

# Possibility thinking pedagogy: Exploring the role of the teachers' meddling-in- the-middle in fostering children's possibility thinking by utilising learning resources linked to museum visits

Maria Gregoriou

University of Aberdeen, MacRobert Building, Room 626, United Kingdom

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## ABSTRACT

The pedagogies for children's aspiration of Possibility Thinking (PT) have been investigated for over a decade in early year and primary settings. This study focuses on qualitative findings related to the involvement of teachers in inspiring PT amongst 9–10-year-old children using museums as part of their learning, in Cyprus. Eight educators participated in the study, and findings were compared to existing literature, providing a detailed exploration of how they engaged with their students for inspiring their PT. The analysis revealed that educators had three distinct stages of involvement in facilitating PT: creating the narrative (taking an active role), participating in the narrative (actively engaging), and supporting the narrative (taking a more passive role at times). These findings serve as a starting point for future research on pedagogies that foster PT using alternative learning resources like museums. This paper presents the key findings of the study and concludes with suggestions for further research in this area.

## 1. Introduction: situating the focus of the study

Over the years several people have contributed to the theories of pedagogy, including Bloom (1956); Bruner (1960, 1966, 1971); Piaget (1926, 1975); Vygotsky (1962) and many others. Alexander defines pedagogy as 'the act of teaching and its attendant discourse' (Alexander, 2004, p.7) which encompasses other views such as that of Watkins and Mortimore (1999, p.3) who argues that pedagogy is 'any conscious activity of one person designed to enhance learning in another'.

Jeffrey et al. (2004), has documented numerous characteristics of creative teaching strategies including flexible structures, encouraging the taking of roles, creating critical events, problematising and stimulating the imagination through narratives. Cremin and Chappell (2019) through their literature review (they draw on studies from 1990 to 2018), identified seven interrelated features that characterise creative pedagogies: generating and exploring ideas; encouraging autonomy and agency; playfulness; problem-solving; risk-taking; co-constructing and collaborating; and teacher creativity. The above studies opened paths for the empirical investigation of teachers' pedagogy for fostering creativity, an area towards which this study has been addressed.

While previous research has examined PT pedagogies and museum education separately, this study aims to bring these areas together to provide a new perspective teacher's pedagogy for older children. This paper builds upon the existing body of research on PT (Burnard et al., 2006; Chappell, Craft, Burnard & Cremin, 2008; Craft, Cremin, Burnard & Chappell, 2008; Craft, Cremin, Burnard, Dragovic & Chappell, 2012a and 2012b; Cremin, Burnard & Craft, 2006, 2013) and aims to enhance deeper understanding of how teachers facilitate their students' PT by connecting their learning with interactive and immersive educational experiences offered by

E-mail address: [Maria.Gregoriou@abdn.ac.uk](mailto:Maria.Gregoriou@abdn.ac.uk).

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Fig. 1. A model of pedagogy and possibility thinking (Cremin et al., 2006, p.116).



Fig. 2. Pedagogy nurturing possibility thinking (Craft et al., 2012).

museums. Specifically, this paper closely examines and delves deeper into the pedagogical approach known as "stepping back and forward" or the "meddler-in-the-middle," as argued by Craft et al. (2012) in their study, focusing on older children aged 9–10 who are engaged in museum visits as part of this process.

### 1.1. Empirical work on possibility thinking

The notion of PT (Craft, 2000, 2001) is considered as "thinking in novel and valuable ways about the world" (Craft, 2000, p.9) and is at the heart of creativity (Craft, 2000, 2001). PT has three main principles: the use of imagination to find a solution for the problem, asking questions (which children do naturally), and play (Craft, 1999). These three principles formed the original conception of PT. However, the concept of PT has developed and changed over the years. PT implies the learner’s engagement with problems and the shift from "What is this and what does it do?" to "What can I do with this?", whether this is through question-posing or behaving "As if" (Craft, 2010).

The pedagogical strategies that have been evidenced as crucial for fostering the development of PT in classrooms are: "standing back, profiling learner agency, and creating time and space" (Cremin et al., 2006, p.108). Standing back fosters learners’ autonomy and provides students with the opportunity to follow their own interests, gaining agency in their learning. In this way, the teacher can

