Technological Empowerment: A Study on New Media's Impact on Participatory Culture in China's Higher Education System

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***Abstract*—New media technology advances the innovation of higher education systems in China. In the wake of new media, learning environments have become more relaxing and accessible than before. This benefits leaners who want to obtain higher and more in-depth learning. Learners may have fragmented learning opportunities and create fragmented content during their spare time. Online education systems provide a platform for participatory learning and offer online users opportunities to achieve co-creation.**

Keywords-New Media; Higher Education; Participatory Culture

I. INTRODUCTION

Many people, especially those born after the development of digital technology, are inseparable from the convenience of new media tools in terms of payment, travel, learning and work. Such people learn through "ubiquitous computing" technology, which provides specific and active media/tools that are integral parts of people's daily activities (Dieterle, Dede & Schrier, 2007)[1]. The development of communication and interaction systems may make the dissemination and manufacture of content play a greater value. The influence of new technology on higher education has not only extended the scope, and objects, of communication, but also extended its content and innovation. The continuous innovation of the learning model is integrated with those cultural practices termed 'participatory culture', which exist in all areas of the Internet, and also has a significant impact on people's productivity. Web 2.0 influences information and knowledge creation, not just in terms of a media message, but also as a "next generation" cultural revolution (Cheung, 2009) [2].

Higher education struggles to catch up with 21st-century technology (Prensky, 2005)[3]. Therefore, higher education still has many shortcomings – and opportunities for development. Research into new educational models in the Web 2.0 era is a new field. Future research should not only pay attention to the new roles and platforms new technology brings, but should also study and promote the modes and systems of new-technology communication. The flow of information is not only constituted by the behavior of the creators of a technological platform, but also by the new environment constructed by the spontaneous participation of the global network users who interact with it.

II. THE LEARNING ENVIRONMENT IN THE CONTEXT OF NEW MEDIA

New technology is used to create interconnected three-dimensional spaces in order to eliminate geographic and temporal limitations. So, learners have access to both community and individualized learning environments. The advancement of new media entails "a less hierarchical knowledge society" (Cheung, 2010) [4], than the uneven distribution described in the knowledge gap hypothesis (Tichenor et al., 1970) [5]. The new technology promotes the spread of information flow. This means that all the people who can apply new technology can achieve equally synchronous and lifelong learning.

New media tools not only avoid the barriers of local geographic boundaries and stratum but also blur the roles of students and teachers. In other words, "Web 2.0 presents a new challenge to media education as it is changing the perception of who has the authority to 'say' and 'know'" (Anderson, 2007) [6]. For example, new technology gives the classroom more forms of participation, as a kind of information base through which information can be found quickly, and as a medium of social interaction. As a tool that offers visualization and a function of human-computer interaction, it invisibly gives students more opportunity to initiate social interactions in the classroom. The result of this expansion of information technology is that students possess accurate information and a voice. Sometimes, a student may even be an "expert" for teachers. The use of new media applications increases the probability of this. As a result, the authority and importance of teachers is weakened. Moreover, undergraduate students not only exchange roles with their teachers, but are members, alongside teachers, of the same team. These circumstances may be summarized as follows: the student may tell the teacher, "yes, you know more than us about some of these things but let us work together to make your understanding stronger: you lead us, and we will show you the way" (Cheung, 2010) [4]. New media technology is the catalyst for the transformation of traditional teaching modes, through

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which students are not only recipients of knowledge, but also participants in its acquisition.

The attributes of Web 2.0 have inevitably brought increased conflict between different ideas in the field of education. As students acquire more concepts and knowledge systems, the classroom environment cannot return to its previous state, which had one-way communication, or less communication. Therefore, in this context, the traditional teacher-centered (one-to-many) teaching model has begun to shift to a student-centered (many-to-many) teaching model. New technology empowers children and offers new ways of sharing and interacting with their peers (Heim et al., 2007) [7]. New technology emphasizes student interaction with information in the classroom, instead of passive reception of information. Therefore, it has broken the spiral of silence, and made leaners accumulate knowledge or replace false knowledge.

III. SOCIAL INTERACTION MODELS FOR PEER REVIEW IN MOOCs AND JOURNALISM COMMUNICATION

The core style of education has changed through participation in Massive Open Online Courses (MOOCs). Researchers suggest that informal learning experiences offer a potential bridge between social media and academic content (see Bull et al., 2008) [8]. The teaching systems in Chinese MOOCs help students to understand knowledge, and to apply that knowledge to practice. On these platforms, teachers have turned from mentors into guides, and most courses require students to achieve as participators. Many learning apps or online education platforms, such as Coursera (www.coursera.org), edX (www.edx.org), and the Chinese University MOOC (www.icourse163.org), have a 'peer review' mode in which students grade one another's tests. Technological empowerment has downplayed classroom or school boundaries, compulsory learning rules, and so on, and created a shift in emphasis on initiative and participation in higher education, away from the passive constraints of traditional education. The degree and quality of participation in the courses are determined by the participants themselves.

