An Investigation of Chinese Students’ Learning Styles at an English-medium University in Mainland China

Chili Li
School of English, University of Liverpool, Liverpool, UK
Email: sundaylcl@126.com

Abstract—This paper reports on an investigation of Chinese tertiary students' perceptual learning styles at an English-medium university in mainland China. Results revealed that 1) a wide variety of learning styles was distributed among Chinese EFL students, a majority of them favoring tactile, kinesthetic, and visual learning styles; 2) gender differences existed but were not statistically significant in the learning-style preferences between male and female students; 3) English majors and Non-English majors showed statistically significant differences in their tactile learning and kinesthetic learning; 4) English majors differed significantly from Non-English majors in their tactile learning and kinesthetic learning; 5) postgraduates and undergraduates were significantly different in their preferences for auditory learning and individual learning. These results provided insightful implications for tertiary English teaching in China.

Index Terms—learning styles, English-medium University, EFL teaching and learning

I. INTRODUCTION

As the first Sino-foreign joint university in China, the University of Nottingham, Ningbo, China (UNNC) has drawn great attention from the educational specialists both abroad and at home for its practice of applying English as the medium of working language and its operation of the British educational system. The approach to teaching at UNNC is shaped from the model of its mother university, the University of Nottingham, UK (UNUK). Students are partly taught in large lecture groups and partly in smaller seminar groups of around 15-20 students. They are encouraged to take a deep approach to learning and to become independent learners who know how to research, analyze and present the key issues of their chosen discipline. They can access to the internet resources of the home campus in the UK. Courses are delivered entirely in English. All the curricula are based on its needs analysis of the development of Chinese society, education as well as learners' personal development conducted by the UNUK before its coming into China (Chen, 2006). Besides, this model is underpinned by the staff who are native speakers of English and whose teaching is directly informed by their research. It can be seen that the teaching beliefs and styles, and the needs analysis of the Nottingham model reflect the student-centered nature of the British educational system.

Efforts have been made to explore the practice of the British educational system in the Chinese EFL context, particularly its Orientation system (Chen, 2006) and its supporting system of self-accessing learning (Cai, 2008), which reflect the nature of the student-centered approach. However, there is paucity to date to explore the characteristics of Chinese university students’ learning styles at an English-medium environment in mainland China. This paper thus attempts to bridge this gap by examining the Chinese university students’ learning styles at UNNC.

II. LITERATURE REVIEW

Learning style is thought of as learners’ preferred way of dealing with information. Reid (2002) defines it as “natural, habitual, and preferred way(s) of absorbing, processing, retaining new information and skills” and categorizes styles into six types: Visual, Auditory, Kinesthetic, Tactile, Group, and Individual. A large body of literature in the West and at home has investigated the characteristics of Chinese EFL learners’ learning styles under different contexts (e.g., Dunn, 1990; Felder, 1995; Peacock, 2001). Reid (1987) studied the preferred learning styles of the Chinese EFL students studying in the U.S. universities and reported that they demonstrated multiple major learning style preferences, preferred kinesthetic learning styles most and group learning style least. This is finding is evidenced in later research. Melton (1990) administered a survey among students from Chinese universities and found that they favored Kinesthetic, Tactile and Individual styles, but disfavored group styles. In their research, Coffield, et al. (2004) reported that the implications of learning styles for language teaching and learning were serious and thus should be of concern to both learners and teachers. Compared to the West, research on learning styles in China began much later. However, there are a proliferation of empirical studies at home, mainly exploring students’ learning style preference under the Chinese EFL context and the implications English teaching and learning in China (e.g. Liu, et al., 2004; Li & Su, 2007; Lü, et al, 2009; etc). Meanwhile, other Chinese Language practitioners and researchers expand the research scope of EFL learning style.
from various aspects. For instance, Li and Bi (2006) argued that students’ English learning outcomes were to a large degree affected by their learning style preference. Zhang (2008) discussed the implication of learning styles for English teaching in EFL classroom and advocated that the design of College English class be based on students’ learning style.

The aforementioned literature reveals that the past studies were administered either under the Western educational context or under the Chinese EFL context. To date no initiative has been made to investigate the features of those EFL students at English-medium universities in mainland China. The present research thus attempts to bridge this gap by studying the characteristics of this cohort of students’ learning styles at the English-medium University in mainland China, with a hope of promoting classroom English teaching at Chinese universities.

III. RESEARCH METHODOLOGY

A. Research Questions

This study addressed the following questions:
1) What is the feature of the Chinese university students’ learning styles at UNNC?
2) Are there any style differences between male and female students?
3) Do English majors vary from non-English majors in their learning style preferences?
4) Do postgraduate students learn differently from undergraduate students?

