Evaluation of Learning Features in Social Media

Fenny
BINUS Graduate Program
Bina Nusantara University
Jakarta, Indonesia
fenny@binus.edu

Bens Pardamean
BINUS Graduate Program
Bina Nusantara University
Jakarta, Indonesia
bpardamean@binus.edu

Suparto Darudiato
School of Information System
Bina Nusantara University
Jakarta, Indonesia
supartod@binus.edu

Abstract—**The spread of social media is so pervasive that it can be used as media for learning. Learning features can be embedded in social media itself. Thus, features take an important role in social media in term of learning process. User-oriented and human-computer interaction become the characteristics for social media to support the learning process. The aim of this paper was to evaluate learning features that support those characteristics. The model of 7Cs was utilized to match with the type of features in web interface design with the 'Cs' component, including context, content, customization, community, connection, communication, and collaboration. Using a questionnaire, data were collected from 524 users who registered in social media for learning activities. SEM analysis was used to describe the fit model of 7Cs in order to support learning process in social media. The result concluded that social media could facilitate the learning process, especially in academic environment, through the usage of appropriate learning features.**

Keywords—**Social media, 7C, Learning features.**

I. INTRODUCTION

Social media provides an important role for changing the flow of communication and information sharing among users [1]. Social media is a group of Internet-based applications that built on the basis of ideology and foundation by web technologies 2.0 [2]. Characteristics of Web 2.0 applications based on the People-Centered Learning [1], Content Creation [3], Dynamic Content Publishing [1], and Human computer interaction [4].

The 7Cs framework guidelines are useful in user interface design a website [5]. The 7C Framework includes seven elements, each of which represents a specific component of the system: Context (how the Web site is designed), Content (what information are presented), Community (how users communicate with each other), Customization (how users customization with site, Communication (how the site communicate with the user), Connection (how the site is related to other sites), and Collaboration (how users collaboration with each other) [6].

Social media has been used in the field of education that focuses on the use of social media as a learning medium. The application of social media into the new trends in learning by Patrício and Gonçalves (2010) [7] identified and explored potential applications of Facebook features within the middle-class education. But, can social media be accepted and used by students as a medium of learning? Based on research by Hussain, Gulrez and Tahirkheli (2012) [8], some students less readily respond to any questions posted to the group. So there is the opinion that learning through Facebook is considered a waste of time and better suspended. It is caused by too many features provided by social media that make students lost focus. This condition is clarified by Jabr (2011) [9] which suggests that at this time, more students need the opportunity to engage in instructional experience that delivers the ease of online meetings, involved communicating, sharing with the group to solve the problem, is active participation in the discussion of learning without any constraint time. Measuring learning feature in social media can be a benchmark on which social features have potential for learning is based on the evaluation of the model 7Cs.

II. LITERATURE REVIEW

A. Weblogs

Social media is a social site that allows one to form online communities and share content created by users [10]. New technologies in Web 2.0, has provided easiness for everyone to create and distribute content. For example, posting on blogs, tweeting on Twitter, watch a video on Youtube, Facebook status updates and many more. Social media platforms include: blogging, micro blogging (Twitter), social networking (Facebook, MySpace), wikis, RSS, photo sharing, video sharing, podcasting, widgets, chat rooms, message boards [11].

B. Role of Social Media in Education

Social media provides the opportunity for users to manage and sharing information to all users connected to Internet. Learners share their knowledge, search for the knowledge they need, and decide learning content through social software platforms [12]. Knowledge in social media will continue to increase, it may even lead to new innovations that can be applied. In the educational activities of students and faculty can be supported by the use of social media technologies [3] such as:

- Content generating. Most social technology allows users to easily create their own content and can actively share information, opinions and support to all network users.
- Sharing. Students are able to publish their work and ideas in public space for others to upload and download.
- Interacting. The technology also supports social interaction between students and students and with their teachers to actively participate in the discussion.
- Collaboratively Socializing. Activities that allow for a situation for two or more people learn or attempt to learn something together. Unlike individual learning, people involved in the use of collaborative learning resources with each other, and skills (asking one another for information, evaluate ideas with each other, watching each other's work, etc.).

