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THE EFFECTS OF SINGING IN ENGLISH ON THE SPEECH FLUENCY OF TURKISH TEENAGERS LEARNING ENGLISH AS A FOREIGN LANGUAGE

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Abstract

Singing has been suggested to have a positive influence on the speech fluency of people with various neurological disorders, such as stuttering, aphasia, and autism. Again, research demonstrates the benefits of singing as a teaching method, through which many aspects of language can be taught or improved, such as grammar, vocabulary, pronunciation. However, there are not any studies as to the effects of singing on the speech fluency of people with no neurological speech disorders. Thus the study aims at investigating any possible influences of singing on the speech fluency of Turkish EFL teenagers. The study was carried out with 10 high-school students (control n=6, experimental n=4) studying at a private school in Turkey. Demographic information of the participants were collected via a questionnaire. To identify the *utterance fluency*, audio recordings of the participants' speech production were collected. The speech samples were produced subsequent to watching short film clips after the participants in the study group were given two songs each week for 5 weeks. The results of the study demonstrate that none of the three measures of fluency showed any significant differences between or within the groups, suggesting that singing does not necessarily have positive influences on speech fluency.

Keywords: speech fluency, accuracy, singing, English as a foreign language

1. Introduction

Speaking is, doubtless, an indispensable skill for language acquisition and learning. Although it was recognized as a teaching element rather lately, with the introduction of the Direct Method in late nineteenth century (Schmitt, 2000; Sim & Pop, 2016), it is now considered as one of the core elements of language teaching.

Having become a must in language teaching, teaching speaking, or "oral communication" as Brown (2007) puts it, has its own sub-skills such as discourse, pronunciation, accuracy and fluency, appropriacy, turn-taking as well as factors that affect its success such as certain affective factors, the interaction effect, and so on. Bailey (2003), however, suggests that the two sub-skills that concern "all of language performance" are **accuracy** (with words and pronunciation) and **fluency**. Referring to the discussions on language teaching back in 1970's, Brown (2007) states that many teachers preferred fluency over accuracy, as they thought speaking must be taught "naturally", and acquired just as a child acquires his first language. Yet, this resulted in students who could speak very fluently, but were barely comprehensible. Eventually, this has led to the two current broad approaches to language teaching: teaching language *use*, or the message conveyed through language, and teaching language *usage*, or the

formal, figural aspect of language, such as fluency, pronunciation, etc. Brown (2007) attests that today's main tendency is to teach language use, sparing the latter to support it. Therefore, it can be suggested that fluency cannot be evaluated at large without considering accuracy. Bailey's (2003) recommendation that both accuracy and fluency must be given equal opportunities by teachers confirms this suggestion.

One way to achieve accuracy seems to be what Hoey (2005) and Pace-Sigge (2013) define as *lexical priming*. According to this relatively recent theory, repetition of a certain pattern creates and reinforces the perception that the pattern is natural. Therefore, repetition of words or chunks of words in certain patterns (for instance, "school" and "homework") is what makes these patterns be used together almost every time they are encountered. Pace-Sigge (2013) attests that "the 'repeat occurrence' primes one's mind to make automatic connections" (p. 3), thus allowing a *priming effect* when one hears, for instance, the word *paper*, and helping him or her to collocate it with, say, *pen*.

Bailey (2003) defines fluency as "the extent to which speakers use the language quickly and confidently, with few hesitations or unnatural pauses, false starts, word searches, etc.", while accuracy is about how much the speaker's utterances comply with "what people actually say when they use the target language." (p. 55). Segalowitz (2010), on the other hand, separates fluency into three sub-categories: *cognitive fluency*, *utterance fluency*, and *perceived fluency*. *Cognitive fluency*, he argues, is about the speaker's ability to manage, regulate, and administrate the cognitive processes underlying speech production. *Utterance fluency*, which refers to the "features of an utterance", depends on the speed and unconsciousness of those cognitive processes. It is an objective picture of what the speaker articulates, and its qualities depend on the speed of the cognitive processes mentioned above. At the end of the continuum, finally, is *perceived fluency*, which is what the listener perceives of the speaker's utterances. Therefore, in this study, the type of fluency measured was utterance fluency.

