

An empirical study of teachers' code-switching frequency in high school English classrooms

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Abstract: *This paper attempts to explore the phenomenon of code-switching in different teaching contents and teachers' classroom instruction in high school English classrooms, the data are collected through questionnaire surveys from 220 students and 16 teachers, and the results show that teachers and students hold the same view that classroom code-switching has a positive effect on English learning. This survey also found that the frequency of language code-switching when teachers teach different content is different and cannot fully meet the current needs of students'. In that light this paper puts forward targeted suggestions for more scientific and flexible strategies for the usage of language code-switching of classroom situation in the future, in the end of this paper it states the limitations of this study.*

Keywords: *High school English classroom; code; frequency of code-switching*

1. Introduction

Code-switching is a phenomenon in which speakers switch between two or more languages in communication, and has received widespread attention from scholars at home and abroad since the especially in classroom teaching.

At present, there is no clear definition of "whether English classes should be conducted in Chinese English codes" and "what is the most appropriate proportion of Chinese to English codes used in classes" in either the 2017 General High School English Curriculum Standards or the Ministry of Education's official Neither the 2017 GSS English Curriculum Standards nor the official policy documents of the Ministry of Education (MOE) clearly stipulate this. According to the 2017 edition of the GCSE English Curriculum Standards, which was developed by the Ministry of Education of the People's Republic of China, teachers should have reasonable and feasible teaching plans based on the content requirements of the compulsory curriculum in the light of students' actual language level and basic needs. (Ministry of Education, 2017: 53) And a conclusion can be easily drawn that teachers use code-switching flexibly to promote the effectiveness of English teaching based on students' actual language level and basic needs.

What are the attitudes of our senior secondary school teachers and students towards the use of code-switching in the English classroom? Do teachers use different code-switching frequencies when teaching different content? Is there a difference in the ideal frequency of students' code-switching needs when delivering different content? Does the frequency of code-switching match the actual needs of students for different content and classroom instructions? As scholar Zheng Lujie (2016) points out, "Students are the main subjects of learning in the classroom as well as the recipients of teachers' instruction, and it is crucial to understand their attitudes towards and needs for teachers' use of code-switching in the classroom."^[1] This paper will address these issues by taking students from Z High School in Z City as the research object and conducting a study on code-switching in high school English classrooms in China, trying to suggest teaching suggestions for the frequency of using code-switching in different teaching contents in order to help high school English teachers have a better grasp of students' needs in order to promote more flexible and effective English teaching.

2. A review of classroom code-switching research at home and abroad

"The term 'code-switching' was first introduced by Bernstein as a neutral way of referring to any linguistic system in which people establish communication and transmit information, such as dialects, language variants, domains or corpora. Code-switching is refers to a situation where a bilingual user

introduces another language and uses the two languages interchangeably in the process of expressing or communicating in a single language. Foreign scholars Nguyen (2012) and Wardhaugh (2010) argue that code-switching is a common occurrence in bilingual and multilingual contexts. As an environment where bilinguals communicate, code-switching inevitably occurs in the classroom. As English is the main language used in English classrooms, the "classroom code-switching" referred to in this study refers to the conversion of English to Mandarin Chinese for supplementary teaching and learning, and does not involve the conversion of English to local Chinese dialects.

Scholars' research on code-switching in the classroom began in the late 1960s with the enactment of the "Bilingual Education Act" in the United States. Scholars at home and abroad have tried to build up theories to explain the classification, functions and causes of code-switching through practice: scholar Baker (2006) points out that code-switching has 12 functions: emphasizing, substituting, solving the concept of linguistic equivalence Baker (2006) points out that code-switching has 12 functions: emphasising, substituting, solving the lack of language equivalence, requesting, clarifying, expressing identity and friendship, relieving classroom tension with humour, quoting and exclamation, etc. Yao Mingfa (2007), an outstanding and influential Chinese scholar in this field, has achieved important results in classifying the functions of code-switching, suggesting that code-switching has three functions in the classroom: teaching, classroom management and communication.^[2]

Recent research on classroom code-switching is divided into three main directions: the role of classroom code-switching (Jin, Fengjiao; Yang, Xiaohua, 2022; Hu, Huan, 2020; Zhang, Jian, 2018)^{[3][4]}, the function of classroom code-switching (Jiang, Lulu; 2020)^[5], and the reasons for classroom code-switching (Li, Huan, 2020; Zhu, Liping, 2018). The main investigation methods of classroom code-switching are classroom audio and video recording, teacher-student questionnaires and teacher-student interviews, and according to the scholar Cheng Xiaoli, "classroom audio and video recording is as high as 50%, and the use of questionnaires and interviews both reach 41.7%" (Cheng, 2015). (Cheng, 2015), indicating that these methods are scientific, so the research instrument used in this paper is the teacher-student questionnaire.

