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Metacognitive Language Learning Strategies Used by Students Learning Mandarin as a Foreign Language

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Abstract

This study focused particularly on metacognitive language learning strategies (McLLS). It aimed to identify the McLLS used by students besides examining the effect of learning level and gender on McLLS. The participants were 582 undergraduates who were learning Mandarin as a foreign language in a public university in Malaysia. The findings indicated that *Centering your Learning* and *Evaluating your Learning were of the highly used range while Arranging and Planning Your Learning was of the moderately used range.* The findings also showed that there were no statistical significant differences by genders in McLLS used. However, there were partial significant differences across learning levels on the McLLS used. There was a significant difference in the usage of *Arranging and Planning Your Learning* for students of Level One and Level Two as compared to the students of Level Three. The students in Level One also significantly used *Centering Your Learning* strategies more frequently than the students of Level Three. In addition, the results showed that there was no interaction effect between gender and course learning level on McLLS. The study also suggests some strategies that teachers can adopt in applying *Arranging and Planning Your Learning* in the teaching of the four language skills.

Keywords language learning strategies, metacognitive learning strategies, Mandarin, foreign language, gender

1. Introduction

Numerous researches on language learning strategies for learning a second or foreign language have been conducted. However, most of these researches mainly focused on general language learning strategies. It is still not a common practice to focus on all types of strategies separately. For example, metacognitive language learning strategies have been treated as a sub-type of language learning strategies, and it was included together with other sub-types of strategies in language learning research. Although there are some researches (Vandergrift, 2005; Wen & Johnson, 1997) have indicated the

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importance of metacognitive strategies in language learning, there is still a scarcity of research that focus particularly on metacognitive language learning strategies (Wu, 2007). Researchers propose that metacognitive strategies are very important in language learning as they assist in learning more effectively and decisively (Camello, 2011; Oxford, 1990)

1.1. Literature Review

Metacognitive language learning strategies are one of the sub-groups of language learning strategies (LLS). Oxford (1990) defines LLS as "specific actions taken by the learners to make learning easier, faster, more enjoyable, more self-directed, more efficient and more transferable to a new situation" (p. 8). She further adds that LLS are steps employed by learners to facilitate the acquisition, storage, retrieval, and use of information. She too produces an exclusive taxonomy or classification of LLS and it was claimed as "perhaps the most comprehensive classification of learning strategies to date" (Ellis, 1994, p.539). In this classification, Oxford (1990) distinguishes direct and indirect strategies and subdivided them into six groups. Memory strategies, cognitive strategies and compensation strategies are sub-groups of direct strategies, while metacognitive strategies, affective strategies and social strategies are the sub-groups of indirect strategies.

In 2001, Oxford summarizes the six categories of language learning strategies as follows:

(i) memory strategies are techniques used for storing and retrieving new information such as creating mental linkages, applying images and sounds, reviewing, and employing actions;

(ii) cognitive strategies refer to skills that involve manipulation or transformation of the language in some direct ways such as through analyzing and reasoning, practicing, receiving and sending messages, as well as creating structure for input and output.

(iii) compensation strategies are behaviours used to overcome knowledge gaps such as guessing at words based on context, using gestures and coining words to communicate.

(iv) affective strategies help learners control their feelings and attitudes that are related to language learning, such as self-reinforcement and positive self-talk.

(v) social strategies are actions involving other people in the language learning process, such as seeking correction, asking for clarification, working with peers, and developing empathy.

(vi) metacognitive strategies are behaviours used for centering, arranging, planning, and evaluating one's learning.

There are eleven strategies under metacognitive language learning strategies (McLLS). Oxford (1990) divides these eleven McLLS into three sets namely *Centering your Learning*, *Arranging and Planning Your Learning and Evaluating your Learning.* These three McLLS sets are further classified as follows:

(a) *Centering your Learning* strategies such as paying attention and linking new information to materials already familiar help learners regain their focus from overwhelmed language input.
(b) *Arranging and Planning Your Learning* strategies enable learners to arrange and plan their language learning in an efficient and effective way. These included organizing, setting goals and objectives, planning for a language task, and seeking practice opportunities.
(c) *Evaluating your Learning* strategies are used for monitoring one's language learning errors and evaluating one's language learning progress.