There is a huge body of studies on fluency, on its properties, on how it can be achieved in L2, on the relationship between speech fluency and formulaic language, on the development of fluency over a short period of time, etc. (see, for instance, Segalowitz, 2016; Tavakoli, Campbell, & McCormack, 2016; Üstünbaş & Ortaçtepe, 2016; Wood, 2010). Singing is also another element that is related to language teaching and reducing the effects of certain disorders on speech, or diminishing the level of anxiety in classroom (for several examples, see Goering & Wei, 2014; Setia et al., 2012; Stanculea & Bran, 2015; Wan, Rüber, Hohmann, and Schlaug, 2010). However, the case is not only that these studies do not particularly focus on the relationship between singing and speech fluency in foreign language, it is also that there are a rather small number of studies that touch only slightly to this field of research.

Thus, the aim of this study is to investigate the possible links between singing and speech fluency in foreign language. Its significance lies in the fact that it is most probably the first study on whether a speaker, who does not have any neurological speech disorders, improves his/her speech fluency by the help of a singing treatment. It is intended to draw the attention of researchers from related areas to this subject, helping to broaden the knowledge on this relatively-less-researched section of language teaching.

There is a large body of research as to measuring and evaluating fluency. Lennon (1990), for one, examines 12 quantifiable properties of speech in his study with 4 German people learning English as a second language. As cited in Segalowitz (2010, p. 31), these properties are: "two measures of *speech rate*" (words per minute, including and excluding self-corrections, etc., also called '*pruned*' and '*unpruned*' words); "three measures of interruptions" (repetitions, self-corrections, and filled pauses); "percentage of repeated and

self-corrected words as a function of unpruned words"; two types of pauses (filled and empty pauses); "number of words between pauses"; and 3 types of measures that connect T-units (percentage of 'a pause after a T-unit', "percent of total pause time at all T-unit boundaries", and "mean pause time at T-unit boundaries).

Kormos (2006), on the other hand, suggests a table that contains 10 measures to evaluate fluency: *speech rate* (found by dividing the total number of syllables by total time, including pause time, then multiplying the resulting number with 60), *articulation rate* (found by dividing the total number of syllables by total time, excluding pause time, then multiplying the resulting number with 60), *phonation-time ratio* (percentage of speaking time proportioned to the sample-production time), *mean length of runs* (syllables in average number produced between at-least-0.25-second pauses), *the number of silent pauses per minute*, *the mean length of pauses*, *the number of filled pauses per minute*, *the number of disfluencies per minute*, *pace* (a number reached counting the "stressed words per minute"), and *space* (the stressed words proportioned to the words at total). Kormos (2006) also claims that the strongest predicators of fluency among these are *speech rate*, *phonation-time ratio*, and the *mean length of runs*. She attests that especially the results of the studies concerning filled and empty pauses "as well as disfluencies such as repetitions, restarts, and repairs" (p. 164) are equivocal.

As mentioned before, even though the number of studies on fluency and singing separately is relatively high, concerning the effects of singing in English on the speech fluency of teenagers learning English as a foreign language, no studies were encountered by the authors.

2. Methodology

2.1. Research Design

The study was structured according to the quantitative approach to research. The qualitative data, which involved the participants' recordings of the utterances was also analyzed quantitatively. The research aims at answering the following research questions:

1. Does treatment of singing have an effect on the speech fluency of teenagers without any neuro-linguistic deficiencies who learn English as a foreign language?

2. Does accuracy correlate with fluency in a negative or a positive way?

2.2. Participants

The study involved 10 participants, each of whom were given a number, such as S1, S2, S3, and so on. The participants were selected among 15- and 16-year-old high-school students at a private school in Bursa, Turkey, who volunteered to participate in the study. Levels of English of the students varied between pre-intermediate, intermediate, and upper-intermediate.

The questionnaire also yielded demographic information as to the participants: 4 of the students were males, and 6 were females. 9 of them were 15 years of age, while 1 was 16. The information as to the participants' perceptions on their own levels of English, on how fluent speakers they are, how many years they have been learning English, and how many hours in a week they spend speaking English can be found on Table 1.

