Strategy Instruction for Macao EFL Students

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Abstract Strategy Instruction (SI) has been in much debate on its effectiveness on students' language learning strategies (LLS) use, proficiency and the four main English skills (speaking, listening, writing and reading). In addition, most research studies on SI focus on one main English skill and train students with one or a few groups of LLS. Still fewer research has looked into the details of changes (or students' learning processes) using diaries. This research used an embedded mixed methods quasi-experimental design to collect in-depth data to assess the effectiveness of SI on higher education nursing students' changes of LLS, English achievement and learning processes. These quantitative and qualitative methods included questionnaires, group interviews, diaries, pre- and post-tests and class observations. One treatment group and one comparison group, a total of 59 university freshmen in Macao SAR participated in this study. All six groups of LLS (memory-related, cognitive, compensatory, metacognitive, affective and social) were taught and their effects on all four main English skills were discussed. Quantitatively, two groups (affective and compensatory) of LLS use and qualitatively, the learning processes of students had been improved after SI but no improvement was obtained in students' achievement from the *Oxford Placement Tests* quantitatively. In this study, recommendations are made for utilizing SI in improving LLS in EFL.

Keywords: *strategy instruction, language learning strategies, EFL students*

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1. Introduction

Language learning strategies (LLS) are steps or actions that a learner consciously takes to improve and regulate his or her language learning [[1], p. 11]. Strategy instruction (SI) means the teaching of LLS to learners. The rationale for learner strategy research is that over the past three to four decades, researchers had confirmed that not all learners used strategies effectively, that low proficiency learners often had difficulties in using appropriate strategies for various tasks. Therefore, these lead to ineffective use of LLS and poor learning outcomes [2,3,4]. Because of this variety in the use and effectiveness of LLS, this research investigates the extent to which one can teach all learners using LLS in an effective way so that their performance can be enhanced. This, in turn, raises the question of whether LLS can be taught and this is a topic which has been debated. Some researchers claim of positive results [5,6] while Jurkovič [7] found no effect on students' achievement after SI. Further, Plonsky [8] conducted a meta-analysis of 61 studies and found that there was a small to medium overall effect of SI ($d = 0.49$) on context (setting, age, institution, class and proficiency), treatment (strategy type, number of strategies and treatment length), outcomes (target skills, e.g., reading, speaking, writing, listening, etc.), and methods (pretest, random groups and reliability reported). Variables that could modify its effectiveness included type and number of strategies, learning context (second vs. foreign language), and length of intervention.

An overview of literature showed that the effectiveness of SI integration for the Chinese learners is generally effective for improving learners' LLS use and proficiency (e.g., [9]). However, only a few studies (e.g., [10]) used diaries to look into students' learning processes, which is very important to understand why and how students' learning outcomes are affected. Further, various qualitative methods are required to understand more in-depth about students' learning processes and outcomes as [11] had also suggested. In terms of students' LLS use, most of the trained groups of strategies had shown improvement after SI. Nonetheless, a large proportion of the studies focused on training one group of strategies only (metacognitive), with the exceptions of, e.g., [12], and looked at the result of one language skill only. Thus, more studies are needed to investigate the effects of SI with combinations of various groups of strategies on more than one language skill.

2. Literature Review

Strategy instruction (SI) has been used 'for many years to refer to ways by which teachers can help students become more effective learners' [[13], p. 175]. Usually, this involves teachers directly teaching LLS to students in classrooms. It helps learners to understand more about LLS and to 'organize and use strategies systematically and effectively' [[14], p. 295].

The goal of SI is to 'explicitly teach students how, when, and why strategies can be used to facilitate their

efforts at learning and using a foreign language' [[15], p. 69]. It also offers two main advantages in language learning because SI can assimilate the language directly and build up the cognitive skills for learners that can be used in pedagogic and natural learning contexts indirectly [[16], p. 108]. Further, it can help learners to become more independent, confident and motivated [17,18].

Strategy instruction shifts the focus of language instruction towards the needs of individual learners more than those of the teachers, so learning and teaching become the responsibilities of both teachers and students in the foreign language classroom. No longer is the teacher controlling all instruction and every aspect of the learning process. Rather, the learners are sharing the responsibility for successful language learning. At the beginning, teachers may have more control of the instruction. However, as time passes, teachers' responsibility slowly declines, and students' responsibility increases as learners need to be more independent and autonomous in their own language learning, applications of LLS and on deciding how, when, why and what to learn. However, many learners may not have their own sufficient LLS understanding to enable them to improve their learning. Therefore, they need explicit training in strategies to become more proficient in using LLS throughout their learning processes [19].

Therefore, in this research, SI is conducted to enable students to learn a larger repertoire of LLS, and students can learn to share responsibility in learning English. SI has been effective in various areas as shown below:

- Speaking [20,21];
- Listening tasks [22-27];
- Writing [28-34];
- Reading comprehension [35,36,37,38];
- Modifying learners' LLS use [39-45].

On the other hand, Oxford [46] listed some possible reasons when SI might be ineffective. They included:

a. The training in strategies might be too short a period of time;

b. When affective and social strategies were not included in SI as these strategies were important;

c. When different levels of tasks are not balanced; and

d. When learners' LLS which were used at the beginning were not assessed appropriately.

Chamot and Rubin [47] further added that it is necessary to integrate SI into the regular curriculum. In addition, the selection of materials and the need for adequate teacher orientation and expertise in SI are important. Also, Plonsky's [8] meta-analysis of 61 studies found that there was a small to medium overall effect of SI ($d = 0.49$) on context (setting, age, institution, class and proficiency), treatment (strategy type, number of strategies and treatment length), outcomes (target skills, e.g., reading, speaking, writing, listening, etc.), and methods (pre-test, random groups and reliability reported). Variables that could modify its effectiveness included type and number of strategies, learning context (second vs. foreign language), and length of intervention.

The present study, in order to address these concerns, involved training learners with all six groups of strategies with a balance of difficulty of tasks, and most importantly, with thorough assessment of learners' LLS use with both qualitative and quantitative methods, including group interviews, observations and questionnaires [48]. Also, it is necessary to deal with all the learners' variables, including motivation, since all of these can influence learners' LLS use, and the effectiveness of SI.

2.1. Strategy Instruction for Higher Education Chinese Learners

Four studies are reported here, which looked at SI in higher education Chinese learners as this was the main focus of this research. Nunan [49] incorporated SI into his classroom with 60 first year undergraduate students in Hong Kong. He used guided journals for understanding the effects of SI in a 12-week period. He concluded that SI 'did lead to greater sensitivity to the learning process over time' through the use of reflective journals (p. 41). Learners were more willing to exploit chances that existed for language learning, made 'greater connections between English and content courses' (p. 41), and developed skills for knowing what and how they wanted to learn. It also helped them to understand the differences between their high school experiences and those from the university with these new learning skills and chances to reflect on their English learning.

