

Bibliobattle: Informal community scheme based on book review sessions

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Abstract

We developed a human-human and/or human-knowledge interface framework called Bibliobattle. Knowledge and people are mediated in the interaction framework. Originally, “information” cannot be disconnected from humans as interpreters in whom semiosis goes through. However, these days a misinterpretation of information that information can be transported and stored as if knowledge were baggage spreads together with Internet society. However, knowledge management systems developed based on such an analogy have not been working well. To overcome such a problem, how to construct an organic knowledge management system or knowledge sharing system to promote human-human communication and emerge innovation in a community becomes an important problem. In Bibliobattle, we focus on a difference between a locality of a real community and a globality of the Internet, and construct social interaction framework to help people share knowledge in a community. We also evaluate the characteristics of Bibliobattle by comparing it with an ordinal book review contents generated by remote reviewers.

Keywords: Social Interaction, Book review, Informal Community, Web application, Knowledge management.

1 INTRODUCTION

We propose Bibliobattle, a framework of social interaction. The framework is applied to construct an informal community management scheme in social organizations involving knowledge workers, e.g. a company, a research laboratory, or a college. A knowledge worker is an individual that is valued for their ability to interpret information and create new ideas. Bibliobattle is designed to help people find and share interesting information. In addition, Bibliobattle is expected to improve participants’ presentation skills and to help organize and activate communication in an organization. First, we give background on Bibliobattle and then introduce how to organize Bibliobattle and play it. Next, we discuss our psychological experiment based on the semantic differential technique to evaluate the effectiveness of Bibliobattle.

1.1 INFORMATION IN A COMMUNITY

Recent information and communication technology enables us to communicate and store much information represented as “bits” in computers. We receive a large amount of data from distant places and store large amounts of digital documents on our hard disk drives. In contrast, distinguishing between such computational information as “data” which can completely treated by a computer and our daily information becomes more and more important.

Shannon developed the notion of information, which can be mathematically transported from a sender to a receiver [1]. After Shannon’s notion on information, many people came to think of “information” as an entity that

can be stored, transported, and manipulated, although Shannon remarked that his notion of information does not involve “semantics”, which is an important aspect of information for humans. To overcome such a problem, many researchers struggled to give adequate definitions and understanding of information, communication, and knowledge.

On the other hand, many approaches to knowledge management have involved building information sharing systems to help people take advantage of others’ knowledge and store many documents. However, most members eventually found that these systems are not so helpful for their work. This problem comes from a misunderstanding that knowledge is a storable entity. Polanyi insisted that there is explicit knowledge, which can be described linguistically and tacit knowledge, which cannot be explained linguistically [2]. Nonaka et al. introduced the socialization externalization, combination and internalization (SECI) model and explained the importance of the management of tacit knowledge in a community [3]. However, not only tacit knowledge but also explicit knowledge is often difficult to access by members of a community. If there is not a so-called “catalyst” in the community, a communication event will not occur and the members of the organization will not be able to access such explicit knowledge.

Therefore, to promote human-human communication and to make beneficial use of knowledge in and out of communities, we have to focus on how to design a “dynamic environment” in which people can easily share their knowledge and access unknown and interesting information. As long as we treat information as an entity, like computational data, we focus on “communication”, “storage”, and “retrieval” of information. To develop an effective knowledge sharing system, we have to focus on other processes such as “encounter”, “generation”, and “interpretation”. Wenger et al. insisted that organizing informal communities and cultivating knowledge-sharing activity is important to become aware of interesting events and information that has been overlooked in routine work [4]. To promote innovation and activate communication in an organization, a methodology how to design an informal community for sharing information which is potentially embraced by an organization is an important issue. We propose Bibliobattle as an example of a framework to organize a knowledge sharing activity in an organization as an informal community .

1.2 INTERNET SOCIETY AND SPACE

Network technology is gradually diminishing our real-world spaces. Recently, information and communication technology has made it possible to communicate anytime, anywhere, and with anybody. However, the result is that a person finds he/she is emotionally separated from other people in real-world communication. Such a convenient technology lost topology of our interactive social world. This also affects our knowledge sharing process.

The Internet has a “globality”, which ignores real spaces and sometimes treats our real-world community as unimportant. On the other hand, the advantage of a real community has also been gaining attention. How to combine the “globality” of Internet technology and the “locality” of our real-world daily and natural communication is a key topic.