Table 1. *Information related to the participants' English*

Student	Years spent learning English	Level of English	Fluency perception	Hours spent speaking English
1	11	Upper-Int.	5	10+
2	7	Upper-Int.	4	10+
3	7	Pre-Int.	2	1-3
4	7	Intermediate	3	1-3
5	6	Upper-Int.	3	1-3
6	9	Upper-Int.	5	4-6
7	6	Intermediate	3	6-10
8	6	Intermediate	3	6-10
9	6	Intermediate	4	6-10
10	7	Intermediate	3	1-3

Table 2 includes information gathered from the participants via the questions such as whether they play a musical instrument, whether they enjoy singing when they are alone, how many hours a week they presumably spend singing, whether they had a singing experience in a music band or a choir before, and what their favorite musical genres are.

Table 2. *The Participants' musical background, preferences, and inclinations*

Student	Playing a musical instrument	Enjoying singing when alone	Hours spent singing	Singing experience	Favorite musical genres
1	No	Yes	1-3	No	Rock/Metal, Pop, Rap/Hip-Hop
2	No	Yes	1-3	No	Rock/Metal, Pop, Rap/Hip-Hop
3	Yes	Yes	4-6	No	Rock/Metal, Pop, Rap/Hip-Hop
4	No	Yes	1-3	No	Pop, Classic, R&B

5	No	No	0	No	Rock/Metal, Pop, Classic
6	No	Yes	6-10	Yes	Rock/Metal, Pop, Rap/Hip-Hop
7	Yes	Yes	4-6	Yes	Pop, Classic, Rap/Hip-Hop
8	No	Yes	1-3	No	Rock/Metal, Pop, Classic
9	Yes	No	0	Yes	Rock/Metal, Blues, Classic
10	No	No	0	No	Rock/Metal, Jazz, Blues

2.3. Instruments

The participants were first given a questionnaire before the treatment, which yielded demographic information about themselves. In order to avoid any misunderstandings or misinterpretations, the questionnaire was prepared and presented in the participants' native language, Turkish. The questionnaire involved questions as to the participants' awareness of their levels of English, their levels of fluency, the frequency of the opportunities to speak English they had in a week, the musical genres they liked listening to, and their musical skills and tendencies such as playing an instrument, liking or disliking singing songs, etc., as well as their ages, sexes, and so on.

Other materials used in the study were 6 silent films and 10 songs in English. Bergmann, Sprenger and Schmid (2015) suggests that a part of the movie *Modern Times* starring Charlie Chaplin and Paulette Godard "has been used in L2 research for at least twenty years". Thus, so as to create a speech context for the participants, approximately 1.5- to 3.5-minute sections of 6 silent films were selected: *Modern Times* (1936) from 3.09 to 4.41 minutes; *The Kid* (1921) from 5.21 to 7.59 minutes; *Battleship Potemkin* (1925) from 19.30 to 22.50 minutes; *Metropolis* (1927) from 63.05 to 66.06 minutes; *The Gold Rush* (1925) from 13.33 to 16.12 minutes; and *The Lodger: A Story of the London Fog* (1927) from 32.23 to 35.30 minutes.

The songs used respectively as pairs in the study were "Connect the Dots" by Ayreon, "The Stroller" by Jaill, "Battleships" by Daughtry, "She's A Rebel" by Green Day, "Lanterns" by Birds of Tokyo, "Caves" by Data Romance, "Pink Shoelaces" by Dodie Stevens, "Hurt" by Nine Inch Nails, "The Lodgers" by The Style Council, and "Nightgown of the Sullen Moon" by They Might Be Giants. The main criterion for selecting these songs was that they contained words and phrases that were related to certain events or objects in the film-clips named earlier. Table 3 shows the materials and when they were used.

Table 3. *The songs and the films used in the study*

Week	Film	Songs
1	"Modern Times" (1936)	---
2	"The Kid" (1921)	"Connect the Dots"; "Stroller"
3	"Battleship Potemkin" (1925)	"Battleships"; "She's A Rebel"
4	"Metropolis" (1927)	"Lanterns"; "Caves"
5	"The Gold Rush" (1925)	"Pink Shoelaces"; "Hurt"
6	"The Lodger: A Story of the London Fog" (1927)	"The Lodgers"; "Nightgown of the Sullen Moon"

In the first week of the 6-week research, the participants were only shown the film ("Modern Times"), so that the *speech rate*, *phonation-time ratio*, and the *mean length of runs* could be determined. These measures, which were decided to be employed depending on Kormos's (2006) suggestion, constituted the basis to be compared to the whole data acquired at the end of the study in order to evaluate whether there would be any changes between the pre-treatment and post-treatment stages, and if there would, in which direction these changes would be.

