A PHENOMENOGRAPHIC STUDY OF MEDICAL STUDENTS' STRATEGIES IN LEARNING ENGLISH[*]

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ABSTRACT

Although many studies have used various methods to explore students' Language Learning Strategies (LLS), very few have used the theoretical framework of phenomenography to investigate the LLS of various medical students and how they experience learning English. In this study, in-depth oral interviews were conducted to discover how students experience English language learning, and to identify which strategies they use to help them. The participants in the study comprised 12 freshmen entering a higher education institution in Macao. It is suggested that these students used certain strategies when learning English, most of which depended on factors such as other people, other objects such as tools, the learning contexts and the learning environment. The strategies they adopted are presented in hierarchical categories: (A) Individual learning strategies; (B) Learning strategies using tools or talking to others; (C) Learning strategies connected with the environment. This study contributes to the fields of English as a Foreign Language (EFL) teaching and curriculum development, as it firstly shows that awareness and knowledge of LLS can enable students to learn English more effectively, and secondly enhances the planning of strategy-based instruction for continuing phases of study.

Keywords: Phenomenography; Language learning strategies; Medical students; Higher education

INTRODUCTION

The purpose of this paper is to investigate the Language Learning Strategies (LLS) used by a group of English as a Foreign Language (EFL) medical students in a higher education institution in Macao. Language learning strategies are 'steps or actions that a learner consciously takes to improve and regulate his or her language learning' (Oxford, Griffiths, Longhini, Cohen, Macaro and Harris, 2014, p.11). In order to gain a more thorough understanding of LLS, this study uses phenomenography to examine the way in which students experience English language learning, and to identify which strategies they use when doing so. Hence, phenomenography could provide a more comprehensive picture of students' learning processes and practices. It is well known that the better you understand how your students learn, the more effective you will be in assisting them.

Language Learning Strategies

Language learning strategies (LLS) research began in the mid-1970s by identifying effective learning strategies used by 'the good language learner'. Since Rubin (1975) shifted the focus

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of learning onto the learners themselves, the way in which knowledge is constructed in learners has increased in significance when trying to understand how students use LLS. Achieving higher English proficiency levels is a common goal for all language learners, and hence the adoption of LLS has been an area of research due to its potential in facilitating effective teaching and learning (Grenfell and Macaro, 2007).

Second language acquisition research, which includes LLS research, generally involves both teaching and learning and has been conducted within a cognitive framework. Strategies for learning are rooted in a range of learning theories, including operant conditioning, social learning theory, information processing theory, schema theory, Piaget's theory of cognitive development, and Vygotsky's sociocultural theory (Chan, 2014a). Some of these cognitive learning theories, including information processing theory and schema theory, have also been elaborated by Oxford (2011).

There have been a number of research studies focusing on understanding students' LLS, employing various methods including questionnaires, interviews, diaries, observations, and think-aloud protocols (Chan, 2014b; Chamot and El-Dinary, 1999; Pan and In'nami, 2015; Zhong, 2012). However, very few research studies have used a phenomenographic approach in this respect, and only Su (2012) has used phenomenography to explore the strategies used by Taiwanese students in learning English speaking skills. Thus, there remains a research gap that warrants further exploration. To this end, in order to grasp the qualitatively different ways in which a group of medical students adopt and apply language learning strategies, a phenomenographic approach was used. It is also suggested that using this approach can provide additional benefits in understanding the phenomenon of interest.

Even though English is one of the major subjects in Macanese schools, besides Chinese and Mathematics, many students do not succeed in mastering it very well (Chan, 2007; Churchill, 2011). It is therefore necessary to investigate how students learn and experience English so that better teaching and learning can be facilitated.

Phenomenography

Phenomenography is a theoretical framework that explores how students think and learn, by focusing on the interaction between the population and the phenomenon. Phenomenographic research in the education field tackles questions related to the various ways that students experience the phenomena in the world around them. It is characterized by using a second-order perspective on the phenomenon of interest, meaning that it avoids merely describing the phenomenon, but looks instead at how people actually experience it. The purpose of this study is to capture the qualitative differences in the ways in which a particular group of students (here, 12 medical students out of a total of 104 freshmen) experience learning English through their use of language learning strategies.

The result of a phenomenographic study is referred to as an 'outcome space' (Marton and Booth, 1997). The outcome space is made up of various categories of description, which show a hierarchical structure of relationships among the different categories. As the focus of phenomenography is on variation, it is necessary to observe the qualitatively different ways of experiencing a phenomenon, irrespective of whether the differences occur between or within participants (Marton, 1996, p. 182). One of the essential elements in designing a phenomenographic study is the selection of participants. The main method for collecting data via a phenomenographic approach is by conducting in-depth interviews using open-ended questions (Marton, 1994).