B. Participants

The survey was administered with 92 participants from UNNC. These participants were composed of 59 undergraduates and 33 postgraduates from various majors including International Business, International Communications, Management, Finance, International Studies, and Applied Linguistics. There were 56 female students and 36 male students, 20 of whom were English majors and 72 were non-English majors.

C. Instruments

The present study employed Reid’s (1987) Perceptual Learning Style Preference Questionnaire (PLSPQ) to measure the participants’ learning-style preferences. This questionnaire is the most widely used instrument for non-native speakers of English (DeCapua & Wintergest, 2004). As a well-tested instrument (Peacock, 2001), it has been proven to be highly valid and reliable. In Cheng’s (1997) study, for instance, the reliability of PLSPQ was as high as 0.81 using Cronbach’s alpha. The instrument consists of three sections. The first section is the directions telling the participants the purpose of doing this survey and how to respond to the questions, including their personal information, namely, their gender, major, and grade. The second section has 30 statements covering six learning-style categories: visual, auditory, kinesthetic, tactile, individual and group learning. The third section is the self-scoring sheet for students to report their style preferences.

D. Data Collection and Analysis

The questionnaire was administered after class at the end of the second semester of the 2007-2008 academic year under my supervision. The collected data were computed through Statistical Package for Social Science 16.0 (SPSS 16.0). In response to the proposed research questions, the collected data were analyzed in the following steps: the statistics were first described to report the results and findings of the overall characteristics of learning styles among all the participants. Then, the data were further interpreted from the perspectives of gender, major, and grade. T-Test was made in order to identify whether and how the differences in learning style preferences were significant between male and female students, English and non-English majors, and postgraduates and undergraduates since the postgraduates already have had more years’ experience of learning English at college than the undergraduates.

IV. RESULTS

A. The Participants’ Overall Learning Styles

Table-1 illustrated the overall characteristics of the participants’ learning styles. It can be noted that there was a stronger distribution tendency among the participants who showed a wider and more diversified stylistic preferences in their learning, compared with that under the Chinese EFL context (e.g., Liu, et al, 2004). The students who preferred tactile learning shared the highest mean value, while those students who used visual learning more frequently and those who favored kinesthetic learning shared the same mean value, which was the second highest mean value. Then it was followed by the auditory learners, and the individual learners. The learners who favored group learning shared the lowest mean value.
A further interesting finding is that the most favored learning style reported by the participants was tactile learning, with kinesthetic and visual learning styles being slightly less favored. The participants favored least individual learning and group learning. These findings were echoed in the results of some earlier studies (e.g., Reid, 1987, Melton, 1990, Rossi-Le, 2002) which reported that Chinese university EFL students favored kinesthetic and tactile learning styles most and disfavored group styles.

Another important feature is that the six Standard Deviation values for these six dimensions of perceptual learning style preference indicate that these learning styles were distributed widely and variedly among the participants. However, there are specific differences according to the particular Standard Deviation for each learning style. The relatively lower Standard Deviation of auditory style (Std. Deviation=4.68741) showed that the auditory learners were more homogeneous in this learning style, while the relatively higher Standard Deviation of group learning (Std. Deviation=6.12406) and individual learning (Std. Deviation=6.84481) indicated that these two learning styles were distributed more variedly and strikingly among the participants.

B. Gender Differences and Learning Styles

Table-2 provided the following findings: obvious differences can be observed in mean values between female and male students in individual learning, visual learning, and group learning respectively, in which male students reported a higher mean value than female students. On the other hand, the two groups demonstrated very close mean values in tactile learning, auditory learning, and kinesthetic learning, though female students showed a slightly higher mean value than the male students in these three learning styles. However, the T-Test (Table-3) showed that all the P values were above the 0.05 level (P>0.05) among these six styles, which means that though differences existed between male and female students, these differences were not statistically significant.

The above statistical descriptions can be interpreted as follows: gender differences do exist in the learning style preference of male students and female students, but these differences are not statistically significant. Male students prefer individual learning, visual learning, and group learning in comparison with female students. They learn considerably differently from each other in these three learning styles.

