

Applying Social Media for Encouraging Mutual Support and Social Creativity

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Abstract: This study applied the features of social media to implement a picture book in facilitating the students collaborative creative activity. Based on Amabile's componential theory, this study evaluated the influences of social media in students' creativity behaviors. The results showed that the students were more active to present multi-thinking, as well as revealed higher significant satisfaction in the perceptions of the ownership of working and peers' mutual support. Moreover, the collaborative creative environment engaged the students in developing creative works.

Keywords: Social media, creativity, collaborative, mutual support

Introduction

In the knowledge economy era, cultivating students to learn in a manner of creativity is an important topic of contemporary education, in which creating and distributing information and knowledge is far more important than merely replicating the same thing [5]. Sawyer [12] indicated that nothing is more important than learning to think creatively for today's children, because the learning is came up with innovative solutions to the unexpected situations that will continually arise in their lives. Therefore, creativity and generating ideas are the core of contemporary economy, and nurturing students to innovative methods is very important in their learning process. However, in the knowledge society, creativity often occurs under the settings of complex organizational and collaborative environment. Many research studies revealed that creative ideas are more often the scheme of social interaction and influence than of periods of thinking in isolation [9] [10]. In particular, the individual's creativity is influenced by the social creativity because the groups and organizations were identified as sites of engagement in creativity [2] [17]. Madjar [8] suggested that the individual creative performance can be stimulated when peers represent any new information and knowledge, which in turn trigger new ideas and alternative solutions. In other words, by reflecting personal experiences, creating, and sharing ideas with others in the contexture of social environment could facilitates students' creativity. Based upon the importance of creativity for students and the impact of social environment in fostering students' creativity, it is essential to explore how a social context of the workplace in a way that will facilitate the beneficial influence of students' creativity and collaborative behaviors.

With the prevalence of Internet, it has accelerated the connection among people around the world for sharing information and knowledge. In particular, the social media on the World Wide Web has changed a variety of cultural forms among people's interaction [1], such as

Flickr and YouTube provide the stages in which sharing and distributing images and videos respectively. Because many of the adolescent activities involve in this type of social media can create a great deal of contents which are able to raise the social media in order to provide the opportunities in developing and showing creativity [4]. The feature of these social media is to allow participants to share their own works on the platform, and to work with other's contributions in order to connect and derive. Therefore, it enables students in collaborating, knowledge sharing, and customizing with significant opportunity for creating socially engaging tasks [14]. For the same reason, Shneiderman [13] suggested that the assistance of technology can support and promote the creativity. He further describes this creativity support tools are able to extend users' capability to make discoveries and inventions from early stages of gathering information, hypothesis generation, and initial production to the later stages of refinement, validation, and dissemination. This kind of creativity support tools broadens from the social media, such as Wiki and media sharing, that further enables thousands of individuals to develop and represent personal creative works collaboratively through remixing and integrating.

As social media is popular among adolescents and students, it is important to investigate that whether the social media can be a creative arena to cultivate and encourage students' creativity. Based on Amabile's componential theory [2], this study proposes a social media oriented platform, called Multimedia Picture Book which is designed for elementary students in order to support their collaborative creative activity.

1. Multimedia Picture Book

1.1 Collaborative Creative Platform

This study proposed and implemented a web 2.0-based collaborative creative platform, the Multimedia Picture Book, to encourage the creator involved in collaborative creating work. Regarding to the componential theory, the notion of the Multimedia Picture Book is to augment personal expertise with resources, promote social creativity with remix and derivation, and further enhance creativity motivation through contextual support. The purpose of this notion is to assist the creators shape the innovative ideas, as well as represent the diversity of creative works through the function of remixing and various choices of media resources. In addition, it is considered as the catalyst in encouraging social creativity via participants' interaction and collaboration. More detail illustrates as following.