These three sets of McLLS are illustrated in Table 1.

Table 1
The Three Set of McLLS

Category	Set	Strategy
McLLS	A. Centering your learning	1. overviewing and linking with already known material 2. paying attention 3. delaying speech production to focus on listening
	B. Arranging and planning your learning	1. Finding out about language learning 2. Organizing 3. Setting goals and objectives 4. Identifying the purpose of a language task (purposeful listening / reading / speaking / writing) 5. Planning for a language task 6. Seeking practice opportunities
	C. Evaluating your learning	1. Self-monitoring 2. Self-evaluating

(adopted from Oxford (1990), p. 18-19)

Although most of the research findings demonstrated the importance of McLLS in language learning, McLLS were not the main focus of these researches on LLS. Some of these researches have shown that successful language learners are high frequent users of McLLS compared to the less successful learners (Bremner, 1999; Cohen, 1998; Chamot & Kupper, 1989). McLLS have also been identified as the category of which learners heavily relied on or the most frequently used by foreign language learners (Bremner, 1999; Gan, 2008; Lee & Zubiadah, 2009; Nisbet, Tindal & Arroyo, 2005; Kaur, 2003; Riazi & Rahimi, 2005; Tan, Hairul & Mohd Kamarul, 2009; Shmais, 2003; Woodrow, 2005; Zahra, 2003). On the other hand, studies that investigated the relationship between language learning strategies and gender also produced mixed results. Some studies discovered distinct differences in the strategies used by different genders (Murni Mahmud, & Sahril Nur, 2018; Oxford & Nyikos, 1989; Ehrman & Oxford, 1989; Green &

Oxford, 1995). Some failed to discover any evidence of differing language learning strategies between genders (Ehrman & Oxford, 1990; Wharton, 2000; Wu, 2007). Except for Wu's (2007) study, all the other findings are part of the results obtained from studies which focussed on general LLS.

On the other hand, many researches reported that higher learning level learners used more strategies that lower level learners (Bialystok, 1981; Green & Oxford, 1995; Oxford & Nyikos, 1989; Politzer, 1983). However, there is no known study that investigates specifically on the relationship between McLLS and learning level. As there is still a lack of study investigating the relationship between McLLS and learning level, and the comparison of McLLS used between genders, this study which focuses on these aspects will provide some new empirical evidences and will help to fill the gap.

Furthermore, there were not many studies that investigated the LLS used by Malaysian undergraduates especially in the learning of foreign languages. Indeed, there are even relatively fewer studies that focus particularly on the LLS used by Malay undergraduates' in learning foreign languages. To the researchers' knowledge, there are only three studies (Gan, 2008; Lee & Zubaidah, 2009; Tan, et al., 2009) that investigated on the LLS used by Malay undergraduates who were learning Mandarin as a foreign language in three different campuses of the university in which this study was conducted. The findings of those studies indicated that among all the LLS categories, McLLS were the most frequently used by the students. To emphasize the importance of McLLS in language learning, besides to gain more detailed evidence on McLLS used by the Malay undergraduates, this study investigated McLLS as a separate category by itself.

1.2. Research Questions

Due to the importance of McLLS in language learning and the lack of study conducted particularly on McLLS, this study was conducted to seek answers to the following research questions:

(i) What are the McLLS used by the students learning Mandarin as a foreign language?
(ii) Do males and female students differ in terms of the McLLS used?
(iii) Do the students in different learning level differ in terms of the McLL used?
iv) Is there an interaction effect between gender and learning level on the McLLS used?

2. Methodology

This is a quantitative study which employs stratified samplings method. The study took place at a public university in Malaysia which only caters for indigenous students.