2.4. Procedure

As the researchers were not teaching the participants when the study was carried out, it was explained to them that they were going to watch a short film-clip, and then tell what has happened in it. Then, they were told that they were going to be separated into two groups, and one group would be asked to learn and memorize the lyrics of two songs each week.

The students were interviewed individually, each watching the film clip, and commenting on it afterwards while their speeches were recorded with the *Recorder* application of Windows 10 Operating System. The recordings were then transcribed into text by hand.

Two days after the first group of interviews, the participants were divided into two groups, one being the control group that consisted of 6 students, and the other being the study group, which was comprised of 4 students. The data acquired from the first group of interviews was run through Mann-Whitney U Test on IBM's software *Statistical Package for Social Sciences* (SPSS), and as no significant difference was found among the participants, they were distributed to both groups randomly. On the day they were distributed, two songs along with their lyrics were given to the study group, and they were asked to listen and sing the songs until the songs were memorized deeply enough to let them sing by reading the lyrics only, that is, without hearing the songs.

The songs were chosen according to their lyrics, so that accuracy as well as fluency could be achieved, as Bailey (2003) and Brown (2007) suggests. Therefore, the lyrics included words or phrases related to the film clips. For instance, the first pair of songs, which were given in the second week, were "Connect the Dots" by Ayreon, and "The Stroller" by Jaill. These songs were selected according to the words they contained. Since the second week's film was *The Kid*, and it featured a stroller into which Charlie Chaplin was struggling to place a baby he had found by a garbage can, the song "The Stroller" was selected. In the movie, Chaplin also smoked a cigarette, and ran from a police officer, coming back to where he had started in the first place. The reason "Connect the Dots" was selected was that it contained chunks such as "light up a cigarette" and "rushed back".

2.5. Data Analysis

As pointed out before, the recordings of the weekly speeches of the participants were decoded into text by hand. So as to achieve a standard, only the first one-minute parts of the speech samples were taken to measure. Of the feature measurement types mentioned before, three pointed out by Kormos (2006) were particularly practical and efficient to measure the targeted features of the fluency of the participants in order to determine whether there would be a significant development as the practice of singing continues: *speech rate*, *phonation-time ratio*, and the *mean length of runs*. Therefore, the empty and filled pauses in each of the speech samples were found and marked along with their lengths. This process was done by the free sound recording and editing software *Audacity*.

The lengths of the pauses mattered, because, as pointed out by Kormos (2006), in order to reach the *mean length of runs*, it is required to calculate the "average number of syllables produced in utterances between pauses of 0.25 seconds and above" (p. 163). Thus, every pause that lasted for 0.25 seconds and more were found and marked. Then, the number of syllables was divided by the number of the utterances between the pauses so as to reach the average number of syllables per utterance, which is the *mean length of runs*.

In order to find the *speech rates* of the samples, the number of the syllables in each speech had to be determined. The number of syllables was calculated by the website *syllablecount.com*. The number of syllables was divided by the total time (approximately 60 seconds in this case), and the number reached was then multiplied by 60. As none of the speeches lasted for exactly 60 seconds, this multiplication process had to be done.

Finally, *phonation-time ratio* was found by first excluding the empty pauses and thus finding the actual speaking time, and then finding its percentage to the whole sample production time.

3. Results

Among many studies, Wan et al. (2010) state that singing is particularly helpful in bettering the effects of certain neurological disorders related to speaking, especially stuttering. Moreover, Davidow, Bothe and Ye (2011) attest that singing enhances fluency even in non-stutterers. Thus the aim of this study was to determine if there would be an increase in speech fluency along with a practice of singing, particularly with participants who do not have any neurological disorders related to speaking.

The findings of the present study demonstrate that this is not actually the case. The results suggest that there are not any significant differences between the study group and the control group. Table 4 clearly shows an oscillation in the participants' levels of fluency measures, regardless of the group they were in.

On Table 4, the terms *speech rate*, *phonation-time ratio*, and *mean length of runs* are shortened respectively as "Sp. Rate", "Pho-T. R.", and "MLOR". On the other hand, "SPM" stands for "syllables per minute", and "SPU" means "syllables per utterance". Also, S1, S2, S3, and S4 are those who were in the study group, while the rest constituted the control group. The averages on the rightmost column indicate only the averages of the values from week 2 to week 6, excluding the first week, so that a comparison can be made between the average and the first week.

