

## **Gender and Electives Differences in the Motivated Strategies for Learning of Pre-service Teacher Education Students in Hong Kong.**

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### Introduction

Research in the area of students' motivated strategies for learning has been conducted by numerous educators in the USA. In fact, motivated strategy for learning is an important aspect of student academic performance in the classroom, especially for the College students. The theoretical framework on motivated strategies for learning, built up by McKeachie et al. (1986), Pintrich (1988, 1989), Pintrich & DeGroot (1990), Pintrich & Garcia (1991) has implicated two separate domains : motivation and learning strategies. The motivation domain covers student's intrinsic goal orientation, extrinsic goal orientation and task value, and these attributes make up the value component; control of learning beliefs and self-efficacy for learning & performance, which make up the expectancy component; test anxiety which makes up the affective component. For the learning strategies domain, it covers rehearsal, elaboration, organization, critical thinking and metacognitive self-regulation, which make up the cognitive and metacognitive strategies component. Pintrich et al. (1991) have developed the MSLQ (Motivated Strategies for Learning Questionnaire) and it demonstrates good psychometric properties which can be used to tap the motivated strategies for learning attributes. Schunk & Zimmerman (1994) argues that there is a need for more research on how self-regulated learning is affected by situational and contextual influences. Academic discipline and electives chosen by College students is one example of a level of such context. Moreover, Blumenfeld (1992) has put forward the implication of disciplinary differences in the content areas on students' motivation orientations.

As teacher educators for many years, the authors are interested to understand the kind of motivated strategies for learning prevailing among prospective teachers. It is expected that the motivated strategies for learning adopted by a student teacher possibly affects how he/she is motivated to learn and what strategies they use, acquire and integrate knowledge and experience from the teacher education program. In turn, this will have an impact on the conception of the prospective teacher about motivation and learning strategies, subsequently influences the way he/she teaches and his/her expectations of the pupils.

### Objectives of Study

The objectives of this study was twofold. The first one was to examine if there was any significant differences in the motivated strategies for learning between gender. The second one was to identify any significant electives differences in the motivated strategies for learning held by the student teachers. Identification of the motivated strategies for learning adopted by the teacher education students in relation to their gender and electives would provide a concrete profile of the motivated strategies for learning of the prospective teachers. This information would be useful and meaningful to course and curriculum designers and developers as well as academic staffs of relevant subject departments to give appropriate assistance and guidance to student teachers in their motivated strategies for learning process when necessary.

### Method of Study

Survey method was employed in this study by means of questionnaire for college students. Motivated Strategies for Learning Questionnaire (MSLQ) (Pintrich et al., 1991) was adapted and translated into Chinese. Purposive sampling method was used in this study. The subjects of this study consisted of 218 students of the Full-time Certificate of Education Course of the Hong Kong Institute of Education. The Certificate of Education Course was a two year full-time preservice course for Advanced Level ("A" level) matriculates to be educated as non-graduate teachers. Although it is a subdegree course, the student teachers could be regarded as equivalent to the undergraduates of college and universities based on the "A" level entry requirement. Like other higher institutions, the student teachers took a variety of subjects, including Languages, Science and Maths., Business and Technology, Social Studies and Cultural subjects as their electives.

## Data Analysis

MANOVA was employed to examine if there was any significant differences in the motivated strategies for learning of teacher education students of different gender and electives. Gender was divided into 2 levels (male /female) and Electives were divided into 5 levels (Language, Business & Technology, Social Sciences, Cultural Subjects, Science & Maths.). Separate ONE FACTOR MANOVAs were conducted to examine whether there were any significant gender and electives differences for the motivated strategies for learning adopted by the Hong Kong student teachers.

## Results

### (A) Gender Differences in Motivated Strategies for Learning (MANOVA)

Table 1

#### SCORES ON DEPENDENT VARIABLES FOR MALE AND FEMALE STUDENTS

##### Gender

<b>Variable</b>	<b>Female</b>	<b>Male</b>	<b>F</b>	<b>Sig. F</b>
Intrinsic	4.64	4.88	4.28	.040
Extrinsic	4.37	4.39	0.02	.890
Task Value	4.41	4.48	0.23	.629
Belief	4.86	5.03	1.82	.178
Efficacy	3.98	4.26	5.63	.018
Anxiety	4.46	4.18	4.21	.041
Rehearsal	4.30	4.23	0.27	.601
Elaboration	4.36	4.54	1.96	.163
Organization	4.36	4.19	1.46	.228
Critical Thinking	4.12	4.44	7.38	.007
Self Regulation	4.21	4.21	0.00	.980