2.1. The Participants

The participants of the study were 582 university undergraduates who were pursuing their study at a public university in Malaysia which only

caters for indigenous students. The participants comprised students who were learning either Introductory Mandarin Level One, Introductory Mandarin Level Two or Introductory Mandarin Level Three. All these students were bilingual in Malay language and English. Those who have background of Mandarin before they registered for the course were excluded from the study. The particulars of the participants are illustrated in Table 2.

Table 2
Demographic of participants

gender	*f*	%	age	*f*	%	level	*f*	%
Male:	292	(50.2)	20 :	16	(2.7)	I:	193	(33.2)
Female:	290	(49.8)	21:	110	(18.9)	II:	195	(33.5)
			22:	345	(59.3)	III:	194	(33.3)
			23:	103	(17.7)			
			24:	6	(1.0)			
			25:	2	(0.3)			

All the 582 participants returned the questionnaires. Among them, 292 of them were male (50.2%), and 290 were female (49.8%). 16 of them were of the age 20 (2.7%), 110 were of 21 (18.9%), 345 were of 22 (59.3), 103 were of 23 (17.7), 6 were of 24 (1%) and 2 were of 25 (0.3%). Their average age was 21.96. 193 (33.2 %) of them were learning elementary Mandarin Level One, 195 (33.5%) Level Two and 194 (33.3 %) Level Three. The demographic data of the participants is illustrated in Table 2.

2.2. Instrument

The questionnaire used in this study consists of two parts. The first part contained items on participants' demographic data such as age, gender, and learning level. The second part consisted of the items on McLLS. The nine items on McLLS of Oxford's (1990) Strategy Inventory for Language Learning (SILL) version 7.0 which were designed for speakers of other languages learning English were used to measure the use of McLLS for the target group. Although there are 50 items in SILL version 7.0 that measure cognitive, metacognitive, compensation, social and affective strategies, only the part (Part D) which measures the use of McLLS was included in the questionnaire to suit the focus of this study. McLLS are divided into three sets by Oxford (1990), that is, *Centering Your Learning* (one item), *Arranging and Planning Your Learning* (six items), and *Evaluating Your Learning* (two items).

SILL has been employed as a key instrument in numerous studies and has its Cronbach alpha reliability coefficients ranging from .85 to .98 in those studies (Bremner, 1999; Oxford & Burry-Stock, 1995, Wharton, 2000). This makes it a trusted measure for gauging students' reported language learning strategies. The McLLS which were included in the questionnaire can be regarded as an independent scale as it has been reported that the reliability and validity statistics of SILL are independent

of the other parts (Bremner, 1999; Oh, 1992; Wu, 2007). Furthermore, the Cronbach alpha reliability coefficient of the items used in this study was 0.87. This value is comparable to those previously reported (Bremner, 1999; Oh, 1992; Wu, 2007). This shows that the questionnaire not only meets the established reliability criterion but also achieves satisfactory high reliability too.

To serve the purpose of this study, the word "English" in the questionnaire was substituted with "Mandarin". To prevent confusion and misunderstanding of the items in the questionnaire, each item was translated into the respondents' mother language by two bilingual language lecturers. The respondents were asked to indicate their responses on how true the items in the questionnaire were to them with respect to the use of the specific McLLS. The items were on a five-point Likert scale, ranging from '1' (Never or almost never true of me) to '5' (Always or almost always true of me).

3. Findings

The data collected was analyzed using SPSS. Descriptive statistics analysis and inferential statistics analysis of Two-way MANOVA were performed to serve the analysis purposes.

3.1 The Results of Descriptive Statistics Analysis on the McLLS Used

The results of descriptive analysis on McLLS used were obtained to answer the first research question – "What are the McLLS used by Malay undergraduates learning Mandarin as a foreign language?" Table 3 illustrates the means and standard deviations of the McLLS used by the respondents.

