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Back to the Era of Conditioning Theory? The Case of the Moodle Platform

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Abstract

This article discusses the role of critical theory in the process of enlightening teachers and students in the digital era, in which higher education has been obsessed by meritocracy. Taking critical theory especially, Herbert Marcuse's critique of the "one-dimensional man", as guide line, the author objects to the conditioning theory as the basis of teaching and learning, since it would alienate the intrinsic relationship between teachers and students.

To show the tenability of my view, an empirical study on the awareness of the negative function of teaching and learning integrated with ICT among teachers and students is conducted. As result, some main problems are found as follows:

1. Although both student and teacher are aware of their own rights and the significance of autonomy, their teaching and learning integrated with ICT are far from expectation, as seen in the low speed of the Moodle platform.

2. On the other hand, teachers in university are rather passive in using the Moodle platform (They are asked for and the Moodle system is free). They are, in fact, not conscious of the danger of being dominated by the system and, consequently, of the inequality of rights, which could hinder the development of autonomy and self-reflection. By criticizing the Moodle system, I indirectly show the indispensable role of critical theory in helping teachers and students to emancipate themselves from the pitfall of technology and its instrumental rationality

Keywords: Conditioning theory; Moodle platform; Critical theory; ICT

Introduction

Building learning and knowledge management systems integrated with information technology has become an indispensable trend for ubiquitous learning since 20th Century [1], despite its complexity. Software platforms have been designed and used to such purposes. One of them, the Moodle system, is designed for senior-level professionals who need to apply these technologies in their teaching and transmitting their knowledge. Such technique, as they believed, would enhance students' learning capacity due to its flexible adaptability, conformity to the multi-needs, and learning styles. The Moodle system offers a wide definition, and takes experiences, background knowledge, learning skills, and so on, into consideration.

However, the Moodle system is not well functioning as predicted. One wonders whether the informational technological tools are really good enough to affect the learners and to improve performances. Further, whether the involved teachers are well aware of the pitfalls and the real (but concealed) motivations of information technology or they are just blindly obsessed by its conveniences and dictated by the policy of learning performances, these questions force us to re-examine the uncritical belief in the information technology, here the Moodle platform.

I take Herbert Marcuse's critique of the domination of technology as a model of my critique of the Moodle platform. In The one-dimensional man [2], Marcuse attempted to transform Hegel's dialectic into a tool exposing the objectification of technology, the same way Marx did in his fight against the alienation of human beings. In Marcuse's view, technology is not vice in itself. Following Martin Heidegger, Marcuse sees in technology rather as an expressive way of beings in dealing with the world. Technology depends on human will, which is rooted in one's own value system, or meta-cognition.

Aware of the significant impact on higher education nowadays of information and communication technologies [3], I share Marcuse's insight and begin with an investigation of the meta-cognition of teachers and students to see how the power of the Moodle platform system would influence their teaching and learning, and whether they have the capacity to detect its errors.

I take the case of the Moodle platform's application in a Taiwanese university as the object of investigation. Interviews and surveys are conducted on the subjects of a good role model for teaching and learning among teachers and students. The question of whether school-effectiveness depends on teachers' professional literacy and their productive instructions or rather on ICTs is discussed via semi-structured interviewing surveys.

The author would begin with the arguments that the effectiveness of teaching and learning could be justified by the Moodle platform or e-learning system., I then argue that it would be too optimist to predict its success in forming good teachers or students, since information technology may also whimsically produce pseudo-teachers.

First, the advantages of the Moodle system over traditional teaching--with whiteboard, discussion, learning materials, library and practicing sheets of self-learning, face-to-fact dialogues--are seen in its open, free, but discretely and frequently, self-display to the viewers. Such advantages certainly boot information, but unable to guarantee knowledge growth, skills learning and especially *Bildung*, i.e. a growth of knowledge in terms of cultural enrichment, social progress and individual fulfillment. Kellner, Lowis and Pierce rightly pointed out that the Moodle system can hardly "enrich the individual and culture" [4].

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Second, the Moodle system, based upon constructivist learning theory, claims to reduce the amount of redundancy and unnecessary repetition, and encourage problem-solving skills, and consequently, to be able to give students the opportunity to participate in the process of learning more effectively and more easily [5]. If such claim is true, then one has to take the belief that it is due rather to technology, and not to teacher's teaching capacity and student's ability.