Although a phenomenographic approach can provide additional benefits in understanding the phenomenon of interest, the principal focus of this study was on the students' awareness of how they learn English. Adopting this approach may also enable an outcome space that involves all the learner variables that can potentially affect students' LLS use.

Learner Variables, Learning Contexts and Learning Environment

A number of variables can influence the choice of LLS, such as gender, proficiency level, age, academic major, and setting, among others (Oxford, 2011). As this study addresses the puzzle of why some students are unable to master English well, proficiency will be discussed first, followed by other variables pertaining to the students in the sample.

Language proficiency has been linked with better language learning in cases where learners used more LLS (Javid, Al-thubaiti and Uthman, 2013; Zhong, 2012), so it seems that the learning outcome depends on the quantity of LLS used. However, a study by Al-Buainain (2010) indicated that LLS use and proficiency were related, but no significant result could be obtained. Thus, there is no unequivocal conclusion as to whether higher use of LLS is associated with enhanced proficiency.

Gender is also associated with students' use of LLS. However, Radwan (2011) compared the LLS of 128 university students in Oman and found that the only difference between male and female students was that male students tended to use more social strategies. Ananisarab and Abdi (2012), on the other hand, found that there was no significant relationship between gender and LLS use when they investigated Iranian university students by means of questionnaires. The same findings emerged in the study by Shah, Ismail, Esa and Muhamad (2013) on Malaysian university students. Hence, students' use of LLS by gender may differ, but the results are inconclusive as to what the differences are and the extent to which they occur.

As suggested by Sepasdar and Soori (2014), age could have an effect on the use of LLS. Further, Griffiths (2003) discovered a positive correlation between proficiency level and students' reported use of LLS. On the other hand, Oxford and Nyikos (1989) reported that various majors could affect the use of LLS. Moreover, Grainger (2012) suggested that cultural background could affect the extent and frequency with which students use various LLS. It is apparent, therefore, that a number of learner variables may affect students' choice of LLS, and hence, using phenomenography can enable us to understand students' strategies as a whole, providing an outcome space that involves all the learner variables of proficiency, gender, age and major in this particular higher education institution. As learning also depends on students' learning contexts and environment (Cohen, 2011; Dörnyei, 2009; Oxford, 2011), this will be discussed next.

To ensure an effective learning environment, the teaching approaches and the learning resources should be compatible, as the resources employed can also influence LLS use. According to Dörnyei (2009), resources and teaching methods are part of the 'environment' that comes into play when addressing the use of LLS, language learning and its outcomes. At the same time, students also want to have a say in what and how they learn. Thus, selecting and designing a suitable curriculum for learners is critical, not least because the English language curriculum varies in different higher education institutions in Macao, as do the materials used.

Taking all of these variables into account, it is possible to gain a holistic understanding of the phenomenon of interest, namely how these medical students experience learning English and which strategies they use in the process. By using phenomenography, the qualitatively different ways in which the learners experienced this phenomenon could be assessed, as

students were expressly chosen to maximize a broad appreciation and understanding of how they experienced learning English (as discussed below).

RESEARCH QUESTION

The main research question was: What are the qualitatively different ways in which certain higher education medical students experience learning English, and which LLS do they use for this purpose?

METHODOLOGY

Phenomenography was applied in this study as it could be used to describe the collective variations in students' conceptions of the phenomenon of interest. It aimed to illuminate how a phenomenon is understood within a certain cohort and, in this case, how a group of medical students learned English as a foreign language (EFL) in Macao. The outcome consisted of a finite set of qualitatively different categories, each of which describes certain ways of understanding the phenomenon of interest.

In-depth, semi-structured interviews with an average duration of about 50 minutes were conducted with 12 participants in Cantonese, the students' native language. The participants' background in, and experiences of, learning English, coupled with their learning contexts, were investigated with open-ended questions. The data were transcribed verbatim, coding, reviewing and recoding iteratively until categories relating to different descriptions of the phenomenon of how the students learned English were generated. Finally, the data were translated from Cantonese into English.

Since the aim of phenomenography is to understand the qualitatively different aspects of a specific phenomenon, participants should be chosen to obtain the maximum possible diversity (Åkerlind, 2005). Thus, a purposeful sampling method was used. Students were contacted by phone by the researcher, and asked to attend an interview session lasting approximately 60 minutes. They were informed that during the interview, general questions related to how they learn English would be asked. In this way, the qualitatively different aspects of their English learning experience could be examined.