Table 3
The Means of McLLS Used by the Participants (N = 582)

McLLS	Min	Max	M	S D
Centering Your Learning	1.00	5.00	3.79	.78
Arranging and Planning Your Learning	.83	4.17	2.75	.59
Evaluating Your Learning	1.50	5.00	3.66	.65

According to Oxford (1990), a range of 3.5 – 5.0 on an item is thought to reflect high use of that strategy, 2.5 – 3.4 moderate use, and 1.0 – 2.4 low use. As shown in Table 3, among all McLLS categories, *Centering Your Learning* (M = 3.79, SD = .78) was the most highly used strategies, followed by *Evaluating Your Learning* (M = 3.66, SD = .65) which was at the high use range too..*Arranging and Planning Your Learning* (M = 2.75, SD = .59) was only moderately used. Table 4 illustrates the means and standard deviations of the McLLS by gender.

Table 4
The Comparison of McLLS Used by Gender (N = 582)

McLLS	Male n =292		Female n= 290	
	M	SD	M	SD
Centering Your Learning	3.85	.81	3.73	.76
Arranging and Planning Your Learning	2.80	.60	2.71	.57
Evaluating Your Learning	3.66	.63	3.67	.66

Table 4 shows the comparison result of McLLS used by both genders with male scoring slightly higher than female in all the three McLLS sets. They were high users of *Centering Your Learning* strategies (M = 3.85; M = 3.73 respectively) and *Evaluating Your Learning* strategies (M = 3.66; M = 3.67 respectively). They were moderate users of *Arranging and Planning Your Learning* (M = 2.80; M = 2.71 respectively).
The results of the comparisons of McLLS across learning levels in Table 5 revealed that all the students of these three Levels were high users of *Centering Your Learning* strategies (M = 3.82; M = 3.84; M = 3.70) and *Evaluating Your Learning* strategies (M = 3.74; M = 3.69; M = 3.56). However, they only used *Arranging and Planning Your Learning* strategies moderately (M = 2.88; M = 2.80; M = 2.57).

Table 5
The Comparisons of McLLS across Learning Levels (N = 582)

McLLS	Level I n = 192		Level II n = 194		Level III n = 195	
	M	SD	M	SD	M	SD
Centering your Learning	3.82	.81	3.84	.72	3.70	.82
Arranging and Planning your Learning	2.88	.58	2.80	.52	2.57	.62
Evaluating your Learning	3.74	.65	3.69	.61	3.56	.67

3.2 The Results of Inferential Statistics Analysis

Subsequently, the inferential statistics analysis of multivariate analysis of variance (MANOVA) was conducted to examine the differences by genders and across learning levels on using McLLS, Before performing MANOVA, a number of assumptions that underpin the use of MANOVA were examined. These assumptions are cell sizes, univariate and multivariate normality, linearity, homogeneity of variance-covariance and multicollinearity (Hair et. al, 1998; Pallant, 2001, Coakes & Steeds, 2003). As the sample size regarding course level was controlled since the beginning of the study, the equal cell size assumption was fulfilled. A total of 193 Level One, 195 Level Two and 194 Level Three students were involved in this study.

The "Regression: Residual Statistics - Mahalanobis Distances" was used to examine the presence of multivariate outliers. Mahalanobis distance is the distance of a particular case from the centroid of the remaining cases, whereby the centroid is the point created by the means of all the variables (Tabachnick & Fidell, 2007). The Mahalanobis distance value obtained for the data was compared against the critical value of three dependent variables, 16.57, by using a chi-square table (Pallant, 2001). Fortunately, there were no extreme cases detected from the data.

Subsequently, Box's M Test of Equality of Covariance Matrices was used to access the homogeneity of variance-covariance matrices. The Box's M test result is shown in Table 6.

Table 6
Box's M Test of Equality of Covariance Matrices

Box's M	F	df 1	df 2	*P*
65.84	1.29	50	568648.07	.08

** $p < .001$

As shown in Table 6, the Box's M Test of Equality of Covariance Matrices indicated that this assumption has not been violated at an alpha level of 0.001 (F = 1.29, p = 0.08). This indicates that the observed covariance matrices of the dependent variables are homogenous across course levels.