However, the fact that the effect of teaching and learning depends more on teacher's professional commitment and on student's willingly participation would support my view that information technology is not the panacea. In contrast, it may reduce self-awareness, a key factor determining professional knowledge and traditional power. The absolute power of technology is relating to the danger of self-alienation, as Kellner and his com-researchers noted [4]:

These everyday examples of life in industrial society reflect a repetitive, dulling, and mutilating mode of life that Marcuse saw being accelerated by the technological achievements of advanced industrial society.

Of course, major changes of higher education are owned to new technologies (i-phone, facebook, Massive Open Online Courses, etc. [6], but any change may be for better or worse depending on the self-awareness of the user. Thus, the operation of the Moodle system should be investigated to see how professional power, power operation, and power source are linked to integrated technology. So, this article has to place the power of teacher and student in the interactive environment of information technology. The question of how teachers could help themselves and their students to get rid of the old "indoctrination" pattern, and how to enlightening themselves is therefore the main objective of this study. To reach this purpose, a constructive approach will be suggested to the Moodle system users so that they may design less "alienate" and to make learning more effective.

Theoretical Foundations

Since my questionnaire is based on the power which lies in the relationship between teachers and students, a certain theoretical foundation of such relationship should be discussed. Here, I am going to examine three basic theories of e-learning, the operant conditioning theory, the cognitive learning theory and the constructivist theory.

The operant conditioning theory

Operant conditioning theory, introduced by F. Skinner, identifies three types of responding to stimulus: neutral operant conditions, reinforces, and punishers. Three types correspond with three principles:

- A positively reinforced will reoccur
- Information should be presented in small chunks, in order to respond to be reinforced
- Reinforcements will produce secondary condition while reinforcements are generalized across similar stimuli [7].

In this way, the operant conditioning theory forces learning under an arranged environment. There is no way for learners to think by themselves. That means, the operant conditioning theory regulates students' behaviors and reduces their thinking force. Such theory, unfortunately, is not compatible to the essence of education as person learning to grow up. Furthermore, conditioning theory is breaking the content into chunks, generalizing them, and locking them in certain logic.

Actually, the operant conditioning theory has been taken as a fancy theory focusing on clear cut information by controlling learners' experiences. Such theory is preferred by the one who sees control as the best way to subject the learner to a certain system, or order, or regime.

Since power-control is regarded as principle, designer and even educator would design learning materials to control learners. In this sense, educator is kind of software technologists in advance. Since the controlled, in terms of feedback, opportunities and consequences, includes learning processes, time, methods, contents and speed, etc., software designer plots devices to have teachers engaged as mentors in motivating students, in highlighting pros and cons and in detecting the causes of failure via technological platform. That is the function of the Moodle system.

The Moodle system displays the power of the conditioning theory regardless of individual view and intention of teachers and designers. Even the rights to express, to respond or to protect personal privacy, all are set by the designer regardless of the difference of teachers and students. The question of whether or not the designer of the Moodle platform is concerned with free thinking in using the information technology, and whether teachers and students are aware of their varied rights before or after their use of the Moodle system is our concern, the answers of which should be found via the interviewing survey.

Cognitive learning theory may reveal the learner's mindset, but not the subjectivity itself

In a certain aspect, reschedule of the materials and integration of learning with the technology might help to make learning subjects more attractive to students. IT-technology-the Moodle platform is the case. However, as I have pointed out in conditioning learning theory, IT-technology integrated into teaching and learning may reduce the learner's autonomy. The crux is not only the un-awareness of students and teachers about the danger of being dominated, but much more, their capacity to free themselves from this new form of slavery. Hence, my interest is whether teaching based upon cognitive theory could be helpful for teachers to reduce technological domination and to enhance the power of teachers' professionals without losing IT convenience.

As I have pointed elsewhere, an intellectual movement of cognitive sciences in the 1950s has been developed by Piaget and Vygotsky [8]. Cognitive theory emphasizes on learner's consciously thinking and reality actively constructing. Reality understanding is through the act of discovering the world, and not by passive information. Human mind is taken as a system that acquires information and applies it to reality with the help of logical rules and strategies [8]. It is in this way, learning material should be focused on making the learner think, instead of memorizing and passively learning. Further, cognitive learning theory objects to behaviorism-a dominant theory of experimental psychology which was widely taken for granted in education at the time-for the latter's mechanism.