1.2 Augmenting Personal Expertise with Peers and Online Resources

The Multimedia Picture Book furnishes with various resources to fulfill in developing participants' creative work. Since the resources of work environment is one of important factors to cultivate the children's creativity, the Multimedia Picture Book allowed the creator not only to express the idea by portraying with painting brush, text, and vocalizations narrative (Figure 1), but also to collect the online open resources into a picture book, such as free music and images - The Mutoxia Project and Flickr, respectively (Figure 2). Meanwhile, all participants can contribute their creative works into the web repository and access other's contributions freely.

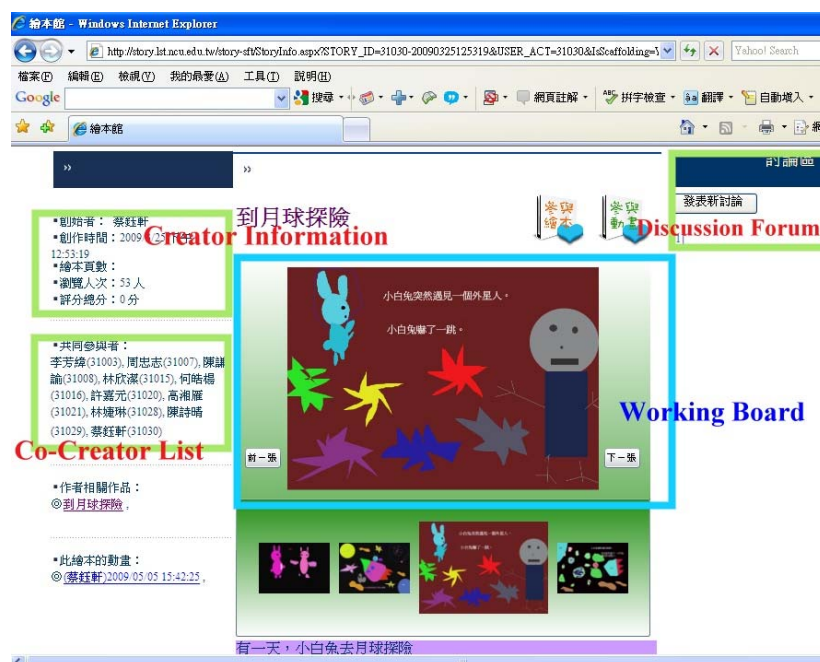


Figure 1. A sketched picture book



Figure 2. An image was inserted into a picture book from a open resource website: Flickr

1.3 Promoting creative thinking skills with deriving and remixing

Even with the support of various resources to cultivate the participants' creativity, the practice of working environment also is essential to carry out the creative activity. One considerable feature is the freedom or autonomy of works conduct. For this reason, the Multimedia Picture Book designed the mechanism of deriving and remixing. The remix function, which represents the process of generating new idea through deriving or combining existing idea [7], is a widespread tool on the Internet. The deriving function indicates that a shared work can be reproduced through a series of modification. Therefore, the participants in the Multimedia Picture Book can derive other's creative work to a new one. In addition, the co-creator list would accompany with the deriving work in order to recognize all contributors (the left block of Figure 1). Meanwhile, every participant may browse all works available in a storyboard, and combine one or more works to develop a

new story plot by linking selected works (Figure 3). The process of deriving and remixing would be iterative in the collaborative duration of creative activity. In other words, participants can interpret and organize the representation of a work in their own way by orchestrating a shared pool of creative works. Contributors in such a mechanism may be more willing to help each other and engaging in the collaborative creative activities.



Figure 3. Participant created a new story plot by linking selected creative works

1.4 Enhancing Creativity Motivation Through Contextual Support

Maintaining the creativity motivation is the core of cultivating the creativity in work [2]. In addition, the contextual support is not only an important implication for team effectiveness, but also to facilitate the contextual awareness in group interaction and opportunity of linking with others [6]. For this reason, besides the aforementioned mechanism of attribution of co-creator list and creating work portfolio, the Multimedia Picture Book employed the chat room and discussion forum as synchronous and asynchronous communication ways in supporting creators' discussion and information exchanging to sustain the contextual support among creators' interaction. Therefore, the activity of derivation and remix would be apparent in the attribution of co-creator list and portfolio while the communications were available in mutual support. Consequentially, by deriving and remixing resources could provide the opportunities in creating new ideas and represent in a personal approach. Also, the Multimedia Picture Book intends to retain and further augment the participant's creativity motivation with supporting the interaction with each other in a trusting and mutual supportive way.

