

Development of Content Specific Information Display to Induce Informal Communication Leading to Informal Learning

Razana Husni* Motoki Urayama** Hirotake Ishii***
Hiroshi Shimoda**** Takayoshi Kitamura† Hidenori Fujino‡

* Graduate School of Energy Science, Kyoto University, JAPAN
(e-mail: razana@ei.energy.kyoto-u.ac.jp).

** Graduate School of Energy Science, Kyoto University, JAPAN
(e-mail: urayama@ei.energy.kyoto-u.ac.jp).

*** Graduate School of Energy Science, Kyoto University, JAPAN
(e-mail: hirotake@ei.energy.kyoto-u.ac.jp).

**** Graduate School of Energy Science, Kyoto University, JAPAN
(e-mail: shimoda@energy.kyoto-u.ac.jp).

† College of Information Science and Engineering, Ritsumeikan University, JAPAN (e-mail: ktmr@fc.ritsumei.ac.jp).

‡ Faculty of Economics, Fukui Prefecture University, JAPAN (e-mail: fujino@fpu.ac.jp).

Abstract: Interactive displays are widely utilised as a mean to cascade information to the public. In this study, a content specific information display has been proposed to encourage workplace informal learning and a field study was conducted where the effectiveness of the display was compared with that of conventional method in triggering informal communication between colleagues in an engineering project office. The increase in informal communications is expected to foster an open and friendly workplace environment which is conducive to learning, enhancing better collaborations and knowledge sharing. The content specific topics are expected to encourage workplace learning activities, be it via self-reading or discussion with colleagues. Our results indicate that both CSID and infographic poster positively affect workplace informal learning activities. High initial CSID interactions were recorded which then reduces to a consistent level after workers gained familiarity with the system. With this study, we realised that users need to be aware of the availability of new contents to maintain the feeling of “newness” and invite continuous interactions. Our findings support the possibility that constant usage of CSID would foster positive workplace discussions, increasing workers competency and help to reduce the numbers of workplace accidents caused by communication failure and lack of knowledge.

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1. INTRODUCTION

Human elements are widely recognised as one of the major contributory causes of workplace incidents with communication failure and lack of knowledge being the most prevalent - as highlighted in numerous high-profile investigation reports such as the NASA Columbia explosion and BP Texas fire; see Starbuck and Farjoun (2009) and USCSB15 (2007).

Zwetsloot et al. (2013) suggest that organisational core values of interconnectedness, participation and trust, form a natural and necessary aspect of a prevention culture when dealing with health, safety and well-being at work. Communication plays an important role in the development of trust within an organisation. In turn, trust appears to shape the perception of openness. A study by

Thomas et al. (2009) found that when employees believe that the organisation is a safe place to express themselves, even if the ideas go against the grain of popular opinion, they are likely to see themselves as more involved in the organisations goals.

There are numerous researches that promote the usage of informal communication for workplace learning. Zhao and Rosson (2009) assert that among the many benefits of informal communication is that it enables the person to build perception of each other, developing common ground and sustaining a feeling of connectedness with one another. This is in line with Kraut et al. (1990) findings where the author propose that as the opportunity for informal communication with colleagues increases, so does one's familiarity with them and their work, as well as liking them for their work. Its usage creates an open and

friendly atmosphere - encouraging frank discussions and opposing ideas, leading to better understanding of the subject. Livingstone (2008) argues that informal learning is the most frequently used type of workplace learning with as much as 80 percent of all workplace learning having a high degree of informality. A study by de Grip and Smits (2012) finds that learning by doing and learning from colleagues ranks high in scientists and engineers view for their usefulness in maintaining and improving their skills. Hicks et al. (2007) also found similar view being held by the professionals in the accounting field.

This paper discusses the effectiveness of using content specific information display (CSID) to trigger and increase the frequency of informal communication in an engineering project team. It also elaborates on the benefits of choosing specific contents to encourage knowledge sharing for informal learning in this organisation. Ultimately, the research objective is to propose a method to induce informal communication and promote workplace informal learning by using CSID.