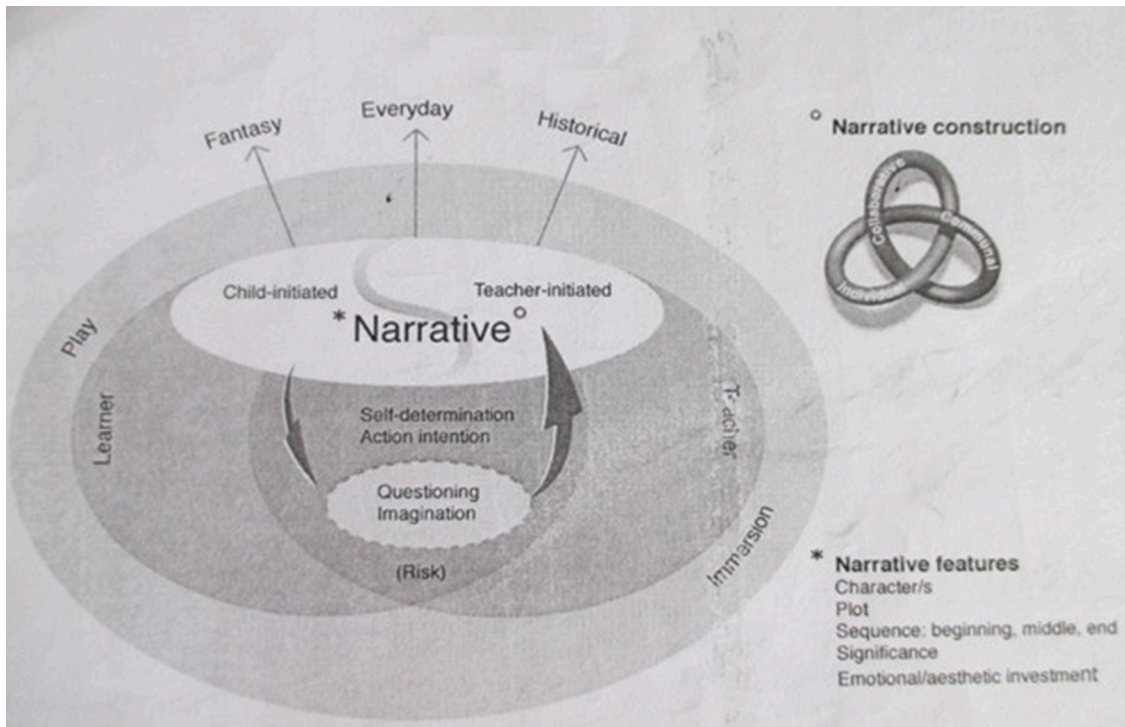


Fig. 3. The role of narrative in possibility thinking (Cremin et al., 2013).

notice children's actions, understand their thinking in the process, and build on this. This pedagogy, according to Cremin et al. (2006), can help engage children by allowing them to make decisions and take responsibility for learning (Fig. 1).

Craft et al. (2012) revealed five ways in which practitioners supported children's creativity in child-initiated play. These were by provoking possibilities, allowing time and space, being in the moment, making interventions, and mentoring in partnership. The new PT features in relation to pedagogies helped to develop a new representation of PT. Craft et al. (2012), through their study focused on the strategies of valuing learner agency, offering time and space, and extended the strategies of standing back and enabling context. The teachers are seen as co-authors or "meddlers-in-the-middle" (Craft et al., 2012), balancing standing back and stepping forward in their classroom. These can be seen through Fig. 2. However, what is much clearer in this study is how practitioners blended standing back with stepping forward into children's play-space, co-imagining with the children. The above analysis offers further insight into the dynamic between children and between children and adults (Craft et al., 2012).

Cremin et al. (2013) revisited key published work and drew on data previously analysed for PT features. This new analysis revealed that the narratives were individually, collaboratively, or communally constructed and had a common set of narrative features. Fig. 3 shows how new analysis extends the previous studies in terms of the role of narrative in PT as well as the teacher's role in this procedure.

This paper draws on the theory of PT already built (Burnard et al., 2006; Chappell et al., 2008; Craft et al., 2012b; Craft et al., 2012a; Cremin et al., 2006, 2013) and explores further the teacher's involvement in inspiring PT, using interactive museum programs as the learning space that will inspire the exploration of novel (for the children) ideas and concepts. This study aims to unpack and closer examine the role of the teachers referred to as 'meddler-in-the-middle' by Craft et al. (2012), focusing on older children who visits museums as part of their learning experience.

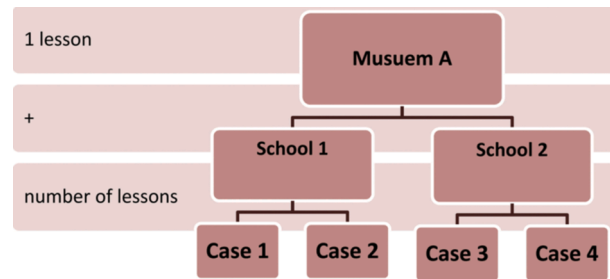
### 1.2. Museums and PT. How they link?