C. 7Cs Framework

7Cs Framework serves as a reference model for the developers in designing and evaluating component interface or web-based applications. 7Cs model framework has also been used to evaluate and see if there is a difference to the hotel portal [13]. The following is the description on the 7C Framework [6], and each of its elements:

TABLE I. DESCRIPTION ON 7CS ELEMENTS

Interface Elements	Meaning/Types in Web 2.0
Context	The Web 2.0 web sites have layouts that are more dynamic. The performance and dynamism increase greatly by the use of technologies such as AJAX and FLASH.
Content	Collective intelligence mix is the new addition which deals with all traditional three "mixes" with users participating in the generation of the content. This is typical of Web 2.0 applications.
Community	Collaborative communication may be enabled via non-interactive and, most likely, interactive communication mechanisms.
Customization	The content of the site can now be tailored in a collaborative manner, since the content will be user-generated. Also the customization can be done in more dynamic fashion (desktop-like feel).
Communication	Site-to-user communications: broadcast, interactive, hybrid, and push/pull (e.g., RSS)
Connection	Lots of content from external sites may be pulled in the form of blogs, advertisements, mash-ups, etc.
Collaboration	Refers to the site's ability to provide users with interface and services to carry out high degree of collaboration, such as collaborative editing, project managements, etc.

Web 2.0-based features using 7Cs:

Context element correspond with section breakdown, where a website has a page divided nicely into many pages so the page will be divided into parts by part in order to make users easily understand the meaning and action that will be executed next. Linking structure, where a website have a page that nice and well connected with the other pages. Navigation tools are tools that help users navigate the application. It can be a link/button next or previous to navigate in a page. Color scheme is the use of color combinations on the application. Visual theme more focuses on the eyes which can be attached to the design theme of each section of the application.

Content element consists of multimedia mix is a mix combination of the use of multimedia on a website. Multimedia here consists of text, images, video, animation, and sound. Collective Intelligence is inviting users to create their own content in a website.

Community element consists of membership is a feature that is provided by the website to catch website's visitors to come back to visit the website. Online communities are virtual communities formed at various Internet services such as online forums, mailing lists, or particular groups. The purpose is to share stories, information, or other experiences among its members without being bound by time and place.

Customization element consists of personalization (by user) is a feature that is provided by the website associated with the setting up of a website. Settings include My page, My groups, My friends and making groups by adjusting the look and feel of the site for the group. Tailoring (by site and special software) is a feature that is provided by the website associated with the setting up of a site where setting a site made by the admin of the site and applies to all member websites.

Communication element consists of broadcast (one to many) is a one-way communication where information is sent by the organization to the user without the feedback. Interactive (message) is a type of two-way communication that occurs between users and organizations. Hybrid (emails, blogging, forums, chatters, RSS feed, etc.) is a type of two-way communication that occurs between users with other users by using the available technologies in the website.

Connection element consists of links to sites is a feature that is provided by the website to manage how a site has links to other sites that can be accessed by users. Outsourced content (bookmark) is a feature that is provided by the website for users to take and store interesting content pages of other websites.

Collaboration element consists of sub groups is a feature that is provided by the website that allows a situation with two or more people learn or attempt to learn something together. Unlike individual learning, people involved in the use of collaborative learning resources with each other, and skills (asking one another for information, evaluate ideas with each other, watching each other's work, etc.).

TABLE II. DESCRIPTION OF 7CS FRAMEWORK AND RELATED FEATURES

The 7Cs	Meaning	Features
Context	Aesthetics and functional look and feel	1. Section breakdown 2. Linking structure 3. Navigation tools 4. Color and background
Content	All digital subject matter	1. Multimedia mix (text, picture, video, animation, and sound) 2. Collective Intelligence (content generation)
Community	Interwoven relationships based on shared interests	1. Membership 2. Online communities
Customization	Page modification	1. Personalization (by user) 2. Tailoring (by site and special software)
Communication	Dialogue between website and its users	1. Broadcast(one to many) 2. Interactive 3. Hybrid (emails, blogging, forums, chatters, RSS feed) 4. Calendar 5. Event (location by Google maps) 6. To-do-list
Connection	Network of links between the site and other websites.	1. Links to sites 2. Outsourced content
Collaboration	Working with each other to do a task	Sub groups activities (discussion forums, photo, blogs, pages, video, sharing file, bookmark, and share)

The hypothesis of this study stated that context, content, community, customization, communication, connection, collaboration were the dimensional variables of learning features.

