

Is it Possible to Enhance the Creative Thinking Skills of EFL Learners through Training? An earlier version of this article was presented in the 5th NTELT İstanbul Conference on March 30, 2018.

Esim Gursoy^{1*}, Hatice Kübra BAĞ²

¹Faculty Of Education, ELT Department, Uludag University, Bursa, Gorukle, Turkey

²Kınık Secondary School, Ministry of Education, Pazaryeri Kınık Secondary School, Bilecik, Turkey

Corresponding Author: Esim Gursoy, E-mail: esimgursoy@yahoo.com

ARTICLE INFO

Article history

Received: August 23, 2018

Accepted: October 24, 2018

Published: December 28, 2018

Volume: 9 Issue: 6

Advance access: November 2018

Conflicts of interest: None

Funding: None

Key words:

Creativity,
Creative Thinking,
Creative Thinking Training,
21st Century Skills,
Visual-Stimuli,
Audio-Stimuli

ABSTRACT

In the light of continuous change of global perspectives, current educational contexts have been evolving to cover the necessary 21st century skills that the individuals must acquire. Two of the 4Cs (creativity, critical thinking, collaboration and communication) of the 21st century educational trends; creativity and creative thinking are the key characteristics of the learners. Considering as one of the requirements of the global communication, knowing and learning a foreign language should keep up with the current improvements in the field of education. Language learners should think critically and creatively in order to communicate with people to enhance the global collaboration. The purpose of this study is to enhance students' creative thinking skills through appropriate training and to understand the effectiveness of the stimuli type –visual or audio. A pre-experimental research design was chosen for the implementation of the training program. Two different groups –visual and audio – were given either visual or audio stimuli at the beginning of creative thinking tasks. 12 participants were chosen via convenience sampling for each group and the ages of the learners are between 12-13. The training continued for 6 weeks and the participants took 3 hours of training were week. Each training session covered creative thinking tasks which were adapted or designed for the development of creative thinking skills –fluency, flexibility, originality and elaboration. A task-based pretest was implemented before the treatment and the students' creative thinking skills were measured through figural, written and oral tests and the post-test was implemented to check the effectiveness of the training program. The results were scored by two different raters and the scores were analyzed through SPSS program. The results indicate that the creative thinking capacity of both groups has improved however the visual group students have higher creative thinking after the completion of the training program. This study suggests that although regarded as a higher level of reasoning, creative thinking can be enhanced to some extent among the secondary school learners of English and it should be a part of EFL curriculum as an essential learning skill.

INTRODUCTION

Global world requires the individuals to think critically and creatively in order to communicate with others in a collaborative way to the construction of the knowledge, solving the problems and meeting on a common, global basis. Regarded as the “4Cs” of the 21st century, “communication”, “collaboration”, “critical thinking” and “creativity” are essential skills that the individuals must have to keep up with the shifting paradigms of the globalized systems. Current educational programs integrated with these skills create a universal perspective that regards not only the individuals, but also the societies with respect to the change without the limitation of boundaries. In a world without boundaries, the importance of knowing more than one language is undeniable. Foreign language learning that aims to promote the acquisition of global skills is essential and it is only possible with the adoption of new perspectives by the education pro-

grammers, curriculum designers, teachers, researchers, and the learners.

As being one of the “4Cs” of the 21st century skills, creativity is a hotly debated issue among not only the language teachers and researchers but also the educators and researchers from all disciplines (e.g., Guilford, 1967; Rhodes, 1961; Torrance, 1967; Amabile, 1996; Craft, 2001; Kaufman & Sternberg, 2006; Maley & Peachey, 2015; Runco, 2011). Creativity is commonly regarded as a process which can result in the solution or identification of problems, normally as a result of divergent and innovative thinking (Carter, 2004). Described as the production of many various ideas on a given situation, divergent thinking was one of different kinds of intellectual skills and processes that J. P. Guilford (1970) introduced in his Structure of Intellect Model. Accepting creative thinking as a divergent production; E. Paul Torrance has based his studies on Guilford's model and he developed

an assessment procedure for the creative thinking capacity of the individuals. According to him, creativity can be enhanced through training and the education systems should be designed in such a way that it can promote creative thinking skills of the learners.

To be able to make the students think in a productive and creative way using their imagination is one of the aims of the educators. Creativity is about “thinking, problem solving, inventing and reinventing and flexing one’s imaginative muscles” (Cremin, 2009, p.4). Regarded as a sophisticated learning experience that includes all these skills besides many others, language learning is a creative process that requires learners’ employment of their creative thinking skills. Language as an aspect for communication has a creative nature itself; so the learners are expected to think and act in a critical, imaginative and creative way while learning a new language, too. Thus one of the most important aims of a second language teacher is to promote the creative thinking of the learners with the effective training using creative activities. Papalazarou (2015) suggests that “by integrating creative activities in English language teaching, we encourage learners to practise an important element in language learning which also lies behind personal growth and the development of culture and society: *thinking creatively*” (p.37).

