An Education Model

of Knowledge Co-creation Skill through

Transition of Learner's Role

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In recent year, in the field of higher education, the dialogic learning style based on the active knowledge construction of learners are accepted and applied, as well as the learning style of the passive knowledge transmission such as learning through listening to the lecture. This phenomenon implies that it is important to educate the learners' capabilities of knowledge construction through understanding the conflicted solutions from different perspectives and integrate them for deepening one's own thinking towards the problems which do not always have only one correct answer. For fostering this kind of knowledge construction capabilities, the group discussion is applied as one of the education methods. In this context, the discussion refers to the "Ba (space)" for constructing knowledge from the different perspectives through communicating with each other in a logical way. In order to improve the quality of discussion, it is curial to acquire the metacognitive skills of expressing one's own opinion logically and estimating others' thought for understanding others' intention appropriately.

To acquire the knowledge construction capabilities, it is difficult to learn them merely from the textbook or the verbal information but necessary to learn them based on the accumulation of learner's experience on thinking reflection. The reason why experience accumulation is curial to the learning of these capabilities is that although the basic knowledge on knowledge construction capabilities can be acquired, how to apply the acquired knowledge for its application is still difficult for the learners.

The lecture of "Introduction to Knowledge Science I" is one of the fundamental courses in the School of Knowledge Science, JAIST, where the author is from. This lecture is designed as a "Ba" for the learners to

improve their abilities and co-create knowledge with the others students, the teaching assistant and even the lectures. Based on the experience from the thinking reflection and discussion, the students are expected to acquire the knowledge construction capabilities which include the meta-level thinking skills such as expressing one's own thinking while considering about others' understanding condition, and estimating others' thought for understanding others' intention appropriately.

In this research, the author conducted a practical research in the lecture of "Introduction to Knowledge Science I". This research targets at the teaching assistants (TA) who have attended this lecture before and serve as a student assistant for supporting the educational activities. For supporting the learning of TA, an education model which is elaborated by the TA's experiential learning circulation of concrete experience, reflective observation, abstract conceptualization, and active experimentation. In addition, the learning activities and self-reflection promoting approaches are also designed for supporting the TA to realize how to learning the knowledge construction through viewing other learners' learning processes and support their learning. Furthermore, in order to help the TA to recognize the learning goals related to the learning of meta-level thinking skills, a tree-structured chart which is characterized by the metaphor of "seeding, watering and harvesting" is designed and introduced into the educational practice.

In the thesis, the design intentions of the learning activities and supporting tools described above will be elaborated. Additionally, for the purpose of understanding the educational effect of the model and the activities and tools designed based on the principles of the model, the data is also designed and planned to be collected during the conduction of the educational practice. As an initial conclusion, the collected data implies the effectiveness in some degree. However, it also shows the limitation on understanding the TA's learning condition from the (macro) perspective of the internalization of experiential learning and meta-level thinking skills. To make improvement, a learning activity named "self- growth reporting session" is designed and conducted. Its results are helpful to identify the effectiveness which is discovered in the initial conclusion.