Museums have the remarkable ability to inspire and foster children's creativity and creative thinking in profound ways. By immersing children in a diverse range of exhibits, museums provide a rich and stimulating environment that encourages imaginative exploration (Dickinson & Neelands, 2006). The intriguing artifacts, captivating artworks, and interactive displays ignite curiosity, prompting children to ask questions, make connections, and think critically. Museums often offer hands-on activities and workshops that allow children to engage with art, science, history, and culture in interactive and dynamic ways. These experiences invite children to unleash their imagination, experiment with new ideas, and develop their unique perspectives.

Museums are ideal places where stories can be told that encourage visitors to make their own interpretations. Dickinson and Neelands (2006) noted that: Stories are the most fundamental way we learn. Through their diverse exhibits and interactive displays, museums offer children a gateway to a world of endless possibilities, encouraging children to think beyond what is readily apparent

**Table 1**  
Numbers of classroom and museum visit observations.

Case	Observations before museum visit	Observations after museum visit	Number of museum visit observations
1	2	4	1
2	3	5	1
3	2	5	1
4	2	3	1
5	2	4	1
6	2	3	1
7	3	4	1
8	2	4	1
Total	50		8



**Fig. 4.** The four cases which participated in the same museum project in Museum A.

and consider alternative scenarios. Museums often provide hands-on activities, workshops, and educational programs that challenge children to engage in open-ended problem-solving and creative exploration. This inspires wonder and awe; it allows children to imagine themselves in another time and place (Dickinson & Neelands, 2006).

Museum interactivity can improve the visiting experience (Kidd et al., 2011). Interactive exhibits are a key tool in engaging visitors and creating immersive educational experiences for them, as the children can explore tasks by imaginatively taking on roles assigned by the teacher. Children not only live through their knowledge by acting in a different role, but also learn to pose questions, find out more possibilities, and be playful in inventing new ideas (Kidd et al., 2011). These features are exactly the qualities of PT.

The story, or the content of an interactive museum, can involve social issues (Bolton, 1992), or themes from other subjects such as an historical event (Clements, 1996; Somers, 1994), unfinished stories told by the teacher and needing to be developed by learners (Heinig, 1993), or the story invented by the whole class with the teacher's prompting and guidance (Wagner, 1999). In any form, there is always a tension in the story (that is what makes story interesting), which enables teachers to set a context that not only involves experience related to children's everyday life, but also trigger children's curiosity "with problems to solve, with open-endedness that requires a filling in of gaps, with information and ideas to synthesise into new relationships..." (Heinig, 1993, p.8). Through story, children's curiosity and their active engagement are aroused. If story is the means to arouse curiosity and invite children to jump into a learning context voluntarily, then role play is the vehicle through which children explore or develop the dramatic context.

Overall, combining storytelling, role play, and museum interactivity can powerfully engage children in learning and promote the principles of PT. By creating immersive and experiential learning experiences that allow children to explore and develop their own understanding of different subjects, museums can help promote critical thinking, and creativity. Children can put themselves in the shoes of different characters, acting out different scenarios and develop a more personal and experiential understanding of complex ideas and themes. This approach is closely linked to the principles of PT, which emphasise the importance of active engagement and personal meaning-making in the learning process.

## 2. Context of the study and sample

The study was conducted over a period of four months. It took place in four primary schools located in Cyprus. The sample for this study included eight teachers and their students aged 9–10 years old. Eight cases were chosen to 'make a compromise between the difficulties of multi-case and the limitations of a single case study' (Lin, 2010, p.112). These eight cases visited two public museums (Museum A and Museum B). These eight teachers were selected based on their primary goal of fostering and inspiring creativity and creative thinking in their classrooms using out-of-classroom resources, which made them particularly suited for the study's objectives. Table 1 provides a summary of the number of classroom and museum visit observations that were conducted during the study.

The selection of this age group was not random, as it possesses several characteristics that make it an interesting sample to investigate. According to the International Centre for Human Rights Education (2008), children aged 9–10 enjoy learning new things, being active, and are naturally curious. At this age, they are beginning to develop abstract thinking and are becoming more aware of their own and others' perspectives, making it an ideal time to introduce activities that encourage critical and creative thinking, social

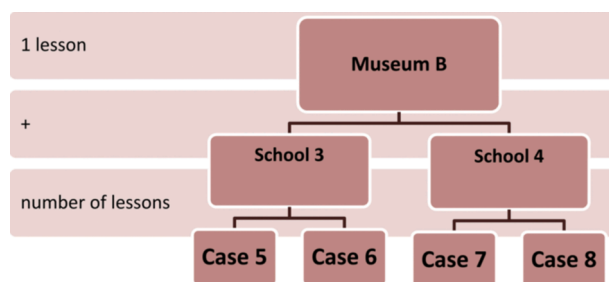


Fig. 5. The four cases which participated in the same museum project in Museum B.

interaction, and communication. Furthermore, they are capable of thinking about hypothetical situations and making predictions about the future. They learn best when involved in concrete projects, enjoy playing and taking on group challenges, and can express their thoughts freely. These abilities are essential for PT, as it involves thinking beyond the present and imagining new possibilities. Overall, the characteristics and developmental stage of this age group make it a suitable sample for investigating the use of museum visits and PT pedagogies.