Table 4. *The numerical results of the speech samples acquired from the participants*

St.	Measure	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Av. (5 w)
1	**Sp. Rate**	163.8 SPM	187.2	167.4 SPM	162.6 SPM	145.2 SPM	181.8 SPM	168.8
	Pho-T. R.	89.35%	87.18%	79.1%	75.74%	63.43%	71.68%	75.42%
	MLOR	11.13 SPU	14 SPU	8.55 SPU	5.92 SPU	4.59 SPU	6.06 SPU	7.82
2	**Sp. Rate**	126 SPM	126 SPM	147 SPM	132 SPM	112.2 SPM	126 SPM	128.6
	Pho-T. R.	83.42%	81.22%	70.99%	70.55%	62.83%	63.07%	69.93%
	MLOR	5.63 SPU	6.3 SPU	5.36 SPU	3.77 SPU	3 SPU	3.87 SPU	4.46
3	**Sp. Rate**	66 SPM	87 SPM	72.6 SPM	56.4 SPM	70.2 SPM	72.6 SPM	71.76
	Pho-T. R.	57.36%	68.46%	47.68%	41.09%	44.12%	40.7%	48.41%
	MLOR	3.47 SPU	2.93 SPU	2.65 SPU	1.61 SPU	1.91 SPU	2.46 SPU	11.56
4	**Sp. Rate**	112.8 SPM	99.6 SPM	91.2 SPM	109.2 SPM	100.2 SPM	118.8 SPM	103,8
	Pho-T. R.	72.83%	68.98%	70.11%	61.74%	62.12%	70.08%	66.60%
	MLOR	4.91 SPU	3.92 SPU	3.51 SPU	3.34 SPU	3.44 SPU	4.39 SPU	3,72
5	**Sp. Rate**	120.6 SPM	151.2 SPM	133.8 SPM	139.2 SPM	114.6 SPM	128.4 SPM	133.44
	Pho-T. R.	85.46%	78.83%	69.83%	67.39%	65.9%	64.11%	69.21%
	MLOR	5.68 SPU	6.23 SPU	5.36 SPU	4.86 SPU	3.33 SPU	3.93 SPU	4.74
6	**Sp. Rate**	147 SPM	108.6 SPM	139.8 SPM	127.8 SPM	92.4 SPM	129.6 SPM	119.64
	Pho-T. R.	79.65%	64.51%	67.23%	59.96%	50.56%	59.13%	60.27%
	MLOR	7.82 SPU	3.92 SPU	6.21 SPU	4.35 SPU	3.55 SPU	4.15 SPU	4.43
7	**Sp. Rate**	75.6 SPM	83.4 SPM	71.4 SPM	73.8 SPM	73.8 SPM	53.4 SPM	71.16
	Pho-T. R.	63.44%	59.97%	50.44%	43.81%	45.52%	41.3%	48.20%
	MLOR	3.52 SPU	3.03 SPU	3.08 SPU	2.56 SPU	2.65 SPU	1.58 SPU	2.58
8	**Sp. Rate**	126.6 SPM	124.2 SPM	108.6 SPM	115.2 SPM	100.2 SPM	115.8 SPM	112.8
	Pho-T. R.	67.24%	63.07%	54.87%	57.86%	48.89%	53.36%	55.61%
	MLOR	4.66 SPU	3.43 SPU	3.45 SPU	3.18 SPU	2.70 SPU	3.27 SPU	3.20
9	**Sp. Rate**	99.6 SPM	127.9 SPM	98.4 SPM	112.2 SPM	124.2 SPM	130.8 SPM	118.7
	Pho-T. R.	50.04%	69.58%	58.27%	54.85%	55.91%	54.99%	58.72%
	MLOR	5.05 SPU	4 SPU	2.94 SPU	3.41 SPU	3.93 SPU	4.67 SPU	3.79
10	**Sp. Rate**	88.8 SPM	120 SPM	108 SPM	118.8 SPM	95.4 SPM	112.2 SPM	110.88
	Pho-T. R.	56.35%	58.09%	56.2%	57.23%	48.55%	51.6%	54.33%
	MLOR	3.92 SPU	3.67 SPU	3.46 SPU	3.60 SPU	3.12 SPU	3.51 SPU	3.47

In order to look for possible significant improvements in the three measures, the data was run through the software IBM SPSS. Since the number of the participants was too little, a

non-parametric test had to be employed. Therefore, Mann-Whitney U Test was used to analyze the data.