However, the literature on how the use of Mandarin Chinese in the English classroom affects different classroom content and classroom instructions is sparse and incomplete, and the use of code-switching in the classroom to disrupt the second language learning environment is the most clichéd academic view (Lynch, 2005; Turnbull, 2001)^[6]. In view of this, this paper investigates the current frequency of code-switching in high school English classrooms and the desired frequency of code-switching for students in different content areas, in an attempt to summarise the most appropriate frequency and strategies for code-switching for each content area.

3. Survey respondents and survey instruments

3.1 Subjects of the survey

The respondents of this study were 220 students in the sophomore and junior classes of Z Senior High School, a provincial model high school in Liaoning Province, and sixteen teachers (six with less than three years of teaching experience and ten with between ten and twenty-seven years of teaching experience; six with a full-time master's degree and ten with a full-time undergraduate degree) who were teaching English in the sophomore and senior classes of the senior high school.

3.2 Survey tools

The main instrument of this study was a self-designed questionnaire for students and teachers on their views on the phenomenon of code-switching in the classroom. 220 student questionnaires were distributed and 215 were returned, with a validity rate of 97.7%; 6 teacher questionnaires were distributed and all of them were returned, with a validity rate of 100%.

The questionnaire was structured as three parts: first, the attitude of students and teachers towards the use of code-switching in high school English classroom; Second, the ideal frequency of code-switching in the eyes of students and the real frequency of code-switching from teachers' survey when teachers teaching different content in the English classroom; Third, the ideal code-switching frequency when teachers give classroom instructions in the English classroom.

4. Results and discussion

In order to make the survey scientific and to quantify the reliability of the survey results, the researcher set the question options according to the principles of the five-level Likert scale, and used Excel (2018) software to conduct a descriptive statistical analysis of the returned questionnaires: firstly, the number of times each option was selected in the paper questionnaire was recorded one by one, secondly, the frequency frequency and percentage of each option being selected was calculated, and finally, a comparative analysis of the differences between the individual. Finally, a comparative analysis of the differences between the options corresponding to each question in the two different papers was carried out.

4.1 Students' attitudes towards code-switching in the classroom

Students are the objects of education and teaching, the starting and ending points of classroom teaching strategies and effectiveness. Upholding the student-centred principle, the researcher set the following three questions to address students' approval and attitudes towards teachers' use of code-switching in senior secondary English classes: Do you have an attitude towards your teacher's use of code-switching in the classroom (Q1), do you think that teachers' use of code-switching in the classroom is more helpful compared to all-English or all-Chinese lessons (Q2), and does teachers' code-switching make students more relaxed (Q3)? (Q2), whether code-switching makes students feel more relaxed (Q3), and the results of the survey are shown in Table 1:

Table 1 Students' attitudes towards code-switching in the classroom

	Questions	Couldn't agree more	Agree	Uncertainty	Disagree	Strongly disagree
Students' attitudes towards code-switching in the classroom	Q1	30.18%	57.40%	9.47%	2.37%	0.59%
	Q2	61.76%	28.82%	7.06%	1.76%	0.59%
	Q3	39.31%	36.99%	19.08%	2.31%	2.31%

The survey shows that most high school students agree with the phenomenon of code-switching between English and Chinese in the high school English classroom. 87.58% of students agree with the phenomenon of code-switching in the classroom, 90.58% of students affirm that code-switching in the classroom plays a positive role, and 76.30% of students feel more relaxed psychologically when teachers use Chinese to assist in English classroom teaching, which fully proves that This demonstrates the effectiveness and necessity of the code-switching phenomenon in relation to the current English proficiency level of high school students and the practicality of teaching in Chinese classrooms.

4.2 Actual and ideal frequencies of code-switching for different pedagogical contents

This part of the questionnaire survey investigates the frequency of code-switching by teachers and the frequency of code-switching by students for the five different modules of knowledge in order to ensure that the results of the survey reflect objectively the frequency of code-switching in real classrooms. The survey was conducted from two perspectives:

Table 2. Ideal frequency of students' code-switching for different contents and their teachers' actual frequency of code-switching in the classroom

		Always	Frequently	Sometimes	Occasionally	Never
Student Perspectives	Words	8.16%	14.75%	18.52%	40.71%	17.86%
	Background knowledge	12.99%	52.45%	28.78%	4.35%	1.44%
	Exercises	22.63%	35.77%	33.58%	5.11%	2.92%
	Language skills	22.54%	42.25%	30.28%	4.23%	0.70%
	Grammar	13.94%	18.45%	18.17%	47.32%	2.11%
Teacher's perspective	Frequency	Always	Frequently	Sometimes	Occasionally	Never
	Words	16.66%	33.33%	50.00%	0%	0%
	Background knowledge	16.66%	33.33%	50.00%	0%	0%
	Exercises	33.33%	50.00%	16.66%	0%	0%
	Language skills	50.00%	33.33%	16.66%	0%	0%
Grammar	16.66%	33.33%	50.00%	0%	0%	

Firstly, the overall frequency of code-switching was analysed: a minority of students and teachers wanted to 'never' code-switch between lectures. This statistic reaffirms that the students' attitudes

towards code-switching in the classroom in this study 4.1 are positive and necessary.