However creativity is still attributed to giftedness and a higher level of production while the creative thinking of the students is regarded as a higher level of thinking capacity and as a luxury in ELT classrooms. Taking it as the last step of language learning, teachers and researchers tend to neglect the importance of creative thinking skills in the earlier stages of the acquisition process. Most of the researchers who study in this field have focused on creative thinking capacity of advanced learners or the learners at the university level. So there are very few studies administered to the elementary and secondary school students. Furthermore most studies done in the field are conducted to measure the effectiveness of a separate creative thinking training beside the curriculum; they weren’t integrated with the current course curricula. This study is significant in that it tries to prove that all learners have a creative thinking capacity and this capacity can be enhanced through various activities included in a creative thinking training integrated with the current course curriculum even in a secondary ELT classroom. In this specific case, the researchers measure the effectiveness of the stimulus and they try to decide whether visual or audio stimulus is more effective to enhance the creative thinking of the students in English class.

Given that all the students have a specific learning style that determines their preferences about their learning process; it is possible to promote the creative thinking of them by organizing the language learning tasks according to their preferred styles. Described generally as “an individual’s natural, habitual, and preferred way(s) of absorbing, processing, and retaining new information and skills” (Reid, 1995, p. viii); learning styles based training may be the key that opens the new perspectives for the improvement of creative thinking capacity. Using a pre-experimental pretest-posttest research design this study aims to enhance the creative think-

ing skills of the students with training and to understand the effect of the type of stimulus on the students’ development of creative thinking skills. It seeks to reveal whether visual or audio stimuli are more effective for the improvement of creativity.

LITERATURE REVIEW

Because of its complex, vague and elusive nature, creativity is hard to define so there have been different versions of creativity definition from various points of views throughout the history. Torrance (1988) argues that “creativity defies a precise definition because it is largely unseen, nonverbal, and unconscious” (p.43). It’s argued that the lack of a universal definition has discouraged the researchers from studying in the field and the creativity remains a relatively neglected research area (Acar, Burnett & Cabra, 2017, p.133). Although highly criticized on the factors it that define creativity, a general definition was proposed and according to that; creativity is commonly accepted as the ability to produce a work or response that is novel, rare, original and appropriate, useful, adaptive (e.g., Sternberg, 1993; Amabile, 1996; Runco & Pritzker, 2011).

The modern creativity research started with J. P. Guilford’s speech for the American Psychological Association in 1950 and the search for a better education for a more intelligent individual was strengthened by the Sputnik crisis. Collaborating with the psychology, education systems tried to keep up with the global race and the researchers sought ways for a more effective education. Creativity was no longer regarded as a high-inborn skill which was necessary for the production of artistic work; it was seen as a tool required for the success in every field of the modern world. Thus, Cropley (2011) claimed that;

...the result was that discussions of creativity in applied settings such as schools came to be dominated by questions of recognizing, measuring and fostering creative thinking (i.e., process), and the purpose of fostering creativity came to be seen not as production of sublime artistic works, but as promoting processes and personal properties related to creativity. The role of educators and managers was then seen as providing an appropriate environment (i.e., press) (p.358).

E. P. Torrance was one of the pioneers who focused on the creativity and creative thinking and he related the creativity research to education. Accepting that the creative thinking was a skill that the individuals must have in the modern world, education authorities had to organize their programs in a way that the creativity of the learners could be enhanced. The need for the learners who can produce various, brilliant ideas and provide different original solutions to problems has led the way for the creativity and creative thinking research.

Creative Thinking as a Divergent Thinking Process

Associated with the quality and originality of responses that individuals produce; creativity is also defined as “the ability to come up with new ideas that are surprising yet intelligible, and also valuable in some way” and to be able

to “come up with new ideas”, one has to think creatively (Boden, 2001, p.95).

Equally important, essential skills of the 21st century; creative and critical thinking skills are considered as two interrelated terms; but the distinction should be made because of their different perceptions on problem-solving. Critical thinking is a convergent production which is defined by Guilford (1970) as the “generation of information from given information, where the needed information is fully determined by the given information” (p. 158). However, creative thinking is seen as a divergent process of imagining, making connections and “possibility thinking” which is “dialogically opening an idea by posing a possibility” (Maine, 2015, p.59). This divergent process of generating multiple possible solutions to a problem or “generation of many appropriate responses to a question” is called divergent thinking (Cliatt, Shaw & Sherwood, 1980, p.1061).

Creative Thinking Skills in ELT Classroom

Foreign language learning requires learners to create the meaning by themselves through using their critical and creative thinking capacities in that it depends on the integration of real life skills with learning. Creative thinking is an essential component for the language use in that it requires learners to use their thinking processes to be able to create new, intelligible, relevant and original meanings. So the language learners should be “creative in their production of ideas, and critically support them with logical explanation, details and examples” (Kabilan, 2000, p.1).

Promoting creativity in ELT classroom is important in that it provides the opportunity for “the necessary affective and cognitive engagement of the learners vital for language acquisition” (Tomlinson, 2015, p.24). It’s believed that through the effective use of creative thinking in the language learning process, “children develop relevant cognitive skills, such as observing, questioning, comparing, contrasting, imagining and hypothesising, that they need in all areas of the curriculum” (Read, 2015, p.29). Provided that the learners in an ELT classroom are able to make use of their creative thinking skills effectively, they can easily get into the process of producing the language and creating new meanings.

