Pictotherapy: Training high school teachers in quake-stricken areas to rethink communication skills

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Abstract. This paper reports an experience to help alleviate negative feelings of the teachers and students after the catastrophic earthquake in Bam City, Kerman province of southeastern Iran. In cooperation with UNESCO Tehran Cluster Office, the author designed a 3-day workshop in the area during which the author and his team introduced and illustrated basics of Pictologics (a language teaching method developed by the author) in order to train the teachers to adapt the techniques in this method when teaching their own subjects. 38 high school teachers selected by the local headquarter of the Ministry of Education of Iran were present in this study as representatives of approximately 500 teachers of the area. In order to assess the effectiveness of the method, a 10-item questionnaire was developed and administered prior and after the workshop to examine the teachers' feedback towards the imaginative usage of pictures in facilitating teacher-student/student-student communication and interaction. A Wilcoxon test was run for each item of the questionnaire, and also for the overall feedback of the teachers (N = 38; $p \leq .05$). The data revealed a significant increase in the teachers' opinion about the usage of pictures and imagination in the classes that suffered post-traumatic stress. Deliberated in light of Gardner's Theory of Multiple Intelligences, the findings of this research may assist education advocates and practitioners, as well as authorities in planning prompt and low-cost remedies in emergencies.

Keywords: Communication, imagination, multiple intelligences, pictologics, pictotherapy, pictures.

INTRODUCTION

On the 26th of December 2003, a devastating earthquake struck the city of Bam, located approximately 1000 km southeast of Tehran. It destroyed most of the city and the neighboring villages. Some 30,000 were estimated dead, and another 30,000 injured; leaving tens of thousands of others homeless. In addition to the rescue and rehabilitation strategies executed by the government, several domestic and international NGO's rushed to the scene. UNESCO Tehran Cluster Office also implemented several plans in order to help schools in the area. One was a workshop for the teachers in order to enable them (and consequently, their students) to overcome negative feelings at the beginning of each class they were going to have. This 3-day training workshop shortly entitled 'Pictotherapy', was proposed by the author and soon approved by UNESCO. In this paper, the PLS method and the Theory of Multiple Intelligences which basically shaped the initial platform of Pictotherapy, are briefly introduced and then, the workshop and the findings of the data are discussed.

REVIEW OF LITERATURE

Disasters worldwide

Disasters could happen anywhere on the globe in various shapes and intensity. Physical conditions required for education is a direct target of such catastrophes. Figure 1 illustrates the rate of disasters in a 25 year period since
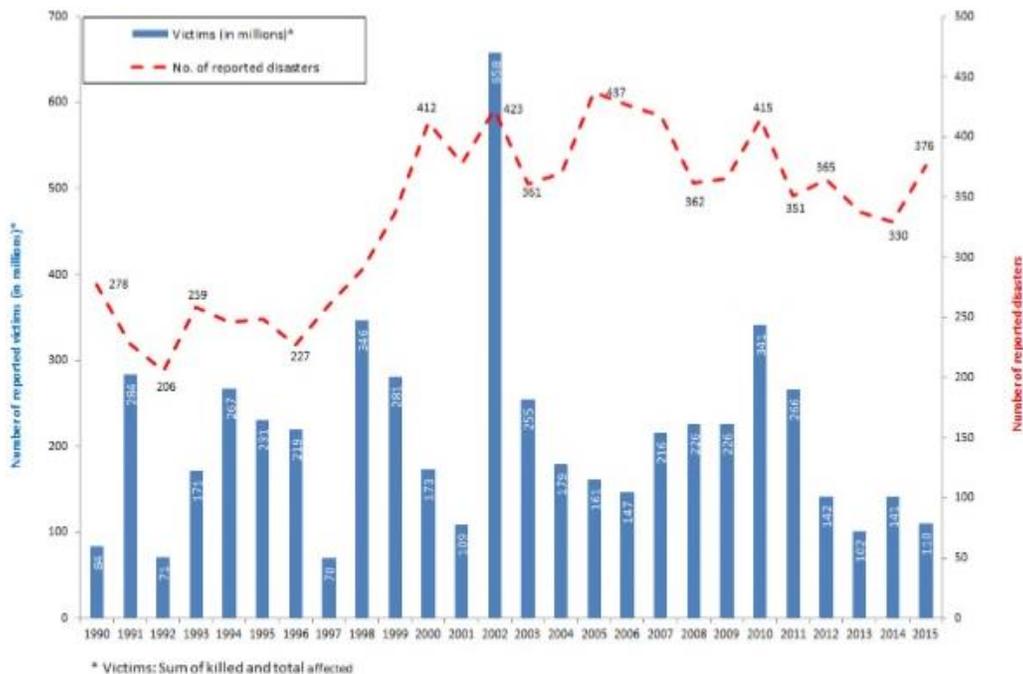
Figure 1. Trends in disaster occurrence and victims. Adapted from Guha-Sapir *et al.* (2016:4).

