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How a Dialogic Space can impact children's creativity and mood valence in Drama Pedagogy Training: Study with a french 4th grade sample

Macarena-Paz CELUME[ab], Maud BESANÇON[c], Franck ZENASNI[a]

a. Laboratoire Adaptations Travail-Individu . Université Sorbonne Paris Cité. 71 Avenue Edouard Vaillant, 92100, Boulogne-Billancourt, France. macarena-paz.celume@parisdescartes.fr / franck.zenasni@parsdescartes.fr

b. Center for Interdisciplinary Research. 8-10 rue Charles V, 75004, Paris.

c. Laboratoire de Psychologie: Cognition, Comportement, Communication (LP3C, EA 1285), Université de Rennes 2. Place du recteur Henri Le Moal, CS 24307 - 35043 Rennes cedex, France. maud.besancon@univ-rennes2.fr

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Corresponding author: Macarena-Paz CELUME, macarena-paz.celume@parisdescartes.fr

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How a Dialogic Space can impact children's creativity and mood valence in Drama Pedagogy Training: Study with a French 4th grade sample.[1]

Abstract

Drama Pedagogy Training (DPT) is a kind of training based on an active educational methodology called Drama Pedagogy. It is mostly based on collaborative drama games and techniques, similar to what is commonly found in literature as creative drama as the objective is neither artistic nor academic. As an active pedagogy, participants co-construct their learning through participative dialogue, reasoning together about the learning experiences that are presented as collaborative dramatic games, thus favouring creativity and creating an active learning and teaching practice. In order to prove the effectiveness of DPT on French children's creativity, we conducted a study on 55 4th grade children (m=9.9; SD=0.3) from two public and a private school. Children were randomly assigned to a DPT, either to an active control group and were measured on divergent and convergent thinking through EPoC in pre-test (T1), post-test (T2) and follow-up (T3) times of measurement. Mood valence was assessed through SAM scale at the beginning and the end of each session. Results showed a significant increase of creativity for the DPT group on divergent ($t=4.56$; $p<.000$) and convergent thinking ($t=2.96$; $p<.004$) measures on T2. Moreover, T3 showed significant differences on divergent thinking scores ($t=2.97$; $p<.005$), nevertheless no statistical differences were found for convergent thinking scores. ANOVA analyses were made to see the impact effect of the training on

[1] Abbreviations:
DBP: Drama Based Pedagogies
DPT: Drama Pedagogy Training
LPT: Liberal Progressivism Tendency

creativity and mood valence. DPT enhances creativity and mood in French 4th grade school children.

Keywords: child development, creativity, creative drama, dialogic space, drama pedagogy

1. Introduction

Existing literature present a vast number of conceptualizations regarding drama pedagogy interventions. Several of these conceptualizations were outlined in the meta-analysis of Lee, Patall, Cawthon & Steingut (2015) and gathered as Drama-Based Pedagogies (DBP). Nevertheless, Garcia-Huidobro's (1996, 2004) approach on what she calls Drama Pedagogy, was not mentioned in Lee et al.'s meta-analysis, probably due to a lack of experimental work based on her theory. In spite of that, the latter seems to be quite specific when explaining the theoretical frame and practical implications of drama based pedagogies, as a result we decided to conduct an experimental study based on this pedagogy.

Drama Pedagogy is an active educational methodology based in drama games and techniques. As an active pedagogy, it implies learners doing things for the sake of learning when also reasoning about these actions (Dewing, 2010) as a kind of a co-construction of the learning

process. For dialogic space theories, pedagogies that are co-constructed through dialogue favour creativity creating active learning and teaching practices (Vass & Deszpot, 2017).

According to Garcia-Huidobro (1996, 2004), Drama Pedagogy can be divided into four *tendencies* that can be inserted in three different areas.[2] The different combinations that result correspond to the different concepts around drama pedagogies and so can be found in the meta-analysis of Lee et al. (2015) gathered under the name of DBP. As an example, the concept of creative drama (included in DBP) would be a combination of *liberal progressivism tendency (LPT)* in a specific area or *dimension of work (inside or outside the educational setting).*

We decided to focus on the LPT inside the educational setting because the aim of this study is aligned with these tendency objectives. As well as creative drama that gathers experiences created for participants' development rather than for preparing a show for an audience (Freeman, Sullivan & Fulton, 2010), LPT's objective is to contribute to the development of competencies by focusing on the group process of learning over an artistic result (Garcia-Huidobro, 1996; Heathcote, 1991; Karakelle, 2009; Libman, 2001 & Woodson, 1999). For Mercer (2000) this process of learning can be observed in dialogic spaces under what he calls *interthinking* or *intersubjectivities* (Rogoff, 1990) by describing the process of learning that occurs when learners work in a collaborative way in order to address a collective issue. On the other hand, when Drama Pedagogy is inserted inside the educational setting as a dramatic art expression subject, it helps the development of integral and creative children (Cremin & Macdonald, 2013; Hui & Lau, 2006; Karakelle, 2009). Garaigordobil (2003) showed that among other things, creative dramatic games helped the development of creative thinking.