Next, a matrix of scatterdots between each pair of dependent variables was conducted separately for gender and course levels to test the linearity among all pairs of dependent variables. The presence of a straight-line relationship between each pair of the dependent variables proved that the assumption was not violated.

Levene's Test of Equality of Error Variances was also generated to view the equal variance for each type of McLLS under investigation. The results of Levene's Test of Equality of Error Variances are shown in Table 7.

Table 7
Levene's Test of Equality of Error Variances

Variable	F	df1	df2	Sig.
Centering Your Learning	1.87	5	576	.10
Arranging and Planning Your Learning	3.53	5	576	.00**
Evaluating Your Learning	.71	5	576	.62

As shown in Table 7, the p value is greater than 0.05 for *Centering Your Learning* (F = 1.87, p = 0.1) and *Evaluating Your Learning* (F = 0.71, p = 0.62). This indicates that the variance is homogenous across *Centering Your Learning* and *Evaluating Your Learning*. On the other hand, the p value is lesser than 0.05 for *Arranging and Planning Your Learning* (F = 3.53, p = 0.00). As such, equal variance is not assumed across *Arranging*

and Planning Your Learning (Coakes & Steeds, 2003; Pallant, 2001; Tabachnick & Fidell, 2007).

As the assumption of equality of variances across *Arranging and Planning Your Learning* was violated, a more conservative alpha level of 0.025 or 0.01, rather than the conventional 0.05 level as suggested by Tabachnick and Fidell (2007) was applied to determine the significance of these variables in the univariate F-test. The results of the MANOVA test are shown in Table 8.

Table 8
The MANOVA Analysis' Results for McLLS

Effect	Wilks' Lambda	F	Hypothesis df	Error df	Sig.	ŋ
gender	.98	3.06	4	573	.02*	.02
level	.94	4.29	8	1146	.00**	.03
gender * level	.99	.98	8	1146	.45	.01

As shown in Table 8, the value of Wilks' Lamba obtained in the multivariate test for gender is 0.98, F (4, 573) = 3.06, $p < 0.05$, ŋ = 0.02. As the p value is less than 0.05, this indicates that there is a statistical significant difference with a small effect size among McLLS by gender. The Wilks' Lambda is used for testing null hypothesis in MANOVA, and it is also referred to as U statistics (Hair, et al., 1998). On the other hand, the results obtained in the multivariate test for course level are, Wilks' Lamba value = 0.94, F (8, 1146) = 4.29, $p < 0.01$, ŋ = 0.03. As the p value is less than 0.05, this indicates that there is a statistical significant difference with a small effect size among McLLS across learning level. However, the results obtained in the multivariate test for the interaction between gender and course level are, Wilks' Lamba value = 0.99, F (8, 1146) = .98, $p > 0.05$. As the p value is above 0.05, this indicates that there is no statistical significant interaction effect between gender and course level on McLLS.

As the result obtained for gender and learning level was of significant difference, a follow-up investigation had to be conducted to explore this relationship further (Coakes & Steeds, 2003; Pallant, 2001). The tests of between-subjects effects were carried out to serve the purpose. As the assumption of equality of variances across *Arranging and Planning Your Learning* was violated, a more conservative alpha level of 0.01 was applied to determine the significance of these two variables. The results of the tests of between-subjects effects for gender are shown in Table 9.

Table 9
The Tests of Between-Subjects Effects (Gender)

Dependent Variable	SS	df	MS	F	Sig.	ŋ
Centering your Learning	1.95	1	1.95	3.20	.07	.01
Arranging and Planning your Learning	1.19	1	1.19	3.63	.06	.01
Evaluating your Learning	.04	1	.04	.08	.77	.00

As shown in Table 9, none of the McLLS sets yield a significant F value as the values are greater than 0.05. The results indicate that there is actually no significant difference in McLLS by genders. Table 10 shows the results of the Tests of between–subjects effects for learning level.