Testing Creative Thinking

Accepted as the most prominent figure in creative thinking research, E. Paul Torrance (Torrance, 1996; Kim, 2006, p.3) defined creativity as;

A process of becoming sensitive to problems, deficiencies, gaps in knowledge, missing elements, disharmonies, and so on; identifying the difficulty; searching for solutions, making guesses, or formulating hypotheses about the deficiencies: testing and retesting these hypotheses and possibly modifying and retesting them; and finally communicating the results.

Torrance has claimed that this process can be enhanced through appropriate training. In order to understand the creative capacity of the individuals, Torrance has developed Torrance Tests of Creative Thinking (TTCT). Torrance’s ba-

sic aim was “understanding and nurturing qualities that help people express their creativity” (Kim, 2006, p.4). He designed his test not to measure and give points to the creativity of the people; instead he aimed to understand the nature of their creativity to enhance and nurture it. Torrance described fluency, flexibility, originality and elaboration as the creative thinking skills and he measured the capacity of the learners using these skills in his test (TTCT). Fluency is described as the ability to produce a lot of ideas and the flexibility is to generate ideas within the ideational categories whereas the originality is defined as to come up with the unusual, unique, different responses and elaboration is embellishing and improving on the ideas. He suggested that these skills are supposed to measure the participants’ creative thinking and they provide effective insights for nurturing the creativity. However he argued that having a high degree of these creative thinking skills doesn’t mean that the individuals act highly creatively. They, indeed, increase one’s possibility to think and act creatively.

Training for the Development of Creative Thinking Skills

Having accepted divergent thinking (e.g., Guilford, 1950; Torrance, 1966) “as a distinct capacity making a unique contribution to creative thought, scholars interested in the development of creativity began to apply divergent thinking tasks in the design of training” (Scott, Leritz & Mumford, 2004, p.363). Most creative thinking training programs have been related to the training on divergent thinking. So providing opportunities for students to develop their fluency (the ability to produce a lot of ideas), flexibility (the ability to produce ideas that fit into different ideational categories), originality (the ability to produce unique and unusual ideas), and elaboration (the ability to develop their ideas) is a necessary part of divergent thinking training programs. Torrance (1966, 1972) was one of the pioneers of the studies on creative thinking and he claimed that the creativity can be developed through appropriate training.

Furthermore, Rose and Lin (1984) conducted a meta-analysis to control the effect of creativity training on the development of divergent thinking and they provided empirical evidence that training on the creative thinking skills of the learners can enhance divergent thinking. They also concluded that the creative training programs tend to improve the verbal creativity and that could be explained by the verbal nature of activities in the creativity training programs.

A meta-analysis by Scott, Leritz and Mumford (2004) showed that creativity can be enhanced through training and “creativity training contributed to divergent thinking, problem solving, performance, and attitudes and behavior for younger and older students and working adults, and for high achieving and more “run of the mill” students” (p.382).

Domain specificity is a recent topic in the creativity training research and it is defined as “a theory that argues that the skills, traits, or knowledge that underlie successful (or creative) performance in a given domain are largely unrelated to the skills, traits, or knowledge that underlie successful (or creative) performance in other domains” (Runco & Pritzker,

2011, p.404). According to the studies (Baer, 2011, p.404) relating the domain specificity and creativity; even its predictive validity of the performance on the same tasks for the next practices is relatively high; there hasn't been significant relationship "among creative ratings on different products". According to Baer (2011) "training in divergent thinking (which is the most common kind of creativity training exercise) can also be targeted to specific domains, or even to specific tasks within domains" (p.406). Having a domain specific view of creativity, the aim of this study was to understand the effectiveness of a training which had specific tasks – visual stimuli and audio stimuli tasks – on the promotion of EFL learners' creative thinking skills.

Because of its elusive nature and difficulty to measure empirically, creative thinking remains a neglected area of research in ELT. The researchers and educators consider it as such a high, abstract level of thinking that only the advanced or adult learners can reach. Furthermore much of the creative thinking research has been conducted in a way that a separate training is administered and the participants are measured in their own language to see the effectiveness of the training. The researchers tend to administer their studies in a quantitative manner looking for the correlations between the creative thinking and other essential aspects of language learning such as language proficiency, vocabulary use, literacy skills, etc. (e.g., Fleith, Renzulli & Westberg, 2002; Ghonsooly & Showqi, 2012; Hajilou, Yazdani & Shokrpour, 2011; Karimpour & Chopoghlu, 2014; Pishghadam, Khodadady & Zahibi, 2011; Sandlund, Linnarud & Norlander, 2001; Seddigh & Shokrpour, 2013).

Significance of this study is its approach to creative thinking and the target sample. The creative thinking training is administered through the activities integrated with the current English course curriculum of the pre-intermediate level of learners. The aim is not to measure the creative thinking the learners in general but to understand the effect of the training on their use of creative thinking in English course.