Cognitive learning theory puts emphasis on the way of how to think, to understand, and to know "to learn meaningfully, students must relate new knowledge (concepts and propositions) to what they already know" [9], and reject the old conception of passive reception. This demands that any successful instructional designer or teacher should be aware of learner's capacity of comprehension besides techniques' application ability, data collection method, and logical structure implication.

Cognitive theory, as such, seems to pay less attention on information, and leaves more space for the learner to think and to engage in learning. Despite its advantage over functioning conditions

theory, cognitive theory is not yet taking the subjectivity itself as the end. It still relies on the designer. Consequently, learner's engagement is limited, and the teacher in the role of coach, mentor, initiator and supporter would act in accordance with cognitive theory. They would not treat the learner as equal, sitting at the same table and talking to each other. In sum, the lack of attention to the subject points out the backwardness of democracy and autonomy in learning.

Constructivism theory stresses the ability of autonomous subjectivity

JS Bruner, one of the founding fathers of constructivist theory, sketched out a theory of human development and a theory of instruction [10]. Relying on Piaget and Vygotsky's cognitive learning theory which emphasizes on the active involvement of learner in idea-constructing, knowledge-building based on intrinsic motivation, past experiences and knowledge, Bruner wanted to go a step further to create an educational environment that would focus on what was uniquely human about human beings [5]. He postulated three stages of intellectual development to explain the effective learning emerged out of exploration:

- The "enactive" stage of learning through actions
- The "iconic" stage of learning by using models or pictures
- The "symbolic" stage of developing the capacity to think in abstract terms [5]

Apparently, constructivism is related to the theory of enlightenment, through discovery, experiences, collaborative learning team, project-based, task-based, and problem-based learning. So, learning must become one's own interests of exploring the fact, of digging for its reasons, and of searching for the significance of life by oneself. One may find in constructivism with its insistence on self-reflection and critical thinking a certain help in reducing the domination of technology, and hence, in reducing the mechanism of the Moodle system. As such, constructivist learning theory demands learner to develop one's own understanding, and teacher to be a facilitator and designer of teaching and learning environment compatible to student' cognitive experiences, and a promoter of free exploration and learning. Furthermore, constructivist theory is constructed by teacher and learner, so no knowledge is possible without a close co-operation among them: "trust and respect are synonymous with healthy relationship" [11]. The construction of knowledge begins with the teacher's acceptance of the diversity of students and their knowledge, strength and weakness and with his belief that all are of values and can be revaluated in terms of their efforts and achievements. Each student is a subject. Therefore, teachers have to work together with students in a sharing and critical spirit. As such, students would acquire self-confidence, be keen to work independently, know to enjoy and dedicate to learning.

It is remarkable to see that mutual respect and trust establish a threshold for teacher-student good interaction instead of professional or even traditional power. Further, moral support permeates through the positive interaction in classroom; and self-reflection, self-learning and responsibility have been taken into consideration, in particular, in designing a constructive learning environment. My question here is, do teachers take constructivism in designing curriculum and teaching via the Moodle? How can this pedagogical thought be recognized?

This article is arguing that both conditioning and cognitive learning theories are of good use for teaching and learning for their integration with IT technology. However, the operation of a dominant discourse may offend the learner's intrinsic motivation (knowledge), and would deny him (or her) the rights to learn. It would hinder positive interaction environment, and would restrict the ongoing communication about effective practice. Unhappy student, distracted teacher and undermined positive engagement would be the consequence of the monopolization of a dominant discourse.

The Moodle Platform in a University in Taiwan-A Case Study

Based on the gain and loss of the conditioning theory, cognitive learning theory and structuralism, a semi-structured questionnaire is designed to explore the power/authority concealed in teaching and learning via the Moodle platform IT-technology pedagogy based upon learning theories. The Moodle provides the most flexible tool-set to support both blended learning and 100% online courses. Since the Moodle system is widely used by teachers in Taiwan, it would not be necessary to repeat its functions here. Instead, I would like to give a panoramic picture of the empirical method (interviewing survey) by means of which I conduct my study.