Social interaction on the online higher education platform has something in common with the mode of news dissemination: information is received from the virtual platform first. Information can come from the platform or can be given by participants. After learning the information, participants will intentionally or unconsciously think about the contents of the information, and give feedback. Feedback can be reflected on the relevant platform, for example through comments on content generated by other participants, which form a circle of social interaction. At the same time, student feedback can also be reflected by a student's own created content, which is affected by the information viewed. This is a form of invisible social interaction. Learners can improve the quality of their information output, and affect the quality of social interactions for people browsing newly expanded information.

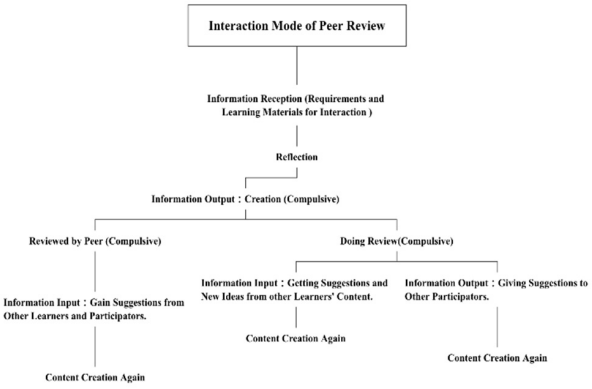

Image 1. Interaction Mode of Peer Review.

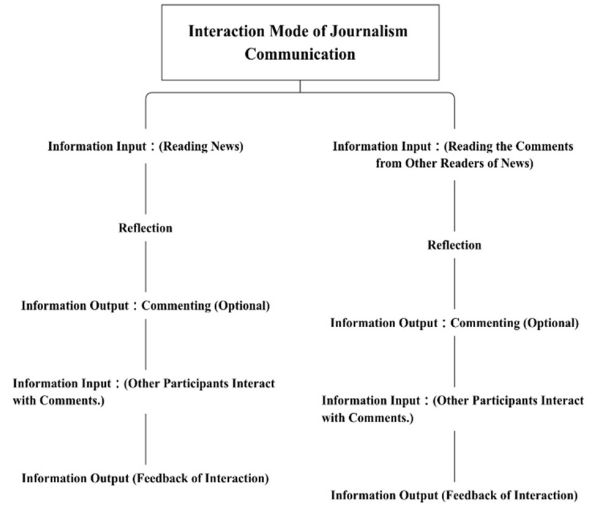

Image 2. Interaction Mode of Journalism Communication.

Citizens who browse other people's comments expressing opinions and thoughts about a piece of news will produce new ideas of their own, or change their original ideas. Learners participate in the acquisition of information, communication with other learners, and public platform speech. This is a process of constant absorption, through social interaction, of information which is then screened and thought over. Social interaction via MOOCs is different from that on news communication platforms, because the model of peer review is a compulsory part of the curriculum. Thus, participants cannot escape social interactions, such as scoring and commenting on other students' work; whereas in the area of journalism, Internet users can choose whether or not to engage in information output.

Information may be generated consciously and purposefully, or unconsciously or for no direct purpose. These patterns of information generation can be termed user-generated content. As in journalism, readers want to post their ideas on comment platforms. Most commenters do not think about how deeply their ideas will affect other viewers. In fact, the effect has been the exponential growth of learning. The primary purpose of

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these online courses is not to complete traditional teaching tasks, but to go beyond the boundaries of traditional education so that students can develop comprehensive abilities through immersion in a participatory culture.

Categorically, the novel teaching methods in MOOCs are constructivist. According to social constructivism, human development is socially situated, and knowledge is constructed through interaction with others (McKinley, 2015) [9]. Constructivism emphasizes the initiative of learners. A learning environment has four elements: context, collaboration, conversation, and meaning construction. These four elements have been fully reflected in network education platforms: MOOCs have achieved knowledge construction through collaboration and conversation in multiple virtual spaces. New media systems have characteristics of hypertext, namely, online information is not sequential and linear, but rather, is interlinked with many links. Relevant derivative information found in the process of information searches, which extend points of knowledge, can help learners to better understand the relevant content of a course and to form a relatively complete knowledge system in a given field. This is because the connection between information is often more meaningful than the information itself. Each information node provided by learning partners on online forums can make up part of an individual learner's information bank, and allow the learner to construct new understanding through comments and reviews. The biggest challenge for teachers is effective active course design. The mode of an online curriculum delivered by new media always pushes learners into a group-learning environment and to constructive knowledge acquisition, because it is a critical process which they cannot ignore, if they wish to obtain online certificates.