[2] Drama Pedagogy is divided into four tendencies: a) neoclassical, b) liberal progressivism, c) radical, and d) critical socialism. It can work in three areas of work: a) inside the educational setting, b) outside the educational setting, and c) as a therapeutic dimension.

Thus, this study does not have academic, artistic or any other achievement aims besides the experience of playing creative-collaborative dramatic games. In our understanding, this tendency of Drama Pedagogy is not a means to improve technical or academic skills, but only a means to let the children play and learn together. In other words, the focus is on the creative and socio-emotional competencies that might be learnt collectively through playing drama games.

In order to prove the impact of this methodology on French children's creativity, we decided to create a training based on the LPT issued from Drama Pedagogy (Garcia-Huidobro, 1996) adapting some of the creative dramatic games proposed by Garaigordobil (2003).

Considering that this training corresponds to the description of creative drama concept, but that it was principally based on the Drama Pedagogy theory, we are going to identify it from now on as a Drama Pedagogy Training (DPT; Celume, Besançon, & Zenasni, 2018) with the understanding that there are similarities with some of the trainings studied by Lee et al. (2015) and classed as DBP. We decided not to use the term DBP as the authors also include trainings whose outcomes are not related to competencies development, but rather to artistic or academic achievement which is not the objective of a DPT nor of creative drama.

In the present work, we are going to focus on the psycho-pedagogical framework or learning environment of DPT and how it impacts children's creative thinking by presenting theoretical and practical evidence. We will describe the conceptual background on DPT and how it is directly linked to dialogic space literature followed by presenting new empirical evidence on how DPT enhances creativity.

2. Creative development in the learning environment of DPT

Creativity can be understood as the ability to give original ideas within a specific context (e.g., Runco & Jaeger, 2012; Stein, 1953; Sternberg & Lubart, 1995). For some authors, these ideas are produced in spite of a specific knowledge domain and can be understood from a multivariate approach (Barbot, Besançon & Lubart, 2016), which proposes that creativity needs to consider at the same time personality and intellectual characteristics of the person but also their environment (Hohmann & Weikart, 2000; Lubart, Mouchiroud, Tordjman & Zenasni, 2015). In other words, the psychological state of participants and their environment can affect creativity.

According to the literature, DPTs propose a free, safe and caring learning environment in which healthy relationships grow, enhancing positive emotions, empathy (ToM) and divergent thinking, among other outcomes (Akin, 2014; Celume, Sovet, Lubart & Zenasni, 2017; Garaigirdobil & Berrueco, 2011; García-Huidobro, 1996, 2004, Holland, 2009; Jindal-Snape, Vettraino, Lowson and McDuff, 2011). One fundamental aspect in DPTs is the learning environment in which the sessions take place and the relationships that emerge in order to create this environment. According to Akin (2014), drama promotes a learning environment in which individuals actively participate allowing them to have rich learning experiences. He found that DPT was perceived by pre-service teachers as quite important for permanent learning because it offered an environment that motivated critical thinking and empathy among other abilities. In Erdogan's study (2013), results highlight a link between creative writing skills and the DPT learning environment, highlighting that children were able to express themselves thanks to this flexible, free learning setting. This positive learning setting was considered by Garaigordobil et al. (2011) as a main factor that fosters children's creativity in collective play. All these creative

expressions that arise in this kind of learning environment correspond to collective interactions among children and pedagogue, which dialogic space theories describe as co-constructive forms of group talk or "interthinking" (Vass, Littleton, Jones and Miell; 2014). Holland (2009) established that in DPT, confidence between pedagogue and children is fundamental for developing a safe environment in order to let emerge children's free expression, and thus their creativity.

As we proposed above, characteristics described in literature defining DPT environments are also mentioned when conceptualizing dialogic spaces. Dialogic theories insist in the notion of co-constructed pedagogies through dialogue that favour creative and dynamic ways of learning and teaching experiences (Vass & Deszpot, 2017) and thus promoting co-creativity. Self-Determination Theory (Ryan & Deci, 2000) proposes that children's expression could lead to a creative development thanks to an environment that promotes the need of autonomy of participants enhancing their intrinsic motivation and thus, leading them to a mood that will promote creativity. Vass et al. (2014) explain it as a sort of connectedness in improvisational contexts, allowing the emergence of creative togetherness. In sum, both DPT and dialogic space literature agree with the fact that a free, safe and/or careful learning setting is better for creative development. In this sense, Jindal-Snape & al. (2011) claim that children's solution finding through a safe environment is not-new to DPT, emphasizing the fact that the DPT learning environment gives them freedom of expression and the possibility of finding solutions to problems, thanks to a space that permit mistakes.

Even though the above literature seems to agree that this kind of learning environment permits enhancing creativity, to our knowledge, there's no clear evidence of the effect of the

learning setting of DPT on French children's creativity, nor exhaustive studies on DPT have been done in France so far.