Prior to conducting the interviews, bracketing was used by the researcher (Ashworth and Lucas, 2000) so that her own experiences and assumptions regarding the phenomenon were filtered out, and she did not impose any biased questions on the students.

Sampling

The participants in the study comprised 12 freshmen entering a higher education institution in Macao. Table 1 below summarizes the characteristics of the students selected to take part in the study. The interviewees were selected out of a total of 104 freshmen, majoring in either laboratory technology, pharmacy technology or nursing. In order to maximize the conceptual variations of the participants, learner variables, including gender, major, place of birth, age, English proficiency and high school attended were taken into consideration when students were selected. Three students from each proficiency level were chosen, namely the high English proficiency group (>80 points out of 100 in the English entrance examination for the higher education institution in question), the intermediate English proficiency group (60-70 points), and the low English proficiency group (around 50 points, with 50 as the pass grade).

During the interview process, with the consent of the students, the interviews were audio recorded and notes were taken on the students' behavioral patterns. The interview questions were designed to gain awareness of how the students were learning English and, as such,

were open-ended in format. Throughout the interviews, the researcher continued to probe the students until a satisfactory amount of information was obtained.

Table 1. Background data of the 12 students selected for interview

	Proficiency	Age	Gender	Place of birth	Major	English-medium secondary school?
Student 1	High	18	Female	Macao	Nursing (class A)	Yes
Student 2	Medium	19	Female	Macao	Nursing (class A)	Yes
Student 3	Low	18	Female	China	Nursing (class A)	No
Student 4	High	18	Female	Macao	Nursing (class B)	Yes
Student 5	Medium	18	Male	Macao	Nursing (class B)	No
Student 6	Low	18	Male	China	Nursing (class B)	No
Student 7	High	32	Male	Hong Kong	Pharmacy technology	Yes
Student 8	Medium	17	Female	Macao	Pharmacy technology	No
Student 9	Low	18	Male	Macao	Pharmacy technology	No
Student 10	High	18	Female	Macao	Medical technology	Yes
Student 11	Medium	26	Female	China	Medical technology	No
Student 12	Low	18	Male	Macao	Medical technology	No

RESULTS

The outcomes of the analyses (illustrated below) were categorized as follows: (A) Individual learning strategies; (B) Learning strategies with tools/other people; (C) Learning strategies based on the environment

Individual learning strategies

Two categories reflected how students experienced and learned English individually. This represents the first level of LLS usage as students' strategies are self-controlled.

Category 1: Individual LLS

Students used some memory-related, visual-imagery strategies like drawing pictures or memorizing the vocabulary from pictures or other labels; using association and keywords; or reciting vocabulary or grammatical rules. They also used some cognitive strategies of practicing English by themselves and writing English notes. Compensatory strategies included using substitution and paraphrasing. In addition, the metacognitive strategy of paying attention while listening to English was mentioned. All of these LLS could be accomplished by themselves, without the help of tools or other people.

Category 2: First level, Chinese way of learning English

Students used Chinese pinyin to pronounce English words. For example, when they did not know how to pronounce an English word, they used a similar Cantonese sound in order to produce the word.

Learning strategies involving tools/other people

Three categories reflected how students used tools and fellow students in order to help them learn English. This represents the second level of strategy use as students only have semi-control over the strategies as they need to rely on other factors.

Category 1: Learning strategies with tools

Students used some mobile phone apps, media or other tools to help them learn English. For instance, playing games, using Google to check the pronunciation of words, flashcards, watching English movies or cartoons on TV or the internet, listening to English songs, and reading the lyrics helped these students in their learning. They also took some extracurricular English courses, used books, reference resources or the extra help provided by tutoring centers, libraries, teachers, parents, or private tutors.

Category 2: Learning strategies by talking to others

Students took the initiative to speak with others during extracurricular activities, part-time jobs and voluntary work, or with teachers, classmates, relatives, and foreign friends. For example, they took the opportunity to practice their English with native English-speaking clients and acquaintances, and joked in English with their classmates. They also helped others to learn English and worked as tutors. In addition, when they had something that they did not want their parents to know, they spoke in English.

Category 3: Second level, Chinese way of learning English

Students employed some typical Chinese methods of learning English, such as translating from English into Chinese. Google Translate, mobile phone apps and other translation devices were frequently used to translate back and forth between the two languages. Another common habit was generating ideas in Chinese first, and then translating them into English. Students who doubted their own capabilities also tended to read the Chinese version of material before reading the English version.

Learning strategies derived from the environment

This is the final category, which reveals how students experienced learning English through the environment which, in this case, pertained mainly to their high schools and homes. This represents the highest level of strategy use, as students did not have any control over the aforementioned environment.