The pre-treatment results, as expected, had shown no significant difference between the study group and the control group. In the comparison of speech rates between the average score of the treatment stage and the first week's scores, study group did not show any significant improvement. The first week's percentages for phonation-time ratios were also compared to the average scores, and found insignificant (.343). Also, the comparison of the first week and the average mean length of runs was not found significant.

The control group did not demonstrate any significant improvements, either. The comparison between the first week and average speech rate scores of the control group was not significant (.937). It was the same for the phonation-time ratio (.240), and for the mean length of runs (.065).

Analysis also showed that the study helped participants to achieve accuracy to some degree. Accuracy here, of course, implies the suggested vocabulary provided to the participants. But this does not mean that there were not any errors and mistakes in samples, the possible reasons of which will be discussed in the next section. Even though it is understandable regarding the participants' levels of English, all of the speech samples included many grammatical errors, such as using an irregular verb as a regular one by adding the suffix "-ed" at the end of it.

Moreover, in three of the samples, S2 tended to use her native language when she could not recall the correct word for the context:

S2: *He is trying to tap… **sıkmak** [tighten]… scratch the **vida**s [screw]*. (Week 1)

S2: *And take it to p- pla- **ne onun adı** [what's it called]…* (Week 5)

S2: *And then, all people g- togeth- gathers… **işte** [you know]…* (Week 6)

Another phenomenon observed in the samples was that the participants used words that actually are in different parts of speech or do not exist:

S9: *And there was a **holy** in his hand.* (Week 3)

S10: *And there was a religion man that with **Christian**.* (Week 3)

In this sentence, S9 means that the priest had a "cross in his hand" by saying "holy in his hand", while S10 indicates the same object by "Christian". Another example:

S8: *And she woke up, and she- she's wearing her **nightgrowns**.* (Week 6)

By "nightgrowns", S8 implies that the landlady wore a "nightgown".

Yet another example:

S3: *And the **prior** cam- cames with cross.* (Week 3)

By "prior", she clearly means "priest". This sentence is also an example of an obvious grammatical error, with "came" becoming "cames".

Another implication of the results was that some of the participants could not follow the story arc. Actually, the 3rd week's film clip, *Battleship Potemkin*, seems to have been particularly incomprehensible to the participants.

S1, for instance, tells a story that is slightly different from the actual plot. In the film clip, there is a priest who comes out on the deck of the battleship to watch the execution of a group of marine soldiers by their co-workers. He hits his palm thrice with the cross in his hand,

probably sanctioning the execution, but the enforcers do not carry out the execution, rebelling against their commander in the subsequent scene. S1, however, tells that the priest was there to do "a magic trick", which influenced the enforcers to give up the execution.

S2 clearly stated that she could not really understand what the marine soldiers were trying to do in the clip. S3, for another, claims that the priest shows up and "says something", while all the priest does is to stand on the deck, and hit his palm with the cross. He does not have any lines in the scene. S6, again, remarks that she did not understand what the priest was doing with the cross. S7, who probably did understand the clip, but was not able to find the right words to narrate the plot, referred to the soldiers as "boys", and the priest as the "old boy". She also stated that she could not understand what the "old boy" did, and expressed that the soldiers who were put before the firing squad died after what the priest did. S8, on the other hand, attests that a soldier died each time the priest hit his palm with the cross, while such a thing never happened in the clip.

Another problematic film clip was from the 6th week, *The Lodger: A Story of the London Fog*. The film is set in London, and tells a story inspired by the infamous killer, Jack the Ripper. The killer is a lodger at an old lady's house, and he goes out to kill at night. A couple meet at the exit door of a theater, who afterwards take a walk in London. Meanwhile, the lodger tries to sneak out of the house he stays in, and unintentionally wakes up the landlady in a nightgown. The lady gets out of the bed, and sees from the window that her tenant is leaving the building. Then, the couple quarrel for a reason, and split, after which the woman encounters the killer, and gets murdered. What S2 tells after watching that week's clip clearly indicates that she did not catch the plot:

> ***S2:*** *There is couple in front of a building. And they are laughing, and- something like that. And then, they… I don't know.* [Laughs.] *Okay. I pass it, this one. And there is a man. He- He go- He went his- his- I don't know. He went a home. And he wanted to- he wanted to enter. And he opened the door, and he entered. And there is a old woman in… She was sleeping. And then, she felt something, and she woke up. And the other- the man came to the- came to- entered a room. And she look at- looked at the window, and she saw someone en- someone there.* (Week 6)

Accuracy, as stated before, seems to have been achieved to some degree. S1 seems to have used only one item of accuracy among the 2nd week's group of words and phrases: "light up a cigarette". Apart from that, she used the word "basket" instead of "stroller", and did not use the others. S2 did not use any of the suggested words or phrases, while S3 used "stroller" and "light up a cigarette". S4, finally in the study group, used only "light up a cigarette". In the control group, on the other hand, S5 did not use any of the vocabulary suggested to the study group, instead, she indicated to her point with expressions such as *"He thought that the woman dropped the baby in the street, and he gave the baby to the woman."* S6, S7, and S10, again, did not used the suggested words, and expressed themselves with accommodative wordings. S8, on the other hand, used the phrase "baby car" instead of "stroller", while S9 referred to the same object as "the baby thing".

In the 3rd week, S1 used "battleships", "cross", "rifle", "rebel", and "priest"; S2 used "battleship", "cannon", "priest", and "cross"; S3 used "battleship", "rebel", and "priest" (as "prior"); and S4, eventually, used "battleship", "priest", and "cross". Among the control group, who were still not suggested any vocabulary whatsoever, S5 used only "priest"; S6 used only "cross"; S7 used none, and expressed herself with other words; S8 used "cross" from among the suggested vocabulary, and "war ship" instead of "battleship", and "wise man" instead of "priest"; S9 did not use any of the words suggested, but he used "holy" instead of "cross"; and S10 used "religion man" for "priest", and "Christian" for "cross".

In the 4th week, S1 used “cave”, “lantern”, and “illuminate”; S2 used only “cave”, saying “lighten” instead of “illuminate”; S3 used only “cave”; S4 used “cave”, “illuminate”, and “lantern”. S5 used “catacombs” for “cave”, which was highly surprising for his level of English. Apart from this, S5 did not use any of the suggested vocabulary. S6, S8, and S10 used “cave”, and none of the others; and S7 and S9 did not use any of the words suggested.

In the 5th week, S1 used “fork”, “shoelace”, and “nail”; S2 used “shoelace” and “nail”; S3 used none of the suggested vocabulary; and S4 used only “shoelace”. As mentioned before, the suggested vocabulary was also given to the control group after the previous week’s interviews, so they were also expected to use the words. S5 used “fork” and “nail”; S6 used none of the words; S7 and S9 used only “shoelace”; S8 used only “nail”; and S10 said “shoe cases” instead of “shoelaces”, possibly mistaking it because of the similarity in their pronunciation.

In the final week, S1 used “nightgown” and “sullen”, using “rangers” instead of “picket”; S2 and S3 did not use any of the suggested vocabulary; S4 used “lodger” and “nightgown”. In the control group, S5, S6, S7, and S10 used none of the words; S8 said “nightgrowns” instead of “nightgown”, which, again, might have been an error due to the similarity in the pronunciation of “gown” and “grown”; and S9 used only “sullen”.

4. Discussion and Conclusions

The results have turned out not to match the authors’ expectations as to fluency, which may have been caused by several reasons. First of all, this study was not conducted under completely controlled conditions. The authors were not teachers of the participants, thus, there is a possibility that the teaching –or memorization– of the songs were not done systematically. The students in the study group were given the songs and the lyrics, and were expected to study and memorize them on their own until the subsequent week’s interviews. However, they may not have done as they were told, and might have, for instance, listened to the songs only on the day of the interviews, right before the performance. Therefore, this may have caused a remarkable lack of control. Wan et al. (2010) state that there are also several techniques that can be used while practicing singing, such as hand tapping. The lack of control and systematicity also prevented the researchers from involving such techniques in the study. What is more, the fact that the researchers did not teach the participants, and did not have the chance to interfere with the participants’ vocabulary teaching also caused the researchers to lack the opportunity to make use of the *lexical priming* effect. Benefiting from the lexical priming theory might have made a difference in achieving accuracy, and therefore fluency.