METHOD

Participants

This study aims to figure out whether it is possible to develop creative thinking skills of EFL learners in English lesson by training or not two different kinds of stimuli –visual and audio during the creative thinking activities. It "aims to identify" tries to understand the effectiveness of stimuli type on creative thinking of the learners. So the participants were divided into two groups.

Subjects were 24 secondary school students in an EFL context that were chosen via convenience sampling. 12 students were placed in each group (visual and audio) and the visual group took the creative thinking training via visual stimuli whereas the audio group took the training via audio stimuli. All participants could complete the pretest and posttest; they all participated in training.

The students come from different villages and their ages are between 12-13; they have similar socio-cultural and so-

cio-economic background. They have also the same English learning background; 90% of them were classmates from the kindergarten. They have been learning English since the fourth grade and they have six hours of English in a week. Participants are pre-intermediate learners of English and both groups have nearly the same proficiency level.

Procedure

Research design

A pre-experimental pretest-posttest research design was adopted to understand the effectiveness of the creative thinking training and the stimulus type (visual or audio) on the thinking capacities of the students in an ELT classroom. Pre and posttests were developed based on the idea of generally accepted Torrance Test of Creative Thinking which measures the divergent thinking skills – fluency, flexibility, originality and elaboration. Students were given a creative thinking training integrated with their standard course curriculum.

"Although there were two groups, both groups took two different treatments and there was no other group to control the development of creative thinking without treatment."

In order to understand the effectiveness of training on creative thinking of the learners in English class, a training course was conducted and a pretest-posttest assessment comparing the results from two groups –visual and audio stimuli groups- was adopted. There are two groups – visual and audio because one of the general aims of the research was to make comments on the effect of different stimuli type in language learning activities that promote creative thinking in the learners. So the study has begun with the following research questions.

1. Is it possible that the creative thinking skills of secondary school EFL learners are enhanced through training?
2. Is there a difference on the creative thinking scores between the visual group which has experienced creative thinking training tasks with visual stimuli and the audio group which has experienced creative thinking training tasks with audio stimuli?
3. To what extent do the creative thinking sub-skills (fluency, flexibility, originality and elaboration) of the participants improve with training?

Instruments

This study aimed to measure the creative thinking capacity of the EFL learners in language learning process and tried to understand the common tendency among students to form a basis for the training. So instead of adopting TTCT directly, some of the activities were adapted to be appropriate for the ELT classroom and some new activities were added to measure the creative thinking skills of the learners in English.

In order to measure the creative thinking capacity of the students before and after training, a pretest-posttest design was employed. The pretest consists of three subtests; figural test, verbal test and oral test (Appendix 1). In figural test, students were asked to "complete an abstract shape" and "draw circles" as many as they can in ten minutes for each

task. This test was used to eliminate the effect of learners' English proficiency on creative thinking and to measure the creative thinking independently from language. The written test includes five tasks: "unusual uses", "imaginary story", "possible solutions", "asking questions", "causes and consequences". The oral test has two tasks: "imagery through music" and "imagination on future". Posttest includes the same tasks; however in order to eliminate the effect of practice; the shapes, objects, situations, pictures and the music were changed with similar equivalents.

For the scoring of the tests, four skills of the creative thinking – fluency, flexibility, originality and elaboration were employed and for the scoring of skills a 4-point rating rubric (1-unsatisfactory, 2-questionable, 3-satisfactory or 4-outstanding) was used. For fluency, flexibility and originality scores, there were no predetermined criteria and the scoring was norm-referenced. For the scoring of fluency, the students with the most responses got 4 and students with the least responses got 1. For example, for the "unusual uses of a sponge" task in pretest; the highest sentence number was 20. The students who produced 20-16 sentences got "4-outstanding", 15-11 sentences got "3-satisfactory", 10-6 sentences got "2-questionable" and 5-1 sentences got "1-unsatisfactory". For the flexibility score, the categories in the students' responses were determined and the students who could produce ideas into more categories got the highest points. For example, for the "possible solutions" task, students were supposed to write as many ways as they could to stay cool in a hot day. Evaluating all student answers, the categories were determined as "activities, actions, food-drink and clothes" and the skills were scored as "4-outstanding" for the students who could write solutions in four categories and "1-unsatisfactory" for the students who could write solutions in one category. For the originality score, the frequency of the responses was calculated and the answers that were frequent in 4%-16% of the sample got "4-outstanding", 20%-48% of the sample got "3-satisfactory", 50%-68% of the sample got "2-questionable", and 70%-100% of the sample got "1-unsatisfactory". For the scoring of evaluation skill, there were four predetermined criteria: a) the ability to form a basis for their ideas, regarding time, place, characters, etc., b) the ability to describe and embellish on ideas by using adjectives and descriptive structures, c) the ability to connect the ideas in a coherent way, d) the ability to use fantasy and humor in their production of ideas. Because of the nature of creativity, there is no highest point that the students must reach or there is no minimum point that the students can be regarded as unsuccessful.