For the hypothesis, the latent variables were context, content, community, customization, communication, connection, collaboration. The unmeasured variables were learning features.

III. METHODOLOGY

This study was a non-experimental quantitative research. This study involved collecting data to determine about learning features in social media. The analyses were perfomed to know the learning features within group in academic environment. The factors that influenced the learning features also found in the literature about learning features and social media. It followed by developing and distributing the questionnaires. Each item in the questionnaires was mapped to a learning feature.

Data collection method was conducted through the distribution of questionnaires. The questionnaires collected ordinal type of data and were categorized as non parametric data. The questionnaires were used to obtain the measurement of all latent variables. The questionnaires contained 21 items related with learning features. The 7-point Likert scale was used to determine the perception of respondents.

Subject population of this study was the students in a university. Data were collected from 524 student-users who registered in social media for learning activities. Convenient sampling was used by this study to determine the respondent. It was non-probabilistic sampling technique, because the probability sample was not necessary for this research. This study analyzed one main model, learning features. The latent variables of learning features were context, content, community, customization, communication, connection, collaboration. The structural equation modeling was used to describe the model, and to analyze the factors that were influenced the model.

IV. RESULTS AND DISCUSSION

The questionnaire contained seven items related with learning features: Context, Content, Community, Customization, Communication, Connection, and Collaboration. The 7-point Likert scale was used to determine the perception of users. And, the questionnaire distribution was done via electronic. It was distributed to 770 users who registered in social media for learning activities. Of the 770 users, only 524 were participated and valid. The 524 comprised of 337 males and 187 females. There 25 users from computer accounting major, 305 users from information science major, 143 users from information systems major, and 51 users from management major.

This study analyzed one main model, learning features. The learning features (LF) was the concept that was known as a second order factor. The LF was made up of seven dimensions or factors, Context (CTX), Content (CTN), Community (COM), Customization (CUS), Communication (COMM), Connection (CON), and Collaboration (COL). The structural equation modeling was used to describe the model, and to analyze the factors that influenced the model.
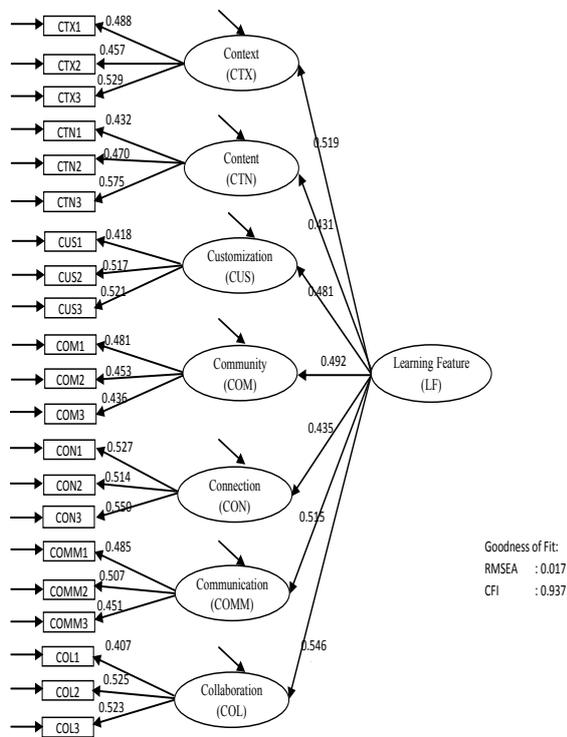
Fig. 1. Learning Features Standardized Regression Weight