C. Academic Major Differences and Learning Styles
Table 4 and Table 5 provided two significant findings. The most striking one was that the Non-English majors were only higher in the mean value of individual learning style, while the English majors (EM) showed a higher mean value than the Non-English majors (NEM) in the following five learning styles: kinesthetic learning, tactile learning, visual learning, auditory learning, and group learning, among which the English majors reported to be most different in the mean values than the Non-English majors in the styles of kinesthetic learning and tactile learning. This was also reflected in the T-Test (Table 5). The T-Test showed that the P value for tactile learning was 0.024, which was under the 0.05 level (P < 0.05); and the P value for kinesthetic learning was 0.025, which was also under the 0.05 level (P < 0.05). These indicated that the differences between these two groups in tactile learning and kinesthetic learning were statistically significant.

The above statistical descriptions were informative in the following ways: the English majors do learn differently from the Non-English majors. The English majors show more preference in kinesthetic, tactile, visual, and auditory learning, and group learning, among which the English majors majorly reported to be most different in the mean values than the Non-English majors in the styles of kinesthetic learning and tactile learning.

D. Grade Differences and Learning Styles

Table 6 demonstrated a major difference between the undergraduate and the postgraduate students. That is, the undergraduate students showed a relatively higher mean value than the postgraduate students in visual learning, tactile learning, kinesthetic learning, and group learning; while the postgraduate students had a relatively higher mean value compared to the undergraduate students in auditory learning and individual learning. Another finding can be obtained through the T-Test (Table 7) that the P value for auditory learning was 0.083 which was under the 0.05 level (P < 0.05) and the P value for individual learning was 0.025 which was also under the 0.05 level (P < 0.05). This means that the
differences were statistically significant between the two groups in their stylistic preferences for auditory learning and individual learning.

The interpretation of the above statistical descriptions yields the following findings: Postgraduate students learn differently from undergraduate students. Undergraduate students favor visual, tactile, and kinesthetic learning more than postgraduate students. While undergraduate students like to learn in groups, postgraduate students prefer to learn individually and favor the auditory learning. And there is a very significant difference between the two groups of these participants in favoring the auditory and individual learning styles.

<table>
<thead>
<tr>
<th>Style</th>
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<tr>
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<td>.89</td>
<td>90</td>
<td>.376</td>
</tr>
<tr>
<td>tactile</td>
<td>1.104</td>
<td>90</td>
<td>.273</td>
</tr>
<tr>
<td>auditory</td>
<td>-1.629</td>
<td>90</td>
<td>.083</td>
</tr>
<tr>
<td>group</td>
<td>1.084</td>
<td>90</td>
<td>.281</td>
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<tr>
<td>kinesthetic</td>
<td>.98</td>
<td>90</td>
<td>.330</td>
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<tr>
<td>individual</td>
<td>-2.272</td>
<td>90</td>
<td>.025</td>
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</tbody>
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*significant at p<.05

V. DISCUSSIONS

A. Participants’ Overall Learning Styles

The findings illustrated in Table-1 provided strong evidence for Question One in that the Chinese tertiary EFL learners were characterized by various and diversified learning styles; they favored tactile, kinesthetic and visual learning most while least favoring group learning; auditory learning was distributed more evenly and homogeneously among them.

The British educational system conducted at UNNC may to a large degree account for these findings. The teaching model at UNNC is characterized by its delivery of courses to students entirely in English, lecture groups and smaller seminar groups, and the same Quality Assurance processes as conducted at the UNUK. In order to communicate effectively in their study with their students and teachers, students need not only good English reading and writing abilities, but also satisfactory listening and speaking skills. Besides, UNNC provides its students various language learning facilities and courses through its Centre for English Language Education (CELE), for example, group project, seminar, English opera, film appreciation, speaking contest, and so on, which can create a very friendly English-learning environment for students. Obviously, this educational system does not only emphasize students’ language ability in academic study, but also pays attention to the development of their ability in listening, speaking, reading, and writing to communicate. Under such an education system, students tend to learn by various means and thus display diversified learning styles.

Secondly, the findings that Chinese college students favored tactile, kinesthetic and visual learning most indicates that the participants tended to prefer to learn through some visual and tactile activities, for example, listening to teachers’ instructions, reading books and the teaching materials provided by teachers, and doing some exercises under their teacher’s directions and guidance in classroom. These Chinese students show strong trust and respect to their teachers in the classroom because they are highly influenced by Confucian thoughts that the teacher is an authority in the classroom (Nelson, 2002) and students are expected to “listen to adults, not interrupt, sit quietly and listen attentively” (Scarcella, 1990). The cultural influence of Confucian thoughts makes the traditional Chinese EFL education emphasize students’ ability in reading and writing while neglecting their ability in speaking and listening. One more reason for the findings that Chinese tertiary students favor group learning least is culture-related. The perceived meaning of group study differs between Chinese and western culture. In Chinese culture a group means a constant involvement for a much longer period of time and defines a certain identity while a group in American culture often refers to a short-term membership, for instance, a short duration of a course (Nelson, 2002). Thus, this particular “cultural background gave group work a minor or a negative preference mean” (Reid, 1987, p.97) to the Chinese EFL students who are uncomfortable with the ad hoc nature of small-group work in ESL classrooms, with groups continually forming and reforming according to the task (Nelson, 2002).