2. Methods

2.1 Participants and Storytelling Activity

The participants of this study consisted 57 third-grade elementary school students in Taiwan. Clarification of storytelling activity is one such important way in cultivating students to learn the concept of how to collaborate with others, and to foster one individual's

creativity through the reflection by linking and exchanging personal experiences and ideas with others [3][15], this study conducts a collaborative storytelling activity through the Multimedia Picture Book to represent the creative story in various type of multimedia. When developing stories with peers in the Multimedia Picture Book, a four-week storytelling activity took place and each week took forty minutes. Within these four weeks, the participants will not only experience various remix behaviors, such as creating, contributing, sharing, deriving, and remixing creative works, but also inspire individual ideas through these remix behaviors and peers' interaction under the scheme of social media. At the same time, how the participants behave through the Multimedia Picture Book is screen captured for further analysis. Moreover, in order to understand the perception of participants towards the influence of creativity came from the collaborative storytelling activity, a questionnaire is administrated after the storytelling activity.

2.2 Data Collection and Analysis

The research data were collected from two approaches. One is the questionnaire was filled out by participants after the collaborative storytelling activity. This questionnaire was use to investigate the influence of social media, Multimedia Picture Book, which was designed to practice the componential theory. The questionnaire includes two aspects, which involved 10 closed statements of a five-point Likert scale. Each statement was reviewed by two primary school teachers. One of the teachers was the teacher of the participants. Therefore, the statements of the questionnaire are appropriately understandable for the participants. Before conducting the questionnaire, the teacher explained the meaning of every question. While reading questions and writing answers, the participants may also get immediate support if they had any problems. A total of 57 valid questionnaires were obtained. The reliability of the Perception of Mutual Support was 0.83 and the reliability of Satisfaction of Creative Activity was 0.72. The composite reliability of this 10-question instrument (alpha composite) was 0.87. These reliability values all reached the satisfaction and expectation of the study.

The other collected data is the screen capture of participants' operation processes in performing storytelling activity. These qualitative data were considered as the objective representation to validate the perceptions from questionnaire. In order to clarify the cause-effect relationship based on the participants' operation timeline, the data needed to be translated into explicit steps. This translating procedure was conducted by two reviewers who first translated the data independently and then discuss with each other and reached 90% agreement about the translation.

3. Results and Discussion

3.1 Perception of Mutual Support

The Perception of Mutual Support from the participants showed convergent opinion (Table 1). The questionnaire results showed high agree in the devotion of peers in collaborative creation (1st item) and promoting the refinement of creation by mutual support (2nd and 3rd items). Note that the contribution and recognition of participating in the collaborative work reached the agree level (4th and 5th items). The researchers believe the interactions of participants in Multimedia Picture Book not only fulfill the ambiance of positive concurrence but also amplify the perception of self-consciousness.

The researchers inferred that Multimedia Picture Book can inspired participants' creativity and facilitated multiple expression approaches by deriving and remixing peers' creative works. With the support of Multimedia Picture Book, even the participants destroyed peers'

creative works, the destruction would soon be recovered. For example, in one of the screen capture a student drew messy lines on other's work. However, after this student found his name has been listed as the co-creator of the story, he decided to undo the destructive behaviors right away. This implies that the features of the Multimedia Picture Book are helpful to reduce the edit wars on social media [16] which may reduce participants' willingness to contribute works and impede the social creativity.