In order to prove if these studies relating the learning setting of DPT and the creative development were replicable in a French school contexts, we conducted a study creating two trainings, a Collective Sports Games training and a DPT, contrasting the effectiveness of these methodologies in enhancing creativity and emotional mood among a group of 4th grade, primary school children.

Based on the literature presented above, as a main hypothesis (H1), we predict that children who will participate in the DPT will present significantly higher scores in divergent and convergent creativity tasks than children participating in the CSG training after the interventions finished. We also hypothesize (H1b) that four months after finishing the interventions, the DPT group will continue to have significantly higher scores in both of the creativity tasks applied. As a second hypothesis (H2), we predict that after finishing the interventions, scores for DPT participants will be higher and more stable than the CSG group on the mood valence assessment.

3. Method

3.1 Participants

Participants were 55 school aged children between 9 and 11 years old (m=9.9; SD=0.3) recruited in 4th grade classes from a private (PR), a public (PU) and a priority (REP) school in the Paris area. Children were randomly assigned either to an active control group participating in Collective Sportive Games (CSG, n=24) or an experimental group participating in a Drama Pedagogy Training (DPT, n=31).

Before the beginning of the study, authorization letters for the participating children were sent to their parents. Groups were composed after all authorization letters were received. For final analyses, three children were excluded because they were not available for posttest evaluations and one of the participants had special learning needs and participated in the intervention accompanied by an educational assistant, so he was also excluded from the analysis. All other children presented no mayor cognitive, social, or affective difficulties.

3.2 Material

3.2.1 Evaluation of Creative Potential (EPoC)

In order to evaluate creativity in a longitudinal way, we used the A and B forms from the abstract figurative tasks for divergent and convergent thinking from the EPoC battery of test (Lubart, Barbot & Besançon, 2011).

For the abstract figurative divergent thinking task, children are asked to draw as many drawings as possible, on separate sheets, starting from a given figure. They have 10 minutes to complete the task and all drawings must have a name indicating what they are (each idea). For the abstract figurative convergent thinking task, children are asked to make a draw using at least 4 shapes from 8 given figures. They had 15 minutes to complete these tasks and the drawing must have a name indicating what is draw (the main idea). Three judges evaluated the productions. Inter-judge agreement was satisfactory with the data showing good interjudge fidelity (α_{post}= .89; $\alpha_{followup}$=.69). We decided to use the figurative tasks, instead of the verbal tasks, due to the time the schools agreed for evaluation purposes. The intended protocol included one hour of evaluation per child for pretest and one hour for post-test, which was considered too long. According to this, we agreed to asses collectively via figurative tasks. Limitations will be discussed.

3.2.2 Evaluation of Mood

In order to measure children's positive emotions we used the adapted paper version (Monnier, Syssau, Blanc & Brechet, 2016) of the valence and arousal Self Assessment Manikin scale (SAM) (Bradley & Lang, 1994). Mood valence was measured through a 9 point Likert scale going from a positive figure at the right of the paper to a clearly not positive figure at the left of the paper. Children had to circle the figure in order to represent how they felt. Mood arousal was not measured in this study. This scale can be easily used because it is a visual and self-reported measure (Monnier et al., 2016) and has already been tested for children aged 6-12 (e.g. McManis, Bradley, Berg, Cuthbert, & Lang, 2001).

3.3 Procedure

3.3.1 Creation of Trainings: DPT and CSG

The independent variable was the Emoted pilot program, a Drama Pedagogy Training created through the selection and adaptation of some Drama Pedagogy Training activities proposed in the Spanish program "Programa Juego" (Garaigordobil, 2003) considering that all the activities in the program were already validated. Some other Drama Pedagogy Training activities were taken from the work of García-Huidobro (2004) and Boal (1989). The training consisted of 6 sessions which were adjusted to French school time in order to avoid holidays that could interfere with the sessions. At the beginning of each session there was a transition/warm up

activity where children expressed how they felt as they left the standard school activities and got prepared for the training. Then, there was the main Drama Pedagogy Training activity(ies), and finally a feedback period in which children expressed their opinions and feelings about the session. Each of the six sessions lasted between 60 to 70 minutes depending on the length of time needed for feedback. For both groups, sessions 2 and 6 had a collective activity.

CSP was created through the selection of popular collective games taken from Boulo & Olivier's (2005) collective games and Orlick's (1986) cooperative games and adapting the latter for the French school context. It also consisted of 6 sessions of 60-70 minutes, was adjusted to French school year, and sessions 2 and 6 had a collective activity for both groups.

The same trainer, also part of the research team, created and conducted both of the trainings in order to avoid teacher's personality bias between the groups.

3.3.2 Protocol experimentation

The protocol was presented to participating school directors and teachers and an agreement participation letter for parents was distributed.

After parent's agreement, each child was given a code. We randomly assigned the codes either to Collective Sportive Games (CSG) or to Drama Pedagogy Training (DPT). Code randomisation was made by a free online software. In order to avoid cognitive or emotional predisposition, teachers were asked not to tell students about the real purpose of the study. As a cover story, children were told they would just participate in two different collective workshops.