Two different museum programmes were observed, as is shown in the two figures (Figs. 4 and 5). It is important to note that the choice of the two museum programmes was not random but rather based on specific criteria, including the suitability of the programmes for the age group and the curriculum, as well as the accessibility and availability of the programmes for the schools and teachers involved. The programmes were also selected based on their interactive and experiential nature, which aligns with the pedagogical approach of PT. These factors were considered to ensure that the programmes would effectively engage the students and provide a meaningful learning experience.

### 3. Methodology

A case study approach was used to guide the data collection and analysis. According to Merriam (1998), the case study approach is appropriate if the researcher is seeking to answer 'how' and 'why' questions. The current research involved a 'how' question and, more specifically, 'How does the pedagogical approach of stepping back and forward, as described in previous studies on PT, manifest in the context of older children aged 9–10 who are engaged in museum visits as part of their learning experiences?'. Apart from the aim to understand and answer the 'how' question, the research was undertaken because of my personal interest in gaining a better understanding of this pedagogical concept.

Yin's (2003) category of descriptive case study was chosen, which is appropriate for fulfilling the purpose of this study. Descriptive case study was the most suitable type of case for the research because this type of case study is used to describe a phenomenon and the real-life context in which it occurs (Yin, 2003). The use of this kind of case study is to describe specific context/events, to capture the interaction between the context, events, and the participants, and to describe how participants view and respond to the process. A descriptive case study approach was found to be appropriate for two reasons: it is compatible with the research aims to describe and understand, and it is sufficiently flexible to tailor a unique study approach.

This study includes more than one case. Thus, if a study contains more than a single case, then a multiple-case study is required. A multiple-case study enables the researcher to explore differences within and between cases. The goal is to replicate findings across cases. Because comparisons will be drawn, it is imperative that the cases are chosen carefully so that the researcher can predict similar results across cases, or predict contrasting results based on a theory (Yin, 2003). A multiple-case study allowed the researcher to analyse within each setting and across settings. Thus, the data collection involved a variety of naturalistic methods such as one-to-one interviews with teachers, classroom and museum visits observations (field notes, video-recordings and still images), and teachers' and researcher's reflections upon the teaching strategies that were used during that day and upon the children's engagement, for gathering qualitative data.

The data collection of this study encompassed several stages. The first stage of data collection was the interviews, which were conducted with teachers not only at the beginning and at the end of the study but during many phases of this project. The second stage involved classroom and museum lesson observations which were video recorded. During all the lessons, the teachers and the researcher sought to undertake reflection-on-action (Shon, 1987) in their diaries. The third stage involved the clarification and triangulation of the research findings which is a crucial technique for establishing credibility (Patton, 1990). This study used multiple resources of data collection, and the accounts from different perspectives were gathered by observation, interviews, and teachers' and researcher own reflective journals. Additionally, the teachers watched specific episodes of the classroom and museum visit videos and reflected upon them in their journals or through discussions with the researcher. The selection of these episodes was made collaboratively between the participants and the researcher.

The data reduction in the study involved the narrowing down to seventy-eight selected episodes out of ninety-five. The selected episodes were representative of descriptive codification. The reason for choosing these specific key episodes was the detection of children's PT through their actions or through their participation in a discussion. The identification of PT features in the episodes was derived from existing PT frameworks such as those of Burnard et al. (2006), Craft et al. (2012a), Craft et al. (2012b), Cremin et al. (2006) and Chappell et al. (2008).

Then, a focus analysis and the development of analytic codes were created through an inductive and deductive process. The data analysis of this study was both inductive and deductive analysis as the study was heavily framed by the PT framework. In the analytic process of the study, there was a need to shift from an inductive to deductive approach, from time to time, to solid themes, in-depth understanding, and solid argument. This was necessary because the study was using an existing framework (PT framework), and as a result, the deductive analysis was appropriate in some stages. However, mainly the qualitative data were analysed through the inductive approach, in which categories were derived from data themselves and coding emerged from the data. The analysis follows the basic coding sequence (Open Axial Selective) iteratively between primary data and the emerging theoretical framework (Warburton, 2005).