For the inter-rater reliability, the researcher gave one-week training to another scorer on creative thinking, its sub-skills, testing and evaluating creative thinking skills of the learners. The pretest scores of the students were rated by two scorers (researcher and the trained scorer) and the inter-rater reliability was calculated in SPSS and found ".858" for the figural pretest, it is ".831" for the written test, and it is ".841" for the oral test.

The administration of pretest and posttests

The pretest was administered by one of the researchers before the training. Students were given ten minutes for each task in written and figural tests. The oral test was administered and recorded by the researcher and scored by two different scorers later. Students were taken one by one and it was conducted as an interview. The participants took the figural and written test during their English course and all participants (N= 24) took the tests. For the oral test, the students were interviewed one by one outside the classroom and on their spare times. Students were given the time they need to think.

The posttest followed the exact same procedures but the shapes, objects, situations, pictures and music were different in order to prevent the practice effect (Appendix 2). The whole administration process was exactly the same with the pretest and all participants took the test. All the data collected through pre- and posttests were used for the analyses.

A piloting of pretest with 12 students was administered in order to check the effectiveness on the scoring criteria. The participants in the piloting group –12-13 year olds- had the same level of proficiency and similar socio-cultural background with the participants of the study. Torrance's (1984) last version of scoring had been adopted first which had five criteria for the figural test and thirteen criteria for the written and oral test. Students were evaluated with a rating scale from 1 to 5, from "very poor to excellent". But the analysis showed that there were no strict boundaries between all thirteen criteria for the written and oral tests. For example, discrimination between "colorfulness of imagery" and "fantasy" scores of the students didn't give significance in the analysis. Furthermore, the analysis showed that 5-pointed scoring of the students' creative thinking skills was too vague. There was no clear explanation for the discrimination between the scores "2-poor" and "3-average" or "4-good" and "5-excellent".

Training

In order to enhance the creative thinking skills of the learners, a training program was designed including two different types of stimuli (visual and audio) for two different groups. The training was given by the researcher during a 6 week period. Students took 3 hours of training in each week and training tasks were conducted during students' English course. There were 12 students in both groups and all students could complete the training.

The creativity training was administered in parallel with the English course curriculum. Functions of the program were the same for both groups. But the implementation of them was different; one group was given visual stimuli at the beginning of creative thinking training tasks and the other group took the audio stimuli based on their tasks (Appendix 3).

Data analysis

The data collected through the pretest and posttest was analyzed with the Statistical Package for Social Sciences (SPSS), version 24. The homogeneity of the variance was observed

as normal in Kolmogorov-Smirnov test and no outliers were identified before the training. In order to answer the first research question a paired samples t-test was used and for the second and third research questions Mann-Whitney U test were conducted. The descriptive statistics for the results were analyzed. The statistical power of the tests was low because of the small sample size; so the effect sizes were calculated for all the research questions in order to measure the magnitude of effects.

RESULTS AND DISCUSSION

Results

In order to understand whether creative thinking capacities of the learners can be enhanced through training in an ELT classroom or not and to test the effectiveness of the stimuli type –visual or audio – on their creative thinking, a pretest-posttest, pre-experimental research design was employed through two treatment groups. The participants in both groups took the pretest and posttest and they could all complete the targeted training program. The results of the pretest and posttest were analyzed through SPSS Program, Version 24.

Assumptions of skewness and kurtosis were found to be satisfactory, and according to Kolmogorov-Smirnov normality test, the pretest results of visual and audio groups showed a normal distribution. No outliers were identified in the normal and detrended Q-Q Plots and observed values graphic indicated that the groups were homogeneous before the training.

R. Q. 1: Is it possible that the creative thinking skills of the secondary school EFL learners are enhanced through training?

The analysis showed that there was a statistically significant difference between the pretest (M=69.33, SD=14.07) and posttest (M=105.08, SD=20.41) results of the whole sample [$t(23)=-12.755, p=.000$] (See Table 1).

R.Q.2: Is there a difference on the creative thinking scores between the visual group which has experienced creative thinking training tasks with visual stimuli and the audio group which has experienced creative thinking training tasks with audio stimuli?

Because of the small sample size (12 participants in each group), non-parametric Mann Whitney U Test was conducted to determine whether being in a visual stimuli group would be more effective in the promotion of creative thinking skills or vice versa. As a result of the analysis, there wasn't a statistical difference ($p>0.05$) between the groups (see Table 3); however there was improvement in both audio (pretest: 67.67, posttest: 97.58) and visual (pretest: 71.00, posttest: 114) groups and this improvement was higher in visual group (see Table 2).

R. Q. 3. To what extent do the creative thinking sub-skills (fluency, flexibility, originality and elaboration) of the participants improve with training?

In order to identify whether there was a statistical significance between the fluency, flexibility, originality and elaboration scores of the groups before and after training,

Table 1. Descriptive statistics of pretest and posttest results

Outcome	Pretest			Posttest		
	N	M	SD	N	M	SD
	24	69.33	14.07	24	105.08	20.41

Table 2. Descriptive statistics on the creative thinking skills test results of the learners

Groups	Pretest			Posttest		
	N	M	SD	N	M	SD
Visual group	12	71.00	9.37	12	114.08	18.63
Audio group	12	67.67	17.89	12	97.58	19.39

Mann Whitney U Test was conducted for each skill separately (See Table 4).

