



Original Article

Using English Songs in Teaching Biology 10 to Develop Student's Foreign Language Competence

Lai Ngoc Ly, Nguyen Thi Thuy Quynh*

VNU University of Education, 144 Xuan Thuy, Cau Giay, Hanoi, Vietnam

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Abstract: Foreign language competence has recently been one of the most important competences for Vietnamese students to easily integrate and compete to other students in the international arena. In the recent years, the demand for learning English has dramatically increased in Vietnam. Many different teaching methods were applied to improve foreign language competence for students, and among those methods, using songs while teaching English as well as curriculum such as Chemistry, Physics, and Math is considered as a good choice for teachers. Music lyrics and song not only provide tools to strengthen and reinforce vocabulary, comprehension, and writing, but increase learning and grammatical variations with auditory skills and rhythm. This study was formulated to discover the improvement in student's foreign language competence by using English songs in teaching Biology 10. The post-test was administered with both groups at the end of treatment period. The data obtained were used to show the changes between the experimental and the control classes. Observations were also carried out during the Biology lessons for both classes to provide in-depth knowledge of findings. An investigation on the status of teaching Biology in English was carried out at some high schools in Hanoi. The English songs used in teaching Biology grade 10 were collected and downloaded on some reputed Youtube channels in educational field. The data were collected through the test and analyzed by excel software. The pedagogical results showed that English songs draws students more attention on lesson, makes lesson more interesting but still well convey the knowledge of the lesson. Moreover, it helps student better in English skills and easily remember biological terms. Thus this research may suggest that the use of songs should be used routinely in each learning activity because in the activity the students would be able to comprehend what they learn. It is recommended that the use of songs which are simple, enjoyable, pleasurable, comfortable, and easy to learn may help students' learning. However, this study should expand the samples to get more reliable results and to get a wider generalization, research of similar kind should be done with different chapters of Biology program and different subjects.

Keywords: English song, foreign language competence, Biology 10.

* Corresponding author.

E-mail address: quynhntt-bio@vnu.edu.vn

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1. Introduction

Educators may use various teaching strategies to achieve the learning objective of the lesson. Due to the potential of enhancing some aspects of memory, songs are considered as a helpful teaching technique. Being a combination of music and language, songs have innumerable virtues that deserve our attention. Their richness in culture and themes, their idiomatic and poetic expressions, their therapeutic functions and so on makes them impeccable tool for language teaching. Songs can transfer knowledge and elicit emotion and have the potential to reach students in ways other teaching strategies cannot. Therefore, songs can be designed for all grade levels and include information about, facts and concepts included in the science curriculum. The use of science-content songs engaged students by providing both situational and personal interest and provided a mnemonic device for remembering key concepts in science [1]. A study launched by Jensen indicated why educators should include music in the curriculum and the reasons are its social nature, emotional impact, ability to carry a message, accessibility, and relevance [2]. It is recommended that for implementation of science-content music into the curriculum include using songs at any point in the learning process as either the focus of a lesson or to supplement it by enhancing and enriching learning [3-6]. Moreover, music can transform the classroom into a pleasant and positive learning environment in which students thrive emotionally, socially, and academically. Exciting musical opportunities and meaningful learning experiences can be implemented to address the needs and to give support for diverse learners through the incorporation of music and song [7]. Even though music is recognized as an effective tool for teaching students but is rarely used in science courses for secondary school and high school students.

Our country has been in the era of industrialization, modernization, and integration with regional and international communities, therefore the reform of education system is the

motivation for the development. According to Hanoi Department of Education and Training [8], using different methods in teaching natural science curriculums in English is one of the orientations of educational innovation that had been studied and carried out in several specialized high schools. However, the teachers have faced many subjective as well as objective difficulties in teaching other subjects in English, and teaching methods have become the biggest barrier [9]. Some studies concentrated on applying different teaching methods in Chemistry such as designing activities according to subject groups, combining games or game shows with learning or designing practical exercises in English [10] to develop students' English skills. In teaching Biology, using English songs is still a new method but attracts students' attention. Therefore, this study aimed to assess the effectiveness of songs in teaching Biology for students' foreign language competence.

1.1. Foreign Language Competence

Competence - sufficient means for one's needs (Webster's), the ability to do well something worthwhile, the knowledge, skills, values and attitudes needed to carry out properly an activity important to success in one's personal or professional life, the ability to meet or surpass prevailing standards of adequacy for a particular activity [11]. The term "competence" means the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development [12].

"Foreign language competence" is a complex and multifaceted scientific concept. Summarizing various scientific theoretical approaches, we formulate "foreign language competence" as a dynamic combination of knowledge, practical skills. Foreign language competence determines the ability of individuals to use a foreign language in professional, scientific activities and in social communication successfully [13].