2. METHOD TO ENCOURAGE INFORMAL LEARNING

2.1 Basic Principles

The basic idea of this research lies on human's core social and esteem needs where we unconsciously seek passive and active engagements as well as new discoveries for personal growth. An interactive public display with CSID application was deployed in the workplace. Its contents are news and articles that relate to the company, its industry as well as the corporate and other relevant fields. We chose these specific topics to increase the likelihood of interaction, as people are more likely to interact with the display if they feel that the contents are related to them and benefits them, see Brignull and Rogers (2003) and Memarovic et al. (2012).

Social triangular effect. By placing the display within arms reach, we invite workers to interact with CSID while making their drinks or waiting for others at the area. As the landing page shows limited information regarding the available articles, the viewer is required to touch/tap on their chosen image or title to access the full article. Sheridan et al. (2007) suggest that in order to cross the boundary from spectator to user, people acquire skill to interact with the interface through observation of others. Also, the "social triangulation effect" where events in public spaces that focus the attention of the diverse inhabitants of the space on a common object and facilitate communication among otherwise disconnected strangers is expected to occur - as observed by Memarovic et al. (2012) and Tomitsch et al. (2014). Therefore, by watching their colleague interacting with the CSID, it will trigger informal conversation between them, bringing us to our first hypothesis,

"H1: The CSID will act as a trigger for informal communication between workers."

This is also supported by the fact that informal communication in a workplace tends to be unplanned and usually

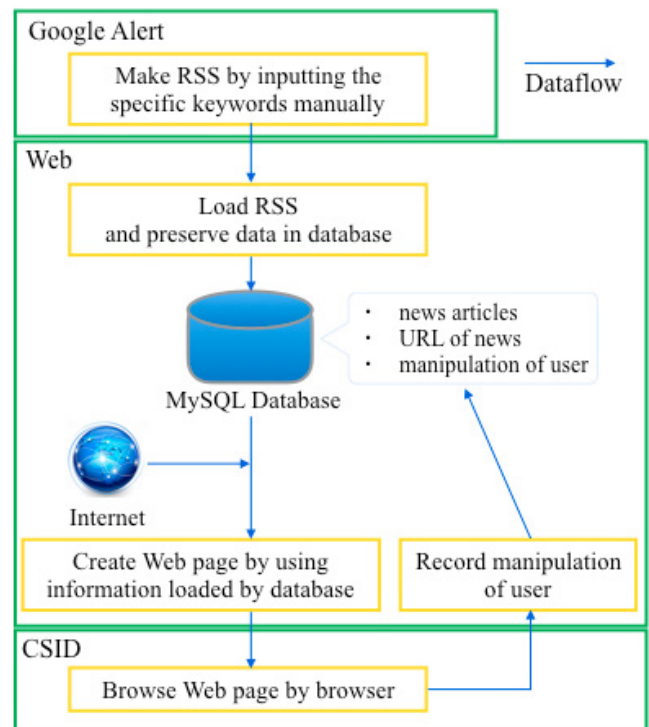


Fig. 1. Schematic of CSID system.

involves people who are physically in close proximity to each other as mentioned by Kraut et al. (1990).

Priming effect. The priming effect of the article would steer the conversation towards it or other similar topic based on the workers' experience. This exchange of knowledge and expertise in an informal setting is expected to enhance the learning experience.

"H2 : The CSID would help in controlling the content of these talks, more work-focused."

"H3 : These talks will help promote workplace learning between the workers."

In this study, we define workplace learning as the promotions of company's initiatives and other business related news. As a basis for comparison, we used the conventional method of information sharing using infographic posters on notice boards.

2.2 CSID System

System configuration. The hardware for CSID consists of a web server, internet connection, small PC and touch-screen monitor. Its software was developed using PHP and javascript. All information were gathered into the MySQL database. A schematic of the process is shown in Figure 1.

Figure 2 shows an example of the CSID screen. A study by Kukka et al. (2013) finds the combination of text, animation and colours attract more clicks and interactions on public displays. Accordingly, we created a webpage of eight multicoloured tiles (4 columns, 2 rows) which shows the article's title and image of the content. These visual signals were refreshed to show new data using sliding animation every 30 to 60 seconds. The interface was made simple and easy to understand to encourage interactions.

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