In the data analysis, it was aimed first to identify open and axial codes for the teachers/museum educators' pedagogies for fostering PT. The data analysis was a deductive procedure having in mind the PT features identified from the literature (Burnard et al., 2006; Craft et al., 2008), and at the same time, the researcher remained open to other possible pedagogical features that might emerge from the analysis. The primary aim was to identify categories and concepts emerging from the text and then to link them with the axial codes. Through the above stages, the organisation of the analysis was largely derived from the PT framework. Appendix 1 (Tables 2,3, 4) shows the overall analysis process of the pedagogical feature identified in the eight cases with the plan of the instruments used for the data analysis process. The research instruments/methods, together with the type of data each generated, are summarised in Table 5.

The study adhered to Lincoln and Guba's (1985) criteria for trustworthiness, quality, and rigour, including credibility, transferability, dependability, and confirmability. To ensure credibility, multiple data collection methods were used, and accounts from different perspectives were obtained through observation, interviews, and reflective journals from both teachers and the researcher. Additionally, peer checking, and theory triangulation were used by comparing the findings with existing research on PT and education. For transferability, precise and broad descriptions of the sample's different perspectives were presented, along with details of the settings and participants' experiences. Dependability was enhanced by providing detailed explanations and processes used for collecting, analysing, and interpreting the data. To ensure confirmability, several procedures were implemented. Peer checking was conducted at various stages, and teachers were interviewed multiple times to confirm their ideas and the researcher's interpretations of their experiences and views. The researcher's interpretations and conclusions were also shared with the teachers, serving as a critical stage for both member checks and ethics.

#### 4. Ethical considerations

Ethical issues are of great importance in research and should be integrated into every step of the research process (Creswell, 2009). Therefore, ethical issues were taken into serious consideration in the research plan and comply with the guidelines issued by the British Educational Research Association (BERA, 2018). The ethical issues that could arise in this study are related to the data. Informed consent was obtained from the research institutions' ethics committee, the Ministry of Education and Culture in Cyprus, as well as from the participants' written approval (teachers and parents). Children's informed consent was also obtained. Regarding privacy concerns, the participants' data were treated with confidentiality and anonymity to protect their right to privacy. Pseudonyms were used for children (e.g., Girl A, Boy A), teachers (e.g., Case 1), schools (e.g., School 1), and museums (e.g., Museum A). Participants were informed that the data would be kept on a secure password-protected computer and would be used only for the researcher's personal use, with no other person having access. The teachers and children were informed from the beginning of the project about their right to withdraw from the research for any or no reason at any time.

#### 5. Findings and discussion

The analysis of the data unpacked further the role of the teacher as 'meddler-in-the-middle' (stepping back and forward) in fostering children's PT and this was consistent across the eight cases. The analysis revealed that educators had three distinct stages of involvement: creating the narrative (taking an active role), participating in the narrative (actively engaging), and supporting the narrative (taking a more passive role at times). Furthermore, these stages of involvement, were observed to be working in complex combination with other pedagogical features such as narrative scenarios, exploratory narrative questioning and the implementation of wait time 1 and wait time 2. The following section provides examples of these themes through quotes and vignettes from the case studies, illustrating the teacher's role in nurturing children's PT.

For this paper, three key episodes were chosen for detailed examination (Appendix 2), based on the detection of children's PT. The identification of PT and the pedagogical features in these episodes were derived from existing PT frameworks such as those of Burnard et al. (2006), Craft et al. (2012), and Cremin et al. (2013). The following pages will provide a holistic explanation and interpretation of these thematic topics, with illustrations relevant to the research question. It is important to note that all episodes presented in this paper are translated from Greek by the researcher.

##### 5.1. Narrative scenario: active participation stepping back & forward

A study by Craft et al. (2012a) observed that teachers were alternating between stepping forward and standing back as students transitioned from what is to what might be. This first example delves deeper into this Craft et al. (2012) finding by examining older children. In Case 4, a teacher engaged the students in an imaginary story based on a museum visit scenario in which the children would participate. According to the scenario created by the classroom teacher (stepping forward), the students were transformed into kings of

the twelve kingdoms that existed in ancient Cyprus. They maintained these roles throughout the entire lesson, successfully experiencing, thinking, and acting within the context. The children chose their kingdom, conducted research, and learned all about their kingdoms before participating in a kings' conference. The teacher acted as a host during the conference, assuming the role of one of the kings and alternating between participating and stepping back at different stages of the process. The following quote illustrates what occurred during the conference:

*Teacher: Let us make a toast for today's meeting. I hope that we will have a good year with lots of profit. -stepping forward.*

*-Cheers! [said all together and trying to clink their glasses]*

*Teacher: For a long time now, I wanted to organise this conference for us to talk to each other, my friends. We must create a plan for our trade. We must agree the countries that each of the kingdoms will have trade with, for all of us to have profits and not to have any disagreement. Do you agree? -stepping forward.*

*-Yes... yes, we agree. [said all together]*

*Teacher: OK, let us start our conversation. What are your plans, King of Kition? [...] -stepping forward.*