Figure 1 describes the parameters of the LF measurement model. The measurement model was obtained with the statistical program Amos 19, using maximum likelihood estimator. The figure was shown using standardized regression weight. The model fit adequately: RMSEA=0.017 and CFI=0.937. The hypotheses testing were conducted based on the fit model. The context (CTX, β=0.519), content (CTN, β=0.413), community (COM, β=0.492), customization (CUS, β=0.491), communication (COMM, β=0.515), connection (CON, β=0.435), and collaboration (COL, β=0.546) positively influenced the learning feature (LF). In other words, all of latent variables were the factors of LF, with transfer collaboration (COL) was the most influencing factor. All the relationships were significant with *p*-value less than 0.001.

Almost all students have social media accounts. 72% of all college students have social media accounts, and 45% of students use social media sites at least once a day [14]. Social media is not only used as a medium of friendship, but also can be used as a medium of learning. Students registered in social media for learning activities stated that learning thinking skills activities, sharing, interaction, collaboration in solving problems together and forming content. [3] Why students use social media that is very important for academia? Because it displays the communication method significantly impact student motivation for learning [15].

Revealing symptoms and problems that occur in the use of social media as a medium of learning, it needed to know which social features have potential for learning

based on the evaluation of model 7Cs. Based on the structural equation modeling analyzes, it was determined that the 7 independent variables (context, content, community, customization, communication, connection, collaboration) positively influenced the learning feature (LF). This suggests that in designing or designing applications feature learning is influenced by the visual display that has a functional and aesthetic, layout, use of graphics, and ease of use of course important in motivating users to participate in web-based learning. Content is the content from social media websites that include images and writing (text), audio and video (multimedia). The involvement of students and the conceptual understanding of information increases when they are involved in visual content [16]. Elements of social media customization functions to facilitate the users to create personalized in my profile, my pages and my group. In addition, each user can create, edit and adjust the display according to the wishes and needs of the user (user generated content). Connection is a connection between the site with other sites using the links provided [17]. In the implementation of elements of communication will allow users to interact with web-based learning administrator that serves as a medium of communication and information for the aspirations of both users and administrators. No less important elements of community, provides features that allow users to interact and discuss more about the topic of learning material, Features such as forums and blogs that can be integrated into web-based learning feature. Social media is one tool for community that is easy to use and for establish better communication between students and lecturers. Social media also enable community involvement in locating expertise, sharing content and collaborating to build content [18] and social media offer people opportunities to build online collaboration, and enhance learning opportunities. Collaborative features, this feature allows users to try and learn something together, whether it is a discussion and problem solving in groups. Collaborative makes the students acquire new skills, ideas and knowledge by working together to build solutions for educative problems. [19]

The majority of students gave a positive opinion in the discussion via social media survey. There are inputs for strengthening for conditions corresponding to the user characteristics resulting in learning outcomes. However the design of learning must be suitable to the learning characteristics, learning environment, as well as the infrastructure that supports ongoing learning process. Similarly, in selecting appropriate learning media, it must consider the readiness of human resources in it.

Academic environment has a model to educate by teaching through a physical classroom and lectures to manage the delivery of knowledge. On the other hand, students are individuals who attend class with different levels of preparation themselves directly affect the acquisition of knowledge and feedback.

V. CONCLUSION

Students responded positively by registering themselves into the social media to follow the learning activities which in turn have positively influenced the learning features. By referring to the 7C framework (context, content, community, customization, communication, connection, and collaboration), this research has been able to conclude that element collaboration has the biggest influence in learning features. However, it also caused a problem. The lack of students' readiness to respond to questions is not caused by students' disagreement in utilizing social media as a learning media, but it was caused by the factor of learner's characteristic. The competence in using social media technology as a learning media, especially communication and collaborative technology, was not an important interaction. Therefore, learners must have and develop their independent collaborative learning skills. The developed features should create a condition which can develop social learning skills, dialogic skills, skills in collecting and finding information with provided technology, and evaluation skill in collaboration. Social media allows lecturers and students to interact with each other and share information and knowledge. Social media is a medium of learning to make students to be more clever in discussing and searching the Internet material.

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