B. Gender Differences and Learning Styles

The findings demonstrated in Table-2 and Table-3 very justify Question Two that the learning styles vary between male students and female students. The male students prefer individual learning, visual learning and group learning, and the female students favor auditory learning, tactile learning, and kinesthetic learning slightly more than the male students.

There are possible social and biological reasons for these gender differences among male students and female students. According to Oxford (2002), these gender differences are possibly due to brain hemisphericity and socialization. Males are considered to process language learning information more readily through the left-hemispheric, analytic mode, but females might more often process language learning data through an integration of left-and
right-hemispheric modes. Socialization is thought to have great influence upon gender differences in language learning styles, because our society is traditionally male-dominated and the female’s subordinate role in our society owes a great deal to the different socialization of boys and girls, men and women (Tannen, 1990). For example, achievement, competition, and control of feelings are often stressed with sons in families; while interpersonal skills and expression of feelings are often emphasized with daughters. Thus, males become more independent and creative than females, and tend to learn individually, but females become more careful and patient, and tend to prefer the auditory learning. One more reason for the difference between male students and female students in auditory learning style is that females use strategies that elicit input from others more often than males. Females are more patient and ask three times as many questions as males and focus on the speaker with greater interest, empathy, concern, and politeness than males do.

C. Academic Major Differences and Learning Styles

The findings displayed in Table-4 and Table-5 are very supportive to Question Three that the English majors differ from the Non-English majors in their learning style preferences. The differences between the English majors and the Non-English majors in their learning style preferences are probably due to the following reasons:

Firstly, English majors and Non-English majors may treat English very differently as a result of their interests and motivations in learning English. English majors are so interested in English and thus are usually more motivated to take English as their major; while Non-English majors may learn English as an auxiliary tool for the need of their future plan or only take it as an extracurricular interest. Therefore, in contrast with the Non-English majors, English majors pay much more attention to the development of the four language skills in listening, speaking, reading, and writing, and try every means to use these four skills, for instance, watching English videos, group work, and so on. Secondly, the undergraduate admissions for Chinese students are through the National Higher Education Entrance Examination (Gaokao) and the score required is above the first division university entry score with an English score 115 or above. For those students who want to enter the Division of English Studies, they must get even higher scores in English in Gaokao than students of other divisions. The relatively higher scores in English for entering the English department mean that the English majors have higher language proficiency than the Non-English majors. In addition, the particular curriculums and syllabus for English majors at UNNC offer them a relatively higher frequency of encountering English. This high frequency of contacting English can assure English majors of getting adequate input and output of English through various kinds of means, for example, English movies, role-play, debates, group projects, and so on.

D. Grade Differences and Learning Styles

The findings obtained from Table-6 and Table-7 provided a reasonable answer to the proposed research question whether the postgraduate students have different learning style preferences from that undergraduate students. These findings justify Question Four that the postgraduate students do learn differently from the undergraduate students.

There are possibly very complex reasons for the differences between postgraduate students and undergraduate students in their learning style preference. One of the major reasons is the difference between the Chinese education system and the British education system considering the nature of the university—the University of Nottingham Ningbo, China—where the participants were surveyed for the present investigation. As an international university, the UNNC adheres to the British educational model. It is featured with its delivery of courses to students entirely in English, lecture groups and smaller seminar groups, and the same Quality Assurance processes as conducted at the UNUK. It provides its students various language learning facilities and courses through its Centre for English Language Education (CELE), for example, group project, seminar, English opera, film appreciation, speaking contest, and so on. It does not only highlight students’ language ability in academic study, but also pays attention to the development of their ability in listening, speaking, reading, and writing to communicate. Under such an education system, students tend to learn in groups through various visual, tactile, and kinesthetic means.