Table 10
The Tests of Between-Subjects Effects (Learning Level)

Dependent Variable	SS	df	MS	F	Sig.	ŋ
Centering your Learning	2.22	2	1.11	1.82	.16	.04
Arranging and Planning your Learning	10.11	2	5.05	15.44	.00**	.05
Evaluating your Learning	3.24	2	1.62	3.90	.02*	.01

*P<0.05, **P<0.01

As shown in Table 10, only *Centering Your Learning* did not yield a significant F value ($F(2, 538) = 1.82$, $p > 0.05$). *Arranging Your Learning* and *Evaluating Your Learning* yield significant F value as the values are lesser than 0.01. The results indicate that there is a significant difference in *Arranging Your Learning* and *Evaluating Your Learning* across learning levels. As there were three learning levels, Post-hoc comparisons using the Tukey's Honestly Significant Difference (HSD) test was conducted. The Tukey's HSD post-hoc test is performed to identify which comparisons among groups have significant differences (Hair, et al., 1998). The results of Tukey's HSD post-hoc test for comparisons are displayed in Table 11.

Table 11
Summary Table for Tukey HSD Multiple Comparison Test

Dependent Variable	Course level	Mean Difference	p
Arranging and Planning your Learning	Level I – Level II	.08	.39
	Level I – Level III	.30	.00**
	Level II – Level III	.23	. 00**
Evaluating your Learning	Level I – Level II	.04	.79
	Level I – Level III	.17	.02*
	Level II – Level III	.13	.16

Table 11 shows the Tukey HSD post-hoc test results and the mean difference score of each level for *Arranging and Planning Your Learning*. The mean score of *Arranging and Planning Your Learning* for the Level One is significantly higher than that of the Level Three (MD = 0.30, $p < 0.01$). The mean score of

Level Two group is also significantly higher than that of the Level Three (MD = 0.23, $p < 0.01$). However, there is no significant difference between the mean score of Level One and Level Two in *Arranging and Planning Your Learning* (M = 0.08, SD = 0.39).

On the other hand, only the mean score of *Evaluating Your Learning* for the Level One group is significantly higher than that of the Level Three (MD = 0.17, $p < 0.05$). There are no significant differences between the mean score of Level One and Level Two as well as that of Level Two and Level Three.(M = 0.04, SD = 0.79; M = 0.13, SD = 0.16 respectively).

4. Conclusions

When the students were viewed as one unit or a whole entity, the descriptive analysis results showed that they used *Evaluating Your Learning* and *Centering Your Learning* strategies at a high use range, and used *Arranging and Planning Your Learning* strategies at a moderate range. In addition, the descriptive analysis results also showed the similar result for the students in all the three levels. The result showed that the students often think of their progress in learning Mandarin and frequently evaluate their learning through means such as noticing their mistakes and using that information to help them do better. They always center their learning by paying attention. However, the moderately used range of *Arranging and Planning Your Learning* strategies reflects that they were not active in seeking practice opportunities. The results might postulate that the students were not seriously interested in learning Mandarin. They learned the language as an elective course due to the university's academic requirement. As it was compulsory for them to pass the course and the grade may influence their CGPA, it urges them to use *Evaluating Your Learning* and *Centering Your Learning* strategies at a high use range.

When the McLLS sets were compared between genders, the descriptive analysis results showed that McLLS were at a slightly higher use range by male students as compared to the female students. However, the Test of between-subjects effects indicated that there was no significant difference in McLLS used by genders. The result indicated that male and female students were actually applying McLLS at the same range of use.

On the other hand, although *Arranging and Planning Your Learning strategies* were at moderate range use by all the students across three levels, the analysis results showed that there was a significant difference between students in Level One and Level Three, and also between students in Level Two and Level Three. The findings showed that the students at lower levels were more active in seeking practice opportunities than those at higher levels. This may be due to the fact that the students in lower levels started learning the new language from scratch, and a sense of anxiety may occur. This pushed them to seek practice opportunities. As time goes by, these students, who learn Mandarin language to fulfill the academic requirement, may find that they can cope with the learning. Their anxiety would decrease and subsequently they began to lack in seeking practice opportunities.