*Teacher stepping back.*

*King of Kition: My advisors and I have considered doing this on our own. The profit will be much greater for us!*

*King of Idalion: Nonsenses (interrupts the King of Kition). You will not be able to this alone. The risk is too big.*

*King of Tamassos: I intend to cooperate with the King of Kition if the kings want. I was thinking to export my copper to some of the Greek islands like Crete and Milos [the king showed to the other kings the two islands on the map]. What do you think, King of Kition? Are you interested? I will give you 20% of the profits.*

*King of Idalion: [the king of Kition was going to talk but the King of Idalion interrupted him] Ah... just a minute. This was my plan also. I will do it. Not you. My kingdom is full of copper. What I am going to do with it? Forget it. [said angrily]*

*King of Tamassos: What are you talking about? I said it first. This was my idea.*

*King of Idalion: Yeah, right. I will give you 25% of the profits, King of Kition.*

*King of Kition: Well... [King of Tamasos interrupted King of Kition].*

*King of Tamasos: I will give you 30%.*

*King of Idalion: I will give you 35%.*

*King of Kition: My friends, we will find a solution.*

Then they started creating a strategic plan, looking at the map and taking into consideration the position of their kingdoms, of how and where to export their copper by accepting and rejecting one another's ideas- stepping back [...]

(Ob, Case 4, L1-E1<sup>1</sup>)

The findings indicated that the students were so inspired by their roles as kings that during the conference, two of them began arguing about the trade of their kingdoms. The teacher created a narrative scenario and participated in (stepping forward). The students' narrative was driven by their participation in the king's conference as their teacher was stepping forward and backwards at different stages of the process according to their needs. The teacher, it was observed to stepped back and allowed an unexpected argument to unfold. This argument led the children to devise a strategic plan for exporting copper, while the teacher observed them. The children utilised the possibility space provided by their teacher, responding imaginatively, innovatively, playfully, and intentionally to the task, thereby shaping the narrative. They created a strategic plan for their kingdoms, responding to each other's questions, accepting, and rejecting ideas, and shaping the narrative, with the teacher stepping forward or out of the narrative at different stages by assuming a role. The teacher not only created the narrative space through a narrative scenario for the students but also intermittently participated, inspiring further imaginative play in the children.

The empirical research of [Craft et al. \(2012\)](#), building on previous studies that have documented PT, suggested, in terms of pedagogy, that the teacher's standing back was blended with the teacher's stepping forward into the children's play and co-imagining. It was observed that the teachers were both stepping forward and standing back as the students transformed what is to what might be. This was referred to as "meddling in the middle" ([McWilliam, 2008](#)) because the teachers were observed to be both standing back and observing their students, while also occasionally becoming involved and helping their students develop their learning. These findings align with the results of this study; however, the analysed data offered a closer look and unpack this pedagogy of involvement for older children compared to earlier studies.

<sup>1</sup> Ob: Observation; L: Lesson; E: Episode

## 5.2. Extending learning with a follow up visit

The second selected episode illustrates children's inspiration of PT through a museum visit. This time the museum educator had the responsibility of children's learning. A captivating scenario was created for the students to actively participate in during their visit. The museum educator had the role of the mermaid Thessaloniki and accompanied the students as they moved from one activity to another (step forward). Throughout the journey, she skilfully supported their engagement with the narrative activities by adeptly stepping back and forth. The following quotes highlight certain parts of the scenario created by the museum educator for the students. One of the initial attempts by the museum educator to immerse the students in a scenario (stepping forward) was as follows:

ME: Are you ready for our journey into the sea? (step forward)

Children: Yeeeee!

ME: Ok, wear your masks, the uniform of the divers, take the oxygen bottles with you [the children were actually doing all the movements as if they were wearing all the things that the museum educator had told them] and get ready for a big splash into the sea. Let our journey begin! (step back and forward)

[The museum educator, the class teacher and the children did the imaginary splash into the sea.

They are then transferred to a different hall of the museum.]

ME: Whoa! What is that? A boat on the seabed! It is an ancient shipwreck. Let's get closer to take a closer look. Ah! See ancient objects. I have an idea. Would you like to become archaeologists and make an underwater excavation? (step back and forward)

Children: Wow...Yeeeee!

Later after they had observed the identical copy of 'Kyrenia II' the museum educator put a magical shell next to her ear.