The empirical method

Questionnaire design, samples and data record, and its implementation:

(i) Questionnaire design: A semi-structured questionnaire as the tool for interviewing survey is designed based upon three main areas:

- Literature review
- Classroom observations and informal view-exchanges about the Moodle platform knowledge and experiences
- Informal view-exchanges with students over the Moodle platform learning experiences under teacher's 'requirement' of taking (or non-taking) the required courses

(ii) Validity and reliability: Since questionnaire is designed to investigate the user's awareness of the domination of the Moodle system, one has to ensure its validity and reliability. Here is used a within-method triangulation via the interviews of different subjects at varied time. The interviewee (3 teachers and 3 students) are selected on the basis of their participation in the courses integrated with the Moodle platform for more than 2 years continuously. Furthermore, three teachers (from the total of 487 teachers), familiar with the Moodle system after more than 3 years with it, are taken as samples. Note that all selected teachers had run courses which had been evaluated as excellent IT technology using courses. (The details are: Teacher 1 (T1), 36 courses, T2, 27 courses and T3, 19 courses. Student 1 (S1) took 3 semesters on-line courses. S2 and S3 took 7 semesters' on-line courses). Sampling students had to meet two conditions:

- One must be recommended by one's own teacher
- The one who had continuously taken the courses integrated with the Moodle platform for 3 semesters at least, and with passable grade

(iii) Interview Survey Implementation: Each interviewee took 1~1.5 hours for each time. Two of them (T1 and S1) took 2 interviews. The interval of 1~2 months between 2 interviews is needed to guarantee its reliability. The second interview focuses on their reflection upon the experiences and effectiveness of the teaching and learning through the Moodle system. Needless to say, the second interview would enhance the validity of the finding.

(iv) The interviews were taken in November and December, 2013. Data are recorded, analyzed and shown as 'T' for teacher, 'S' for students, dates numbers for the interview time. For example, T1, 2013/12/06 means Teacher 1 with his or her interview on 6 December 2013. All interview records are erased after this research in accordance with privacy protection laws.

The following questions are expected to answer through interviews

The functions of the Moodle system, including advantages and disadvantage, are constituted as parts of the contents of questionnaire for interviewing. Some facts are also expected to be explained from interview. They are:

a) What is your reason of taking the course integrated with the Moodle system? (The answer would be helpful to understand whether teachers are aware of the Moodle system's domination and whether they are able to evade from it.)

b) What functions of the Moodle system do you use often? And what causes your irritation when using the Moodle system, and why? (The answers would reveal your concern or indifference to the power (either from the Moodle system or from teachers. They would explain also the user's meta-thinking about the learning theory).

c) Do you feel free to express your own ideas or opinions on the Moodle platform? (This question might sort out how teachers/students sense the domination of technology, and whether they are keen to protect students'/your own subjectivity? Also, the possibility for teachers/students to reject the domination during using the technology to enhance teaching and learning effectiveness will be discussed.)

d) What are the advantages and disadvantages of the Moodle platform? And in what way does the Moodle system make good use to promote your teaching/learning effectively, and why? (This question will help to ensure if teacher could offer the opportunities for students to construct their own knowledge; it would deal with the question of whether teachers are getting used to operate the Moodle with the relinquishment of controlling students' free will.)

e) Do you think the Moodle system in some ways hinders students/you from learning autonomously because almost all learning materials, homework and learning steps have been getting ready beforehand? Who does make the Moodle function this way? Have you ever thought to dodge the domination from the technology? And why and in what way? (This can explain what pedagogical philosophy is taken for teaching as well.)

The Findings and Discussion

The findings following the discussion are shown as follows:

Free access is a main reason for teachers to take the moodle platform system for pedagogy

"Moodle" is a learning platform, which is web-based and can be accessed from anywhere and free of charge. It is designed to provide educators, administrators and learners with a single robust, secure and integrated system to create personalized learning environments [12]. As it claims, it is an all-in-one learning platform. As the survey indicates, the key reason of the popularity of the Moodle system in Taiwan is no required fee and not its convenience or good functions. Actually, university staff has been encouraged to use the Moodle since 2009 due to the financial reason. Only ca. 80% teachers declared that they would have improved their learning effectiveness in using the Moodle system.