Mann Whitney U Test indicated that there was a statistically significant difference between the visual and audio groups' posttest result of fluency ($U=32, p=.020$) and originality ($U=36.5, p=.039$) subskills whereas there wasn't a statistically significant difference between the groups' posttest results of flexibility ($U=41, p=.078$) and elaboration ($U=43, p=.101$) subskills.

According to the descriptive statistics of the means, it can be suggested that both the visual (M=19.17) and audio (M=17.67) groups got the highest point from flexibility sub-skill from the pretest. The visual group got the highest point from the originality (M=29.42) and elaboration (M=29.42) sub-skills whereas the audio group got the highest point from the elaboration (M= 27.42) sub-skill from the posttest. Furthermore both groups showed the greatest improvement in originality (visual group, pretest M=16.42 and posttest M=29.42; audio group, pretest M=15.42 and posttest M=26.08) and elaboration (visual group, pretest M=17.17 and posttest M=29.42; audio group, pretest M=17.25 and posttest M=27.42) sub-skills (See Table 4).

Discussion

By measuring the creative thinking skills, the point is not to evaluate the learners, not to rank them according to their points and not to label them as successful or unsuccessful. However, the aim of this research was to understand the creative thinking capacity of the participants and to determine whether a creative thinking training can help learners improve their creative thinking in an ELT classroom. In order to reach this aim and check the effectiveness of different kinds of tasks – in this case visual stimuli based tasks and audio stimuli based tasks- two groups were formed and two different treatments were conducted. For the visual group, the creative thinking tasks started with visual stimuli whereas for the audio group, the tasks began with audio stimuli.

For the empirical analysis of the research questions, pre-experimental research design was chosen and a pretest-posttest assessment of the creative thinking of the learners was conducted. It's important here to note that the aim of the pretest was to check the capacity of participants' creative thinking

Table 3. Rank of means and significance according to Mann Whitney test

Groups	Pretest				Posttest			
	N	Mean rank	Sum of ranks	P	N	Mean rank	Sum of ranks	P
Visual group	12	13.25	159.00	0.630	12	114.08	18.63	0.052
Audio group	12	11.75	141.00		12	97.58	19.39	

Table 4. Descriptive statistics on the creative thinking sub-skills of the participants

Subskills	Group	Pretest				Posttest			
		N	M	SD	P	N	M	SD	P
Fluency	Visual	12	18.00	2.92	0.600	12	27.50	4.94	0.020
	Audio	12	17.00	4.39		12	22.08	5.72	
Flexibility	Visual	12	19.17	2.65	5.62	12	28.42	5.08	0.072
	Audio	12	17.67	5.22		12	24.00	4.91	
Originality	Visual	12	16.42	3.31	0.541	12	29.42	4.10	0.039
	Audio	12	15.92	4.42		12	26.08	4.27	
Elaboration	Visual	12	17.17	2.79	0.908	12	29.42	5.10	
	Audio	12	17.25	3.72		12	27.42	5.08	0.093

before the training and the posttest aimed to check the effectiveness of the training regarding the difference between the pre and posttest results. It is generally accepted that “creativity exists along a continuum and is not a dichotomous measure, individuals can display differing levels and degrees of creativity” (Karpova, Marcketti & Barker, 2011, p.56). So the aim was not to give grades to the learners thus the results were not graded; they were just rated with certain criteria under the sub-skills of fluency, flexibility originality and elaboration.

The results suggest that in both groups there has been an improvement in the creative thinking skill capacity of the learners however the posttest scores of the visual group are higher than the audio group. This may be because of the fact that seeing an image of something activates the students’ background knowledge which is an essential prerequisite for the creative thinking. There is a notion that the imaginative capability of the students is affected by the knowledge which is regarded as “a storehouse for experience and information” (Noppe-Brandon et al., 2011; Drapeau, 2014, p.61). Drapeau (2014) also suggests that knowledge is an essential factor for the creative thinking of the individuals; so if the students are not aware of something, they cannot imagine it, and if they “cannot imagine something, they cannot create it” (p.62). This view implies the importance of visuals for the promotion of creative thinking skills of the students.

The findings of this study are consistent with the earlier research (Torrance, 1972; Cliatt, Shaw & Sherwood, 1980; Rose & Lin, 1984; Scott, Leritz & Mumford, 2004; Karpova, Marcketti & Barker, 2011). These studies all suggest that the creativity can be enhanced through appropriate training. This specific study tried to extend their argument in that designing a creative training program which has different kinds of tasks with different types of stimuli is possible to enhance the creative thinking of the students.