Secondly, as shown in Table 2, more than half of the students wanted the teacher to use code-switching "occasionally" or "never" in word explanation, while half of the teachers actually used code-switching "sometimes". "For the introduction of background knowledge, students relied more on code-switching, with more than half of the students expecting teachers to use code-switching 'always' or 'often', while half of the teachers actually used code-switching 'sometimes'. In practice, half of the teachers used code-switching "sometimes"; the largest proportion of students wanted teachers to use code-switching "often" in their explanations of exercises, and half of the teachers met students' expectations by using code-switching "often" in their lessons. The largest proportion of students (43.25%) wanted teachers to use code-switching "often" when teaching language skills, while half of the teachers used code-switching "always" when teaching language skills. "Nearly half of the students wanted their teachers to use code-switching 'occasionally' when teaching grammar, while half of the teachers actually used code-switching 'sometimes'.

Finally, the analysis of the above data shows that teachers use code-switching more frequently than students' actual needs in word, grammar and language skills instruction; code-switching is used less frequently than students' actual needs in background knowledge introduction sessions; and code-switching is used more frequently than students' needs in exercises. However, Viakinnou-Brinson et al. (2012) investigated whether teaching grammar in the target language alone or in the target language's native language was more effective for students' learning and retention. However, Viakinnou-Brinson et al. (2012) conducted an experimental study to investigate the effects of using only the target language for grammar instruction or code-switching in the target language on students' learning and retention levels, and the former had significantly higher grammar test scores than the latter.^[7]

4.3 Code-switching preferences for classroom instructions

Teaching activities are the main activity of the teacher in a high school English classroom, in addition to the teacher's activities of giving classroom instructions to maintain order and keep the classroom running. What is the frequency of code-switching during this activity? What role does the phenomenon of code-switching play?

Classroom instructions are common words used by teachers in the classroom, such as "Open your book" and "Be quiet!" Half of the teachers' code-switching frequency when speaking classroom instructions was also 'sometimes', which suggests that teachers' current code-switching frequency for classroom instructions is consistent with students' ideal.(see Table 3)As the greater part of the classroom language is a fixed phrase that appears frequently in every lesson, and with which the target audience is usually familiar, it can be seen that both teachers and students are aware that classroom language does not need to be frequently used in Chinese to assist the English classroom, but at the same time, as the mother tongue is the link between the mind and the heart, the use of code-switching can have an emphatic effect and make the target audience receive a quick mental impact, so the use of code-switching in classroom instructions is of necessity but should be infrequent but still necessary.

Table 3. Ideal frequency of students' code-switching for different classroom instructions and their teachers' actual frequency of code-switching in the classroom

Frequency	Always	Frequently	Sometimes	Occasionally	Never
Student Perspectives	14.69%	23.78%	41.96%	14.69%	4.90%
Teacher's perspective	0%	16.66%	50.00%	16.66%	16.66%

5. Conclusion

This study explored the attitudes of teachers and students towards code-switching, the ideal frequency of students' code-switching of classroom instructions and different teaching contents, and the actual frequency of teachers' code-switching of classroom instructions and different teaching contents in two grades in Z. The results of the survey showed that the overall attitudes and views of teachers and students towards code-switching in the classroom remained consistent, and they all affirmed the necessity and usefulness of code-switching in the classroom. However, the frequency of code-switching in today's classrooms does not fully match the actual learning needs of students.

In response to the findings, the author has formed the following recommendations for the future use

of code-switching in the classroom by high school teachers to improve the quality of teaching and learning and to achieve teaching objectives:

Firstly, as the Scottoa subject language framework model shows, one of the two codes in code-switching must be in a dominant position and the other in a subordinate position. "The proportion of teachers and students who use code-switching is not mainstream, and the excessive use of code-switching by teachers can result in students' one-sided understanding of the language, such as "bare at", "look at" "watch" all mean "to look at" in Chinese, but there are subtle differences in meaning in English. At the same time, the positive effects of code-switching should not be overlooked when using English as the primary language in the high school English classroom, and the positive transfer of the mother tongue to language learning should be promoted.

Again, teachers should use code-switching strategically and adjust the frequency of code-switching according to the content of the lesson. For example, the frequency of code-switching should be reduced when explaining vocabulary and language skills, and when giving classroom instructions, so as to leave more room for students to move up the learning ladder.

Finally, there are inevitable limitations to this study: firstly, due to the limited size of the sample and the fact that the respondents were from key provincial high schools with a good English language foundation and a more positive willingness to learn, the generalizability of the findings cannot be fully determined. If the sample could be expanded to include high school students from good, medium and poor English language levels, the findings would be more complete and more relevant to how students with different language bases can use code-switching strategies to improve their teaching quality. There may be bias in the assertion of the frequency of code-switching in teachers' classrooms. In future research, scholars can investigate the differences in the ideal frequency of code-switching among students at different levels of English language proficiency for different teaching contents.

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