ME: I can hear oars! Well, I can see a boat approaching. Quickly, let's ask the sailors: 'Is King Alexander alive?' Let's shout all together, my little friends. 'Is King Alexander alive?' They did not hear us ... I think it's time we become sailors and travel to lot of ports. But to have a safe trip, we must pray to the gods, to protect us. Let's create our own prayer. (The museum educator started the pray with a phrase and then the children taking turns created their own pray to the Greek Gods) (step back and forward)

(Ob, Case 1, MV; Ob, Case 2, MV; Ob, Case 3, MV; Ob, Case 4, MV<sup>2</sup>)

The teacher in Case 3 (In<sup>3</sup>-3, Case 3) emphasised in her interview the crucial role of educators in implementing successful learning programs and fostering children's creativity and problem-solving thinking. The educator, with their unique personality, brings activities to life and motivates children to participate and unleash their creativity and imagination (step forward). She further expressed, "Not only is a well-designed scenario-program necessary for nurturing creative thinking, but the ability to effectively handle it is also essential" (In-3, Case 3). She argued that as an educator, one must employ various interventions (step back and forth) and be capable of executing them successfully (In-3, Case 3). Additionally, she emphasised the importance of being part of a team, both within the classroom and providing students with the necessary time and space to thrive (In-3, Case 3). The active participation of teachers, specifically, appeared to be highly significant in fostering PT.



Picture 1 (Ob, Case 2, MV-E5<sup>4</sup>)

Picture 1 captures a distinct phase of this intervention process. During this stage, the museum educator played a role in supporting

<sup>2</sup> Ob: Observations (classroom and museum visit); TR: Teacher's Reflective Journal; RR: Researcher's Reflective Journal; Ph: Photographs and still images; MV: Museum visit, ME: Museum Educator;

<sup>3</sup> Int: Teacher's Interview.

<sup>4</sup> Ob: Observations (classroom and museum visit); MV: Museum visit, E: Episode.



the narrative by intermittently stepping back and forth. The children were engaged in the creation of prayers to the ancient Gods, seeking a safe journey back to Cyprus. One child initiated the prayer, and it evolved as different children contributed their ideas, ultimately resulting in a prayer that satisfied them all. The museum educator was observed helping at various points while also allowing the children to explore their narratives in groups. The collaborative nature between the museum educator and the children was evident as they co-constructed and co-imagined the narrative together, adapting to different stages of its development.

The findings provided further insights into the pedagogy employed by the museum educator. The museum educator initiated the narrative scenario (stepping forward), which encompassed the entire visit. The children actively responded to the task set by the museum educator by immersing themselves in an "as if" context. Throughout this process, the museum educator played an active role (stepping in), while also allowing the children time to explore and providing them with a space brimming with possibilities to develop their narratives. The museum educator fostered children's autonomy and agency, aligning with the literature review by [Cremin and Chappell \(2019\)](#) encompassing 17 papers. During this time, the teacher was observed to alternate between stepping back and stepping forward based on the children's needs. The children, in turn, responded to the teacher's task by engaging in imaginative thinking, accepting, or rejecting ideas, evaluating them, and expanding upon them. This imaginative and playful approach to ideas led to innovative concepts<sup>5</sup> and solutions for the scenario task in which the museum educator involved them.

### 5.3. Exploratory narrative questions & wait time

The third episode can be observed in Case 5, where the teacher drew inspiration from the museum visit B scenario centred around ancient myths and legends. In a subsequent lesson, the teacher employed a narrative improvisation technique by posing a narrative question, prompting the students to imagine themselves as the Odysseus sailors. Engaging the students in this scenario, the teacher utilised exploratory narrative questions while using the pedagogy of wait time 1 and wait time 2, creating space for reflection and response. The following quote captures the essence of what unfolded during the ensuing discussion.

T: What might happen if you were the sailors? What would you do then? If I came on our ship this morning and told you, 'Do not open the sack because Aeolus has put inside all the bad winds that prevent us from going home.'- step forward [Pauses for 7 s before selecting C to speak - wait time 1] – step back.

C: Definitely, I would open it. [Teacher pauses for 7 s before speaking - wait time 2]- teacher step back.

T: Why? [Teacher waits a couple of seconds before selecting P to speak – wait time 1]- step forward.

K: I would open it too because I would think that you were lying to us. I would imagine that you keep a treasure in the sack that you want for yourself. [Teacher waits a couple of seconds before selecting A to speak – wait time 2. Then pauses for 7 s before selecting M to speak – wait time 2. Then pauses for 7 s before selecting G to speak – wait time 2. Then pauses for 5 s before speaking - wait time 1] – teacher step forth and back.

C: No, I strongly disagree. This is dangerous for our lives. This was not the right time to test our loyalty. No, no, definitely not. Also, we must not forget the fact that we have been trying to go to Ithaca for so long.- teacher step back.

T: But I will feel very angry and disappointed with you if you open the sack. I told you not to do that. What shall I do now? [Teacher waits a couple of seconds before selecting P to speak – wait time 1]- step forth and back.

Then P stands up at the front of the class and starts acting in the moment, pretending to be Odysseus. Gradually, other children join in (Pictures 2, 3, 4) – teacher step back.