A week before starting the training, children answered the EPoC tasks, specifically the abstract figurative tasks for divergent thinking and convergent thinking, Form A. They were asked to 1) draw as many drawings as possible from a given figure and 2) draw a complete

drawing from eight given figures including at least four of the figures. The week after the task completion, we started with the training. From session 1 until session 6, children were asked to answer a SAM scale in order to see their emotional valence before and after each session. After the training was finished, children were asked to answer the abstract figurative tasks for divergent thinking and convergent thinking, Form B. Also, as part of qualitative analyses, 12 semi-directive interviews were prepared right after the interventions were finished. Six for the DPT group and six for the CSG. Two children from each school (one boy and one girl) from each group were randomly selected for an interview group. Due to the absence of four children, interviews could only be carried out with eight children.

3.4 Follow-up

3.4.1 Participants

For this part of the study, 35 children aged 9 to 10 years old (m=9.8; SD=0.3) who had previously participated were included. This sample was composed of children from the public and the private schools. The Priority school included in the study didn't participate for this part of the study.

3.4.2 Material

3.4.2.1 Evaluation of Creative Potential (EPoC)

As described above in 3.2.1, creative figurative divergent thinking and creative figurative convergent thinking were measured by abstract figurative stimuli EPoC.

3.4.3 Procedure

Three months after the final interventions, we contacted the three schools again that had participated in the study. The public and the private schools replied that they would be happy to participate in a follow-up study while the priority school did not answer. We established dates to conduct our follow-up study, and it was carried out four months after the last session. We asked the children to answer the EPoC figurative tasks.

4. Results

4.1 Descriptive analyses

Analyses were made on a final sample gathering all participants that were present for both measurement sessions. Thus, the CSG group was comprised of 24 children and the DPT of 31. The mean scores for divergent thinking and convergent thinking of the participants before the sessions are detailed in the table below.

Table 1. Means of divergent thinking and convergent thinking for each group before the sessions.

	Type of Training	**N**	**Mean**	**SD**
Divergent Thinking	CSG	24	7.08	3.51
	DPT	31	5.68	2.88
Convergent Thinking	CSG	24	3.51	1.20
	DPT	31	3.73	1.29

4.2 Hypothesis testing

4.2.1 Creativity

A Two-Way ANOVA for repeated measures was conducted in order to test the interaction effect between the type of training and the time of measurement on creativity. A Two-Way analysis of variance was conducted on the interaction of two independent variables (type of training and time of measurement) on creativity for both divergent thinking and convergent thinking variables. Type of training consisted of two levels (DPT and CSG) and time of measurement included two levels (Pre-Test and Post-Test). Results showed a significant interaction effect between the type of training and the time of measurement (2x2 model) and a large effect size of this interaction on divergent thinking ($F_{(1,53)}$=61.18; p<.000; η^2=.54) as well as on convergent thinking ($F_{(1,53)}$=12.76; p<.001; η^2=.19) scores.