In 1997, Nunan [12] investigated the effects of SI on four key aspects of the learning process, including motivation, students' understanding of LLS, their perceived and actual use of LLS on two groups of 30 undergraduates in Hong Kong. The experimental group was trained in fifteen learning strategies [1]. Results indicated that the experimental group significantly outperformed the comparison group on motivation, knowledge and the perceived utility of LLS but no statistically significant differences were found in the area of actual use of LLS (it was suggested that might be because the students had few chances to take control of their learning in the context of their study). Also, the effect of SI was not 'uniform across all strategies' (p. 134). In certain cases, the effect was quite large, while in others, it was less clear. Both individual analysis and interpretive analysis of the interview data showed that the greater the attention from students to particular strategies, the greater was the effect of SI seen on these strategies. However, as commented by Nunan [12], since the 'amount of focus on individual strategies was not one of the variables focused on in this study, it is not possible to comment on it in greater detail' (p. 134), so no further details could be obtained from this study related to the effects of SI on LLS.

Rao [9] conducted research with 118 sophomores in a Chinese university. Students were randomly allocated to three groups with two groups receiving brainstorming strategy training and the last group acting as a control. It was found that explicit instruction in the brainstorming strategy had a measurable effect on students' writing outcomes.

Zhang, L. [50] looked at the effect of SI on the reading proficiency of two groups of 99 Chinese students, using a quasi-experimental methodology. O'Malley's and Chamot's [51] SI approach was used by first raising students' metacognitive awareness (i.e., the teacher

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[1] Identifying objectives, selective listening, predicting, confirming, reflecting, self-evaluating, cooperating, summarizing, memorizing, inductive and deductive learning, independent learning, applying, classifying and personalizing.

discussed 'what was the strategy?' 'Why should a strategy be learned?' 'How was the strategy used?' 'When should the strategy be used?' 'Where should the strategy be used?' and 'How should the use of the strategy be evaluated?'), and direct instruction was carried out in small groups. Then in the second stage, self-questioning and self-reflection were used to cultivate learners' self-regulation. It was found that after a two-month strategy-based reading instruction program, students' use of many reading strategies (i.e., previewing or surveying, predicating content, self-monitoring, identifying main ideas and supporting details, checking effectiveness in strategy use, evaluating reading, etc.) and their reading comprehension proficiency were improved.

From mainland China, SI has been shown to improve the results of the following tasks and can improve learners' proficiency and LLS use:

- Speaking tasks [10,52];
- Listening tasks [53,54,55,56];
- Writing tasks [57,58];
- Reading comprehension [59,60];
- Modifying learners' LLS use [39,44,61,62];
- Proficiency [45,63,64]; and
- Both LLS use and proficiency [40,42,43,65].

What follows is a summary of studies related to the four main English skills, LLS use and proficiency only as these are the foci in this research.

For speaking tasks, Wang [52] taught three communication strategies (topic avoidance, circumlocution and stalling device) to 109 second year English major university students and used oral tests, reading comprehension tests (for checking students' proficiency levels of the two classes) and questionnaires for data collection in a quasi-experiment. The reasons for choosing those three strategies were to improve students' oral proficiency, accuracy and 'buying time' before responding to oral tasks. Results showed that after SI, both LLS use of these three strategies and oral test scores increased for the intervention group.

Shen and Song [10] conducted a quasi-experiment on 46 business major university students, using diaries, oral tests and interviews for data collection. Metacognitive and affective strategies were integrated. Results showed that for metacognitive strategies, learners believed that those strategies were very important for their oral skills. Effective learners were shown to have better monitoring of their learning (i.e., watching an English movie for 2-3 hours every week) but less effective learners were less clear in their plans. For affective strategies, they all revealed that they would become nervous when speaking. It was also shown that for the intervention group, oral test scores improved 17.8 percent when comparing pre- and post-test scores. For understanding students' use of LLS, two interviews were conducted after SI, one for an effective learner and another for a less effective learner and they both said that SI was important and could make them more aware of their LLS use so that they would use LLS more often later.

In terms of listening tasks, in the study by Su [53], 66 beginning English learners in a vocational school were randomly assigned into two groups. Su used her own listening strategy questionnaire and pre- and post-tests for data collection. Fifteen metacognitive, cognitive and social/affective strategies were selected for instruction. The findings showed that SI improved learners' transactional listening performance with the experimental group significantly outperforming the comparison group. Also, the experimental group revealed a higher frequency of LLS use in association, pre-organization and answer finding.

In 2006, Zhao and Chang [56], conducted a quasi-experiment with 208 non-English major freshmen but this time using only metacognitive strategies (i.e., goal-setting, directed attention, background knowledge, predicting). The focus was on the scores of the listening tests and not on the changes in the LLS used. The results revealed very small differences between the scores of the intervention and the comparison groups.

Zhang, O. [55] conducted a quasi-experiment on 121 Chinese major university students in three classes: the first class with metacognitive, cognitive and affective/social strategies training; the second class with metacognitive and cognitive strategies training; and the third class as a comparison group. It was found that both frequencies of LLS use (the details of which LLS were not discussed) and listening test scores increased for the intervention groups but the results showed that the best way for SI was by using a combination of metacognitive and cognitive strategies. In addition, less effective learners benefited more from SI than the effective learners.

In another quasi-experiment on two classes of 42 students each, Tan and Chen [54] used the Metacognitive Awareness Listening Questionnaire (MALQ) and metacognitive SI for the intervention group. The findings revealed that the listening scores for the intervention group were significantly improved after the SI (the students' use of LLS was not discussed in this research).

In terms of writing, Gan [57] integrated metacognitive SI on four classes with a total of 162 students. Two classes were assigned as the comparison groups and the other two as the intervention groups. Results showed that all frequencies of the five metacognitive strategies (planning, focusing, monitoring, managing, and evaluating) increased after SI, with the high proficiency students using these the most number of times, medium proficiency students using medium number of times, and the low proficiency students using the least of them. In terms of writing scores, all students in the intervention groups improved as compared to the comparison groups. In addition, the low proficiency students benefited the most from SI, with the highest increase in scores.

Miao [58] conducted SI with three metacognitive strategies (planning, monitoring and evaluating) on two classes of 112 accounting and finance students. The findings showed that both the frequencies of LLS use and scores on writing after SI increased in high, medium and low proficiency students (the details of LLS use were not discussed).

Reading SI was conducted by Tan and Wei [59] with three classes of university students. One of the classes was the comparison group, while the other two classes received strategy training on metacognitive strategy (goal-setting), social strategy (group/partner learning) and cognitive strategies (i.e., summarizing, skimming, scanning, etc.). The focus was on the scores of the reading comprehension tests, which revealed an improvement

after SI (no details were given regarding the use of LLS in students).

Wu [60] conducted a 'management strategy' training on some vocational students and also found that reading comprehension scores improved after SI (students' LLS use was not discussed).

In terms of effects on students' LLS use, Wang [44] conducted metacognitive SI on 196 university freshmen, using the author's own designed and the adapted SILL (Strategy Inventory for Language Learning) [61] (no details were discussed), structured diaries, think-aloud protocols and tests for data collection. Results revealed that metacognitive strategies (e.g., planning, managing, learning from mistakes) significantly improved after SI.

In 2009, Li and Zhao [62] investigated 186 Chinese medicine sophomores by using questionnaires (not specified) and 15 teachers by using interviews to find out the results of listening strategies after SI. Results showed that students' use of metacognitive, cognitive and social/affective strategies all increased after SI.

Chen [39] conducted metacognitive SI with 59 university students in two classes. Data were collected using background questionnaires, diaries and interviews. It was found that the frequencies of use of metacognitive strategies (planning, managing, monitoring and evaluation) improved after SI.

