Online Direct Learning Strategies of Mandarin as a Foreign Language Learners During COVID-19 Pandemic Period in a Malaysian University

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Abstract
This study seeks to identify the patterns of the use of direct learning strategies of learners of Mandarin as a foreign language in an online setting during the spread of the Covid-19 Pandemic where educational institutions had shifted to online distance learning. This study also examined at how gender difference in strategy preference were represented in various situations, as well as student preferences for language learning strategies. A simple random sampling was conducted to investigate the third language learners' direct learning strategies (memory, cognitive, compensation) in Mandarin as a foreign language based on the Strategy Inventory for Language Learning (SILL) Questionnaire developed by (Oxford, 1990). A total of 445 Malay undergraduates who were undertaking the basic Mandarin course participated by answering questionnaires which were prepared as a data collection method. All the participants were non-native Mandarin speakers. Descriptive statistics and significance tests were utilised in the study. The significant differences in direct learning strategies used by male and female degree students were determined using the Independent Sample t-Test. The results revealed that memory strategy is the most preferred direct learning strategies used by the undergraduates, followed by compensation strategy and cognitive strategy. Besides, memory strategy also gained the most preferred learning strategy regardless of gender. However, the results also showed that the male and female degree students had statistically significant differences in using compensation learning strategy. The findings of the study would be important to Mandarin as a Foreign Language instructors when selecting strategies, teaching materials and activities to be carried out in their language classroom. The implications for Mandarin as a foreign language instructor are to improve the teaching and learning by preparing materials and tasks that are suitable for online learning. Therefore, it is recommended that future research should integrate quantitative and qualitative methodologies to gather more detailed information about the use of strategies or study the effects of the direct language learning strategy (LLS) on students' success in the Mandarin

course. It will be preferable if a longitudinal study is undertaken to determine whether the effect of direct LLS increases over time as learners progress in learning Mandarin.

Keywords: Language Learning Strategies (LLS), Mandarin as a Foreign Language, Covid-19, Online Distance Learning, Undergraduates

Introduction

Due to the spread of the Covid-19 Pandemic, the Malaysian government announced that the nation would enter the Movement Control Phase on March 18, 2020, and that all primary, secondary schools as well as institutions of higher education would be closed entirely. In order to allow students to continue their education, private and public educational institutions had to shift from traditional classroom instruction to online distance learning, ushering in a new normal for education in Malaysia.

The advantage of online distance learning is that it provides great flexibility in terms of time and location, enabling students to study remotely with easy access to instructors and online course materials (Mukhtar et al., 2020). However, students also highlighted the drawback of the online learning model, which is the absence of in-person interactions with instructors and social communication of traditional classrooms that they need (Adnan & Anwar, 2020; Dhawan, 2020). Limitation of communication in foreign language classrooms has a more pronounced impact on language learning effectiveness, as successful communication is the major goal of learning a foreign language, and it is also one of the challenges that students encounter when learning a language.

Therefore, this research aims to investigate whether learners employ language learning strategies to help them overcome learning barriers and make "learning easier, faster, more enjoyable, more self-directed, more effective and more transferrable to new situations" (Oxford, 1990, p.8). This paper will also examine students' preferences on language learning strategies and how gender differences in strategy choice are reflected.

Literature Review

Language learning strategies is an action taken by learners to improve their learning. Oxford (1990) reviews language learning strategies as the "tools for active, self-directed involvement" which can help the learners to improve language proficiency and build up self-confidence. Besides, the learners can experience easier, faster, more fun, more self- DIY, productive and more transmissive to new condition. Cohen (1998) added the function of language learning strategies as the action where the learners are to increase the reservation, memory, reminisce and practice of knowledge in the language learning process. A successful language learning process somehow could be linked with the use of the right language learning strategies of a language learner.

Language learning strategies were developed in 1975 by Rubin and Naiman to investigate the strategies used by successful language learners while learning a new language. These strategies have been expanded and classified into two categories which are direct strategies and indirect strategies (Oxford, 1990). Direct strategies consist of memory strategies, cognitive strategies and compensation strategies meanwhile indirect strategies are metacognitive strategies, affective strategies, and social strategies. Direct strategies involve mental processing of a language. Memory strategies are used by learners to keep and trace back information (Ho & Ng, 2016). Learners could use memory strategies such as, grouping

and imagery to learn language. Cognitive strategies consist of summarizing and reasoning deductively in the process of learning. These strategies are to assist learners to recognise and create new language using diverse words. Compensation strategies made up of reckoning or using counterpart meaning, for learners to compensate for missing knowledge (Hsiao & Oxford, 2002, p.371).