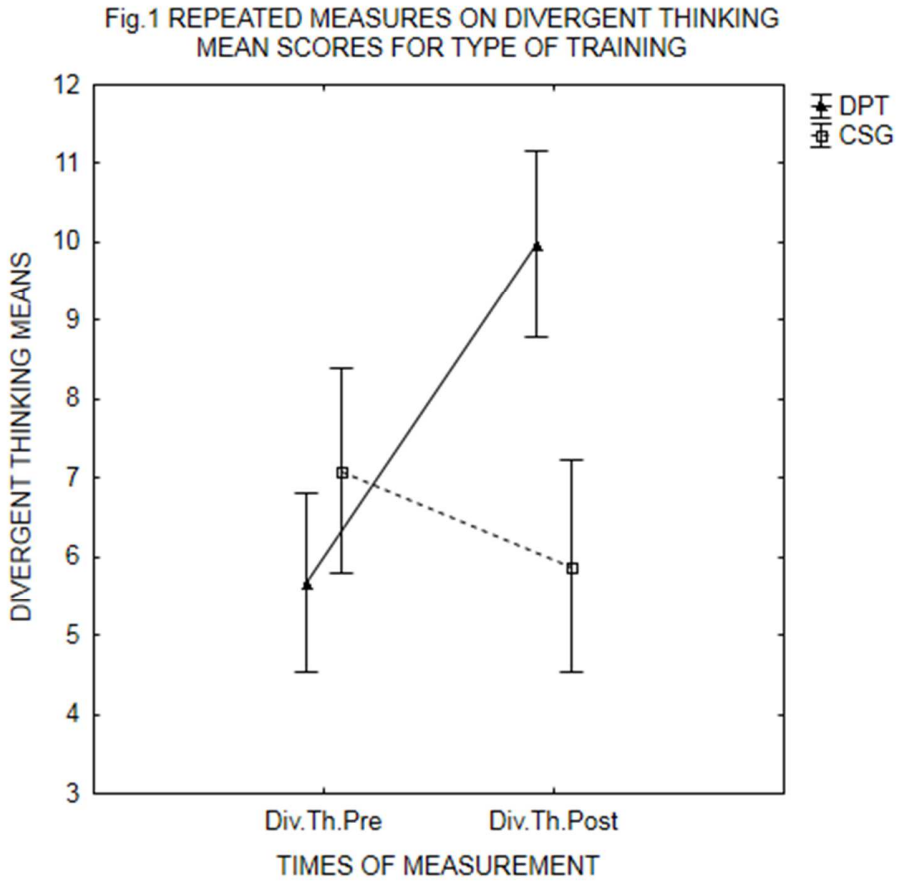


Fig.1 Repeated measures on divergent thinking means for type of training.

According to the chart plotted above, the means on divergent thinking present a significant difference (t=4.56; p<.000), indicating that children who followed the DPT group (m=9.97; SD=3.26) performed significantly higher on the creative divergent thinking test than the CSG group (m=5.88; SD=3.35).

For convergent thinking, scores were statistically different in post-test time of measurement (t=2.96; p<.004) with DPT group scores (m=4.14; SD=0.97) higher than CSG group scores (m=3.36; SD=0.96).

Results confirm our first hypothesis (H1), showing that after DPT children have higher scores on both creativity measures compared to their classmates in the CSG training.

4.2.2 Follow-up

In order to determine the interaction effect of the type of training with the three measurement sessions, we conducted a repeated measures analysis. Independent variables were the types of training (DPT and CSG) and the three different times of measurement (pre-test, post-test, and follow-up). Results showed a significant interaction effect as well as a large effect size on divergent thinking means ($F_{(5,66)}$=8.35; p<.001; η^2=.20) with DPT scores higher than CSG, but no significant interaction found for convergent thinking scores.

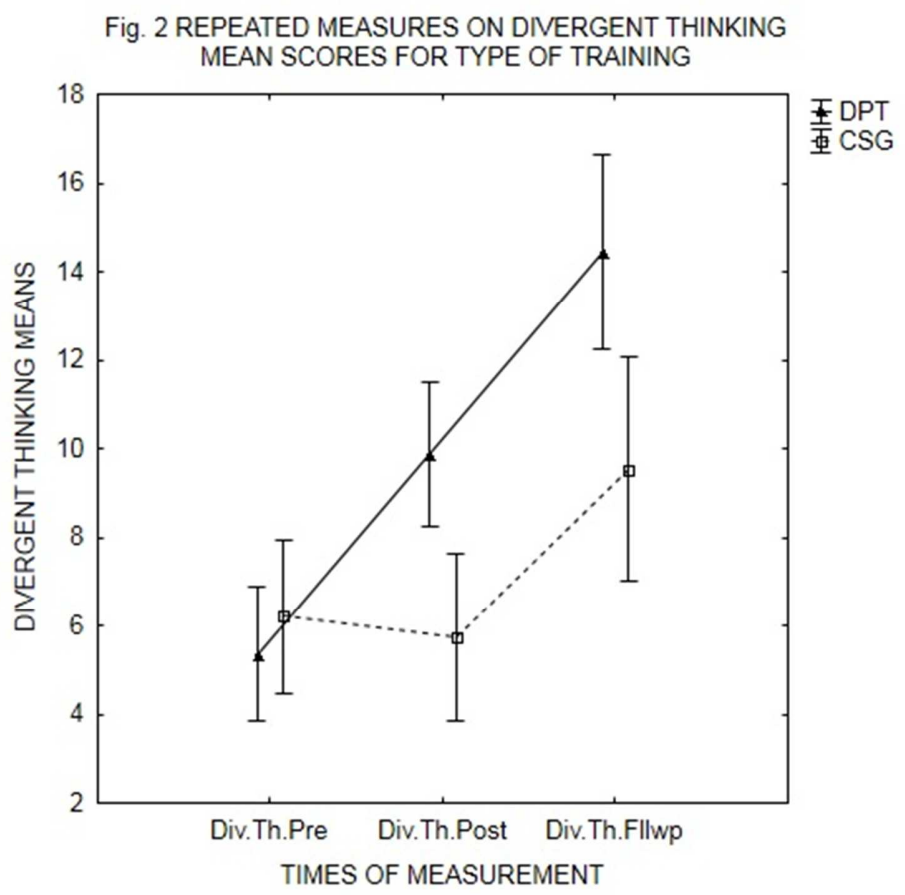


Fig.2 Repeated measures on divergent thinking means for type of training.

Figure 2 shows follow-up mean scores on divergent thinking to be statistically different (t=2.97; p<.005) between the scores of the two types of trainings. DPT group (m=14.5; SD=5.49) present higher scores than CSG group (m=9.53; SD=3.78) indicating a better performance of the DPT group in the divergent thinking creativity task than the CSG group. Convergent thinking scores presented no statistical differences.