Gao, Chen and Cheng [63] explored the effect of SI on learners' metacognition in a longitudinal study. An adapted questionnaire (not specified) was used with 108 English major freshmen before, midway, immediately after and half a year after the SI to assess students' metacognitive strategies. Results indicated that the use of these strategies, including monitoring, planning, evaluating and information management increased significantly after one-year of SI training and the improvement could still be seen half a year later.

With regard to proficiency, SI was shown to be effective in studies by [45,64] and [65] and students' test scores improved.

In terms of SI effects on students' LLS use and proficiency, Cheng [66] reported the effects of SI on 260 non-English majors. They were separated into 6 classes with 3 classes as the training groups and the other three as the comparison groups. SI (no details discussed) lasted for one year and results revealed that higher scores were achieved by the training groups on tests after SI but the uses of LLS had not improved. Qualitative interview analysis showed that motivation had an important effect on their willingness to use LLS.

In 2008, Qi and Yu [42], conducted SI with 47 non-English majors using SILL (but with only four categories of LLS: cognitive, metacognitive, affective and social strategies) and proficiency tests for data collection. After SI, both frequencies of use of cognitive strategies (no details revealed) and metacognitive strategies (understanding learning deficiency and improvement, active engagement in English learning activities, looking for opportunities for learning English and self-evaluation) and proficiency (in terms of test scores) had statistically significantly increased for the intervention group.

Shan and Gu [43] conducted a metacognitive SI with less successful non-English majors in higher education. The results indicated that, after training, students' metacognitive strategy use (e.g., planning, organizing,

goal-setting, evaluation, monitoring) and proficiency were enhanced statistically significantly, but there was only a weak correlation between increased metacognitive strategy use and proficiency (in terms of test scores), which might be due to other factors affecting proficiency (e.g., other strategies, motivation).

Ouyang and Zhang [40] conducted affective strategy training with 15 classes of university freshmen, a total of 768 students. A quasi-experiment was conducted using another 15 classes of students as the comparison groups. Questionnaires and proficiency tests were used for data collection. The findings revealed that affective strategies (confidence, overcoming negative emotions and strong will), motivation and proficiency test scores improved significantly after training. In addition, the effects of the training could still be seen after half a year when the scores of proficiency tests were compared between the intervention groups and the comparison groups.

In sum, the effectiveness of SI can be seen in all of the aforementioned studies in improving students' LLS use, their English speaking, listening, writing, reading and proficiency. However, all of these studies investigated the effects of SI on one skill only, and so further studies are needed to look into more than one skill at the same time. In addition, only a few studies (e.g., [10,49]) used diaries to look into the learning processes, which is very important to understand why and how students' learning outcomes are affected. Thus, this research examines this area and looks at the effects of SI on four main English skills.

Further, qualitative methods are required to study in greater depth students' learning processes and outcomes [11]. In terms of students' LLS use, most of the trained groups of strategies had increased in usage after SI. Nonetheless, a large proportion of the studies focused on training only one group of strategies (metacognitive), with the exceptions of [12] and [59]. Thus, more studies are needed to investigate the effects of SI on training a combination of various groups of strategies. Also, some of the studies did not reveal the details of how students' LLS use had changed after SI (e.g., [54,58,59]. So, it is necessary to assess these effects in greater depth, and here various methods can be used, e.g., diaries to report students' learning processes.

Thus far, SI is helpful for learners in increasing their awareness of various strategies and their English proficiency. The intention of the present study, in order to address these research gaps, is to look into the effects of SI, with six groups of strategies training, on more than one skill, by using a range of methods for conducting the investigation and collecting data.

3. Study Purpose

This research would try to shed light into the effectiveness of SI, especially its effects on six groups of LLS (memory-related, cognitive, compensatory, metacognitive, affective and social), the English outcomes, together with the understanding of students' learning processes in the contexts of Macao.

4. Research Questions

1. What is the relationship between the nursing EFL students' strategies use and strategy instruction?

2. What are the effects of strategy instruction on those students' achievement in English?

3. What are the effects of strategy instruction on those students' learning processes in English?

5. Methods

5.1. Study Design and Participants

This research used an embedded mixed methods quasi-experimental design to collect in-depth data to assess the effectiveness of SI on higher education nursing students' changes of LLS, English achievement and learning processes. SI, including teaching all six groups of LLS over a 4-week time, was planned after understanding their LLS [48], and was adapted from [67,68,69]. English was taught as one of the subjects for the nursing programme including general English and some medical English.

Convenience sampling was conducted on one treatment class (N=31) (university freshmen who had learnt English since kindergarten for 15 years) (SI intervention), and another freshmen class as the comparison group (N=28) (no SI intervention, and they had their usual English lessons using the *Interchange Student's Book 3* [70] and other activities for general English learning).

Group interviews of a total of twelve students from the treatment class were conducted at the beginning of the second semester. Students were divided into three groups of high, medium and low proficiency students according to their English entrance exam admitted into the institute (students getting >80% score in the entrance English exam were assigned to the high proficiency group; those scored around 65% were assigned to the medium proficiency group and those scored around 50% were assigned to the low proficiency group). Three groups were chosen so that a better overall class representation of students' LLS use could be presented. Interviews were used to investigate any changes in students' LLS use both before and after SI and were semi-structured [71,72]. They were video recorded for easier data summary [73] (and sound recorded as backups). Each interview lasted for about one hour (the contents are related to the six groups of LLS that students might have used). Interview questions were written up mainly to elicit students' LLS use in all six groups of strategies (memory-related, cognitive, compensatory, metacognitive, affective and social) [74,75], and questions to elicit students' LLS use in the four main English skills were also included. All these interviews were conducted in Cantonese – their native language and then the main ideas were transcribed into English. Content analysis was used for data analysis.

At the same time, a pre-test using the *Oxford Placement Test* [76] and SILL were given to two freshmen classes on the first day of class so that students' English performance and LLS used before SI could be assessed. Then, SI was integrated into one of the two freshmen classes' English curriculum. One class was the comparison group and the other class with the SI integration was the treatment group. These data were analyzed using SPSS (the Statistical Package for the Social Sciences) (version 20). Qualitative data including observations and diaries were collected from the treatment group each week (details below). These data were analyzed by content analysis.

Observations were carried out to observe the changes in the use of LLS during the SI integration period and this could provide more objective data [[5], p. 33]. Class observations were carried out by the researcher in each SI class for the treatment class. An LLS checklist was used to accommodate the need of being both their teacher and a researcher [74]. This checklist was used to mark down the observed LLS in SI classes. In addition, for those unobservable LLS, questions relating to students' LLS use after observations were elicited in order to fully account for them. After the demonstration of how each LLS should be practiced, while the students were practicing the LLS, the researcher would start her observations and marked down the LLS observed and/or elicited students' mental LLS retrospectively during break time. For example, 'What are you doing when you are reading this article? Can you tell me something more when you seem to be concentrating?' could be asked when unobservable LLS were suspected.

Diaries were also asked from the treatment group to be submitted after each week of SI. Diaries can provide personal views about LLS. They can also raise awareness of the learners' experiences when they are writing about their own progress [77,78,79]. This served as a rich source for understanding students' learning processes, their own accounts of LLS use and the effectiveness of SI. Questions in diaries were structured and students needed to write in English since these diaries were treated as writing assignments.