Fig. 1 Bibliobattle scene



Fig. 2 Bibliobattle procedure

Kawakami et al. insisted that inconvenience should be taken into consideration to overcome such recent problems [5]. For example, *mixi*, which is the most popular Japanese social networking service, prohibits a person to register without invitation from his/her friends. This inconvenience helped *mixi* have a similar network of contacts to those in a real-world. Generating constraints to reduce the amount of freedom of an internet service is an important approach to design a **information system** for living people. Based on these backgrounds, we developed Bibliobattle as an example of a social communication scheme balancing the globality of the Internet and the locality of face-to-face communication.

2 BIBLIOBATTLE

In this chapter, we explain the framework of Bibliobattle. Bibliobattle is an information sharing framework through which participants gather, introduce the books they read to each other, interact, and share the recorded video over the Internet. Bibliobattle is not only limited to the interaction in a real world, but it also broadcasts the interaction over the Internet by recording and uploading video to the community's weblog. The shared knowledge in Bibliobattle is not limited to information about recommended books. By using this scheme, participants can share knowledge about "know-who network", which tells us "what does each person knows", in the community and the personality of each member. This kind of informal community will smooth information flow in the organization.

2.1 METHOD

Figure 2 shows the Bibliobattle procedure. First, one recruits participants in an organization¹. The members should meet in an informal setting. In Bibliobattle, there are two types of members, "presenter" "observer"².

1. A presenter reads one or more books and decides which book to recommend. The book should be decided by the presenter. Therefore, the book represents the presenter's interests and personality.
2. A presenter brings the book to a Bibliobattle session. A Bibliobattle session should have about 4 to 8 presenters. Each presenter gives a presentation about the book for 5 minutes. He/she need not prepare power point slides or notes³. The presentation is recorded with a digital camera. After the presentation, a 3-minute question-and-answer session is held.
3. After all presentations finish, the best book, called "Book of the Week" is selected by anonymous vote of the members.
4. The recorded video of each talk is uploaded to a weblog on the Internet and shared with a broader community or the world. The video should be easy to view on the weblog for people who cannot attend the session. The broadcast of the recorded video supplements the locality of the interaction. The people who watch the video can not only share the book review but also become potential participants in the local interaction.

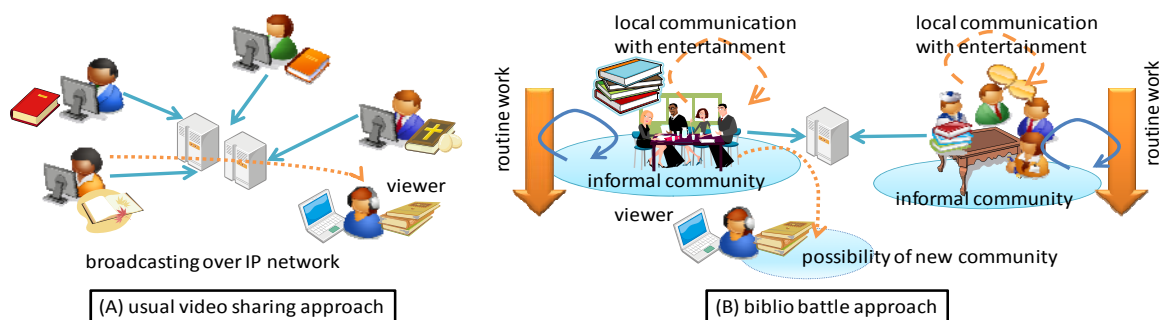


Fig. 3 Difference between scheme in which separated people broadcast recoded book review and Bibliobattle

¹ The participants can also come from other organizations.

² These roles should not be fixed. A manager of Bibliobattle should encourage observers to be presenters.

³ This constraint enables potential participants join the session at ease and promote interesting interaction in the local interaction space.

To share Bibliobattle videos, we developed a web service on the official Bibliobattle site⁴⁵

2.2 FOCAL POINTS OF BIBLIOBATTLE

In this section, we explain the characteristics of Bibliobattle as a social interaction framework. Many artificial systems, which are aimed to promote our information sharing capability, narrowly focus on “explicit knowledge”, which is stored as written documents. Such a system is likely to be evaluated from only a single viewpoint of information sharing. The word “information”, as most knowledge management system tries to share, means “data”, e.g., PDF files, Word files, or web sites. However, to activate actual information sharing process in a community has to **cover all of** semiotic activities that emerge in the target community, ideally. A person’s information environment is also an ecosystem. Katai insisted that “stackedness”, which is typically found in soil in natural farming and Permaculture, is an important idea of the natural environment [6]. As an ecosystem, an effective information sharing system must have multi-faceted functions.