1990.

Related studies

According to Baggerly *et al.* (2010), child-centered play therapy (CCPT) is the most investigated type of play therapy for childhood trauma. It is a person-centered therapy that establishes unconditional positive regard, and empathy to enhance children's communication of feelings, desires, and thoughts. There are several studies such as Kot *et al.* (1998), Shen (2002) and Tyndall-Lind *et al.* (2001) that show CCPT improves self-concept and reduces anxiety, and depression of young people who have been exposed to either domestic violence or natural disasters.

Also, Jaycox *et al.* (2009) developed a cognitive-behavioral, skills-based package called Support for Students Exposed to Trauma (SSET). Implemented by school teachers, SSET aimed at relieving symptoms of child traumatic stress, anxiety, depression, and functional impairment among middle school children exposed to traumatic events. During 10 lessons, children would learn about common reactions to trauma, practice relaxation, learn problem solving skills, build social support, and learn ways to challenge negative thoughts. In another research, Jaycox *et al.* (2010) reported that a group intervention at school or individual treatment at a mental health clinic administered to school children in New Orleans 15 months after Hurricane Katrina led to significant symptom reduction of PTSD.

Likewise, a study on 127 war-exposed and mostly

ethnic Muslim secondary school students in 10 schools in central Bosnia conducted by Layne *et al.* (2008), the subjects were randomly assigned to one of two experimental conditions: either an active-treatment comparison condition consisting of a classroom-based psychoeducation and skills intervention alone; or a treatment condition composed of both the classroom-based intervention and a 17-session manual-based group therapy intervention. Both interventions were employed during the school year and resulted in significant effects.

Moreover, to examine the effectiveness of a group-administered cognitive-behavioral psychotherapy (CBT) protocol for pediatric posttraumatic stress disorder after a single-incident stressor, March *et al.* (1998) conducted a school-wide selection-to-treatment procedure in two elementary and two junior high schools by structured interviews. Then, 17 subjects entered into an 18-week, group-administered CBT protocol using a single case across time and setting experimental design. The researchers concluded that more clinical studies are required to approve CBT is a safe, acceptable, and effective treatment for PTSD in children and adolescents.

In another research to assess the effectiveness of a collaboratively designed school-based intervention for reducing children's symptoms of PTSD and depression resulted from exposure to violence, Stein *et al.* (2003) randomly assigned 61 sixth-grade students at two middle schools in Los Angeles who reported exposure to violence and had clinical levels of symptoms of PTSD to a 10-session standardized cognitive-behavioral therapy. Compared with no intervention group, after 3 months of therapy, the students who were randomly assigned to the

Figure 2. Any picture of any chicken. Retrieved from www.bigfoto.com (n.d.). Reprinted with permission.

early intervention group had significantly lower scores on symptoms of PTSD, depression, and psychosocial dysfunction. The researchers of this study concluded that a standardized 10-session cognitive-behavioral group intervention, which can be effectively provided on school campuses by trained school-based mental health clinicians can significantly decrease symptoms of PTSD and depression in students who are exposed to violence.

A concise introduction to PLS method

Background

Pictologics (PLS) is a newly-developed language teaching method which has been tried with Iranian, Korean, Malaysian, and Taiwanese students. Pictures are the main tools used in this method. Interestingly this method was initially inspired by playing cards! People might play with cards for several hours and they do not even feel the passage of time. If we can create such an effect in our classes, then that would be a great help for both teachers and students. The basic question is: What is it that makes it possible to play for several hours without tiring? There are basically two reasons:

1. With a set of 52 cards, each player can have almost endless combinations of two, three, four, … of cards just by chance and according to the game.
2. The value of each card is not absolute; that is, based on different games, different values would be attributed to each individual card.

Just replace the cards with pictures and then both teachers and students have a good opportunity to teach and learn.

Definition of pictologics

There are three parts: *picto*, *logic*, and *s*. As a suffix, **s**

gives the whole term a noun form. *Picto* is the short form of 'picture'. This has two meanings: as a noun, it means pictures of different subjects such as people, nature, animals, food, places, etc. Totally, there are just 300 pictures that are used for all levels. 'Picture' as a verb means to 'visualize' or to 'imagine'. What we do in the classes is to teach students how to control and then benefit from their imagination. To do so, they must be first trained to pay attention to their physical senses of sight, hearing, smell, taste, and touch. *Logic*, on the other hand, means 'whatever word(s) or pieces of information that we can associate -directly or indirectly- to a certain picture or/and set of pictures picked randomly'. The only limitations are: 1) when the language piece is completely in contrast with the established grammatical rules of that specific language (for example, *he* is a masculine subject pronoun, so it cannot refer to a female); and 2) when a language production violates the ethics of a particular culture (for instance, in some cultures a human cannot be compared to a dog or a cactus).