Both teachers and students claimed to be aware of the rights, limits and advantages of the Moodle platform

As seen from the answers to questionnaire, it seems that teachers and even students are conscious of the Moodle system. A teacher said: "*Course code has been set already by the university, but I can see it when it is necessary for me to know*." (T2, 2013/12/06). Another teacher insisted: "*The course is not for the students who do not inscribe for this course. The non-inscribed student who wishes to attend this course must get my permission*." (2013/12/06, T1, T2 and T3) "*We all know that voting, reading students' reports, homework and even handouts are the rights and duties of teacher. And we can accept this*." (2013/11/04, S1, S2, & S3)

However, despite this superficial awareness, teachers in general lack of a deep consciousness about learning performances. They are not sure how much and how far they can decide about learning performances as seen in evaluation and even its result. The answer of students about the process and result of assessment is prototypical explaining the vagueness of teacher's knowledge about the Moddle system: "*We have no idea about if and when we can take part unless we're told by teachers*." (2013/11/04, S1, S2, & S3).

And this vagueness is testified by the variety of answers of teachers to the effect of the Moodle system. Some are happy to see the evaluation open for all: "*Evaluation must open for all absolutely, because by this way one may reduce the enquiry from what the learning performance comes*" (2013/12/06, T1), while some other may not be too enthused. They thought that performance result should be kept confidentially. It can be given only to the concerned student him/herself. Actually, the Moodle platform can merely open for the ones who choose the course.

This debate leads to the question of privacy rights. How far should privacy be protected? Is it decides by teacher instead of students themselves? If so, then, this is the teachers' rights. To claim the rights back, should students go to the public making their performances public? The crux here is, there is still no equal authority between teachers and students. Due to a long tradition of Confucian ethics that is the foundation of social orders, teacher's authority over students is morally defined and observed. As such, teachers and students, despite their claim of being aware of their rights, they are unconsciously succumbing to the old system of authority. There is, however, some change has seen in my argument in the following section.

Autonomy in curriculum-design

With the opening of democracy, Taiwanese education seems to be more democratic today. Students are asked to be more engaged in designing curriculum for themselves, and teachers are willing to give this opportunity to them. They said, for example: "*Teachers always asked our opinions for the details of the syllabus at the first week of the semester, and for how the course would be going.*" Sadly enough, they however "*are seldom expressing their ideas*." (2013/11/04, S1, S2 & S3), simply follow their teachers: "*We respect what teachers said and always do what teacher asks us to. Our teachers are very kind of us*." (2013/11/04, S3)

The paradox of "moving forward to democratic society" and "respect for traditional authority" is best reflected in the student's unwilling to emancipate from teachers' authority, and teacher from state's authority. As consequence, autonomy is a simple lip service, and passivity is a good expression of obedience. Teachers would prefer to provide students the handouts rather than to encourage them to be a

part of the curriculum, including teaching contents and methods. A teacher confessed: "*I prefer to provide the handouts to students directly rather than to ask them to download, because I am afraid that students do not really read them carefully.*" (2013/12/06, T2) Such attitude displays a lack of confidence in students' self-learning capacity, but also a fear of authority's loss. The uneasy feeling of being challenged by one's own students pushes teachers to simply provide learning resources and syllabus, and shun from open discussion. The Moodle system may satisfy teachers exactly for that. It is providing nearly all learning materials (2013/12/06, T1, T2 & T3; 2013/11/04, S1, S2, & S3), but it does not stimulate and is not open for discussion. This is verified by kind of answers like "*we are available to review or get learning material handed out in the classroom.*" (2013/11/04, S2, S3) "*However, some of classroom dialogues which did not record are unable to get after classroom so that we are unable to do self-learning.*" (2013/11/04, S1)

A familiarity with the Moodle platform is required for the user. Autonomy, effects from teaching and learning should be integrated with ICT

These are the conditions that all users of the Moodle system have to accept. Teachers should know the functions of uploading, making copy of their teaching resources and database designing etc., as seen in the answers like. "*The guideline for the Moodle platform provided by university is not clear enough for us to grasp every bit of its functions.*" (2013/12/06, T3 & T2) And "*the training courses provided by university to introduce the Moodle platform are far more enough for us to get familiar with it.*" (2013/12/04, T1, T2 & T3) Further, "*the guideline on the platform is not written in Chinese yet. That causes our difficulty to grasp its functions, in particular, the rights for us to employ the Moodle platform.*" (2013/12/06, T3) Fortunately, "*it is not too hard for us to understanding how the Moodle system functions, and you will get familiar soon after one or two semesters.*" (2013/12/06, T1, T2 & T3) In a word, "*the system is super to push students to hand out homework without arguments.*" (2013/12/06, T2)

Note that the Moodle system demands for "good" habit, the more one is accustomed with it, the better effect one may get from it. Good habit is the custom one follows spontaneously and unconsciously. Bourdieu has brilliantly analyzed habits (habitus) that could reproduce actions and constitute culture [13]. Needless to say, "habitus", action and culture constitute a spiral framework of cognitive epistemology.