IV. ACTIVE PARTICIPATION: CONTENT CREATION IN THE INTERACTIVE LEARNING FORUM

Apart from mandatory peer assessment, MOOCs have also set up learning forums for autonomous participation, which draw on the learner's intellectuality and enthusiasm to participate in discussions, and facilitate co-creation via social interaction. To achieve timeliness and accuracy in news reportage, journalism needs citizens' fragmented and instantaneous participation. Because each event begins instantaneously, traditional journalists cannot appear immediately at every emerging event. However, there will be people present at each event. Therefore, news organizations require videos or texts from eyewitnesses on the spot. This is co-creation in the field of journalism, comprising the collective intelligence of both professional journalists and non-professional witnesses. Online learning platforms gather and display content created by different learners in the same curriculum, in order to achieve the co-creation of knowledge and ideas. After long-term, fragmented study, a learner's brain will deal with many pieces of information. Eventually, the information becomes chunks of knowledge. In other words, "The functions and format of Web 2.0 mirror mind maps and give a visual representation of ideas and the linking of ideas" (Cheung, 2010) [4]. This means that online education platforms make the learners, in a given course, intangibly form a virtual team. A team is termed a 'virtual team' when at least one of its members works in a different location, time zone, or culture (Mukherjee & Natrajan, 2017) [10]. This kind of reorganization and presentation of visualized fragmented content leads the members of a virtual team to achieve the most efficient information co-creation.

Co-creation sometimes requires free and enthusiastic participation, which can be achieved through network empowerment: having users choose courses according to their preferred models, and giving them a voice on the Internet. Besides, new technology has facilitated a shift in the composition of learning groups, from learners who have the same educational background, to those who have similar interests or goals but may be of different ages and occupations. This kind of interest- or career-driven curriculum, drawing on learners' collective intelligence, offers more meaningful content than a traditional class.

V. CURRICULUM MODE OF MOOCs IN CHINA

The Chinese domestic platform has been constantly learning from international platforms, and has its own characteristics: each course on the Chinese University MOOC platform has an online community which includes real-time discussion facilitated by Chinese social applications such as WeChat and Tencent QQ. Each course promotes wide scale social interaction, provided that its community is well utilized.

However, participation and interaction on this platform have not been much improved. The higher education system has not kept pace with the development of new technology. This lag breeds a certain anti-participatory culture, a kind of exclusion from, and boredom with, online interaction and participation. The network gives users the right to speak, which is the premise of all interaction. Some Chinese MOOC curricula pursue user participation, but set up participation tasks in an unscientific form. For example, assignment scores may be assigned according to the number of likes from other learners, which means that the quality of course participation is measured by page views. The effect of this is that those participants who have new, quality ideas, but do not get good scores, lose motivation to innovate. This kind of utilitarian teaching mode creates a compulsory and utilitarian anti-participation culture, which leads to an output of content consisting of invalid participation. Worth has been defined as active engagement, the opposite of which is boredom and alienation (Wolf, 2009) [11]. This low-worth outcome is contrary to the original intention to reform higher education through new technology. Social interaction for the sake of making friends and seeking praise, rather than sharing knowledge, has increased.

Learners in these courses rarely try to communicate with others, because many curriculum modes are not conducive to the breeding of participatory culture in learning. More specifically, the Chinese University MOOC, to some extent, cultivates an anti-participatory culture which does not motivate thinking and innovation. Therefore, there is much invalid content (repetitive and copied ideas) in forums on this platform. In the repressed learning mode, in which course scores depend

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on likes, learners often lack enthusiasm about participating. This is because this kind of scoring mode focuses on socializing instead of co-creation.

VI. CONCLUSION

The accessibility of information encourages lifelong learning. The pursuit of higher education occurs not only in universities, but also on any screen. However, schools and governments in many countries pay less attention to new media education for both students and teachers. As a 'hidden curriculum', new media is necessary for the delivery of courses in the development of society and people.

In curriculum design, the generation and depth of participation and social interaction need to be an added catalyst. Online platforms need to use a scientific curriculum system to catalyze these positively. Therefore, to promote the internationalization, and specialization, of higher education curricula on Chinese domestic network platforms, we need to introduce media literacy education and professional online learning-system design.

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