Number of possibilities

When we use more than one card at a time and make random combinations of two, three, four, and … cards, then we will have a very large number of combinations. Therefore, there will be chances for the students to produce (both oral and written) structures, and chances for the teachers to monitor the process. The following formula is applied:

$\binom{n}{m}$ = Total number of possible combinations of cards = $\frac{n!}{m!(n-m)!}$

Where n = total number of the cards, m= number of the cards picked together at a time, and "!" means the figure should be multiplied by all the digits preceding it.

If we assume we are dealing with just 20 pictures in a hypothetical PLS class. Applying the formula for each

possible picture combination, we will have:

1 card at a time: $\frac{20 \times 19!}{1 \times (20-1)!} = \frac{20 \times 19!}{1 \times 19!} = \frac{20}{1} = 20$

2 cards at a time: $\frac{20 \times 19 \times 18!}{2 \times 1 \times (20-2)!} = \frac{20 \times 19 \times 18!}{2 \times 18!} = 10 \times 19 = 190$

If we keep calculating for 3 cards, 4 cards, …, and 20 cards at a time, then we will have 2,096,766 possibilities each of which can be a good source for language production (Shirban, 2004).

A sample lesson in PLS

Now let us see in an example as to how the teacher can use a simple picture and maneuver imaginatively in prompting responses from students (Figure 2). Before that, please bear in mind the following points:

- **T** stands for teacher, and **S** for students. Although in practice almost all the students in a class participate in the activities, to make it shorter, the students' responses have been reduced to a maximum of three students: **S₁**, **S₂**, and **S₃** respectively. Of course, it is clear that S_1 in one response at a particular stage is not necessarily S_1 in the next.
- In practice, many of the responses are not essentially grammatical and correct. However, to avoid discrepancy, here some corrections have been implemented.
- The students in this example are teenagers.
- For the brevity of this paper, the intentions of the teacher as to what he/she wants the students to learn will be left to the reader to conjecture. Also, teacher's positive reinforcements, his/her repeating and emphasising students' responses, his/her cries of surprise, happiness, wonder, etc. all will be eliminated due to the same reason.
- When asking any questions, the teacher looks at and addresses all the students, though he/she might focus on one or two every now and then.

Then, the following lines show a typical teacher-student interaction when dealing with a simple picture. These are just a few out of many more possibilities.

T: OK. What can you see in this picture?
S_1: A hen.
S_2: A chicken.
S_3: Rooster.
T: Well, anything else?
S_1: Grass.
T: Who can smell the grass?
S_2: Me.
T: What does it look like? Do you like the smell?
S_3: It's like cucumber.
T: What, the green color of the grass?

S_3: No, the smell of it. I like it.
T: You mean you like the smell of this hen?!
S_3: No, I meant the grass!
T: Now that he talked about the smell, who likes the smell of roast chicken?
S_1: Me.
S_2: I do.
S_3: Me, teacher.
T: Now let me see. This is an animal, right? Where can you find more animals, in villages or in towns?
S: In villages.
T: Who likes to live in a village?
S_2: Me.
T: Tell us why.
S_2: Because it is quiet. No pollution.
S_1: But cities are better. My father says there is more money in the cities.
T: What about facilities? Like cinemas? Malls? Other things?
S_1: Cities are better.
T: In which one can you fine better nature?
S: In a village.
T: Now, is the number of villages and towns or cities equal in different countries?
S: No!
T: How do you know?
S_1: Villages are more.
S: Even in advanced countries like USA?
S_2: Towns are more.
T: How do you know it? Have you ever been to any of them?
S_1: I have been to Egypt.
T: Egypt?! Where is it? In Europe?
S_2: No, in Asia.
S_1: No! It is in Africa.
T: So you have been to Africa? Did any lions attack you?
S_1: No.
T: Not him, who else knows anything about Egypt, or generally about Africa.
S_2: They have Pyramid.
T: Can you explain to your friends?
S_2: Very old, big buildings in the desert.
T: How old? 100 years?
S_3: No! More.