Then the post-test (another *Oxford Placement Test [76]*) was administered to both classes, together with the SILL after the intervention on the last day of class. In order to prevent cross-group contamination for testing [[80], p. 313], both groups were physically separated in two classrooms and the test (for both pre- and post-tests) was administered one class directly after another. The relationships between SI and LLS, and SI and EFL learning outcomes could be identified with the help of these two instruments by comparing students' LLS from the SILL and their proficiency from the scores of the *Oxford Placement Test* before and after SI.

Finally, group interviews with the same selected students from the treatment group were conducted. This served to gather data on students' LLS use, learning processes and the effectiveness of SI as perceived by the students. The questions were also semi-structured and these group interviews were video recorded (with sound recorded as backups). Each group interview also lasted about one hour. These interview questions were written up mainly to elicit students' LLS use in all six groups of strategies (memory-related, cognitive, compensatory, metacognitive, affective and social) [74,75], and questions for students' LLS use in the four main English skills, for assessing students' perceived effectiveness of SI, and their learning processes in the four main English skills were included.

Qualitative data were collected before, during and after SI and were embedded with the quantitative data from questionnaires and pre- and post-tests. Students' differences in LLS use and English outcomes, before and after SI integration were compared between and within both groups ('between' for comparing the two different

groups, and 'within' for investigating the differences over time). In addition, the students' learning processes were also identified.

5.2. Strategy Instruction (SI)

Styles and Strategies-based Instruction (SSBI) Model [5,81] was used for SI. In the SSBI model, the steps included: 1. Strategy preparation – determine LLS of learners; 2. Strategy awareness-raising – alerts learners to available LLS; 3. Strategy training – students are taught explicitly on how, when, and why certain strategies can be used to facilitate language learning; 4. Strategies practice – students are encouraged to experiment with a broad range of strategies; 5. 'Personalization of strategies – learners personalize what LLS they have learned and evaluate to see how well they are using those LLS and see in what ways they can be used to transfer the learned LLS to other contexts' [[81], p. 1].

For example, when one of the affective strategies of 'encouraging yourself' was practiced, I bought to class several pictures of people accomplishing different tasks. For example, an athlete climbing a mountain, a runner participating in a marathon, a student graduating from college, and a baby learning to walk. I displayed the pictures and asked students to talk about the tasks represented by each picture. After students' discussions, I asked them what they thought might have helped people in the pictures to accomplish their tasks. Then, I asked them to write their answers on the board. I asked the students what went through these people's minds during their task completions, i.e., what attitude did they have to focus on their tasks? I explained to students that those people believed in themselves and their abilities; they were ambitious and they tried and tried, had never lost hope and were determined to succeed! Most importantly, they were always saying to themselves: 'I CAN DO IT!' After that, I asked students to write how they were going to reduce their fear on learning English. Use the ideas from the photos to illustrate and explain (i.e., how they would overcome it the same way as those people in the photos). For reflection: I asked students to tell themselves that 'They can do it'. 'I CAN DO IT' was an effective strategy to be used to ease any task in life. I asked students to write in their diaries, problems they encountered when using English outside of class and how they encouraged themselves to overcome the problems.

6. Results

First, qualitative data were presented. Students' group interviews had been analyzed and summarized in high, medium and low proficiency groups. Results of their reflective diaries were reported, followed by the LLS observations in classes. Then, quantitative data of the changes of students' LLS and the scores of *OPT* using independent and paired samples t-tests were discussed.

6.1. Group Interviews

6.1.1. High Proficiency Group

Three of the students in this group came from English medium secondary schools while one was from the Chinese medium secondary school. They were all freshmen students and they scored among the highest in the English entrance examination for getting into this institute. Three of them were from Macao and one from Hong Kong.

Before strategy instruction, when speaking English in secondary schools, they practiced a lot, especially those from the English medium secondary schools, with their classmates. They also practiced with their domestic helper at home or when working part-time. For reading, they read a lot of English books, newspapers and writing reports in secondary schools. They used dictionaries or translations for their writing. The student from Hong Kong also reported less use of Chinese in secondary school, especially in writing. They also used synonyms and asked others for help if needed.

Recitation was their mostly used strategy for remembering new information, especially for English vocabulary. They said:

{Recitation.} {Recitation, but will forget after the tests.} (pre-SI Int: Oct. 25, 2013).

They also used association, keywords, grouping and separation into morphemes for easier remembering. They used guessing if they did not know something and interesting information would enable them to remember.

After strategy instruction, they reported a lot more strategies used (both in variety and in frequency). For example, in speaking, not only would they continue their practice, they guessed, used synonyms, summarized, took notes and highlighted more. When they read, they took notes, guessed, summarized, used associations, semantic mapping and brainstorming. They also used synonyms, abbreviations, keywords and semantic mapping for helping their writing. Furthermore, guessing, paying more attention, using association and using keywords were reported in listening. They used clusters of strategies and would transfer these LLS in other courses. However, they mentioned that they had used most of these LLS even before SI, but they just did not know the names of these LLS. They mentioned:

{(The strategy I don't know before is) the semantic mapping.} {Also, semantic mapping.} {Some were used before, but I don't know the names of them.} (Post-SI Int: Nov. 22, 2013).

Therefore, in this group of students, coming from a stronger English background (English medium secondary schools) meant that they started from a higher foundation, and they were more aware of various strategies. Thus, it was obvious that they would seek more learning opportunities and take more initiatives to learn English.

6.1.2. Medium Proficiency Group

All students in this group were from the Chinese medium secondary schools. Medium proficiency means that they got the medium score in their English entrance examination. All of them were from Macao. Compare to the high proficiency group, they reported less English practices. Before strategy instruction, they would not take the initiative in speaking English. They reported needing to read newspapers in secondary school sometimes, but they would not read books. When they were watching movies, they would read the Chinese subtitles. They said:

{Sometimes I need to read English newspaper in schools.} {(I) only read the English book from the English

class.} {(I) watch English movies with the Chinese subtitles.}(Pre-SI Int: Oct. 23, 2013).

They also used translations and dictionaries a lot. They were lack of confidence and did not know how to link the new information with the old one. They recited vocabulary or information for tests only.

After SI, this group reported improvement in their LLS use both in frequency and in variety. They stated using organization, summarization and dictionaries more. They had more confidence in speaking without writing things down first. Furthermore, cooperating with others helped to boost their speaking. Although still being afraid to speak, they reported more willingly to try. When reading, they would skim the article, read the key ideas, organize, plan, summarize and highlight first. They also summarized, used synonyms, organized/planned and reported that diaries were very helpful for improving their writing. Also, before writing their diaries each week, they reviewed the notes from classes first. Group discussions in classes also enabled them to remember new things. Compared to four weeks ago, they would organize before writing and use more resources like translation or dictionaries. They also guessed and paid more attention when listening; they took notes, listened to the keywords, guessed, and asked their classmates when they practiced their listening. Similar to the high proficiency group, they understood how to use different clusters of strategies for helping their tasks. Encouraging themselves was a very useful strategy in this group of students as they encouraged themselves and their friends a lot more, they said:

{After I understand 'I can do it', I have more confidence. If I did not know how to say something (in English) before, I would ask others to say it. Now, I will try to say it more times.} {My friend mentioned in Wechat that she was stressed with her midterm, and I use 'You can do it!' to encourage her.} (Post-SI Int: Nov. 21, 2013).