2.2.1 Developing communication capability

Bibliobattle is different from a usual literature introduction session in ordinal community, e.g., a laboratory or a company’s section, in two aspects at least. One is that a presenter should not prepare notes or slides. The other is that the presentation time is only 5 minutes. This improvisation with time restriction makes the presentation interactive and exciting in most cases. In addition, the interactive session is good for developing good communication skills, which Japanese students and workers rarely have. Additionally, the simple real-time evaluation by voting provides a chance to receive reasonable feedback on their presentation.

2.2.2 Book search

Bibliobattle gives an informal community the ability to find good books from the millions of books on the market. The number of books, i.e., explicit information, has dramatically increased. In contrast, knowledge about good books for particular community is limited compared to the number of potentially beneficial books for that community. However, the evaluation criteria of “good books” depend on the community’s culture, purpose, habits, and preferences. Therefore, there are no objectively “good books” for all communities. Each community has to search for good books its members. In Bibliobattle, each participant is also considered an agent who searches for good books for the community. If a participant finds and introduces a book to the community, he/she will be rewarded by having their book voted “Book of the week”. This framework increases the probability of participants finding good books. The information retrieval function based on evaluation criteria of a local community is an important factor of a knowledge management system.

2.2.3 Generating video content

From the view point of broadcasting a book review video, Bibliobattle is similar to a content generation scheme in which a person, i.e., reviewer, introduces a book in front of his/her camera, record his/her presentation, and uploads it to a video-sharing site, such as YouTube, Google Video, or Nico-nico Douga. However, Bibliobattle can produce a more natural video in a socially interactive environment, where each participant can talk about books more naturally compared to being “alone in a room”. This results in a significant difference in video content. An overview of the two schemes is shown in Fig. 3.

Bibliobattle is a very simple framework, which is an example of an informal community. To evaluate the all aspects of the interaction occurred in the framework is difficult. In the next section, we evaluate the third function, i.e., generating video content using the Kansei evaluation method.

⁴ <http://bibliobattle.net/>

⁵ Currently, we can provide free accounts to people who want to start Bibliobattle.

3. EXPERIMENT

To evaluate the difference between video content, which is generated through Bibliobattle and that which is recorded in a situation where a reviewer talks to a camera alone in a room, we executed a simple psychological experiment.

3.1 CONDITIONS

First, we announced a usual meeting of Bibliobattle and gathered participants. In this case, we did not pay them any money nor force them to attend the meeting. All the participants attended the session voluntarily. The presenters selected the books they introduced were. In the session, there were four presenters (P1 to P4) and an observer. Each presenter introduced a book B1, B2, B3, and B4, respectively. In addition to a normal Bibliobattle, we asked each participant to give a presentation alone in a room and record a video of the presentation using a digital video camera. B1 and B4 were recorded before the Bibliobattle, and B2 and B3 were recorded after the Bibliobattle. All participants, except the presenter, evaluated each presentation by filling out questionnaires. After the Bibliobattle, all participants were asked to watch videos recorded in the alone-in-a-room condition and to fill out the same questionnaires. The questionnaires consisted of typical questions based on a semantic differential technique and a simple evaluation of the presentation. The semantic differential technique involved seven questions, i.e., “abstract - concrete”, “easy to understand – difficult to understand”, “elegant – not elegant”, “boring - fun”, “artificial - natural”, “closed - open”, and “careful explanation - rough explanation”. Participants rated the presentations from -3 to 3 for each axes. Additionally, each presentation was evaluated from 0 to 5 points based on the participants’ subjective criteria.

Next, we gathered four participants who were not familiar with Bibliobattle and did not know the presenters. We asked them to watch all eight videos, and fill out the same questionnaires. At the time, we consider its order effect, and we presented the videos in this order (2b 1a 3b 4a 1b 2a 4b 3a). Each number represents each book, and (a, b) represents the presentation condition, i.e., “a” means alone-in-a-room, and “b” means Bibliobattle. In addition, the evaluation might also depend on the relationship between the presenters and the evaluators. Therefore, we differentiated the evaluators joining in the Bibliobattle from those who watched the presentation in a distant place. We denote p (proximal viewer) and d (distant viewer) for each group, respectively. For example, experimental data index “1pb” represents a result answered by a proximal viewer on a presentation about book B1 during the Bibliobattle.