Students learned these strategies at school. For instance, teachers taught them certain strategies and set lots of homework assignments, tests, and examinations, especially in the case of English-medium secondary schools. During English classes, students were obliged to speak English to their teachers, whether native or not. They became engaged in various classroom activities in English, including brainstorming, group discussions, watching movies, reading English novels and newspaper articles, interviewing native English speakers, as well as writing tasks such as keeping diaries. One student also learned English when he was immersed in the learning environment in a foreign country for over ten years. Further, as English is one of the major subjects in schools in Macao, failing it would pose a major obstacle to progressing from one grade to the next.

DISCUSSION

The main research question in this study centered on the qualitatively different ways in which higher education medical students approached learning English. Judging by the findings above, it is obvious that on entering higher education, these medical students were equipped

with various kinds of strategies for learning the language. Different levels of LLS activity and engagement included the wholly self-controlled level, the semi-controlled level where other tools/people were involved, and the environment level, which they had no control over. The first level comprised strategies that could be self-accomplished, including certain memory-related, cognitive, compensatory and metacognitive strategies. A Chinese method of learning English was also discovered, in which they used Chinese pinyin to help them with English pronunciation. At the second level, these strategies could only be used with tools or other people, and hence were semi-controlled. If the students did not possess these tools or if other people were absent, none of the strategies could be used. For example, they needed certain tools for translating from English into Chinese, and others for communicating directly in English. Finally, students did not have control over their learning environment, namely their schools or homes. Without the specific environment, none of these strategies could be imposed, and the students would simply not use them in learning English. For example, if they had not had tests or examinations, or if English had not been a major subject in schools, they might not have studied it at all.

These students had no control over the highest level when learning English, namely the environment, and only partial control over the second level. Thus, looking at these levels both separately and collectively, they did not have much control over the kinds of strategies they could adopt. Apparently, they had to rely heavily on the first-level strategies, while level-two strategies may well have been limited. Thus, it is suggested that this might be the reason why there were differences in their English proficiency when they entered higher education. If students lacked support from their parents or others, for example, or the money to buy tools to facilitate learning or English communication, they would be unable to use the strategies at the second level and would have to rely purely on level-one strategies instead. Therefore, as the Chinese proverb goes, 'A handy tool makes a handy man'. In other words, without the necessary equipment or resources, nothing can be performed well. Learning English seems to be the same. If students were deprived of the necessary tools, support from other people, or a suitable environment, their language learning might be hindered. Thus, those students who graduated from English-medium secondary schools usually had better English proficiency than those who did not. This finding was supported in a previous study by the researcher (Chan, 2014a). The different understandings of how students learn English indicate that the strategies they use are closely related to the learner variables (e.g. proficiency), the learning contexts (e.g. different English assignments or activities), and the environment (e.g. the high school they attended). This duly gives rise to a big difference in their English proficiency in higher education. Since most of the freshmen graduated from Chinese-medium secondary schools, their English proficiency was either moderate or poor. In this study, it became clearer as to why some students could not master English well, insomuch as certain strategies would not be available if they lacked the learning resources, or if they were not immersed in a 'better' English learning environment.

Similarly to the research conducted by Su (2012), phenomenography proved to be a useful tool in providing in-depth data on the phenomenon of interest – the qualitatively different ways in which a small sample of students experienced learning English. Using this method, it was possible to categorize the data into different themes which, taken together, formed an outcome space for understanding students' LLS use when learning English.

CONCLUSIONS, IMPLICATIONS AND LIMITATIONS

The outcome space that emerged by adopting a phenomenographic approach enabled qualitatively different understandings of how students experienced and learned English. Findings showed that the strategies these students used are closely related to their learner

variables, learning contexts and the environment, and it duly became clearer why some EFL students' English proficiency is poor when they enter higher education. It likewise showed that using a phenomenographic approach enabled an authentic, more in-depth, and more effective understanding of how these medical students experienced and learned English.

This study contributes to the field of EFL teaching by enhancing understanding of the way in which Chinese medical students use LLS in a higher education institution in Macao. This, in turn, can result in improved planning for strategy-based instruction (teaching students how to use and apply LLS) and enhanced curriculum development, as the more we know about how students approach and experience language acquisition, the more effective teaching and learning will become.

Although this study only focused on one area of research in applied linguistics, phenomenography can be applied to various areas within the same field, or may even be extended to other fields in exploring a phenomenon of interest.

This study was confined to a small group of medical students in Macao, but further studies could expand on the exploration of students' LLS use within a wider geographical area, which could involve more institutions and students with more diverse backgrounds, or from different countries.

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