Results partly confirm our hypothesis (H1b), showing that four months after finished the training, DPT group scores are significantly higher on divergent thinking creativity measure over CSG training group, but no significant differences were found on the creative convergent thinking task.

4.2.3 Mood Valence (Positive Emotions)

We measured children's mood valence in both types of trainings before and after each session. We decided to run a multivariate test in order to see the interaction effect of the type of training with its two values (DPT and CSG) and the after-session times of measurement with its 6 values (one for each session) on children's mood valence throughout the sessions. Results showed a significant interaction effect between the type of training and the after-session times of measurement and a medium to large effect size on mood valence ($F_{(5,225)}$=5.77; p<.001; η^2=0.11).

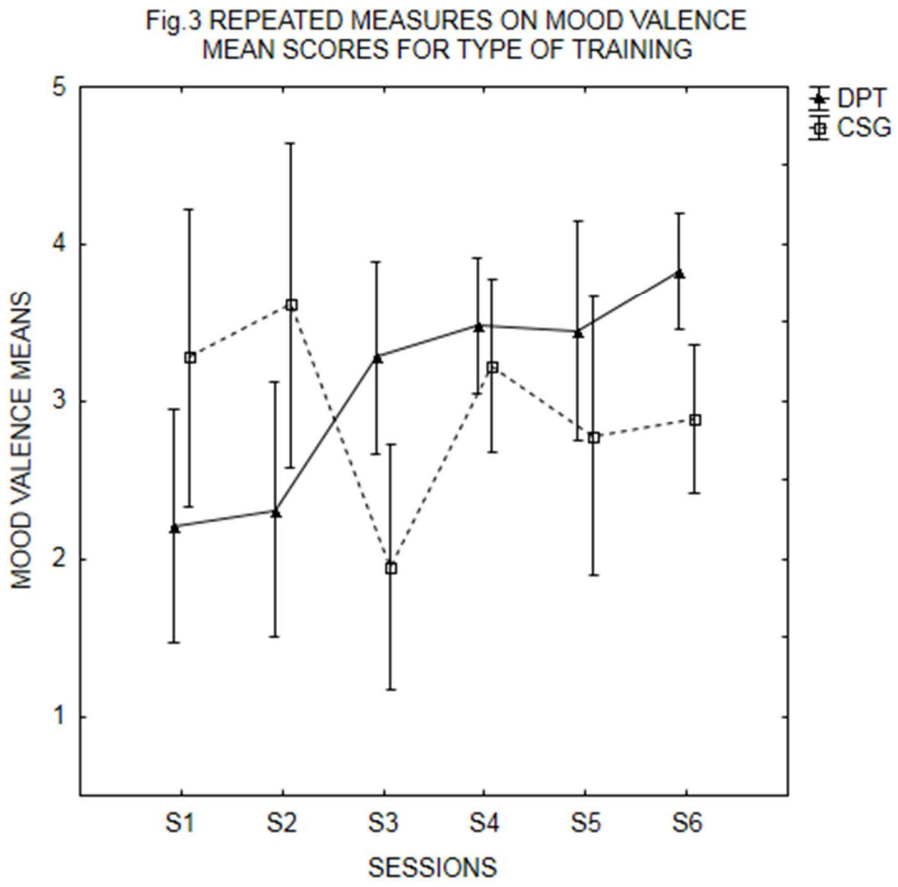


Fig.3 Repeated measures on mood valence scores for type of training.

In the run chart plotted above, repeated measures analyses illustrates the differences of mood valence between both groups right to the end of each session. Both groups show high levels of mood valence, although the behavior of the lines indicates more positive moods for the DPT group (m=18.39; SD=6.1) than for the CSG group (m=17.61; SD=5.7). Nevertheless, no significant differences were found. DPT group increases its scores from the second session to gain stability in the scores of mood valence from the third session until the final session. On the other hand, the CSG group started marginally higher than the DPT group, even though no statistical difference was found, and shows more of a nonlinear development of mood valence,

particularly in session three in which we observe a slump of mood valence which is recovered during the fourth session.

Results of repeated measures, evidencing a significant interaction effect and a medium to large effect size of the type of training on mood valence, confirm our second hypothesis (H2) showing that after the interventions, the DPT group has higher and more stable scores in mood valence than the CSG group.

4.3 Interview analyses

Table 2 below shows the percentages of the results for the given answers to the semi-directive interviews. In both groups, children answered that they liked the training in which they participated. When asked for the reasons, the biggest differences were found in the creative aspect of the training, with 75% of the DPT participants identifying this aspect as the reason they liked the training. Regarding the learning experiences, the main difference was given in emotional intelligence learning, with 100% of the DPT participants evoking this learning versus 0% in the CSG. Another major difference between groups was found in how they learned to communicate with others. 75% of the DPT group judged that they had learned how to communicate with others thanks to the training, while none of the subjects in the CSG mentioned this learning.