Some learners preferred to use one and some learners prefer to use more than one learning strategies to learn foreign language in an online distance learning setting. Alyani and Muhammad (2021, p.34) investigated the second language learners' preference for LLS while learning English in an online setting. Their result indicated that learners used more compensation strategies in terms of LLS choice. Alireza et al (2017) found that the compensation learning strategies are preferred by Third Millennium English as a Second Language (ESL) learners with some modification on the strategies to compensate for their knowledge gap and to enhance their ESL learning. However, another study (Anett, 2015) aimed to test the learning strategy choice preferred by Hungarian students learning Mandarin as a foreign language and found that no learners preferred to use more than one learning strategies or non-choice learning strategies. The study indicated that learners had less preference for affective and compensation strategies if they used memorization strategies. On the other hand, learners preferred affective strategies, and often used less memorization and compensation strategies. The results of the previous studies contradicted with another research which involved Indonesian EFL university students who most preferred to use the metacognitive strategies than any other learning strategies (Ag. Setiyadi et al., 1999). Compensation strategies were the most used strategies. On the other hand, memory strategies were the least used in examining the use of language strategies by a group of Hong Kong learners (Stephen, 1999).

Even though much literature of language learning strategies has been discussed over the decades, yet little studies have been done on how learners use learning strategies in online distance environments during Covid-19 pandemic. Language learning strategies are still very important and essential for language learning even in the online learning environment (Oxford & Schramm, 2007). A study conducted by Solak & Cakir (2015) on online language learners in Turkey found that e-learners used mostly memory strategies while cognitive strategies were used the least. However, Broadbent & Poon (2015) argued that learners who utilized their learning time effectively, know their own learning pattern well, understand learning contents and are optimistic throughout the learning process despite facing difficulties are more likely to perform better in the learning process.

Past research has shown that language learning strategies used differ among gender. A study intended to explore learners' learning strategies and gender differences in English language teaching highlighted that the male learners mostly selected compensation strategy (Murni & Sahril, 2018). In addition, Bozinovi (2011) also found that the female learners more frequently used all types of direct learning strategies. Similarly, Ho & Ng (2016) revelaed that the female learners employed more direct learning strategies compared to male learners. Their study also reported that there was a significant difference in the use of language learning strategies based on gender for all the language learning strategies particularly memory, except for compensation. Tam (2013) also found a significant difference among male and female in using memory, compensation, and cognitive strategies to learn English. Another research done by Solak & Cakir (2015) reported a significant difference was found for females in cognitive strategies and for males in metacognitive strategies on digital online learning platforms. However, another study contradicted with previous research which showed that both the

male and female learners do not differ significantly in the use of language learning strategies while learners were engaged in an online learning environment (Marimuthu et al., 2013). Therefore, there is still a need to investigate how gender variables could affect the use of language learning strategies in online learning platforms since there are some contradictory findings in the literature review. This concern has led to the exploration of the language learning strategies among undergraduates in respect to the effect of gender as one of the factors in a Malaysian public university during Covid-19 Pandemic period, while engaging in online learning.

Methodology
Research Objectives
This study aims to identify the direct LLS of Mandarin as a foreign language learner in online distance learning settings. The research questions (RQ) for this study are:

1. What is the overall means of direct LLS (memory, cognitive and compensation) used by the degree students?
2. What is the pattern of direct learning strategies preferred by male and female degree students in Mandarin course?
3. Is there any significant difference in memory, cognitive and compensation strategies used by male and female degree students?

Based on the RQ3, three hypotheses were suggested

H_1: There is no significant difference in memory learning strategy used by the male and female degree students.

H_2: There is no significant difference in cognitive learning strategy used by the male and female degree students.

H_3: There is no significant difference in compensation learning strategy used by the male and female degree students.

