^2	*df*	*P*	Days	Performed	Unperformed	χ^2	*df*	*p*
1-3	9	6	0.285	1	0.593	1-3	9	6	3.436	1	0.063
4-7	10	12				4-7	4	14			

("Unperformed" contains "Unregistered")

5. Discussion and Conclusion

We realized that it was insufficient only by giving the environment for encouraging each other. In the former half, the users that sent an encouragement message tended to perform their objective activity, but it is considered they sent the message because their motivation was strong enough to perform it. It is interesting that the tendency turned over in the latter half considered to have lost motivation. They might intend to have achieved duty. Further it is interesting without stimulation from others by the encouragement messages to hardly perform the activity if the motivation is low. It was the only result that could realize the effect by the encouragement message in this experiment. We told the subjects that they could use the prototype site continually when the experiment period was expired, but the strong extrinsic motivation by the cooperation to the experiment was lost after the experiment period. Therefore, the use of the site decreased sharply, after about 2 weeks from the end, none of the subjects sent an encouraging message and registered the performed result of the activity. We consider that the encouragement message can convey that the user still have interest for developing habit to the partner not only encouraging the partner; moreover, we consider that the users feel that the partner lost interest to habit development when they do not receive an encouragement message. Especially, the motivation of one of the pair would decrease infectiously if another one's motivation decreases. Therefore, we consider that users should form a group of more than 2 people. In addition, we would like to implement a function to let users compete between other users. It is important that we prepare for a mechanism for letting users enjoy to encourage each other.

Acknowledgements

This research was supported by Japan Society for the Promotion of Science (JSPS), Grant-in-Aid for Young Scientists (B), No.22700815, 2010.

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