Now, rather than getting help immediately from others, they would try to solve the English problems by themselves because they were more motivated and less stressed in learning English.

In this group of students, SI boosted their self-confidence in learning English. Further, they took more initiative in trying to learn English. Graduating from Chinese medium secondary schools meant that they did not experience the privileges as those from the high proficiency group of having more chances to practice English. Nonetheless, SI helped this group in providing more practices for them.

6.1.3. Low Proficiency Group

This group of students was also from the Chinese medium secondary schools and they got the passing grade of about 50 in their English entrance examination. One of the students was from Hong Kong and all the others were from Macao. Before SI, this group seldom took the initiative in speaking English but they would practice their speaking and listening by watching English movies, television or listening to English songs. They would also try to remember new words from soap opera. Sometimes, they also needed to practice English speaking in their part-time jobs. They read only interesting English materials. They also reported needing to write some English reports in secondary schools. They followed grammatical rules, outlines from teachers and used dictionaries when writing.

They also asked their classmates for help. However, they reported having bad memories, especially in word spelling and experienced pressure from learning English. As they said:

{I need a long time for reciting a vocabulary.} {Have pressure (when learning English).} {(I) also have (pressure).} (Pre-SI Int: Oct. 25, 2013).

Because of SI, they reported of finding an interesting way to learn English and they were more motivated. They also used more strategies; in speaking, they encouraged themselves, organized, guessed and cooperated more. In reading, taking notes, guessing, using keywords, association and summarizing were utilized. They also used more synonyms and translations in writing. Furthermore, they took notes, summarized, organized, used synonyms, guessed when listening. They reported having more confidence and courage now. As they mentioned:

(My English performance) is better.} {(I) talk more.} {(I) understand more.} {(My English) organization has improved.} (Post-SI Int: Nov. 22, 2013)

This group of students, similarly to the other two groups, experienced an improvement in using various LLS. Also, because of SI, they became more willing to try to upgrade their English.

In sum, all these three groups of students had used more strategies both in a wider range and more frequently. Further, all of them mentioned that SI improved their English writing more than their listening, reading and speaking as there were not enough time for more practices in classes. However, for writing, since they had their diaries every week, their writing had improved, which is discussed next. Also, similar to Nunan [12,49] and Shen and Song [10], SI improved students' willingness to use various LLS and gave them a larger repertoire of LLS for use.

6.2. Reflective Diaries

Their diaries were summarized into the following themes.

6.2.1. Find SI Useful

Different strategies were practiced throughout these four weeks and students found them useful. For example, in week one, when they learned the two metacognitive strategies of organizing/planning and 'managing your own learning', they reflected that these were useful and could be used in other courses because they could better manage and plan what they needed to do ahead of time. Students wrote:

{Yes, it helps me to consider it step by step without getting confused.} {(I can) plan on how to start (my) learning. Make a checklist or goals about what I want to learn; evaluate or review myself and see if (I) achieve (my) goals.}(Week 1: Oct, 28, 2013).

Cognitive strategy of 'take notes' was practiced in week two. Students reported writing faster because of taking notes and understanding the reading better. Furthermore, taking notes could also enable their memorization of what they had read and they could recall faster. They wrote:

{It helps me to remember the details and the basic concept of a long talk by reading the notes after the talk.} {It can help us to quickly understand and organize the

concept of the material.} {This strategy helped to train me to write faster.} (Week 2: Nov. 4, 2013).

Other students also mentioned:

{These strategies are helpful for us to learn English in an easier way. After the sad midterm, I think this is a good time to teach us some useful strategies like these. I think strategies will help us a lot.} (Week 2: Nov. 4, 2013) {This week helps us to learn more about communication in using English.} (Week 3: Nov. 11, 2013).

6.2.2. Gain Confidence

In week one, although students enjoyed group work, some reported feeling lack of confidence to speak English. They reflected:

{I think my English is very poor; I dare not to communicate in English with my classmates or friends.} {I am not confident in learning English because I am scared of speaking English. I'm scared that people would laugh at me when I said something wrong.} (Week 1: Oct. 28, 2013).

In the following weeks, however, students reported gaining their confidence in English. They wrote:

I realize my skill of taking notes is not that poor and I get my confidence back.} (Week 2: Nov. 4, 2013) {I sure have developed more self-confidence in English than before, as I had learned a lot of language learning strategies.} (Week 3: Nov. 11, 2013).

6.2.3. Stimulate Motivation

{I think the game in this week is quite funny. I hope to have similar or other games again.} (Week 2: Nov. 4, 2013) {I look forward to next week's strategy.} {Yes, it is beneficial for me to practice English. It is fun and increases my interest to study more.} (Week 3: Nov. 11, 2013).

These were some of their comments of how students thought about SI, which was both interesting and stimulating. Also, learning strategies could help students in improving their English and students were more motivated than before. They mentioned:

{Listening is my weak point in English so I would try to use this strategy to improve my listening skill.} (Week 2: Nov. 4, 2013) {Yes, I am not only more motivated and confident than before, but also find some ways to improve my English easily and effectively.} {I think I am more motivated than before because I am more willing to speak English than the time that I studied in secondary school.} (Week 3: Nov. 11, 2013).

In week three, compensatory strategy of guessing intelligently and social strategies of role-play and cooperation were taught. Most of them were more motivated in learning English. Guessing intelligently helped them in listening and reading. Role-play aided them to learn and remember vocabulary better. Cooperation stimulated their learning because they knew they could learn from others and boosted their team spirit. They also learned how to better communicate with others. They started to realize that all these strategies learned could be transferred to other courses and they could be used in clusters in helping various tasks. Some students even started to report other strategies that had not been taught but they were using at that moment, i.e., association, encouraging yourself, brainstorming, ask for clarification and self-evaluation.

Finally, in week four, four strategies were taught. They included cognitive strategy of summarizing, two memory-related strategies of grouping and semantic mapping and affective strategy of encouraging yourself. All these strategies were positively viewed and used. Encouraging themselves helped in many ways, not only in improving their confidence, but also in strengthening their positive attitudes so they would not give up easily. They wrote:

{Yes, it can motivate and inspire my impetus.} {'I can do it' can make me have more confidence.} {I will encourage myself that I can do it better the next time.} {Firstly, I can tell myself that I can do it. It will be ok. Then (I) try to find out the way to solve the difficulty.} (Week 4: Nov. 18, 2013).

In summary, SI had provided a suitable learning environment, with empowering and interesting experiences for students to gain a larger repertoire of LLS in learning English. Students became more motivated and self-confident when learning English and at the same time, they could apply those LLS learned to further enhance their English. Writing diaries helped students to reflect what they learned and was one affective strategy by itself. Students were more willing to try out the opportunities for learning English and at the same time, they were more aware of their LLS learning over this 4-week time.

6.3. LLS Observations

Various strategies had been observed in classes during SI and they were listed in Appendix A. Since some LLS were not observable, students were asked to elicit what they were thinking or doing retrospectively during the break time. Students had used different strategies in all six groups of LLS with affective strategies the least. For example, in class 1, metacognitive strategy of organizing/planning was trained. Students worked in groups for trying out this strategy, various different groups of LLS were observed with the exception of affective strategies. Although it seemed that they used the similar numbers of strategies from classes 1 to 7, different clusters of strategies were used with various tasks. For instance, they used 'employing action', translation, and etc. when they were role-playing, or self-evaluating, analyzing, and etc. when they were learning 'encouraging yourself' in different classes.