Research Framework
This study employed Oxford's (1990) Strategy Inventory for Language Learning (SILL) to investigate the third language learners' direct learning strategies in learning Mandarin language. A research framework is proposed as in Figure 1. The research model shows how the variables such as memory, cognitive, and compensation learning strategies are referred to.
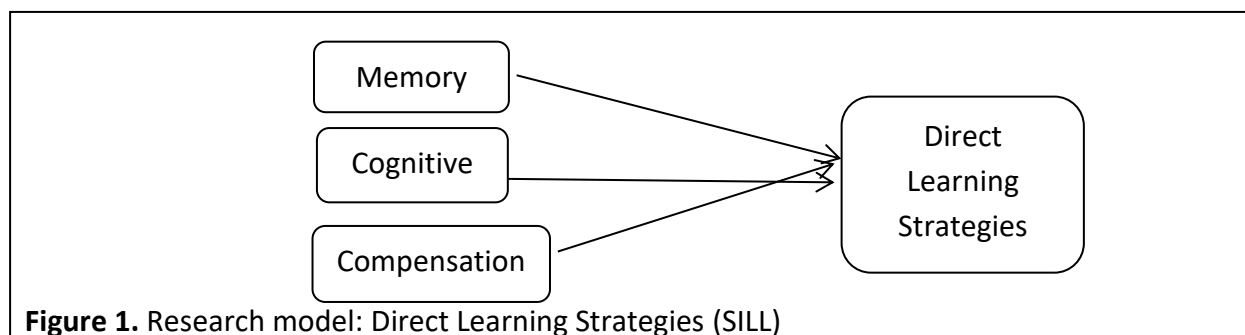

Figure 1. Research model: Direct Learning Strategies (SILL)

Sample
A total of four hundred and forty-five (N=445) Malay undergraduates from Universiti Teknologi MARA (UiTM), Cawangan Melaka (Melaka state campus) were selected as the

respondents of this study. The sample consisted of 101 males and 344 females who were non-native Mandarin speakers. Due to the spread of the Covid-19 Pandemic, all the respondents learned Mandarin in an online distance learning environment. The respondents were from 7 faculties such as Business Administration, Art & Design, Accountancy, Hotel and Tourism Management, Communication and Media, Computer Science and Mathematics, and Plantation and Agrotechnology. They were degree students who had enrolled in the *Introductory Mandarin Level I, Introductory Mandarin Level II, and Introductory Mandarin Level III* as their foreign language course. Although all the respondents were from the same university, but they came from different states in Malaysia. With the differences in their places of origin, accommodation, and social economic background, it is believed that these can provide a variety of useful perceptions and information concerning the study. Besides, as they come from various faculties, the differences in academic training, courses as well as teaching and learning may also provide a variety of learning strategies in learning Mandarin as foreign language.

Instrument
This quantitative study employed a survey method to investigate the third language learners' direct learning strategies. A questionnaire of Strategy Inventory for Language Learning (SILL) developed by Oxford (1990) was adapted and used to gather data on the respondents' memory, cognitive, and compensation learning strategies in learning Mandarin language in the online classroom setting. The questionnaire for this study comprised two parts. Part one consisted of 6 items while part two consisted of 29 items. The first part of the questionnaire was on the respondents' demographics, such as age, gender, campus, faculty, course code, and background of learning Mandarin language. The second part of the questionnaire was to examine the direct learning strategies (memory, cognitive, compensation) measured on a five-point Likert scale, ranging from '1=Strongly Disagree' to '5=Strongly Agree', as shown in Table 1.

Table 1
Five-Point Likert Rating Scale.

Scale	1	2	3	4	5
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Reliability Test
A pilot test was conducted to test the internal consistency, reliability, and validity of the study instrument. Results of the Cronbach's Alpha Reliability Test are presented in Table 2.

Table 2
Reliability Coefficient of Study Instruments

Instrument	No. of Items	Cronbach's Alpha
Memory	9	0.82
Cognitive	14	0.87
Compensation	6	0.76

Cronbach's alpha values for the instruments in table 2 are greater than 0.70. Therefore, the scale of all the items can be considered as having high reliability since they are all greater than 0.75.

Data Collection and Analysis

The questionnaires were distributed from December 2021 to February 2022 to the subjects to complete through Google Form link and 445 questionnaires were returned. The data collected from the questionnaire were fed into the computer and analyzed with the help of the Statistical Package for Social Sciences (SPSS-v-17) software. Descriptive statistics mean, standard deviation of direct learning strategies (memory, cognitive, compensatory) was conducted to determine the overall means of direct learning strategies employed by degree students. Descriptive statistics mean, standard deviation of the direct learning strategies based on gender were also conducted to determine the pattern of direct learning strategies preferred by male and female degree students in Mandarin course. The significant differences in direct learning strategies used by male and female degree students were determined using the Independent Sample t-Test.