1.2. The Role of English Song in Teaching and the Development of Foreign Language Competence

Setia et al discovered that the use of song not only helps the understanding, it also stimulates and increases the students' interest to learn, enjoy and engage in the learning process. Furthermore, it accelerates students' confidence, learning ability and skill when activities are highly motivated and memorable [14]. Using English songs was demonstrated that it helps students comprehensively develop all four following skills in learning the language.

* Listening skill:

At the beginning of the listening process, understanding songs can become difficult for students, but through the time and with a lot of practice, the hearing starts being acute and the comprehension becomes easier for them to identify details in any speech. They also get familiar with sounds and natural reductions of English that can put into practice at the moment of speaking [15]. The uses of songs as an effective tool to improve listening skill for students was demonstrated because after using songs, students' listening skill increased with the number of students who achieve a minimum score of 65 were 7, and which reached a maximum value of 60 were 16 students [16]

* Speaking skill:

It is a difficult and crucial skill that helps the students express themselves properly while communicating. One of the important aspects of this skill is pronunciation, a study carried out by Ratnasari indicated that the use of songs in teaching English is effective to improve the students' pronunciation. The improvement is caused by the students' interest of the songs given and the relevance between vocabularies that are presented in the songs used in this action research and the vocabulary that students have already got [17].

* Reading skill:

The vocabulary is an important factor that determines a student's reading comprehension success when learning a foreign language [18, 19]. According to the students, songs help them remember new words better and it lasts longer

in their memory box [20]. Consequently, along with a wide range of vocabulary, their reading skill increases.

* Writing skill:

Writing skill is the combination of other skills to diversify the forms of English practice, reinforce the knowledge learned and enrich specialized English vocabulary.

1.3. The Status of Teaching in English at High School

* About teachers:

To understand the current status of teaching in English, we surveyed both teachers and students at several high schools in Hanoi such as Nguyen Trai, Kim Lien, Yen Hoa, and Olympia.

The results showed that 70% of teachers have never taught Biology in English. For those who have taught Biology in English, they would often use videos in the lesson and their general comment is that not only the atmosphere of the class is more lively but also the students participate in lessons more actively than when they use traditional methods. After the survey, there are 50% of them being confident to meet the standard if they have to teach Biology in English, 100% of teachers agree that learning Biology in English helps students improve their foreign language competence. According to statistics, most teachers, who teach Biology in English, are working at international or bilingual schools. However, they only use traditional teaching methods that are not effective to scale up students' competence.

Additionally, they have faced some obstacles in teaching Biology in English as follows:

i) The lack of specialized lexical resources for both teachers and students;

ii) Difficulties in explaining and describing biological knowledge in English due to the lack of English speaking skill.

* About students:

100% of students have never learned Biology in English through English songs, 70% of them have a demand for learning Biology in English to upgrade their foreign language competence.

To sum up the results of the investigation, it can be said that teachers' English skills are still limited and using English songs in Biology lessons is a completely new teaching method that has not been used in high schools.

2. Research Methods

This study is an experimental research which has a purpose of finding out whether or not there is a significant effect of teaching Biology 10 through English songs in terms of foreign language competence between two classes in The Olympia Schools, Hanoi. Teacher taught Biology in control class by traditional teaching method, while in experimental class English songs were applied as the main teaching technique. The design of

this study was post-test only control group design. For better understanding about the status of teaching Biology in English, teachers in several high schools in Hanoi did the survey and interview. The data collected was statically analyzed by excel software.

To choose the songs used in experimental lesson, we researched some professional and reputed websites, looked for the feedback from other teachers as well as learners around the world, then decided whether to use those songs or not. We also carefully analyzed the content of songs. We ensured that these songs have accuracy and conformity with students' awareness. The list of links with English songs with the content relevant to knowledge of Biology 10 is shown in table 1.

Table 1. Biological English songs used in teaching Biology 10

Program of Biology 10	Name of songs	Links
Section II - Chapter II: Cell structure	The Cell song	https://www.youtube.com/watch?v=rABKB5aS2Zg
	The parts of a cell song	https://www.youtube.com/watch?v=NkC9AiJf7gI
	Organelles song	https://www.youtube.com/watch?v=dngsF12X3nc
	Cell song	https://www.youtube.com/watch?v=8KUJHMnjOIM
Chapter III. Materials and energy transformation	Enzymes	https://www.youtube.com/watch?v=NdMVRL4oaUo
	Enzymes song	https://www.youtube.com/watch?v=jTh0gj1YWNk
	Respiration song	https://www.youtube.com/watch?v=5zAL1jIppj0
	Cellular respiration song	https://www.youtube.com/watch?v=m9VTC9ZpRog
	The photosynthesis song	https://www.youtube.com/watch?v=C1_uez5WX1o
	The photosynthesis song	https://www.youtube.com/watch?v=xMSNB1CX8LA&list=RD8u_hwwztRqI&index=2
Chapter IV. Cell division	Mitosis rap	https://www.youtube.com/watch?v=pOsAbTi9tHw
	The mitosis song	https://www.youtube.com/watch?v=f7Dmhfo7XXA
	Mitosis	https://www.youtube.com/watch?v=HYKesI9jL8c
	Meiosis song	https://www.youtube.com/watch?v=kGWNykbxKY
	Meiosis!	https://www.youtube.com/watch?v=hOuzYLNuA4
Section III. Microorganism Biology	Microorganisms song	https://www.youtube.com/watch?v=tHvHww1tNnA
	Bacteria song	https://www.youtube.com/watch?v=KiCTXIkNP_A
	I'm a virus!	https://www.youtube.com/watch?v=kYf_S18W3qY
	Pathogens song	https://www.youtube.com/watch?v=Hr7jjlZI6NA