Reflection on the sample lesson

Although the above example might seem to be a fragmentary, superficial piece of language; the truth is, it is not. The teacher in this example could practically involve all the students in many other topics which-though apparently not connected to the first topic/picture-share some ideas. It is so because every thought is at least connected to the previous one, and that, in turn, to the one preceding it, and so on and so forth. In addition, whenever necessary, the teacher can simply return to

some stages before, or even to the very first stage (picture, or combination of pictures). A good analogy is a spider's web: It has a center (the first idea triggered by a picture, or combination of pictures), then it goes to many concentric circles and shapes which are also connected to the center by some pillars, beams, or bars. The places where the circles and the bars meet, that is to say, the knots can be analogues to the main ideas generated originally from the first stimulus. They have both connections to the previous ideas, as well as associations to the core; not to mention the adhesive substance shared in all the structure (the web) which entraps the poor insects (Shirban and Kalantari, 2003; Shirban, 2004, 2006, 2008, 2009, 2013).

Gardner's theory of multiple intelligences

Because one of the basic assumptions in PLS is the continuous imaginative use of the physical senses both on the part of the teacher and the students, I believe that this theory can help explain what actually happens in the minds of the students when learning with PLS.

Howard Gardner's theory of multiple intelligences describes different kinds of talents and abilities (Gardner, 1983, 1993). He points out that most school systems teach, test, reinforce, and reward primarily two kinds of intelligence: verbal/linguistic and logical-mathematical. He further suggests: "I believe that we should get away altogether from tests and correlations among tests, and look instead at more naturalistic sources of information about how people around the world develop skills important to their way of life" (Gardner, 1993:7). To describe the right description of intelligences, Gardner and his colleagues surveyed a vide set of sources including: 1) the development of different kinds of skills in normal children; 2) information on the ways that these abilities break down under conditions of brain damage; and 3) children with learning disabilities, e.g. autistic children. They considered two kinds of psychological evidence: correlations among psychological tests of the sort yielded by a careful statistical analysis; and the results of efforts of skill training, that is, when you train a person in skill A does that training transfer to skill B? For example, does training in mathematics enhance one's musical abilities, or vice versa?

Gardner (1993) postulated seven intelligences, all equally important:

- Spatial: the ability to understand and transmit visual/spatial information, and to recreate visual images from memory;
- Linguistic: the ability to communicate through oral or written language;
- Interpersonal: the ability to communicate with other people and understand them;
- Musical: the ability to recognize rhythm, pitch and melody and communicate meanings with sounds;
- Bodily- Kinesthetic: the ability to have control of body movements;
- Intrapersonal: the ability to form a realistic image of the self;
- Logical-Mathematical: the ability to solve problems.

According to Messaris (1994:27), although there is no specifically pictorial intelligence in Gardner's system, at the heart of "spatial intelligence" is the ability to envision mentally the relationships among objects or parts of objects in three-dimensional space. This form of intelligence, Messaris believes, plays a role not only in art (painting, sculpture, dancing) but also in geometrical thinking, in the design and construction of any solid object. He further explains that because vision is so important to these skills and because spatial intelligence contributes to picture-making ability, then the spatial intelligence might be considered an area of cognitive functioning enhanced by experience with images. Also according to Lazear (1992), because many learning styles can be found in any given classroom, it is almost impossible for a teacher to accommodate every lesson to all of the learning styles of the students. However, the teacher can guide students how to use their more developed intelligences to assist in the understanding of a subject which normally employs their weaker intelligences.

MATERIALS AND METHODS

Pilot study

Prior to the main workshop, a pilot study was conducted in the area. There were two basic goals: 1) to see if the teachers in the area would like to attend such a workshop; and 2) to test the reliability of the research instrument (the questionnaire). As for the first objective, the author interviewed a few teachers and principals both in girls and boys high schools. Almost everyone agreed that such a work shop would be feasible and helpful. Then as for the questionnaire, it was administered to two randomly assigned groups of high school teachers (10 teachers each). The measured Cronbach's alpha of .86 showed an acceptable value suggesting a high internal reliability in the questionnaire.

Subjects

A total of 38 high school teachers (both females and males) were randomly selected as representatives of about 500 teachers in the area. They were invited by the local headquarter of the Ministry of Education.

Main workshop

The workshop was held during three consecutive days.

There were two morning sessions, and two afternoon sessions. Apart from the formal protocols which must be observed in such meetings in Iran, each session was divided at least into two parts: 1) introducing the PLS techniques by the Author and the accompanying team; and 2) the immediate feedback, as well as the teachers' turn to use the new technique. Each individual teacher was given at least one time chance to come to the front of the class and give a demo. Each teacher was provided with a pack of 150 color picture cards, sized 17 × 12 cm.