6.4. SILL

Table 1. Pre-test t-test for the Six Groups of Strategies Before SI

	Treatment group (N=31)		Comparison group (N=28)				
	M	SD	M	SD	df	t	ρ
Memory-related	2.33	0.39	2.53	0.49	57	-1.69	.097
Cognitive	2.95	0.49	3.06	0.60	57	-0.78	.441
Compensatory	3.16	0.57	3.24	0.60	57	-0.54	.594
Metacognitive	2.79	0.60	2.83	0.66	57	-0.25	.804
Affective	2.51	0.64	2.30	0.60	57	1.28	.205
Social	2.95	0.79	2.80	0.79	57	0.72	.475

An independent samples t-test was used to find out if there were any statistically significant differences in the SILL mean scores between the treatment and the comparison groups before the SI in each group of strategies (Table 1); paired samples t-tests were also conducted to analyze the mean score differences in each group pre- and post-SI (Table 2 for the treatment group and Table 3 for the comparison group). Further, another independent samples t-test was used to find out if there were any differences in the adapted SILL mean scores between the treatment and the comparison groups in each group of strategy after SI (Table 4). The reason for conducting the difference tests was to compare students' LLS both between and within the treatment and comparison groups before and after SI to find out changes of LLS between the groups, for assessing the effects of SI, and within the groups for assessing what happened over time with regard to changes of LLS. Effect sizes were also calculated for the post-test results as these measure the magnitude of changes and offer a useful indicator of how much difference the intervention has made [[80], p. 617] [2]. Effect sizes are also useful in avoiding Type II errors in small samples, as they show changes which may not be statistically significant.

From Table 1, the mean scores of all six groups of strategies from the adapted SILL of the treatment group before SI did not differ statistically significantly ($\rho>.05$) from those of the comparison group, i.e., there were no statistically significant differences in terms of LLS use for both classes before SI.

Table 2. Pre- and Post-test t-test for the Six Groups of Strategies Before and After SI for the Treatment Group (N=31)

	Pre-SI		Post-SI				
	M	SD	M	SD	df	t	ρ
Memory-related	2.33	0.39	2.81	0.59	57	-5.72	.000
Cognitive	2.95	0.49	3.25	0.66	57	-3.63	.001
Compensatory	3.16	0.57	3.50	0.64	57	-3.16	.004
Metacognitive	2.79	0.60	3.20	0.74	57	-3.40	.002
Affective	2.51	0.64	2.90	0.71	57	-3.41	.002
Social	2.95	0.79	3.27	0.79	57	-3.04	.005

Table 2 shows that there were statistically significantly differences ($\rho<.05$) between the mean scores of all six groups of strategies in the SILL for the treatment group after SI. After SI, the frequencies of LLS use in all six groups had statistically significantly improved in the treatment group.

Table 3. Pre- and Post-test t-test for the Six Groups of Strategies Before and After SI for the Comparison Group (N=28)

	Pre-SI		Post-SI				
	M	SD	M	SD	df	t	ρ
Memory-related	2.52	0.4	2.6	0.73	57	-1.14	.263
Cognitive	3.06	0.60	2.97	0.65	57	1.41	.171
Compensatory	3.24	0.60	3.03	0.68	57	1.64	.112
Metacognitive	2.83	0.66	2.85	0.73	57	-0.17	.869
Affective	2.30	0.60	2.43	0.69	57	-0.95	.349
Social	2.80	0.79	2.88	0.81	57	-0.66	.515

Table 3 shows that in the comparison group, the mean scores of all six groups of LLS were not statistically

[2] 0-0.20=weak effect; 0.21-0.50=modest effect; 0.51-1.00=moderate effect; >1.00=strong effect

significantly improved after 4 weeks, which was expected as students did not receive any SI.

Table 4. Post-test t-test for the Six Groups of Strategies After SI

	Treatment group (N=31)		Comparison group (N=28)				
	M	SD	M	SD	df	t	ρ
Memory-related	2.81	0.59	2.63	0.73	57	1.06	.294
Cognitive	3.25	0.66	2.97	0.65	57	1.69	.097
Compensatory	3.50	0.64	3.03	0.68	57	2.75	.008
Metacognitive	3.20	0.74	2.85	0.73	57	1.86	.068
Affective	2.90	0.71	2.43	0.69	57	2.60	.012
Social	3.27	0.78	2.88	0.81	57	1.89	.064

Table 4 shows that the mean scores of the compensatory and affective strategies in the adapted SILL of the treatment group after SI differed statistically significantly from that of the comparison group while all the other four groups did not. There was a statistically significant increase in the mean scores of the compensatory and the affective groups of strategies. The effect sizes of the differences between the treatment group and the comparison group were:

- Memory related strategy: 0.27 (a modest effect);
- Cognitive strategy: 0.43 (a modest effect);
- Compensatory strategy: 0.71 (a moderate effect);
- Metacognitive strategy: 0.48 (a modest effect);
- Affective strategy: 0.67 (a moderate effect);
- Social strategy: 0.49 (a modest effect).

These effect sizes indicate that the intervention had made a modest to moderate difference in all strategies used. In this instance effect size may be more useful than statistical significance alone, as it is unaffected by sample size.

6.5. Oxford Placement Tests

An independent samples t-test was used to calculate statistically significant differences in the *Oxford Placement Test* scores between the treatment and the comparison groups before the SI for the listening and grammar parts, and the total scores (Table 5). Paired samples t-tests were conducted to analyze the differences in within groups pre- and post-SI (Table 6 for the treatment group and Table 7 for the comparison group). Finally, another independent samples t-test was conducted to find out if there were any statistically significant differences in the *Oxford Placement Test* scores between the treatment and the comparison groups for the listening and grammar parts, and the total scores after SI (Table 8). Further, effect sizes were also calculated.

Table 5. t-test for the Listening, Grammar and Total Scores of Pre-tests

	Treatment group (N=31)		Comparison group (N=28)				
	M	SD	M	SD	df	t	ρ
Listening score	71.42	6.58	69.68	7.77	57	0.93	.36
Grammar score	60.48	10.19	55.75	9.56	57	1.84	.07
Total score	131.90	14.63	125.43	15.16	57	1.67	.10

Table 6. t-test for the Listening, Grammar and Total Scores of the Treatment Group (N=31)

	Pre-SI		Post-SI				
	M	SD	M	SD	df	t	ρ
Listening score	71.42	6.58	77.06	5.87	30	-4.95	.000
Grammar score	60.48	10.19	54.58	8.69	30	4.34	.000
Total score	131.90	14.63	131.65	12.18	30	0.14	.892

Table 7. t-test for the Listening, Grammar and Total Scores of the Comparison Group (N=28)

	Pre-SI		Post-SI				
	M	SD	M	SD	df	t	ρ
Listening score	69.68	7.77	74.21	5.65	27	-3.67	.001
Grammar score	55.75	9.56	51.71	7.22	27	3.29	.003
Total score	125.43	15.16	125.93	10.84	27	-0.27	.793

Table 8. t-test for the Listening, Grammar and Total Scores of Post-tests

	Treatment group (N=31)		Comparison group (N=28)					
	M	SD	M	SD	df	t	ρ	Effect size
Listening score	77.06	5.87	74.21	5.65	57	1.90	.063	.49
Grammar score	54.58	8.69	51.71	7.22	57	1.37	.176	.36
Total score	131.65	12.18	125.93	10.84	57	1.90	.063	.50

Table 5 shows that there were no statistically significant differences in the listening, grammar and total scores between the treatment and comparison groups before SI, and Table 8 shows similar results after SI. Effect sizes were calculated for the post-test scores, and they indicate modest effects only (Cohen's *d*). After SI, there was no statistically significant increase in mean listening, grammar and total scores between the treatment and the comparison groups.