Table 1. Mean value of Perception of Mutual Support

Item and description	Mean	SD
1. My classmates were devoted to support my creation.	4.33	1.00
2. With the supports from my classmates can enrich my creative work.	4.35	1.09
3. Combining my classmates' contributions would enrich my creative work.	4.47	0.94
4. I think I am one of the creators when my classmates and I create works collaboratively.	4.37	0.90
5. I think my contributions are very important when my classmates and I create works collaboratively.	4.18	1.02

The qualitative data also revealed Multimedia Picture Book can promote the mutual support among participants, and only very few of them did not engage in creating. For instance, two of the participants utilized the discussion forum and derivation for mutual support. First of all, participant W derived participant G's creative work, and then left a message to G. When G saw the message, she browsed all of her works and found out W's contributions from the co-creator list. Then, G reviewed W's creative work and added new content to W's work to show her appreciation. These screen capture timeline showed the Multimedia Picture Book can stimulate the interaction among participants and encourage the mutual support by the contextual awareness, which supported through attribution of co-creator and message exchanging. Consequently, the participant could make decision by him/herself to accept or reject suggestion from peers and remix any resources of repository in Multimedia Picture Book.

3.2 Satisfaction of creative activity

Table 2. Mean value of Satisfaction of creative activity

Item and description	Mean	SD
1. I think I benefited from creating works with my classmates.	4.53	0.76
2. I feel happy when people appreciate our collaborative works.	4.61	0.75
3. I like to work for a common goal with my classmates in Multimedia Picture Book.	4.53	0.80
4. I am satisfied with the creations which were developed collaboratively by my classmates and I.	4.39	0.90
5. I want to use Multimedia Picture Book to create work again with my classmates.	4.65	0.61

Table 2 shows the participants' perception of satisfaction of collaborative creative activity. All of those results showed the participants have positive impression of Multimedia Picture Book. Especially it can prompt the feeling of happiness when personal creations were appreciated by peers (2nd item). In addition, the participants demonstrated higher intention of future usage in this kind of collaborative creativity platform (5th item). Therefore, it is rational to predict the satisfaction of collaborative creative activity is correlated with the positive perception of mutual support (section 3.1). And, Multimedia Picture Book also promotes participants' engagement in achieving a common goal (3rd item). The qualitative data also verified that once the participants found he/she can contribute ideas and works to the collaborative activity, he/she would devote more contributions in creating.

Rhodes [11] highlighted four essentials about creativity, such as the person, process, product, and place. Moreover, Amabile [2] precisely emphasized that maintaining own

creativity in work depends on maintaining personal own intrinsic motivation which should be synergistic with extrinsic motivation from work environment. In the Multimedia Picture Book, two key elements encourage the accrual of creativity. First, effective supports help to take shape the creativity and express multiple interpretations through the work environment which is equipped the mechanisms of derivation and remixing. Second, contextual supports from the work place could stimulate the interaction among peers and motivate them to produce more creative works.

4. Conclusion

This study set out with the intention of encouraging students' creativity by proposing a social media oriented platform, the Multimedia Picture Book. The qualitative and quantitative results indicated that this social media platform which was designed to fulfill the approach of Amabile's componential theory [2] can satisfied the user's creativity experience in motivation and interaction. According to the findings, this study asserted that the personal expertise can be augmented by furnishing with sufficient various types of resources for developing and concreting the innovative ideas. The creative thinking skill can be cultivated through the mechanism of derivation and remixing for arousing multiple interpretations and enriching the creative works. In addition, the Multimedia Picture Book represents a contextual support in peers' interaction and co-creator listing to motivate the users participated in creative activity. This framework of the Multimedia Picture Book demonstrates the approach between the Amabile's componential theory and the design of social media platform.

Within such an approach, the findings revealed that the derivation and remix stimulate the opportunity of collaboration and interaction between the participants for creating works. However, the recovery of destruction in this social media also emerged the importance in preventing inferior creative behavior. Additionally, this social media can augment the participants' positive concurrence and encourage their creativity by mutual support and recognition of contribution. The findings expressed a positive intention to use the Multimedia Picture Book and its features for more inspirations, richer representations, and more satisfactory artifacts in the collaborative creativity experience. The expected outcomes and participants' experience represented in this study also have revealed important research questions in creativity improvement and future research should focus on assessing students' creative thinking skills. Consequently, evolving research on the use of social media in promoting students' creativity can expand in the broader goals in the contemporary educational setting

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