Table 2. Percentages of children's given responses
regarding personal preferences and learnings during the trainings.

	satisf action	liked ludic aspect	liked collec aspect	liked creat aspect	liked collab aspect	liked emot aspect	liked mouv aspect	learnt to be in group	learnt comm others	learn t EI
DPT	100%	100%	75%	75%	25%	25%	0%	50%	75%	100 %
CSG	100%	75%	50%	0%	0%	0%	0%	25%	0%	0%

Table 1. Percentages of given responses regarding personal preferences and learnings during each training.

5. Discussion

This study provided evidence that the work of a dialogic space in DPT enhanced creativity through the increase of divergent thinking. Nevertheless, we are well aware of the limits of this study. We worked with a little sample, with groups sizes that are below the threshold needed for making any statistical assumptions, so results cannot be generalized and they have to be taken with consideration. This small sample could explain in part why some of the results regarding creativity in the follow-up were not significant when assessing convergent thinking, as well as the mean differences in mood valence within each group.

Besides, the election of figurative tasks instead of verbal tasks needs to be observed. We understand that verbal tasks are more likely to be related to DPT interventions, as children were asked to create and improvise stories which would have a better impact on a verbal task than on a figurative task. Nevertheless, we are also aware that the fact of training children via dramatic

experiences, making them improvise stories would have been considered as a practice for the tasks, and thus, our results may be biased. In any case, it seems necessary for further studies to measure at least both components of creative potential (verbal and figurative) to see if there are correlations in scores, and if DPT is more involved with verbal creativity development than with figurative.

Another limitation that should be considered is that both interventions were carried out by the researchers, thus implying possible unconscious bias. In order to avoid this possibility, the researchers were trained through a rigorous protocol that provided every activity and instructions that needed to be addressed to children. Each activity for each of the sessions in both trainings were carried out as expected, no improvised games were allowed, only what was previously agreed for each training. Nevertheless, we understand that unconscious bias could have occured, influencing some emotional or motivational aspects on children, thus inducing them to be more creative in the DPT group. In any case, DPT has a specific framework that needs to be respected, and these emotional and motivational differences in the training could be due to the psycho-pedagogical framework of DPT (Celume et al. 2019) as it cares about the environment in which the activities are carried on. Future work will need to consider a way to control this variable.

We tend to support the idea that the results of this study can be generalised to the work that DPT, as a methodology, can achieve in terms of creative development. We are aware that the use of a set of specific activities during 6 weeks could be considered by some authors as a particular tool instead of DPT and that should be considered carefully. Nevertheless, we would like to insist in the idea of DPT as a methodology, a specific kind of training within Drama Pedagogy (considering the term coined by Garcia-Huidobro in 1996). The activities carried on during the DPT intervention were subject to the model of DPT (Celume, Besançon, & Zenasni, 2019) and

thus, can be replaced for any other activities as far as they can be recognised as an equivalent of the constitutive element of DPT that correspond to the original activity (For more detailed information about the constitutive elements of the model of DPT to enhance creative thinking, please see Celume, et al. 2019). The use of this particular methodology, considering all the elements that constitute DPT (technical drama phases and psycho-pedagogical framework) is the fundamental part of the work that can be achieved in terms of creative thinking, and not the activities isolated. In other words, more than the activities itself, is the use of narrative and embodiment in the technical drama phases of DPT, along with the use of narrative and a dialogic space in the psycho-pedagogical framework of DPT, which would have an impact on creative thinking. In this sense, if the set of activities used in this study are isolated and repeated without considering the other constitutive elements of DPT, results are not likely to be replicable.

Creativity scores, measured through divergent and convergent thinking, were significantly higher for the DPT group after the intervention was finished. Positive emotions were also significantly higher for DPT group than for CSG. Moreover, four months after the training was finished, results for divergent thinking continued to be statistically higher for DPT. These results confirm our main hypothesis which suggested that children participating in DPT group would score significantly higher than their classmates in the CSG group in both creativity measures and emotional mood right after the trainings.

Nevertheless, our second hypothesis is only partially confirmed, as results showed no statistical differences between the groups for creative convergent thinking scores four months after finishing the intervention. Thus, while divergent thinking tended to continuing growing with statistical difference between the groups, convergent thinking started to shrink this difference. Still, results for the DPT group continued to be higher than for the CSG, suggesting that maybe a

more targeted experience that focused on the convergent aspect of creativity could prevent scores from dropping over time. Nevertheless, the fact that creative divergent thinking continued to be high for the DPT makes us wonder about the links between creativity and DPT. As explained before, dialogic spaces can be defined as co-creative learning spaces that permit intersubjectivity (Rogoff, 1990) to arise. This creative intersubjectivities shown to be fostered by DPT, as this pedagogy is based on a learning environment in which the dialogical interaction or interthinking (Mercer, 2000) among participants permits the child to express in a free non-judgemental space.