Different from the undergraduate participants who are receiving college education in UNNC in the present investigation, and prior to coming to UNNC for their postgraduate study, the postgraduate students attained their first degree from Chinese universities where the Chinese education system is implemented. The traditional English teaching in China is famous for its examination-orientation. The traditional grammar—translation approach used to be very popular in a majority of English classes in Chinese universities. The grammar—translation approach is teacher-oriented and textbook-based rather than student-centered. Teachers are authoritative in the classroom, and students show their respect to teachers by listening to their lectures very attentively and reading any materials and books their teachers instruct them to do. This examination-oriented English education system emphasizes the students’ ability in reading and writing, but ignores their ability in listening and speaking to communicate with others. Therefore, students tend to favor the auditory learning style under the influence of this traditional education system.

VI. IMPLICATIONS

Through above statistical analysis, several pedagogical implications can be obtained from the present investigation as follows:

A. Raising Self-awareness and Accommodating Students’ Learning Styles
It is pointed out that one of the aims of education is to help students realize that learning is a life-long process, it is very essential for students and teachers to be aware of the findings of the current study (Rossi-Le, 2002). Knowledge of their own learning style preferences can inform students of their habitual learning styles as well as the strengths and weaknesses of the strategies they employ in their study. Sims & Sims (1995) indicate that identifying students’ learning styles and providing appropriate instruction lead to more effective teaching and learning. Therefore, it is significant for teachers and students to identify their learning styles and then make appropriate adjustments in their teaching styles and techniques to meet students’ learning styles in classroom.

B. Accepting and Integrating Style Differences into Language Instruction

As for the differences displayed among students’ style preferences, what teachers can do is to accept these differences instead of labeling students with bad or wrong learning styles, and integrate these differences into their classroom teaching by making their class more inclusive. Considering the gender differences among students’ style preferences, teachers can provide a wide range of classroom activities, such as the gender-contrasting activities, to cater for male and female students. The present study also shows that there is difference between undergraduates and postgraduates, which should be taken into account when teachers are considering designing curriculum and providing course choices to students. Under such circumstances, graded courses are highly recommended.

C. Promoting Collaborative Learning

One of the findings the present study demonstrates is that group learning is the least favored learning style among the Chinese college students and that the Chinese EFL students tend to learn individually. As part of the efforts to meet the differences in students’ learning style preferences, it is advisable for teachers and educators to promote the collaborative learning in formal instruction. Promoting collaborative learning is significant in that it can not only accommodate the style differences among students, but also contribute to increasing learners’ autonomy in their language study. Under the collaborative learning mode, students work in groups rather than work alone towards a common goal (Macaro, 1997). No matter what language levels they are at, they must be responsible for each other; and they are encouraged to fully and actively participate in the group work and become intellectually and emotionally involved with other members to negotiate their comprehensible output for a particular learning task. This kind of group work is helpful for the creation of a friendly environment featured with “low threat, positive regard, honest and open feedback, respect for ideas and options of others, approval of self-improvement as a goal, collaboration rather competition” (Candy, 1991, p.337). This friendly environment is significant in promoting autonomy.

VII. CONCLUSION

According to the above analysis, conclusions with regard to the proposed research questions can be drawn as follows: (1) a wide variety of learning styles is distributed among Chinese EFL students at UNNC, a majority of them favoring tactile, kinesthetic, and visual learning, which means that students at UNNC prefer to learn by reading rather than by listening, and that they endorse the hands-on and kinesthetical activities in class, for example, seminar, research project, role-play, and so on; (2) gender differences do exist in the learning-style preferences between male and female students, but the differences are not statistically significant. (3) English and Non-English majors learn differently and the differences between them in tactile learning and kinesthetic learning are statistically significant. (4) Postgraduate students learn differently from undergraduate students, and the differences were statistically significant between them in their preferences for auditory learning and individual learning.

In a nutshell, this research manifests that the practice of the British educational system in China has the potential to contribute to a diverse learning style distribution and preferences among the Chinese EFL students. Its findings will significantly promote people’s understanding of the individual differences among the Chinese tertiary students in EFL classroom and provide very insightful implications for EFL teachers to select appropriate teaching methods and materials in their teaching practice. However, the present study is constrained by two possible factors. Firstly it didn’t compare the learning styles of the students under the present context with those under the Chinese EFL context and secondly the unbalanced gender of the subjects may affect the reliability of the findings. Therefore, further studies are invited to examine in what way and to what degree the British educational system influences Chinese EFL students’ learning style preferences.

REFERENCES


Chili Li is a Lecturer of English Studies at the Department of Foreign Languages, Fujian University of Technology, China. He is currently a Ph.D. candidate in Applied Linguistics at the School of English, the University of Liverpool, UK. His research interests include teaching English as a second or foreign language, individual differences and learner variables in EFL contexts, curriculum implementation and evaluation, and EAP (English for Academic Purposes).