3. Results and Discussion

3.1. Quantitative Results

We collected information for assessment through the test, investigation, interview, and observation during each lesson. Analytical figures showed that the average mark of the experimental class is higher than the control class (table 2). These results confirm that students in the experimental class are able to absorb the knowledge better than students in the control class.

Table 2. Comparison of statistical figures between experimental and control class

Parameters	Control class (CC)	Experimental class (EC)
Average mark	7.13	7.23
Variance	1,76	1,52
Standard deviation	1,32	1,23
Coefficient of variation	0,18	0,17

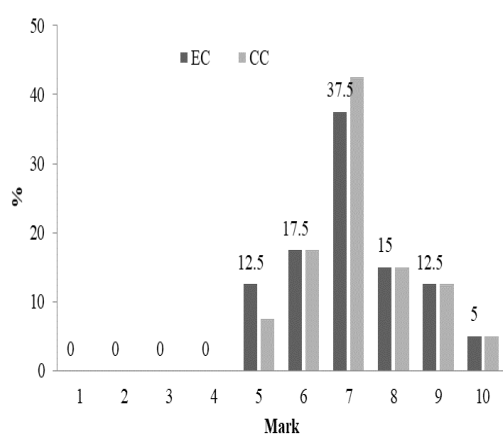


Fig 2. Test marks of experimental and control classes.

According to the figure shown in the graph, the average mark of students in the experimental class is higher than in the control class. It proved that students in experimental class better memorized specialized English vocabulary to fulfill the test (Fig 2). In addition

to that, the percentage of students agree and partly agree that their English reading skill is developed due to the expanse of the lexical resource are 29% and 45.2%, respectively. These findings also supports the statement of the previous study that not only do songs provide pleasure, but they also enhance language practice and positively affect vocabulary acquisition and memorization [21, 22].

Futhermore, in comparison to research on teaching Chemistry in English executed by Hoang and Ha [23], in which they used different teaching technique, the percentage of students getting a very good mark (more than 8) is higher than that of our research, which were 40% and 20%, respectively. However, the percentage of students getting good and average marks (from 5 to 8) in our research is higher than that of their study, which are 80% and 50%, respectively. The results also show that no students got under average marks (under 5) in our research comparison to [23]. This finding indicates that songs also can have a good impact on teaching science curriculum and can be used more regularly as a good method.

3.2. Qualitative Results

Besides analyzing the quantitative results, we also observed and assessed changes through the comparison of students' learning attitudes and the atmosphere of both classes. Several figures in the experimental class are shown in Fig 3. After the assessment, we have some conclusions about students in the experimental class:

+ The students in experimental class were better than those of the control class in memorizing specialized lexical resources. They also had more opportunities to practice and scale up all English skills

+ They had opportunities to build up and upgrade some competences such as solving problems, cooperation, creativity, using language.

+ Team-work activities: They were more active and were able to perform solidarity on their own as well as support in their group.

Many types of research about teaching science curriculums in English, such as Chemistry and Physics, were launched by many authors in Vietnam. Their results seem to be similar to those of our study, especially in terms of drawing students attention in lessons as well as gaining knowledge. According to author Hoang. T.H, learning Chemistry in English makes students to put more attention in lessons, participate more

actively, and help them develop their communication ability. Moreover, the results of students' writing tests showed that they could understand all specialized terms of Chemistry in English. However, there are some mistakes when they translate into Vietnamese because of choosing the wrong Vietnamese words [23]. It shows the student's general mistakes when learning other subjects in English.



Fig 3. Student's activities in the experimental class.

4. Conclusion

This study has some restrictions in a pedagogical experiment such as the small number of samples and qualitative analysis of foreign language competence has no clear evidence. However, the results of this research show that it not only ensures the biological knowledge for students but also attracts them to the lesson as well as helps them study more efficiently. We realized that it is a new teaching method but positively accepted by students. It will be a useful method to help students strengthen their foreign language competence as well as open more opportunities for their future in the 21st century.

Moreover, to apply this method regularly and popularly, the teachers have to broaden their English skills and use proficiently specialized English terms in order to have more lessons with higher quality.

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