The results shown in Table 4, suggest that the improvement in the originality score is higher than the improvements

of other skills. Moreover, the students in both visual and audio groups got the highest score from the flexibility skill in pretest. It was regarded as the easiest category for them eliminating the effect of their lack of vocabulary. In posttests, students in both groups got the highest score from the originality and elaboration because of the fact that during the training students have learnt how to express their ideas creatively and productively. Furthermore, the vocabulary knowledge could be a reason for that development in that the students have improved their vocabulary during a 6-weeks training on the creative thinking. This conclusion could also be identified through the researchers’ observations; it can be suggested that the vocabulary of the learners had an important effect on their creative performances. Even if students can think creatively, if they don’t know the essential words that are equivalent to their thoughts, they cannot express their ideas productively. So it is also critical that the students should be provided with the appropriate level of challenge. If the students don’t have the necessary vocabulary level or the tasks are too hard for them, they tend to be demotivated to create ideas. The language learning program should be designed in such a way that it should allow learners to take control of the management of their ideas and to proceed at their own pace. The results of this study is very similar to a meta-analysis conducted by Scott, Leritz & Mumford (2004) in which they get some conclusions on “the effectiveness of creativity training as well as the course content and delivery methods that make effective training possible” (p.381).

Domain specificity and task specificity are two important issues regarding the creative performance of the students and delivery methods of the course. Domain specificity (Baer, 2011, p.406) view suggests that “creativity in one domain does not predict creativity in other domains” and task specificity is “a theory that argues that the skills, traits, or knowledge that underlie creative performance in different micro-domains within the same more general domain are

different and largely unrelated” (Runco & Pritzker, 2011, p.404). Baer and Kaufman (2012) support the view that “the skills that underlie creative performance are very task specific” (p.6). So there is no evidence that a learner, who performs highly creatively on a task, can show a creative performance on the other and the same idea is true for the domain specificity. Although there is a disagreement among the researchers on domain and task specificity in creativity; it is possible to say that there is no harm to organize the creative thinking tasks regarding these issues. Taking into consideration of the preferred learning styles of the learners and task specificity of creative thinking, the students can be provided with a rich range of tasks aiming various learning styles that promote their creative thinking skills.

One of the most interesting findings of the study was to realize that the siblings who live in the same house have very similar level of creative thinking capacity. There were 3 participants in the audio group who had a sibling in the visual group. It was observed that the siblings tended to draw the exact same pictures for the figural test and give very similar answers for the oral test. This finding supports the view that the creative thinking capacities of the learners are affected by their sociocultural background. From a sociolinguistic perspective, it matches with the view that the creative performance of the learners is determined by the social norms.

The problem with the first research question is that it can be explained with Hawthorne effect or practice effect. The development of the students’ creative thinking may be because they had practiced the language and they had known they were being tested, so they might act differently. Furthermore there are a number of studies which have found that if the students were aware of they were having a creativity test and if they were told to be original and different; they tend to act differently to cover the requirements (Manske & Davis, 1968; Speller & Schumacher, 1975; Tsai, 2014).

All of the students who took part in the study showed an improvement in their posttest results comparing with the pretest. The students who took training through visual-stimuli tasks achieved higher scores in the posttest; however there is not a statistically significant difference between the visual and audio group posttest results. This may be because of the creative thinking time and small sample size. Provided that the study is administered throughout a whole education year with a larger participant group, it can be more effective in answering whether the visual or audio stimuli is more effective to promote the creative thinking skills of the students in an ELT classroom. Thus the generalizability of the study results can be achieved. Furthermore, testing creative capacity of learners in a classroom context doesn’t always guarantee everyday creativity; so the fact that the lack of predictive nature of the study for the real contexts of the learners can be shown as one of the drawbacks of this study and the studies of this kind.

CONCLUSION

According to Drapeau (2014) “Students will make it a habit to express their creativity in an environment where they feel

encouraged to do so” (p.13). So for the promotion of creative thinking skills of the learners, they should be provided with a flexible learning classroom in which both the teacher and the students are respectful to each other’s ideas.

In a creative language learning environment “where students are asked to brainstorm many (fluency), different (flexibility), and unusual (originality) ideas; add to an idea (elaboration); or combine it with another idea (flexibility)” (Drapeau, 2014, p.18-19). This study is significant in that it provides evidence for the promotion of creative thinking skills in an ELT classroom where it is generally tended to be seen as an abstract thinking only the advance level of learners could reach. With the employment of the creative thinking tasks which is appropriate for the current level and learning styles of the learners, it is possible for the learners to think creatively in English course.

In such a short time the students have improved their thinking styles, they have learnt how to move beyond the stereotypes and they can make use of their creative thinking capacities effectively which is obvious in the posttest results, the observation data and the students’ products in the training process.

One of the limitations of this study is the small sample size. It prevents the results being generalized to other EFL contexts. Furthermore the sociocultural and socioeconomic background of the participants is very important in a creative thinking training program. Taking into consideration that the students for that specific case are from a rural area, it is hard to make comments for other EFL learners with similar educational background.

So as a further research, this study can be conducted with bigger groups for longer periods of time spent for the training. Considering its importance for the individuals in the shifting paradigms of the globalized world, a language learning curriculum should cover the creative thinking skill as separate category that needs to take more attention.