There was also a significant difference between students in Level One and Level Three in the used of *Evaluating Your Learning*. The students at

elementary level significantly used *Evaluating Your Learning* at a higher range than the students at advanced level. These indicated that the students learning Mandarin as a foreign language were more frequent users of *Evaluating Your Learning* in the earlier level and this probably is due to the fact that they were aware of the immense efforts they should take in learning a foreign language. They were always alert and careful in the learning process. This urged them to employ *Evaluating Your Learning* during their learning. The regular exercises and ongoing tests also provide them plenty of opportunities to evaluate and monitor their learning from time to time. The high range use of *Evaluating Your Learning* was due to the consciousness of the students that they will succeed in the course and score good grades to fulfill the academic requirement.

5. Discussion

This study was conducted to investigate the McLLS used by Malaysia's indigenous undergraduate students towards learning Mandarin as a foreign language. The findings of the study revealed that the students when were viewed as a group or across learning levels, were at high use range of *Evaluating Your Learning* and *Centering Your Learning* strategies and at moderate use range of *Arranging and Planning Your Learning strategies*. The findings also proved that there were no significant differences by genders in the range of McLLS used. There was also no interaction effect between gender and learning level on McLLS used. This provided sufficient answers to the research questions and could provide additional insights in better identifying McLLS and could help to fill the gap that was mentioned in the literature review of this study.

The present study might have micro implications in the form of in-class teaching. As the results show that *Arranging and Planning Your Learning* was only moderately used by the students and across learning levels, the instructors should teach their students to apply more *Arranging and Planning Your Learning* strategies in their language learning. Since McLLS contribute to successful language learning (Oxford, 1990), instructors can also create interesting lesson plans by applying *Arranging and Planning Your Learning* strategies based teaching.

Encouraging students to use *Arranging and Planning Your Learning* in the process of teaching and learning can help them learn the language better. To serve these purposes, instructors are encouraged to adapt strategies suggested by Oxford (1990) namely:

1. allowing students to talk about their language learning problems, ask questions andshare ideas with each other on the effective strategies they have tried,
2. creating the best possible physical learning environment, and help students to create a well planned schedule, and encourage them to keep a learning notebook,
3. aiding students in determining goals and objectives in the four language skills,

4. helping students to plan language task and identify the purpose of language task,
5. challenging students to look for practice opportunities.

The findings of this study can also help syllabus designers to develop courses and design syllabus and create interesting textbooks which will encourage students to use LLS especially McLLS.

References

Bialystok, E. (1981). The role of conscious strategies in second language proficiency. *Modern Language Journal*, 65, 24-35.

Bremner, S. (1999). Language learning strategies and language proficiency: Investigating the relationship Hong Kong. *Canadian Modern Language Review,* 55, 490 -514.

Camillo, I. C. (2011). Metacognitive Strategies in Language Learning. Retrieved from http://www.scribd.com/doc/49751756.

Chamot, A. U., & Kupper, L. (1989). Language strategies in foreign language instruction. *Foreign language Annuals*, 22, 13-24.

Coakes, S. J., & Steed, L. G. (2003). *SPSS version 11.0 for windows. Analysis without Anguish.* Australia : Wiley.

Cohen, A. D. (1998). *Strategies in learning and using a second language*. NY: Addison-Wesley Longman Limited.

Ellis, R. (1994). *The study of second language acquisition.* NY: Oxford University Press.

Ehrman M. & Oxford, R. L. (1989). Effects of sex differences, career choice, and psychological type on adult language learning strategies. *Modern Language Journal,* 73, 1-13.

Ehrman, M., & Oxford, R. L. (1990). Adult language learning styles and strategies in an intensive training setting. *Modern Language Journal,* 74, 311-327.

