

# **The Effect of Need for Uniqueness to Metacognition Related to the Creative Skill Domain among Semi-Expert.**

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## **Introduction**

It could be said that the function of metacognition plays a significant role in the process of expertise. Metacognition is difficult to define clearly, but is known its two subordinate functions: metacognitive control and metacognitive knowledge (Okamoto, 2001). Although it depends on the degree of students' experience, many studies about expertise and metacognition solidly stressed the need of making full use of metacognition to accelerate learners' expertise (Ichikawakawa,1996; Fujiwara,1996, 2000). Also, as well as metacognition, some study shows that social skills are so effective in the learning and performing procedure that there must be two principal keys in expertise (Brown, 1987; San'nomiya, Ichikawakawa,1996). However, as I pointed above, there are not only several stages between novice and expertise, but also variety of domains related to expertise studies that have ever been published. Thus, it is necessary for the expertise study to focus precisely on the stage and the domain which the research will be conducted. From this point of view, this study focuses on semi-expert learners and the creative-skill domain, and this paper aims to examine the relationship between the need for uniqueness and the learning and performing strategies which fundamentally consist of two variables: metacognition and social skills. The theoretical hypothesis that will examine in this study are:

**Hypothesis-1:** In the creative-skill domain, the higher the need for uniqueness, the more each of the learning and performing strategies consisted of metacognition and social skills will be accelerated.

**Hypothesis-2:** Compared with experts, semi-experts will shows marked differences in the relationship between the need for uniqueness and the learning and performing strategies.

## **Methodology**

**Participants:** Participants are 650 university students in Tokyo. The overall response rate was 25.8% ( $N = 164$  respondents, Female = 67.1%, Male = 32.9%, Mean Age: 19.4,  $SD = 2.35$ ).

**Questionnaire:** 1) Original learning and performing strategy in the creative-skill domain questionnaire. 26 items were rated by five choices. 2) Need for uniqueness questionnaire made by Yamaoka (1994). 24 items were rated by five choices.

**Procedure:** This research was mainly conducted by a researcher in the end of English Language Program classes and another class in the International Christian University located in the western part of Tokyo. The copies of questionnaire were collected in the class or by mail box from October to November, 2007.

## **Results**

**Preliminary Analysis:** Before examining the hypothesis, the preliminary analysis was conducted whether the original learning and performing strategy scale has sufficient reliability. Results of the analysis show high reliability coefficient (Cronbach) with all factors, thus, this scale was adopted.

**Characteristics of Variables:** The mean, standard deviation and  $\alpha$  score on each factor of the learning and performing strategy scale and the need for uniqueness scale were computed. Most of all variables and factors showed high reliability coefficient (Cronbach). Since two factors, one in each variable, showed relatively low reliability, the overall each variables barely showed acceptable reliability (the learning and performing strategy scale:  $\alpha = .61$ , the need for uniqueness scale:  $\alpha = .59$ ). Thus, scores for both scales were used for analysis.

**Examination of the Relationship between Strategy and Uniqueness:** First, a series of correlations was conducted to examine the relationship between the learning and performing strategy and the need for uniqueness among university students. Correlations between overall variables showed statistically significant positive correlation between the learning and performing strategy and the need for uniqueness ( $r = .20, p < .01$ ). For semi-experts, correlations between overall each variable showed statistically significant positive correlation between the learning and performing strategy and the need for uniqueness ( $r = .18, p < .01$ ). For experts, correlations was not significant between the learning and performing strategy and the need for uniqueness ( $r = .33, n.s.$ ). Secondly, a series of correlations between overall each variable and factor was conducted to examine the relationship between the learning and performing strategy and the need for uniqueness. Results indicated the tendency that people who have highly need for uniqueness could be the better learner and performer using the most of metacognitive strategies. Moreover, although results indicated that experts have higher tendency in the need for uniqueness, semi-experts illustrated higher application in metacognitive activities than experts. Among overall factors of the need for uniqueness scale and the learning and performing strateg—"Self-monitoring", "Metacognitive control: planning", "Meta-Knowledge", "Social Skills", "Metacognitive control: Monitoring", for semi-experts, results showed statistically significant positive correlation with "Metacognitive control: planning" ( $r = .22, p < .01$ ), "Meta-Knowledge" ( $r = .26, p < .01$ ), "Self-monitoring" ( $r = .18, p < .05$ ). On the other hand, for experts, results showed statistically significant positive correlation with "Metacognitive control: planning" ( $r = .36, p < .01$ ), "Meta-Knowledge" ( $r = .30, p < .01$ ).

### Discussion

Based on these results, *theoretical hypothesis-1*, the higher the need for uniqueness, the more each of the learning and performing strategies consisted of metacognition and social skills will be accelerated in the creative-skill domain, was supported. This finding is congruent with other cognition studies which have stressed that metacognition plays a significant role in expertise especially learning and performing in the creative-skill domain. And *theoretical hypothesis-2*, semi-experts will shows marked differences in the relationship between the need for uniqueness and the learning and performing strategies compared with experts, was supported from findings along with the relationship of each sub-factor. For semi-expert, there must be a various possibilities to choose in the procedure of learning and performing, so that it is essential for semi-expert to utilize their original strategies with metacognition as much as possible. This finding showed that uniqueness, or originality, tend to animate metacognition of learners, particularly semi-experts. In conclusion, it was suggested that semi-experts need to utilize their strategies based on metacognition to make use of their huge potential and it bring them to the better way to expertise in their field.

For a long time, the study of metacognitive strategies with semi-experts has been considered as a part of experts because there is less difference between semi-experts and experts than novice and experts. However, this study illustrated considerably distinctions in the relationship of each sub-factor between the need for uniqueness and metacognitive strategies. This study indicated that the structure of the process in expertise could not be a simple linear development that had been believed for a long time. Further studies about metacognition, that are not only double checks but also multi-disciplinary researches with other point of view, must make the developmental structure clear, and it will contribute to one of the effective leaning system for those who struggle to be an expert in their field. Moreover, findings about expertise will be widely applicable to the basic researches of artificial intelligence and will take on a new significance.