3.2 RESULTS

The collected data from the semantic differential technique are averaged for each conditions and a principle component analysis (PCA) was applied. Figure 4 shows the results. The 1st and 2nd components have a 85.1% contribution rate. The 1st component relates to feelings about “open”, “natural”, “fun”, and “easy to understand”. It also relates to “roughness” of the presentation. The 1st component clearly discriminates condition b and a (0.5% significance in t-test). In fact, presenters said they were really “nervous”, and that they “broke out in a cold sweat”. This suggests that Bibliobattle allows a presenter to easily and frankly talks about a book. The second component seems to represent how each book is interesting for evaluators because B1 was a champ book in the Bibliobattle and the labels “concrete” and “careful explanation” correlate with the 2nd component.

We also analyzed the evaluation results of each presentation. It was shown that whether the answerer was a

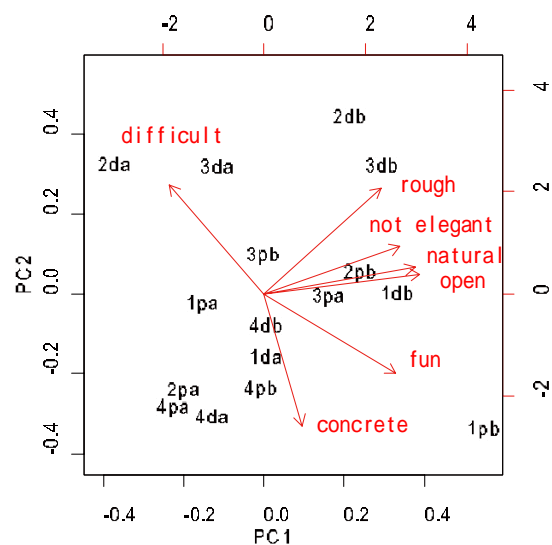


Fig. 4 PCA results of semantic differential technique

proximal viewer or a distant viewer seemed to be the most related factor to the presentation scores (5% significance in t-test). This means that the satisfaction viewers feel depends heavily on the relationship between the viewer and the presenter. Usually, a presenter talks to people presuming knowledge they have to generate a story which are understandable to people listening to the presentation. The locality of knowledge the community has possibly results in a gap between distant and proximal viewers.

However, to generate the best presentation which presumes all people's background knowledge is impossible. As long as Bibliobattle does not give bad effect to the evaluation of the presentation, Bibliobattle is better than the alone-in-a-room condition because it reduces a presenter's difficulty to generate story about a book they try to introduce.

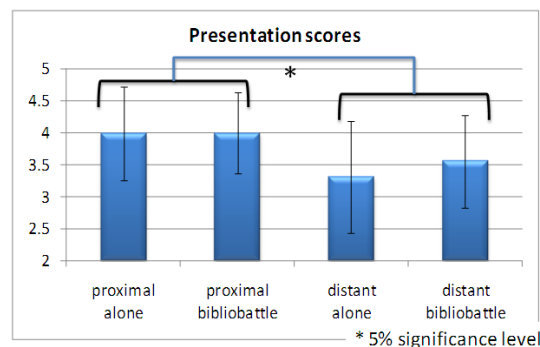


Fig. 5 Scores of presentations depending on a presenter's and a audience's conditions

4 CONCLUSION

We proposed a social interaction framework called Bibliobattle. We don't aim Bibliobattle to have a single function, i.e., sharing information, but also have various functions, e.g., developing communication capabilities, searching interesting books, and generating natural video contents.

The authors have been seeking for a scheme how to design an informal community which promotes better information sharing in an organization. In this paper, we reported the scheme we developed and practiced. We also evaluated the effectiveness of Bibliobattle about the function of generating natural video contents by comparing a video recorded in a Bibliobattle condition and one recorded in an alone-in-a-room condition.

Bibliobattle is a really simple framework but has multi-faceted functions. However, this kind of system should be evaluated in practices on the field. In future work, we should expand the use of Bibliobattle. To achieve this we developed Bibliobattle web site. Additionally, we will apply this framework not only to "books", but also "theses", "magazines", and other contents.

Nowadays, we become able to utilize many kinds of information technology. However, to use such a technology does not always make all aspects of our daily knowledge works better. In order to utilize such a information technology in a better way, we have to design supplemental systems including human-machine interfaces and real social communities.

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