The basic idea was that using pictures imaginatively, the teachers were trained to spend about 10 to 15 min of the beginning of their own classes (no matter what subjects they were teaching) to "break the ice" and to encourage their students to interact and take part in the imaginary associations to a certain picture, or picture combinations. This would in turn help students to concentrate more for the particular lesson of that session which was to follow.

Instrument

In order to assess the effectiveness of the ideas introduced in the workshop, the author developed a 10-item questionnaire to solicit the teachers' general opinion. The responses to each item were positively ordered from 1 to 7 based on the Likert scale and the coding direction was consistent across all the ten items of the questionnaire (Appendix A). Moreover, the participants were requested not to leave any item unanswered. The questionnaire was initially modified and validated by some high school teachers and then approved by the UNESCO Tehran Cluster Office. Also the reliability of the questionnaire was evaluated in the pilot study. It was administered prior to and at the end of the workshop. Appendix B shows the teachers' responses to the questionnaire at both times.

RESULTS

Statistical test used

Wilcoxon Signed-Ranks test is a non-parametric alternative to repeated measures t-test, but instead of comparing means, the Wilcoxon converts scores to ranks and compares them at Time 1 and Time 2 (Pallant, 2005:293). In the case of the current study, it compared a repeated measurement on a single sample to assess whether their population mean ranks have changed after the treatment (workshop). In this study, each of the 10 questions (items) of the teachers' opinion questionnaire has been inspected by a separate Wilcoxon test based on the Likert scales as (absolutely disagree = 1 / strongly disagree = 2 / disagree = 3 / no idea = 4 /agree = 5/ strongly agree = 6 / absolutely agree=7). Consequently, the ranks data are summarized in Table 1.

As can be seen in Table 1, all positive ranks outnumber the few negative and the observed ties (no change). This means almost all the teachers had a more positive view on each item towards the application of Pictotherapy during the workshop. Table 2 (Wilcoxon test statistics) also confirms this claim for each item as all the p values for Z are equal to .000 and thus much smaller than the cut-off value of .05.

Then in order to see if the null hypothesis (There is no significant difference between teachers' general opinion towards Pictotherapy) could be rejected or not, a Wilcoxon test was run for all the 10 items of the questionnaire as a whole. This was possible because as mentioned before, the coding direction was positive and consistent across all the 10 items of the questionnaire. The results are shown in Tables 3 and 4.

As seen in Table 4, the p value for Z is .000 which is much smaller than .05. This means that the null hypothesis is rejected. Also, based on the data in Table 3, we can observe that out of 38 observations, there are 37 positive ranks and 1 equal response and 0 negative ranks. This suggests that the directional hypothesis of this study (Teachers will reveal significantly more positive opinion towards Pictotherapy after the workshop) is strongly confirmed.

DISCUSSION

The findings of the current study reveals similarities with the study conducted by Jaycox et al. (2009) in which school teachers had a key role in delivering the trainings to the students. Likewise, the selected teachers who participated in the pictotherapy workshop were supposed to, in turn, teach and train the other high school teachers in the area (they could also use the video tapes recorded during the main workshop if they needed, of course) so that all teachers could use the learned techniques at the beginning of their own classes. The time span of 10 lessons is also similar in these two studies. More importantly, both studies aimed at reducing symptoms of post-traumatic stress, anxiety, and depression. Then, as far as communication of feelings, desires, and thoughts is concerned, the present study shares grounds with Baggerly et al. (2010) in their postulation that child-centered play therapy (CCPT) establishes unconditional positive empathy. However, we might differentiate between Pictotherapy and CCPT in that imaginative use of pictures is the instigator of the positive thoughts and feelings in Pictotherapy. Then as for the dichotomous research experiment by Layne et al. (2008), the findings of the current study is more skewed towards the group therapy intervention because in PLS students can substantially learn from their peers. This is also in agreement with the findings of March et al. (1998). Furthermore, the findings of the present study is pertinent to the findings of Stein et al. (2003) in both the 10-session standardized treatment, and that the treatment

Table 1. Summary of the Wilcoxon Signed Ranks test results for each of the 10 items of the teachers' opinion questionnaire.