From Table 1, it can be observed that 4 variables, namely intrinsic goal orientation, efficacy, test anxiety and critical thinking have significant differences between female and male students at the .05 significance level. Among these, critical thinking is highly significant. Moreover, when ONE FACTOR (of two levels) MANOVA was conducted with respect to the Value Component (Intrinsic, Extrinsic and Task Value), Wilk's lamda = .97207,  $F(1,216)=2.0496$ ,  $p>.05$ . Similarly, for the Expectancy Component (Belief and Efficacy), Wilk's lamda = .97341,  $F(1,216)=2.9366$ ,  $p=.055$ . For the Cognitive and Metacognitive Component (Rehearsal, Elaboration, Organization, Critical Thinking and Self-Regulation), Wilk's lamda=.88894,  $F(1,216)=5.29732$ ,  $p=.000$ .

(B) Electives Differences in Motivated Strategies for Learning (MANOVA)

Table 2

SCORES ON DEPENDENT VARIABLES FOR STUDENTS FROM FIVE DIFFERENT ELECTIVES GROUPS

Electives							
Variable	Lang	Cult	SoSci	S&M	T&C	F	Sig. F
Intrinsic	4.79	4.49	4.61	5.36	4.75	4.17	.003
Extrinsic	4.53	4.24	4.16	4.54	4.20	1.57	.184
Task Value	4.47	4.27	4.29	5.10	4.52	2.94	.023
Belief	4.94	4.70	5.01	5.45	4.94	2.52	.042
Efficacy	4.12	3.93	3.87	4.64	4.06	2.79	.027
Anxiety	4.34	4.43	4.25	4.44	4.56	0.38	.826
Rehearsal	4.20	4.27	4.13	4.93	4.54	2.77	.028
Elaboration	4.38	4.39	4.27	5.04	4.49	2.28	.062
Organization	4.22	4.33	4.11	4.86	4.64	2.43	.048
Critical Thinking	4.19	4.15	3.96	4.79	4.54	3.35	.011
Self Regulation	4.23	4.14	4.13	4.60	4.17	1.93	.107

From Table 2, seven variables among 11, namely: intrinsic, task value, belief, efficacy, rehearsal, organization and critical thinking have significant differences between the five different electives students at the 0.05 level. Among which intrinsic goal orientation attained the highest significance. Moreover, when ONE FACTOR (of five levels) MANOVA was conducted with respect to the Value Component (Intrinsic, Extrinsic and Task Value), Wilk's lamda = .89876,  $F(4,213)=1.91626$ ,  $p <.05$  was obtained. Similar analysis was conducted for the Expectancy Component (Belief and Efficacy). Wilk's lamda = .92366,  $F(4,213)=2.1466$ ,  $p<.05$  was observed. For the Cognitive and Metacognitive Component (Rehearsal, Elaboration, Organization, Critical Thinking and Self-Regulation), Wilk's lamda=.87418,  $F(4,213)=1.4361$ ,  $p=.098 >.05$  was obtained.

Discussion and Conclusion

As indicated from the result, it can be inferred that male students did outperform the female students with respect to the efficacy in motivation to learn and critical thinking learning

strategy. However, from the MANOVA analysis on the overall assessment on the expectancy component, there existed fairly significant difference in this component between female and male students ( $p=0.055$ ). Moreover, on the overall assessment on the difference in metacognitive component between male and female students, MANOVA did indicate a highly significant difference as  $p=.000$ . Hence, it can be concluded that male teacher education students in Hong Kong had higher self efficacy in learning and had better metacognitive and cognitive strategy in learning. Therefore teacher educators should be aware of this and plan to change this situation through restructuring curriculum and implement more training on learning strategy especially for female students.

The analysis in electives difference indicated interesting results. It can be observed that Science and Mathematics Group students obtained highest scores in three variables, namely intrinsic goal orientation (mean=5.36), task value (mean=5.10) and belief (mean=5.45) in the motivation domain, and one variable : elaboration (mean=5.04) in the learning strategies domain. In mathematics and science electives, students were usually regarded to own higher motivation to learn and employed more cognitive skills in learning than other electives. Hence, from the present study, it seems to confirm this argument. However, the MANOVA result in the value and expectancy component did indicate significant difference between the five electives students meaning that different disciplines/subjects students did behave differently in the motivation to learn. Moreover, with respect to metacognitive and cognitive strategy of learning for the five electives students, there is no significant difference. Hence it can be concluded that motivation to learn is different for the five electives teacher education students but none for the learning strategies. Curriculum developers and academic staffs therefore should be aware of this finding and implement suitable training courses in motivating students to learn, especially for those elective students who had comparatively low motivation in attending the course.

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