The Moodle system and its dominance

As I have pointed out that the Moodle system is taken primarily by teachers for its usefulness without losing authority, and by students for better grade with less creative labor. The fact that teachers are inclining towards a control of the learners' behaviors is verified by their uncritical embracement of the Moodle system. Students have to follow strict regulations to hand out homework, to stay in the Moodle, and what the quantity and quality of learning performances students should show and so on. Followings are the answers of teachers to the main reasons of their acceptance of the Moodle system. They all implicitly display the factor of authority, and the tacit acceptance of the dominance of the Moodle system.

A teacher expressed her satisfaction:

It (the Moodle system) does save my time to prepare teaching materials because all materials can be reused and what I should do is just add something new to it. Further, it works much more successful than in the classroom as usual, in particular, in posting or making an announcement, and taking a quiz.(2013/12/06, T1).

Another one said that:

Though the system is somewhere inconvenient, it is still convenient for me to inspect students' learning performance, in particular, during the process of teaching." (2013/12/06, T2)

And the third one:

I agree with T1 and T2's opinions about the advantages of the system, and add further that it works to keep students attention during the classroom, and students are taken into custody immediately as well. In fact, it is dangerous for us to control the classroom management if the system or teachers give too much freedom to students, according to my own experiences." (2013/12/06, T2)

It is seconded by T1:

Yes. Though I do not change the regulations of classroom learning, my students do not argue against them, as they often did without using the Moodle system. (2013/12/06,T1).

It is interesting to note that T2, even in the second interview, repeated almost the same to the answer, confirming her opinion about the Moodle system:

From doing tests with my own students, I have been pleasantly surprised how well this method works in helping the students to understand the contents. It works so that they would not be able to forget." (2013/12/06, T2)

Further:

W*e must take it (the Moodle system) into account in our designing on-line courses or exercises. This is especially important to self-learning. There is no immediate way for the learner to ask for help if they are confused or don't understand. This takes us a long time to prepare the learning materials and tests.*" (2013/12/06, T1)

And this is the key reason why a great number of teachers would simply advise their students to take certain materials instead of planning or helping them to look for more or different materials. Paradoxically, teachers take the old approach of authority and satisfy with passive recitation and imitation, against their insistence on autonomy. This is seen in their satisfaction with the Moodle system:

Some would tell us:

S*tudents have no excuses to default their learning and homework. Also, it saves my time to Xerox my handouts.* (2013/12/06, T1)

Or:

W*e have no time to argue against (the Moodle system). If we often complaint in classroom about many things, then in contrast, there is no space for us to argue against the rule at all, because time is limited and learning step is speeding.* (2013/11/04, S1, S2 & S3)

In general, despite some complaint about the speed of learning:

"T*he speed of the Moodle is going too slow to respond to teachers or peer's opinions",* or it would cause "*the loss of patience, and sometimes the teacher would give up using the Moodle.*" (2013/11/04, S1, S2 & S3) Teachers and students have a positive regard to the Moodle system:

the system keeps us paying more attention not only to what teacher arranged for us, but also to the interesting part that peers express their ideas and mutual discussion over the topics assigned on the Moodle by the teacher. (2013/11/04, S1, S2, & S3)

Yet, as I have seen, there is a paradox between autonomous teaching

and learning and the ones with the instruction of the Moodle system. The success with the Moodle system, in terms of the performances, does not automatically change into the success of self-learning. A more positive learning should be more constructive. Obviously, the Moodle system based the conditioning theory of knowledge and the cognitive learning theory is insufficient here. It is a kind of game of pulling-and-pushing in which students are deemed to be the losers because of their passive belief in the authority of teacher (as expert and controller of the Moodle platform). In a word, no matter of what function of the Moodle system chosen by teachers, it is guided by a certain instrumental rationality, as Horkheimer and Adorno had desperately attacked [14]. To free oneself from the ideology of instrument rationality, teachers and students should be critical of it. A true enlightenment should be guided by the right sense of justice and democracy of which equity within the classroom is an essential factor. As Whitty [15] recommended, educational system should include a global perspective to curriculum and teaching. Co-operation, critical thinking, democratic values, fairness and peace should be encouraged.