Gan, K. C. (2008).*Language learning strategies of Mandarin learners at different course levels in Malacca city Campus, MARA University of Technology*. Unpublished master thesis. Universiti Putra Malaysia.

Green, J. & Oxford R. (1995). A closer look at learning strategies, L2 Proficiency and gender. *TESOL Quarterly,* 29, 261-297.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). New Jersey: Prentice Hall.

Kaur, P. S. S. (2003). *Perceptual learning style preferences and language learning strategies of ESL university students.* Unpublished doctoral dissertation. Universiti Malaya.

Lee, A. C., & Zubaidah, I-B. (2009). Strategi pembelajaran bahasa Mandarin: Satu tinjauan terhadap pelajar Melayu di universiti Teknologi MARA. *Proceedings of 2nd ILANNS 2009 Conference*. MARA University of Technology Malaysia.

Murni Mahmud, & Sahril Nur. (2018). Exploring students' learning strategies and gender differences in English language teaching. *International Journal of Language Education*, 2 (1), 51-64

Nisbet, D. L., Tindal, E. R., & Arroyo (2005). Language learning strategies and English proficiency of Chinese university students. *Foreign Language Annals,* 38(1), 100-107.

Oh, J. (1992). Learning strategies used by University EFL students in Korea. *Language Teaching,* 1, 3-53.

Oxford, R. L. (1990). *Language learning strategies: What every teacher should know* Boston: Heinle & Heinle.

Oxford, R.L. (2001). Language learning styles and strategies. In M. Celce-Murcia (Ed.). *Teaching English as a second language*, p. 359-366. Boston: Heimle and Heinle.

Oxford, R. L., & Burry-Stock, J. (1995). Assessing the use of language learning strategies worldwide with the ESL/EFL version of the strategy inventory for language learning (SILL). *System,* 23, 1–23.

Oxford, R. L., & Nyikos M. (1989). Variables affecting choice of language learning strategies by university students. *Modern language Journal,* 73, 291-299.

Pallant, J. (2001). SPSS *survival manual: A step by step guide to data analysis using SPSS.* NSW: Allen and Unwin.

Politzer, R. (1983). An exploratory study of self-reported language learning behaviors and their relation to achievement, *Studies in Second Language Acquisition*, 6, 54 –65

Riazi, A., & Rahimi, M. (2005). Iranian EFL learners: Pattern of language learning strategy used. *The Journal of Asia TEFL*, 2(1), 103-129.

Tabachnick, B. G., & Fidell, L.S. (2007). *Using multivariate statistics* (5th ed.). Boston: Allyn & Bacon.

Tan, T. G., Hairul Nizam, I., & Muhammad Kamarul Kabilan, A. (2009). Language learning strategies used by MFL students based on genders and achievement groups. *Journal of US-China Foreign Language. 8* (1), 50-58. USA: David Publishing.

Vandergrift, L. (2005). Relationships among motivation orientation, metacognitive awareness and proficiency in L2 listening. *Applied Linguistics*, 26(1), 70-89.

Wen, Q., & Johnson, R. K. (1997). L2 learner variables and English achievement: A study of tertiary English majors in China. *Applied Linguistics*, 18(1), 28-48.

Wharton, G. (2000). Language learning strategy use of bilingual foreign language learners in Singapore. *Language Learning*, *50*, 203-243.

Woodrow, L. J. (2005). *The challenge of measuring language learning strategies. Foreign Language Annual,* 38, 90-99.

Wu, M. M. (2007). The relationships between the use of metacognitive language learning strategies and language learning motivation among Chinese-speaking ESL learners at a vocational education institute in Hong Kong. *Asian EFL Journal, 9(3).* Retrieved June 02, 2009 from http://www-writing.berkeley.edu/TESL-EJ/ej26/a3.html

Zahra N. (2003). *Learning strategies preferred by the field dependent and field independent students in an EFL environment.* Unpublished master thesis, University of Malaya.