Thus, regarding our third hypothesis, initial analyses of interviews tend to confirm that the learning environment of DPT promotes creativity. Most of children in the DPT considered that one of the learning outcomes was the fact of being able to communicate with others. This points to a fundamental basis of dialogic thinking. In one of the interviews, a child specifies: "... actually, I thought that... everybody was going to laugh at the others but it actually didn't happen… we didn't feel ashamed… we learned… to not feel scared of presenting what we think to others...". So, considering that dialogic space can be understood as a social setting in where participants think together and interact (Nes & Wikan, 2013), this conception can be related to the talkative setting proposed by DPT in which the participants can present, discuss and interact with their ideas. This idea exchange occurs in an active listening space which is free of judgments (García-Huidobro, 1996). According to this perspective, the learning setting that DPT promotes helps children to feel safe to express themselves and thus, to develop the ability to actively communicate their inner thoughts and ideas without feeling judged but rather feeling cared for and safe.

Considering these statements, one could argue that freedom of expression, understood as free creation, can be found in a DPT setting. The active participation allowed them to make

independent decisions while the feeling of belonging encouraged them to be open to different experiences and to be tolerant of others. Whatever the perspective, it is a dialogic space such as the learning environment proposed by DPT that seems to have an impact on creativity. A dynamic environment might enhance children's free expression allowing them to be more creative just as proposed by Vass et al. (2014) which considers that sharing and reflecting different ideas and points of view are detrimental to establish intersubjectivity in any collaborative activity.

Moreover, DPT permitted an interaction of opinions and ideas that children express as an important learning outcome that could not be done if it were not done by the DPT learning environment and that is one the reasons they enjoyed the training. One of the children mentions that "... after the session, you'll be able to talk with everybody, enjoy with everybody… if we hadn't done this [DPT] I would have never talked with them [classmates], I would have left them at their corner." In her statement, she explains that the space she shared with other classmates helped her to interact with others. In the same vein, another child answered that he liked the training because "we had to work in group and each of us could propose ideas and it was good to listen to other's [ideas]". His remark, which is shared by other children in the class, reminds us of the importance of active listening in which participants share their ideas listening to each other. These children's appreciations highlight the importance of language for relationships by outlining one of the principal values of dialogic space which states that several voices can speak simultaneously without the need to silence others (Fernández-Cárdenas, 2014; Matejka & Titunik, 1973). Moreover, children take this interaction as part of the creative process and linking it with positive emotions, pointing out that "we are with the others and we create something with the others, we invent altogether, and also we can produce in front of others and

watch the others… I was rather happy… I like to enjoy with others...". Here, we see how the interaction with the others is described as related to positive affections and creativity consistent with several studies that link both processes (e.g. Abele-Brehm, 1992; Bass, De Dreu & Nijstad, 2008; Celume et al. 2017). Vass et al. (2014) reflect the ideas of Gelernter (1994) by explaining the term "affect linking" as an affect related thinking process that would be the key to generate creative associations.

As discussed above, positive results and large effect sizes were achieved thus suggesting that further research should to be done in the field. In order to repeat this experience in an ideal setting, many considerations have to be done. First, the training room has to be as similar as possible for all the groups participating in the study to avoid physical bias. Environment had an impact on participant creativity, so ideally all settings must remain the same. Second, training sessions should occur at the same hour and ideally on the same day of the week. To this end, we recommend running the training each week alternating the hour (e.g. every wednesday at 8 and at 10; week A, DPT starts at 8 and CSG at 10, week B, CSG starts at 8, DPT at 10). We were able to do this only for one part of our sample in order to reduce bias of time. Third, evaluation sessions for pre-test and post-test should occur during the same week of the trainings. All pre-test assessments should occur one day before the trainings and all post-tests assessment should occur one day after the trainings. In this way, sessions 2 and 6 should go first and last respectively. Another perspective to consider in the future is that DPT should be repeated using a much larger sample in order to generalize results to a larger population. Another perspective is to make a comparative study with two different countries. Currently a project is being carried out between a European and a Latin-American country in order to see the similarities and differences that children might encounter by analysing language, culture, educational system, among other

variables. Also, DPT for older children, adult, and elderly population are contemplated for further investigation. Moreover an observational study has been already carried out in order to observe the details of the sessions and the specificities of the training that impact creativity and other outcomes, and a study on kinesthetic creativity was carried out in order to see which other aspects of creativity could be impacted by DPT.

5.1 Conclusions

DPT is a drama based method focused on the learning experience of its participants, which has shown to be related to the experience of sharing ideas through an open learning environment that permits children's judgement-free expression. Significantly, higher scores in creativity that were shown right after the training and after four months for the DPT could be explained in part by this intersubjective pedagogy. This, as dialogic space theories explain, promote interthinking among children leading to co-creation in a positive space and thus enhance creative thinking. Thus, the learning environment proposed by DPT from a dialogic perspective promotes creative thinking. These findings reinforce the idea that creativity can be transferred and how the arts, in this case drama pedagogy training, can be a feasible way for developing cognitive and emotional factors that impact creativity. These ideas were already developed in a previous work (Celume et al. 2019) in which the different elements in DPT, including the dialogic space, have an impact on several cognitive processes that impact creative thinking.

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