			N	Mean rank	Sum of ranks
Q.1	After - Before	Negative Ranks	1[a]	31.00	31.00
		Positive Ranks	34[b]	17.62	599.00
		Ties	3[c]		
Q.2	After - Before	Negative Ranks	0[a]	.00	.00
		Positive Ranks	24[b]	12.50	300.00
		Ties	14[c]		
Q.3	After - Before	Negative Ranks	1[a]	7.00	7.00
		Positive Ranks	13[b]	7.54	98.00
		Ties	24[c]		
Q.4	After - Before	Negative Ranks	1[a]	9.00	9.00
		Positive Ranks	32[b]	17.25	552.00
		Ties	5[c]		
Q.5	After - Before	Negative Ranks	1[a]	12.00	12.00
		Positive Ranks	24[b]	13.04	313.00
		Ties	13[c]		
Q.6	After - Before	Negative Ranks	2[a]	18.50	37.00
		Positive Ranks	23[b]	12.52	288.00
		Ties	13[c]		
Q.7	After - Before	Negative Ranks	0[a]	.00	.00
		Positive Ranks	30[b]	15.50	465.00
		Ties	8[c]		
Q.8	After - Before	Negative Ranks	0[a]	.00	.00
		Positive Ranks	13[b]	7.00	91.00
		Ties	25[c]		
Q.9	After - Before	Negative Ranks	0[a]	.00	.00
		Positive Ranks	30[b]	15.50	465.00
		Ties	8[c]		
Q.10	After - Before	Negative Ranks	0[a]	0.00	.00
		Positive Ranks	19[b]	10.00	190.00
		Ties	19[c]		

a. After < Before; b. After > Before; c. After = Before.

can be effectively provided in schools, and not any other sophisticated facilities. PLS, however, does not need to be applied by 'trained school-based mental health clinicians', as almost all teachers can be trained to apply the PLS techniques in their classes. Although at the first glance, PLS seems to be relying entirely on vision, the reality is that teaching and learning in this method is done by making constant use of all the five senses of hearing, sight, smell, touch, and taste. Supposedly, if one sense is not sufficient to make the imaginary connections with the picture or picture combination, teachers are advised to tap on students' other senses. Moreover, being aware that students have various types of intelligences, and knowing what approximately each intelligence is capable of doing, will help the teachers (as well as the students) to be always ready to tackle each individual problem which is there to be solved. The Author believes that if we accept the assumptions of PLS which were explained before, by using them both the teacher and the students are facing a vast number of possibilities. Pictures are there to trigger the process, however, the students, guided by the teacher, should constantly (and very fast, of course) maneuver amongst their tools (senses, as well as intelligences) to achieve the goal. This process might sound difficult or even impossible, yet if fully perceived and practiced, it will result fascinating outcomes. On the other hand, because in each class we are dealing with different subjects and different students of diverse strength in their intelligences, not to mention their differences in their five senses, then holistically thinking, we are working with a totality of highly-intelligent, highly-sensitive group which is capable of achieving high goals

Table 2. Summary of the Wilcoxon test statistics results for each of the 10 items of the teachers' opinion questionnaire.

		After – Before
Q.1	Z	-4.909[b]
	Asymp. Sig. (2-tailed)	.000
Q.2	Z	-4.735[b]
	Asymp. Sig. (2-tailed)	.000
Q.3	Z	-3.153[b]
	Asymp. Sig. (2-tailed)	.000
Q.4	Z	-4.990[b]
	Asymp. Sig. (2-tailed)	.000
Q.5	Z	-4.481[b]
	Asymp. Sig. (2-tailed)	.000
Q.6	Z	-3.736[b]
	Asymp. Sig. (2-tailed)	.000
Q.7	Z	-4.940[b]
	Asymp. Sig. (2-tailed)	.000
Q.8	Z	-3.418[b]
	Asymp. Sig. (2-tailed)	.000
Q.9	Z	-5.007[b]
	Asymp. Sig. (2-tailed)	.000
Q.10	Z	-4.264[b]
	Asymp. Sig. (2-tailed)	.000

a: Wilcoxon Signed Ranks Test; b: Based on negative ranks.

Table 3. Wilcoxon signed ranks test results for all the 10 items of the questionnaire

		N	Mean rank	Sum of ranks
After Workshop - Before Workshop	Negative ranks	0[a]	.00	.00
	Positive ranks	37[b]	19.00	703.00
	Ties	1[c]		
	Total	38		

a. After Workshop < Before Workshop, b. After Workshop > Before Workshop, c. After Workshop = Before Workshop.

Table 4. Test Statistics[a] for all the 10 items of the questionnaire

	After workshop – Before workshop
Z	-5.315[b]
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test. b. Based on negative ranks.

CONCLUSION

We might assume it as a fact that if teachers and students start a class with positive feelings (even rendered by imagination), chances are they can focus more on the subject and thus, learn and internalize their lessons more efficiently. Pictotherapy is a feasible and affordable way which can be applied in many emergency situations and with teachers and students of various demography to help them put aside negative feelings and consequently, be able to concentrate more and communicate with each other better and more effectively.