Findings and Discussion

This section presents the analysis and findings of the participants' memory, cognitive and compensation learning strategies used by Malay undergraduates in online Mandarin courses. The results are presented according to the research questions.

Research Question 1: What is the overall means of direct language learning strategies (Memory, Cognitive and Compensation) used by the degree students?

Table 3
Overall Direct Language Learning Strategies used by the Degree Students

	Direct Learning Strategies	Mean (M)	Standard deviation (SD)	Rank
Total (N=445)	Memory	3.11	0.574	1
	Cognitive	2.89	0.599	2
	Compensation	2.84	0.657	3

Table 3 shows the Direct Learning Strategies of the subjects in terms of three categories, such as Memory, Cognitive and Compensation. The results show that Memory Strategy (M=3.11, SD=0.574) is the most preferred direct learning strategies used by the degree students. This was followed by Cognitive Strategy (M=2.89, SD=0.599) and Compensation Strategy (M=2.84, SD=0.657) in the speaking components of their Mandarin courses. All the mean scores of Direct Learning Strategies ranged from 2.97 to 3.42 indicate that respondents "sometimes" used these strategies as classified by (Oxford, 1990).

These findings are aligned with Solak & Cakir (2015) on Turkish language learners who were enrolled in online courses, memory strategies were preferred over cognitive strategies. However, the results are not consistent with Alyani & Irfan (2021, p.34) who indicated that learners used more compensation strategies in terms of LLS choice. Additionally, the results also differ from Alireza et al (2017) who found that the compensation learning strategies are preferred by Third Millennium ESL learners. Furthermore, when a group of Hong Kong learners was examined in the use of language strategies, memory strategies were the least frequently used (Stephen, 1999).

Based on the findings mentioned above, this study demonstrates that different strategies are used in various environments. When studying a language in a traditional setting, students employ more compensations strategies. However, memory techniques were the most widely used when the environment changed from conventional to online distance learning. According to Ramli & Aladdin (2021), "Memory strategies allow learners to store vocabulary and then retrieve them when needed for communication". It is used to learn, store, and retrieve information. This includes the use of flash cards or grouping words with comparable functions to aid learners in remembering new vocabulary. Many researchers have agreed that teachers play an important role in getting learners to understand the functions and benefits of using the correct language learning strategies and become good language learners. (Soupi et al., 2022). As a result, teachers are urged to offer more resources or tools to improve the efficiency of online distance learning.

Research Question 2: What is the pattern of direct learning strategies preferred by male and female degree students in Mandarin Course?

Table 4
Direct Learning Strategies used by Degree Students based on Gender

Direct Learning Strategies	Male (N=101)		Female (N=344)	
	Mean (M)	Standard deviation (SD)	Mean (M)	Standard deviation (SD)
Memory	3.18	0.601	3.08	0.565
Cognitive	2.95	0.659	2.88	0.580
Compensation	2.99	0.666	2.79	0.649

Table 4 shows that male students prefer Memory Strategy (M=3.18, SD=0.601), followed by Compensation Strategy (M=2.99, SD=0.666) and Cognitive Strategy (M=2.95, SD=0.659). Besides that, as shown in Table 4, the results also indicated that female students also prefer Memory Strategy (M=3.08, SD=0.565), followed by Cognitive Strategy (M=2.88, SD=0.580) and Compensation Strategy (M=2.79, SD=0.649). Both males and females were "medium users" for all direct language learning strategies as their scores were between 2.5 and 3.4 based on the classification by (Oxford, 1990).

These findings indicate that the most used learning strategy is memory strategy regardless of gender. This finding is in line with the research done by Soupi et al (2022) on LLS used among Malaysian ESL graduates where memory strategy are the most preferred direct learning strategies with a percentage of 69.21%. This portrays that the Malay non-native Mandarin undergraduates, regardless of their gender prefer learning Mandarin as a foreign language with memorizing information about language such as vocabulary, sentences patterns to enable them to retrieve it when necessary or for later usage in real-life. Based on these findings, it is strongly suggested that Mandarin lecturers should introduce more LLS and assist students to explore more learning methods, besides memorizing method. Lectures can create an environment for students to have more opportunities to communicate with native speakers. For instance, lecturers can design a task to ask students to look for a Mandarin

native speaker to complete a short film of interview or dialogue and upload to social media. This can help improve the students' learning strategies in the Mandarin course.