Another aspect of the problem with fluency improvement may have risen from speaking anxiety. In their study with Turkish students at the preparatory school of a state university in Turkey, Öztürk and Gürbüz (2014) assert that students regard speaking “as an anxiety-provoking factor” (p. 14), and impromptu speech in particular has a higher influence on the anxiety level of students. Moreover, they state that this anxiety causes students to speak more carefully, which results in an apprehension of error in vocabulary and pronunciation. In this case, as a list of suggested vocabulary was given to the participants, they may not have suffered from an anxiety to use the correct words in accurate contexts, while still be affected by speaking anxiety.

Another problem might be the use of film clips that were not suitable to the age group and level of English of the participants. Although encountered in the 6th week, too, this phenomenon is particularly notable in the 3rd week’s interviews, where 6 of the students prove to have failed to catch up with, or plainly misunderstood, the plot. This is actually peculiar, given that the 3rd week is also when the highest rate of accuracy was reached. At this point, it

must be noted that all of the words given that were used by the participants during the interviews were employed in valid contexts with accurate meanings.

Yet another reason for the students not to achieve the expected improvement may be linked to the concept of *proceduralization*. According to the skill acquisition theory in the field of second language acquisition (SLA), skills are acquired in a sequence which involves the three stages of knowledge: *declarative knowledge, procedural knowledge,* and *automatic knowledge* (DeKeyser, 2015). The first stage involves an explicit teaching and demonstration of the knowledge, and large amounts of repetition, which constitutes a basis on which the second stage, *proceduralization*, can be built. In their study with 20 students who learned English as a second language in the United States, de Jong and Perfetti (2011) divided the participants into two groups, and asked one group to tell different short stories first in 4 minutes, then 3, and finally, in 2. They asked the second group to tell the same story, again, in 4, 3, and 2 minutes. The researchers found that the latter group grew more fluent in speaking, and in delayed post-tests, they saw that this group maintained the improved level of fluency. They concluded that repeating the same practice, rather than varying the types of practices, contributes to the transition to the proceduralization stage. In this study, the participants were given different songs each week, therefore, proceduralization may have been hindered by this practice.

Even though fluency was not improved as expected, however, it can be seen that the accuracy of the participants in the study group is higher than the accuracy of those in the control group in every week's interviews. This issue can be explained by the lists of words given to the participants in the study, as mentioned before. Although the lists were given to both of the groups, since the study group used them in more meaningful contexts than the control group, it is no surprise that their level of accuracy demonstrated an improvement. Nevertheless, it must be noted that accuracy in this context involves only the suggested vocabulary provided to the participants. As explained and exemplified before, all of the participants, regardless of the group they were in, tend to make grammatical and vocabulary errors while speaking.

It was also stated earlier that the plot of the clip taken from the film "Battleship Potemkin" was seen to be particularly difficult for the participants to follow or grasp. One reason of this might be the unfamiliarity of the students to the context and environment of a battleship. Moreover, since they did not know how the events in the previous scenes led to that point, they may not have found a reason for a priest to be on a battleship. Furthermore, the participants did not even know why the Admiral wanted a group of marines executed by a firing squad. These may have caused them to bring the pieces together to form a general impression of the plot, while having to follow the flow of events.

All said and done, it can be stated that the results of this study do not match those of which conclude that singing improves speech fluency. The possible reasons for this were discussed, and in order to reach sounder results which, contrary to this study, may comply with the studies in the literature, researchers who investigate whether singing has any positive effects on the speech fluency of Turkish EFL learners may (1) conduct a more controlled study, in which they can monitor and interfere with the process of the memorization or teaching of the songs and lyrics; (2) use several techniques to practice the singing; (3) use context-inducing materials that are more suitable to the age group and the level of English of the participants; (4) take into account the speaking anxiety of the participants, and try to find means to lower it as much as possible; and (5) consider the factors that contribute to proceduralization, and devise treatments accordingly. One possible implication for classroom is that, by utilizing the *lexical priming* effect, that is, using, composing, or having composed songs that comprise of closely related chunks, teachers may increase the students' level of accuracy and fluency. As

the world is changing the learners' needs and interests are also changing. The present study, in this sense, is unique in its innovative approach to language teaching. Thus the study has further implications for theoreticians, practitioners, and materials writers as it encourages using new ways to develop language skills of adolescent learners.

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