Table 6 shows that the scores of listening and grammar had changed statistically significantly after SI in the treatment group. The listening scores had statistically significantly increased while those for the grammar had statistically significantly decreased, and the change in the total score was not statistically significant. Very similar results were obtained in the comparison group (Table 7). Therefore, before and after SI, whether having SI or not, it appears that there were no effects on students' listening and grammar scores, or that there might have been improvements but these were masked by other factors.

7. Discussions

7.1. Relationship between LLS and SI

Research question 1: What is the relationship between the nursing EFL students' strategies use and strategy instruction?

Qualitatively, SI improved the LLS use more for both the medium and low proficiency groups than the high proficiency group since the high proficiency group had already been exposed to more LLS use before coming to the institute. Although it seemed that SI only improved the mean scores of the compensatory and affective groups of strategies in the adapted SILL for the treatment group after SI and there were no effects on the other groups, but certainty about this could not be ensured. There are many factors that can influence students' LLS use, for example, other learners' variables (learning styles, beliefs, proficiency levels, motivation, etc.) and learning variables

(learning tasks, environment, etc.) and the LLS use was differed by gender (c.f. [61,82-87]).

From observations, although similar LLS had been observed, different clusters of them were used in various classes. The least number of LLS observed were the affective LLS. However, from diaries, the use of affective strategies of writing language diaries and encouraging yourself, and also compensatory strategies of substitute/paraphrase and guessing intelligently or other related strategies must have improved after SI (as shown quantitatively and are discussed next). Further, writing diaries had improved their English writing more than other English skills.

Quantitatively, after SI, the compensatory and affective groups of strategies were shown to have statistically significantly improved between the treatment and comparison groups. This is an anomalous result from other SI studies of higher education EFL students as the studies conducted on affective strategies were inconclusive, e.g., [10] and [88]. The only study that showed improvement in affective strategies after SI was that by [40]. This research differed from that by conducting an SI with all six groups of LLS and at the same time, the changes of LLS in this study had been followed by the use of various methods of questionnaires, diaries, group interviews and observations. As a result, more comprehensive and in-depth understanding could be obtained. In the research, affective strategies of encouraging yourself and writing language diaries were positively viewed by students, both in reducing their anxiety and pressure from learning English and also a channel for relieving their pressure was provided. It also encouraged them by motivating them and to try harder in this lack of seemingly stimulating environment for language learning. This is a significant finding from this research as so far, successful affective SI training research study have been under-reported with six groups of strategies being conducted through SI.

7.2. Relationship between SI and *OPT*

Research question 2: What are the effects of strategy instruction on those students' achievement in English?

Findings suggested that this 4-week SI did not help students in their English proficiency according to achievement/performance tests but certainty could not be ensured as the sample sizes were small and the SI was conducted in a short time of 4 weeks. There might not have been sufficient time to find any statistically significant effects on students' improvement in listening, grammar and total scores. Also, it might be necessary to have a longer period of SI.

7.3. Effects of SI on Students' Learning Processes

Research question 3: What are the effects of strategy instruction on those students' learning processes in English?

Students were more willing to learn English and to try out different LLS in helping their English skills. As compared to week 1, students reported more frequent and a wider use of LLS. Throughout this learning process, students were more actively participated in SI classes in accomplishing various tasks; they were more aware of

their own learning through writing diaries in SI. Students' motivation in learning English was improved because of SI and they were less anxious and had more self-confidence throughout this learning process in SI.

Students understood what, why, how and when to use all the LLS introduced in these 4 weeks of SI. They reported they were more willing to try out the opportunities for learning English and to choose their most appropriate LLS in finishing their particular goals. So, their learning processes moved from remembering and understanding, to applying and further applications of them in other courses or learning other things.

7.4. Recommendations

Pedagogically, the recommendations when conducting SI in improving students' LLS include: 1) It is necessary to cater to the needs of students when learning and applying LLS [89]. For example, since they were nursing students, nursing scenarios were chosen when role-playing and medical English terms were used when practicing grouping strategy. 2) At the same time, the difficulty level of the tasks needed to be suitable for students in applying LLS. If the level was too easy, no LLS might be used in accomplishing the task, while on the other hand, if the task was too difficult, students did not even know how to start in approaching the task. 3) Students' interests needed to be stimulated when learning LLS. 3) There were many factors that could affect the LLS use, for example, learning styles [86,90]. 4) A mixture of teaching approaches (such as cognitive and affective-humanist approaches with direct instruction) and learning methods (such as group or individual works) in SI could also be used so that students could learn LLS in different ways (e.g., by using visual media, playing games, etc.). 5) Teachers could also follow the Styles and Strategies-Based Instruction (SSBI) model [5,81] or the Cognitive Academic Language Learning Approach (CALLA) model [3,89] in conducting SI. In this research, SSBI was followed to carry out an explicit SI. 6) It is important to have a relaxed, motivated and warm atmosphere for learning LLS [91]. 7) There is a need to motivate students in learning LLS before SI and to encourage positive retrospective self-evaluation of the LLS learned [91]. 8) Teacher training is important [92]. Teachers who conduct SI should have a comprehensive understanding of LLS, their definitions, terminology, classification, etc. They should also be aware of research studies relating to LLS and SI. Teachers needed to know how to integrate LLS into the English curriculum if they were going to carry out an explicit SI. Also, they should understand how different learner factors could make a difference in students' LLS use, and they needed to be constantly aware of the needs of students. 9) Teachers should consider the duration of SI, and decide if a substantial period of time is needed in conducting SI (e.g., more than 4 weeks) so that students have a comprehensive grasp of LLS learned. 10) In terms of teachers' expectations on SI, although some studies had indicated improvement in students' proficiency after SI (c.f. [42,66]), SI had some, but limited help in improving students' proficiency in this study. However, teachers should not be discouraged in conducting further SI, as some small effects were found, even in this short 4-week period. A longer time might be needed for seeing fuller

effects. Although, only the compensatory and affective groups of strategies had statistically significantly improved quantitatively after SI in this study, there were some noticeable effect size increases; qualitatively, all six groups of LLS were improved. Looking at the improvement in students' motivation, self-confidence and independence in their learning processes from their diaries, it was important to stress that these compensatory and affective strategies must have improved the learning processes in students.

8. Conclusions

SI is beneficial for these nursing students in helping them to expand their LLS repertoire in all four English skills qualitatively. However, this 4-week SI might not have been long enough to have helped students to improve their English proficiency. All six groups of strategies had statistically significantly increased after SI in the treatment group, although only the compensatory and affective groups of strategies were shown to have statistically significantly improved between the treatment and comparison groups. Though the quantitative results indicated little or no statistically significant differences between the treatment and comparison groups (apart from with reference to compensatory and affective strategies), the effect sizes, calculate to avoid a Type II error and to calculate the magnitude of effects, found modest and moderate effect sizes between the treatment and comparison groups. It was argued that the findings move forward the field, as many other studies conducted on affective strategies were inconclusive.