Research Question 3: Is there any significant difference in direct learning strategies (memory, cognitive and compensation) used by male and female degree students?

Table 5
Independent T-Test for Equality of Means for Memory Learning Strategy

		F	p	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Direct Learning Strategies (Memory)	Equal variances assumed	1.832	.177	1.548	443	.122	.10039	.06485
	Equal not variances assumed			1.496	155.511	.137	.10039	.06710

Table 6
Independent T-Test for Equality of Means for Cognitive Learning Strategy

		F	p	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Direct Learning Strategies (Cognitive)	Equal variances assumed	2.315	.129	1.082	443	.280	.07333	.06775
	Equal not variances assumed			1.009	148.380	.314	.07333	.07266

Table 7
Independent T-Test for Equality of Means for Compensation Learning Strategy

		F	p	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
Direct Learning Strategies (Compensation)	Equal variances assumed	.212	.645	2.692	443	.007	.19883	.07385
	Equal not variances assumed			2.654	159.881	.009	.19883	.07491

An independent sample T-test was conducted to compare the equality of Memory, Cognitive and Compensation Learning Strategies used by male and female degree students. As shown in Table 5, the results showed that there was no significant difference in the scores for Memory Learning Strategy used by male and female degree students, $t(443)=1.548$, $p= 0.122$. The findings support the hypothesis (H_1) there is no significant difference in Memory Learning Strategy used by the male and female degree students as the value in the *sig.(2-tailed)* is > p=0.05. The results imply that male and female degree students use Memory Learning

Strategy the most in learning Mandarin. The same situation happened in the use of Cognitive Learning Strategy. Result in Table 6 revealed that the male and female degree students have no significant difference in the scores for Cognitive Learning Strategy, $t(443)=1.082$, $p= 0.280$. where hypothesis (H_2) is supported. The finding suggests that Cognitive Learning Strategy is equally used by both male and female degree students in learning Mandarin as a foreign language.

However, as shown Table 7, the male and female degree students had statistically significant difference in using Compensation Learning Strategy, $t(443)=2.692$, $p=0.007$. Therefore, the hypothesis (H_3) there is no significant differences in Compensation Learning Strategy used by the male and female degree students is not supported because the value in the *sig.(2-tailed)* is $< p=0.05$. The result suggests that the use of Compensation Learning Strategy in learning Mandarin between the male and female is different. As shown in Table 4, the mean value for male (M=2.99) is higher than female (M=2.79) for compensation strategy. It can be concluded that Malay male undergraduates use compensation strategy more often than their female counterparts in learning Mandarin language. This seems to concur with previous research that males generally tend to compensate their knowledge gap using guessing and gesturing (Oxford, 1990) to assist them in learning. For instance, guessing the meaning of new words or phrases. These results have pedagogical implications in the teaching and learning of Mandarin.

Conclusion
The result of this study indicates that male and female degree students use Memory Learning Strategies most frequently when learning Mandarin. This could be due to the nature of memory strategies as they are the most used techniques to learn a new language by remembering the basic blocks of language, especially vocabulary. The results also indicate that the male and female degree students had statistically significant difference in using Compensation Learning Strategies as the female students prefer to use Compensation Strategies compared to the male students.

To conclude, it appears that more successful language learners use a wider variety of strategies than less successful language learners. Since the ability to adopt learning strategies is crucial for learning a new language, the study may suggest some pedagogical implications. As proposed by Oxford, learning strategies is teachable and can help to make language learning more meaningful. Research have shown that language learning is improved for students who receive strategy instruction. Teachers can explicitly teach the strategies in a classroom and give students opportunities to practise them and apply them to language tasks.

This study only used closed-ended questionnaires to determine the use of language learning strategies without in-depth investigation on how or why the learners adopt the strategies reported in the survey. It would be beneficial that future research use a mixed method of quantitative and qualitative approach to gather more detail data regarding the use of strategies.

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