REFERENCES

Baggerly JN, Ray DC, Bratton SC (2010). Child-Centered Play Therapy Research: The Evidence Base for Effective Practice. Hoboken, NJ: John Wiley & Sons.

Gardner H (1983). Frames of mind: The theory of multiple intelligences. New York: Basic Books.

Gardner H (1993). Multiple intelligences. New York: Basic Books.

Guha-Sapir D, Hoyois P, Below R (2016). Annual Disaster Statistical Review 2015: The numbers and trends. Brussels: CRED. Available on http://www.cred.be/sites/default/files/ADSR_2015.pdf.

Jaycox LH, Cohen JA, Mannarino AP, Walker DW, Langley AK, Gegenheimer KL, Scott M, Schonlau M (2010). Children's mental health care following Hurricane Katrina: a field-trial of trauma focused therapies. J. Trauma Stress. 23:223.

Jaycox LH, Langley AK, Stein BD, Wong M, Sharma P, Scott M, Schonlau M (2009). Support for students exposed to trauma: a pilot study. School Mental Health. 1:49.

Kot S, Landreth GL, Giordano M (1998). Intensive child-centered play therapy with child witnesses of domestic violence. Int. J. Play Ther. 7:17-36.

Layne CM, Saltzman WR, Poppleton L, Burlingame GM, Pasalic A, Durakovic E, Music M, Campara N, Dapo N, Arslanaqic B, Steinberg AM, Pynoos RS (2008). Effectiveness of a school-based group psychotherapy program for war-exposed adolescents: A randomized controlled trial. J. Am. Acad. Child Adolesc. Psychiatry 47:1048.

Lazear D (1992). Teaching for Multiple Intelligences. Fastback 342 Bloomington, IN: Phi Delta Kappan Educational Foundation.

March JS, Amaya-Jackson L, Murray MC, Schulte A (1998). Cognitive-behavioral psychotherapy for children and adolescents with posttraumatic stress disorder after a single-incident stressor. J. Am. Acad. Child Adolesc. Psychiatry 37:585.

Messaris P (1994). Visual literacy: Image, mind, and reality. Boulder, CO: Waterview Press.

Pallant JF (2005). SPSS survival manual: a step by step guide to data analysis using SPSS. Sydney: Ligare.

Shen Y (2002). Short-term group play therapy with Chinese earthquake victims: effects on anxiety, depression, and adjustment. Int. J. Play Ther. 11:43-63.

Shirban SA (2004). Pictologics System, Elementary: textbook. Tehran: Peyk-e Zaban Publishers.

Shirban SA (2006). Pictologics System, Intermediate: textbook. Tehran: Peyk-e Zaban Publishers.

Shirban SA (2009). Improving Imagination in EFL/ESL Classes: The Case of PICTOLOGICS. Asian EFL Journal 7th International Conference, Pusan, South Korea, April 10-11.

Shirban SA (2008). Towards a New Usage of Pictures in Teaching Languages, or PICTOLOGICS. The 17th MELTA International Conference, Penang, Malaysia, May 26-27.

Shirban SA, Kalantari J (2003). Let's Learn English. [Educational TV Program]. Tehran: Educational Channel of the Islamic Republic of Iran Broadcasting.

Shirban SA, Chang TC (2013). Developing a Virtual English Language Institute Using the PLS Method. EdMedia 2013, World Conference on Educational Media & Technology, Victoria, British Colombia, Canada, June, 24-27.

Stein BD, Jaycox LH, Kataoka S, Rhodes HJ, Vestal KD (2003). Prevalence of child and adolescent exposure to community violence. Clin. Child Fam. Psychol. Rev. 6:247.

Tyndall-Lind A, Landreth GL, Giordano MA (2001). Intensive group play therapy with child witnesses of domestic violence. Int. J. Play Ther. 10:53-83.

APPENDIX A: The Questionnaire (English Translation)

Name: ………………………………………………

Instructions: Please mark the response that best shows your opinion about each item of the questionnaire.