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APPENDIX

Appendix 1

Pretest

	Tasks	Process
Figural test	Completing an abstract shape	Students are asked to complete an abstract shape in ten minutes
	Drawing circles	Students are required to think about the objects in the shape of a circle and draw as many as they can in ten minutes
Written test	Unusual uses	Students are supposed to make a list of unusual uses for a sponge
	Imaginary story	After having completed the abstract shape, students are asked to write a short story based on their drawings in ten minutes
	Possible solutions	students were asked to produce as many different ideas as they can to stay cool in a hot day
	Asking questions	Students were required to ask as many various questions as they can, based on a given picture
Oral test	Causes and consequences	They were supposed to write as many causes and consequences as they can for an event in the given picture
	Imagery through music	Students are asked to imagine that they are somewhere else through the music and they are required to describe the scene
	Imagination on future	Students are asked to imagine that they are in 2050 and they are required to talk about their life in 2050

Appendix 2

Posttest

	Tasks	Process
Figural test	Completing an abstract shape	Students are asked to complete an abstract shape in ten minutes
	Drawing squares	Students are required to think about the objects in the shape of a square and draw as many as they can in ten minutes
Written test	Unusual uses	Students are supposed to make a list of unusual uses for a brick
	Imaginary story	After having completed the abstract shape, students are asked to write a short story based on their drawings in ten minutes
	Possible solutions	Students were asked to produce as many different ideas as they can to stay warm in a cold day
	Asking questions	Students were required to ask as many various questions as they can, based on a given picture
Oral test	Causes and consequences	They were supposed to write as many causes and consequences as they can for an event in the given picture
	Imagery through music	Students are asked to imagine that they are somewhere else through the music and they are required to describe the scene
	Imagination on past	Students are asked to imagine that they are in 1970 and they are required to talk about their life in 1970

Appendix 3

Sample Lesson Plan

Lesson 1. Designing a lesson: Targeting creativity and imagination – visual group	
Function of the lesson	Students will be able to describe people’s physical appearance and personality traits.
Creative thinking skills emphasized	Fluency, flexibility, originality, elaboration
Duration	40 minutes
Creative thinking provoking activities	Guessing from the images, brainstorming on a picture, writing a descriptive paragraph about their imaginary friends

Lesson set- up	Students will be shown three images of human mouths. First one is a happy, smiling, middle aged woman, second mouth belongs to an angry young boy, and third picture is a mouth of a child. Students will be asked to look at the pictures carefully then they are asked to close their eyes and try to imagine the physical appearance of these three people. They are asked to make some predictions on their personality as a brainstorming activity. The whole class will create a mind map on the board on the personal traits of the people in the pictures and then they will talk about the most important characteristics of a true friend. After discussion, they will be supposed to invent a robot, draw a picture of it and write some personal characteristics that a true friend has
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Lesson 1. Designing a lesson: Targeting creativity and imagination – audio group

Function of the lesson	Students will be able to describe people’s physical appearance and personality traits.
Creative thinking skills emphasized	Fluency, flexibility, originality, elaboration
Duration	40 minutes
Creative thinking provoking activities	Guessing from the voices, brainstorming on a sound, creating a song about their imaginary friends
Lesson set- up	Students will listen to the voice of a woman (Voice of Siri) and the voice of two different actors with different characteristics. They will try to describe the people’s appearance and personality by analyzing their voice as a brainstorming activity. Then, they will form a mind map as a whole class on the people’s personality traits. Relying on their mind map, students will talk about the characteristics of a true friend in groups. Then they will be asked to create a rap song describing their imaginative perfect best friends in pairs

Sample Lesson Plan 2

Lesson 2. Designing a lesson: Targeting creativity and imagination – visual group

Function of the lesson	Students will be able to write short poems using abstract concepts
Creative thinking skills emphasized	Fluency, flexibility, originality, elaboration
Duration	40 minutes
Creative thinking provoking activities	Brainstorming on ideas, making comments on abstract concepts, writing poems
Lesson set- up	Students will be shown various images of human hands. They are all interesting pictures which symbolize different concepts like happiness, death, love, hope, etc., Students are asked to look at the pictures carefully one by one and take a note the concepts that come to their minds on each image. After that they are supposed to write short poems on a concept or more. Finishing the poems students are required to look at the pictures again with their groups this time and they are supposed to make comments on the pictures and share their poems with friends

Lesson 2. Designing a lesson: Targeting creativity and imagination – audio group

Function of the lesson	Students will be able to write short poems using abstract concepts.
Creative thinking skills emphasized	Fluency, flexibility, originality, elaboration
Duration	40 minutes
Creative thinking provoking activities	Brainstorming on ideas, making comments on abstract concepts, writing poems
Lesson set- up	Students will listen to the bird sounds which symbolize different concepts like death, happiness, sorrow, anger etc., They are supposed to take a note the concepts that come to their mind while listening to the recordings. After that they are asked to write short poems on the one or more concepts they like. Finishing the poems students will listen to the sounds again with their groups this time and they are supposed to make comments on the bird sounds and share their poems with friends