The qualitative data showed that SI was effective as in this 4-week SI, students had reported that they clearly understood what, why, how and when to use all these LLS learned. Students' motivation, self-confidence and autonomy in learning English were reported to have improved. Students said that they were less afraid of English and enjoyed the interesting ways in learning English through SI. In other words, SI was seen to make a qualitative difference if only a small quantitative difference to the students.

Throughout this learning process, students were more active in participating in SI classes in accomplishing various tasks; they were more aware of their own learning through writing diaries and reflections in classes.

The point was raised that there is a need to remember that LLS use and the effectiveness of these LLS depends on learners' variables, the learning tasks, and the learning environment as they all work together for learning [93]. No single strategy will be suitable for all learners or for all tasks, and each learner will need to apply LLS according to their own needs and maybe in different ways. So, how can we be more sensitive in designing a better and more suitable SI for students? As Oxford [94] suggested, besides assessing students' LLS [48], determining students' goals, motivations, attitudes, personality types and considering their gender, age, and other background factors, a more successful SI might be provided in improving students' LLS use, their motivation and proficiency.

Macao may not have provided the best place for learning English and students do not have a lot of chances to practice English out of classes despite the economic growth. Also, learning English seemed to be difficult for students in Macao even with fifteen years of compulsory English studies starting from kindergarten. Therefore, more encouraging channel, like SI, needs to be conducted more frequently to help students so that their repertoire of LLS can be enhanced and better English practicing chances are provided. In higher education, providing students with an exciting and funnier way to learn English, like SI, can help students to become more confident, less anxious and more self-motivated in learning English.

There are some limitations to the present study. Firstly, it was conducted in only one higher education institution in Macao, and the findings may not be generalizable. Results may be different in other places, e.g., in Mainland China where students' backgrounds may be diverse. Secondly, the Chinese nursing students were the focus; it might not be generalizable to other majors or students. Nonetheless, since there are only two nursing higher education institutions in Macao, it is perhaps fair to generalize the results to all Macao nursing students[3].

Thirdly, the *Oxford Placement Test* might not be the most suitable instrument for reflecting their skills, especially as speaking and writing are not incorporated into the test. However, more comprehensive tests, i.e., IELTS or TOEFL iBT, which cover all four English skills, were too expensive to be used as pre- and post-tests in this research, and, indeed, the *Oxford Placement Test* was chosen because it is widely used as a placement test and can be used diagnostically to determine different abilities of learners [[95], p. 18]. It tests the general English language skills and can 'provide scores that form a wide distribution so that interpretations of the differences among students will be as fair as possible' [96]. Even though it was the best alternative, both speaking and writing could not be properly assessed. Finally, a 4-week span for SI may not be long enough to see the full effect of SI.

Further research studies of using a phenomenographical understanding of students' LLS can provide further insight into the understanding of LLS. Also, using an action research for improving SI is also beneficial for EFL students.

Acknowledgements

List of Abbreviations

CALLA, Cognitive Academic Language Learning Approach

EFL, English as a Foreign Language

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[3] All nursing students need to be residents of Macao in order to apply for the nursing program, as required by Macao law for practicing in the hospitals. Thus, even though students may have come from Hong Kong or Mainland China, students must have already gained their citizenships before attending nursing schools in Macao.

IELTS, International English Learning Testing System
LLS, Language Learning Strategies
MALQ, Metacognitive Awareness Listening Questionnaire
OPT, Oxford Placement Test
SI, Strategy Instruction
SILL, Strategy Inventory for Language Learning
SPSS, the Statistical Package of the Social Sciences
SSBI, Styles and Strategies-based Instruction
TOEFL iBT, Test of English as a Foreign Language Internet-based Test

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Appendix A

Table. Results of LLS observations (LLS observed with >80%, except those indicated) [74]

Strategy instruction	*Class 1*	*Class 2*	*Class 3*	*Class 4*	*Class 5*	*Class 6*	*Class 7*
Strategies taught	Organize/plan (metacognitive)	Take notes (cognitive)	Substitute/paraphrase (cognitive)	Guessing intelligently (compensatory) and role-play (social)	Role-play (social) and cooperate (social)	Summarize (cognitive) and grouping (memory-related)	Semantic mapping (memory-related) and encouraging yourself (affective)
Memory-related strategies noticed	Associating new words into a context (40%); using keywords (40%); reviewing well	Associating new words into a context (40%); using keywords (40%); reviewing well	Associating new words into a context (30%); applying images and sounds; employing action (50%)	Associating new words into a context; using imagery; employing action	Associating new words into a context (40%); representing sounds in memory; reviewing well; employing action	Grouping; associating new words into a context; semantic mapping; using keywords (40%); reviewing well; employing action	Creating mental linkages (30%); semantic mapping; using imagery; using keywords; reviewing well
Cognitive strategies noticed	Formally practicing with sounds and writing system; recognizing and using formulas and patterns; getting the idea quickly; using dictionaries or other resources (50%); analyzing and reasoning; taking notes; summarizing	Formally practicing with sounds and writing system; getting the idea quickly; analyzing and reasoning (translating); taking notes; summarizing	Formally practicing with sounds (50%); receiving and sending messages; analyzing and reasoning (translating); taking notes	Practicing; receiving and sending messages; analyzing and reasoning (translating); taking notes	Practicing; receiving and sending messages; translating; creating structure for input and output	Recognizing and using patterns; receiving and sending messages; analyzing and reasoning; creating structure for input and output (summarizing)	Practicing with writing systems; using resources; analyzing and reasoning (translating); creating structure for input and output
Compensatory strategies noticed	Guessing intelligently (30%); switching to the mother tongue; getting help; selecting the topic; adjusting or approximating the message	Guessing intelligently; switching to the mother tongue; getting help; using synonym (30%)	Guessing intelligently; switching to the mother tongue; getting help; adjusting or approximating the message; using synonym	Guessing intelligently; switching to the mother tongue; getting help; adjusting or approximating the message; using synonyms	Switching to the mother tongue; getting help (40%); using mime or gesture; selecting the topic; using synonym	Guessing intelligently (30%); switching to the mother tongue (50%); getting help	Switching to the mother tongue; getting help; selecting the topic; using synonym
Metacognitive strategies noticed	Overviewing and linking with already known material; organizing; identifying the purpose of a language task	Overviewing and linking with already known material; paying attention; identifying the purpose of a language task; self-evaluating	Overviewing and linking with already known material; paying attention; identifying the purpose of a language task; planning for a language task	Overviewing and linking with already known material; paying attention; identifying the purpose of a language task; self-evaluating	Overviewing and linking with already known material; identifying the purpose of a language task; planning for a language task and seeking practice opportunities	Overviewing and linking with already known material; organizing; identifying the purpose of a language task; self-evaluating	Overviewing and linking with already known material; identifying the purpose of a language task; self-evaluating
Affective strategies noticed	----	----	----	----	----	----	Lowering your anxiety; encouraging yourself
Social strategies noticed	Asking questions; cooperating with others	Asking questions; cooperating with others	Asking questions	Asking questions (30%); cooperating with others	Cooperating with others; role-play	Asking questions; cooperating with others	Asking questions; cooperating with others