No.	Questionnaire Items	Absolutely Disagree			No Idea	Absolutely Agree		
		1	2	3	4	5	6	7
1	A single picture can be used in clarifying various thoughts							
2	Your feelings can motivate your imagination							
3	One's imagination can increase one's positive feelings							
4	It is possible to train someone's imagination by using pictures							
5	Being fully aware of one's five senses can be positively effective in education							
6	Imagination can help students learn better							
7	Imagination can help teachers teach better							
8	Imaginative use of pictures can encourage students to pay more attention in the class							
9	Imaginative use of pictures can help students communicate more easily							
10	Imaginative use of pictures can help students overcome their negative feelings							

APPENDIX B

Teachers' responses to the questionnaire before and after the workshop

Q.	Q.1		Q.2		Q.3		Q.4		Q.5		Q.6		Q.7		Q.8		Q.9		Q.10	
T.	Be	Af	Be	Af	Be	Af	Be	Af	Be	Af	Be	Af	Be	Af	Be	Af	Be	Af	Be	Af
1	6	7	6	7	7	7	6	7	6	7	6	7	6	7	7	7	6	7	6	7
2	6	7	6	6	6	7	6	7	6	6	6	7	6	7	7	7	6	7	6	6
3	3	4	3	4	3	4	3	5	3	3	3	3	2	4	3	3	3	5	3	3
4	4	6	4	6	5	5	4	6	4	5	5	6	4	6	5	6	4	6	4	5
5	4	6	5	6	6	6	4	6	5	6	5	6	5	6	5	6	5	6	5	6
6	5	6	5	6	6	6	4	6	5	6	5	6	5	6	6	6	5	6	5	6
7	6	7	6	7	7	7	6	7	6	7	6	7	6	7	7	7	6	7	6	6
8	6	6	6	6	6	7	6	6	6	6	6	7	6	7	7	7	6	7	6	6
9	5	6	5	6	6	6	5	6	5	6	5	6	5	6	6	6	5	6	6	6
10	3	4	3	3	2	3	2	5	2	3	3	3	2	3	3	3	3	4	2	3
11	5	6	5	6	6	6	5	6	6	6	5	6	5	7	6	6	6	6	6	6
12	2	4	3	3	5	6	2	3	2	3	2	3	2	2	3	3	2	3	2	2
13	3	4	3	4	3	4	3	5	3	4	3	4	3	4	3	4	3	5	3	4
14	4	6	5	6	5	5	4	6	5	5	5	6	4	6	5	6	4	6	5	5
15	6	7	7	7	6	7	7	7	5	7	7	7	4	7	7	7	6	7	7	7
16	6	7	7	7	7	7	6	7	7	7	7	7	5	7	6	7	7	7	6	7
17	2	3	2	3	2	2	2	3	2	3	2	2	2	2	2	3	5	6	2	2
18	6	7	6	7	7	7	6	7	6	7	7	7	7	7	7	7	6	7	6	7
19	7	7	6	7	7	7	7	6	7	7	5	7	7	7	5	7	7	7	7	7
20	4	5	3	4	3	4	3	5	3	4	4	4	3	5	4	4	4	5	3	4
21	4	6	4	5	4	5	4	6	4	5	5	5	4	6	5	5	4	6	4	5
22	5	7	7	7	7	7	7	7	7	6	7	6	7	7	7	4	7	7	6	7

APPENDIX B Contd.

23	7	5	7	7	7	7	7	7	6	7	7	7	7	7	7	7	6	7	7	7
24	5	6	6	6	6	6	5	6	6	6	5	6	5	7	6	7	6	6	6	6
25	5	6	5	6	6	6	5	6	5	6	5	6	5	6	6	6	5	6	5	6
26	4	6	5	6	6	5	4	6	5	5	5	6	5	6	5	6	4	6	5	5
27	6	7	6	7	7	7	6	7	7	7	7	4	7	7	7	7	5	7	6	7
28	6	7	7	7	6	7	7	7	7	7	7	7	5	7	7	7	7	7	7	7
29	3	4	3	3	2	2	2	4	2	3	3	3	2	2	3	3	2	3	5	7
30	5	6	5	6	6	6	4	6	5	6	5	6	5	6	6	6	5	6	5	6
31	4	5	4	4	3	5	3	5	3	4	4	4	3	5	4	4	4	5	4	5
32	4	5	4	5	4	5	4	6	4	5	4	5	4	5	4	5	4	6	4	5
33	6	7	6	6	7	7	6	7	6	7	6	7	6	7	7	7	6	7	6	6
34	5	6	5	6	6	6	5	6	5	6	5	6	5	6	6	6	5	6	6	6
35	4	6	4	6	5	5	4	6	4	5	5	5	4	5	5	5	4	6	4	5
36	6	6	6	6	6	6	5	6	6	6	6	7	6	7	6	7	6	6	6	6
37	5	6	5	6	6	6	5	6	6	6	5	6	5	7	6	6	6	6	6	6
38	4	5	4	5	4	5	3	5	3	5	4	5	4	5	4	5	4	5	4	5

T = teacher; Q = question; Be = before workshop; Af = after workshop. 1 = absolutely disagree; 2 = strongly disagree, 3 = disagree, 4 = no idea, 5 = agree, 6 = strongly agree, 7 = absolutely agree.