Only through enlightenment that teachers would release time and space for students for free expression, that authority and domination could be minimized. That is aware by teachers as T1 (2014/01/10) claimed: "*I feel that using learning through discovery is far more successful in making people to learn and remember concepts, theories and meanings.*" As consequence, teachers do need not only to create a better learning environment, but also to transform their knowing style to leverage communication with students during and after the classroom. New technology would be a condition *sine-qua-non* for effective education in our digital era, an age of rapid change. Such view is echoed by students: "*We students would like to learn through the Moodle in the classroom more than through the Moodle alone. It is more comfortable and effective for us to learn concepts in an integrated system in the class, face-to-face with teachers and classmates*" (2014/01/10, S1).

Conclusion and Suggestions: Exploring the Future

In general, the use of new media or IT-technologies in education is believed to make studying easier. It is more convenient to inspect the learning performances and assess learning materials by means of new media. Actually, it gives a big advantage, according to the subjects.

However, an unchecked technology would easy drives human beings to take instrumental rationality as the sole approach to reality, and to bypass the superficial effectiveness caused by a lack of concern to human dignity and human existence's meaning. Instrumental rationality makes pedagogy dysfunctional and inhuman as seen in the use of ICT to foster literacy and in the belief in the self-regulated learning skills, a trend in the 21st century [16]. The convenience and uncritical acceptance of new media (as seen in the adoption of the Moodle platform) are taken unconsciously by both teachers and students. By not recognizing the instrumentality of the Moodle system, one may lose the substantive rationality related to the meaning of life [17,18].

True pedagogy aims not merely at improving performance or at changing behavior, but much more at enlightening students' minds. Teacher should not be taken as a stranger, but rather as "a home-comer". And their teachings should be taken in notice [19].

As a result of this empirical study, I would like to suggest both for teacher institutions and university students as follows: First, one should not be allowed to ignore the merits of technology, but also to bypass the damages done by it to human dignity. To minimize damage, e-learning material should be focused on making the learner to think critically. Of course, we are aware of the fact that teachers embedded in dominant ideology of instrumental rationality would still run the course the same way regardless of technology. Here is the reason of my insistence on critical thinking as human capacity of enhancing one's ability and inspiring one's empathy. Critical thinking is of help for teacher in acquiring professional empowerment, and in distinguishing *Being* from thinking itself. Similarly, it keeps students' mind free of burdened ideology, and then helps them to discover the world by themselves. This is the method of the subject's learning through discovery of oneself and his or her world. K. Loewitt brilliantly interpreted this kind of understanding of Being of M. Heidegger as follows:

Heidegger is primarily a teacher. He does not wish to travel alone and then report what he has seen, nor does he wish to go as a guide merely pointing out objects along the road. He wishes the reader to accompany him on the way, to participate with him, and even to begin to build his own way through thinking, and not merely to hear about what it is or should be [20].

Another suggestion would go to the software company. Convenience and effectiveness are key factors determining a good machine or software tool. But human is not a machine. Therefore, for pedagogy, software companies should better pay more attention on human beings, and not only on software itself. It suggests that software tool should be designed with a space so that the user would be able to create and to express one's own idea. En-framing is a mode of revealing. A certain free space to communicate with the designer (complaints, suggestions) is urgently needed. By this way, pedagogy may be able to escape from the domination of either conditioning theory or cognitive theory, or even from teachers' professional authority. Further, cross-border worldwide e-learning would be able not only to reduce the gap between students' learning [21], but also to reach all shared cultures and products of human society, in particular, humanity, dignity and caring, which are constituting the core of education. In a nutshell, it is necessary to the teachers' training, both in-services and pre-services, to take a kind of discourse and dialectic value of learning path, in which critical thinking and interactive communication would activate a positive inter-dependence. Such approach would incentivize the development of personal and social skills of students, in terms of personal autonomy and social harmony.

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