(Ob, Case 5, L5-E5<sup>6</sup>)

The above episode begins with the teacher posing a narrative question. The question and scenario (step in) prompt the students to envision themselves as sailors, while the teacher assumes her own role (stepping forward - role of Odysseus) within the scenario. The students utilise this opportunity to respond with imaginative thinking. Throughout this episode, the teacher employs various other questions, such as "What are we going to do then?" and "Why?" to support the process, dynamically stepping back and forth during the discussion. These questions, coupled with the implementation of wait time 1 and wait time 2 (a strategy where the teacher alternates between stepping back and forward during the discussion), foster further development and exploration of the students' thoughts and ideas. This approach enables them to delve deeper into the narrative scenario crafted by the teacher, who actively participates as well (stepping forward).

The Case 5 teacher (TRJ,<sup>7</sup> Case 5, 9/10/2018) reflected on her approach of utilising narrative questioning and active participation

<sup>5</sup> What this study means with innovative concepts: This study argues with what [Boden \(1990\)](#) argued in her theory on creativity. In her writing she has developed important notions of personal - versus historical - creativity, which have helped to define creativity in a much more formal context. More specifically, 'psychological' creativity involves coming up with a surprising, valuable idea that is new to the person who comes up with it. It does not matter how many people have had that idea before. But if a new idea is 'historical' creativity that means that no-one else has had it before: it has arisen for the first time in human history. Her work defines creativity as more than just novelty-producing thought, but rather of novel exploration of and creation of mental representations ([Boden, 1990, 1994, 1995](#)).

<sup>6</sup> Ob: Observations (classroom and museum visit); L: Lesson, E: Episode.

<sup>7</sup> TRJ: Teacher Reflective Journal

to stimulate her students' thinking. She noted that by doing so, she was able to encourage them to explore alternatives, consider different possibilities, and view things from various perspectives, ultimately enabling them to find solutions to problems by immersing themselves in an "as if" space. Pictures 2, 3, and 4 capture different stages of the teacher's involvement in this narrative exploration after student P (see the example above) stood up and other children step in. Picture 2 depicts the teacher's initial engagement in creating the narrative, actively stepping into the process. Picture 3 shows the teacher participating in the narrative that the children began to develop, taking a step forward. Lastly, Picture 4 shows the teacher supporting the narratives by intermittently stepping in and out of the narrative according to the children's needs.



Picture 2



Picture 3



Picture 4

(Ob, Case 5, L5-E5<sup>8</sup>)

It was observed that the teachers' narrative questioning for creating the scenario was combined with an additional pedagogical strategy of Wait-Time 1 and Wait-Time 2 to involve the students more in the narrative space/scenario. The Case 5 teacher reflected that these few seconds of silence would give every student a chance to think (In-5, Case 5). These two strategies combined (Wait Time and narrative questioning) promoted the active engagement of the students in the conversation and inspired new concepts, ideas, and

<sup>8</sup> Ob: Observations (classroom and museum visit); L: Lesson, E: Episode

**Table 2**  
Data analysis process example 1.

Data Analysis Process for Example 1 Stage one: Open Coding The main ideas of thematic topics of the data analysis	Instruments of data collection					Stage two: Axial Coding Grouping of ideas into similar content	Stage three: Selective Coding Combined the main categories which drawing together the overarching categories
	Int	Ob	TR	RR	pH		
Creation of a plot/scenario for the whole lesson	✓	✓	✓	✓		Stepping in	Creating the Narrative
Creation of a narrative question		✓	✓	✓			
Creation of a narrative based on children's ideas		✓	✓	✓			
Creation of a narrative based on the museum programme	✓	✓	✓	✓			
Cross-curricular nature of teaching	✓	✓	✓	✓			
Use of different kind of learning activities	✓	✓	✓	✓			
Teacher has a role	✓	✓	✓	✓	✓	Stepping in	Participating into the Narrative
Lead the discussions	✓	✓	✓	✓	✓		
Teacher's personal contact with the students	✓	✓	✓	✓			
Eye contact		✓	✓	✓			
Giving Feedback		✓	✓	✓			
Clear instructions	✓	✓	✓	✓			
Teacher's caring relationship with students	✓	✓		✓			
Use of different types of materials	✓	✓	✓	✓			
Teacher active participant to the discussions		✓	✓	✓			
Flexible role playing activities		✓		✓		Stepping back	
Flexible cross-curricular activities		✓		✓			
Flexible written narrative activities		✓		✓			
Role-playing activities	✓	✓	✓	✓	✓		
Narrative simulations driven by children		✓	✓	✓			
Time for group discussions	✓	✓	✓	✓			
Exploring a scenario in a given time	✓	✓	✓	✓			

**Int:** Teacher's Interview **Ob:** Observations (classroom and museum visit).  
**TR:** Teacher's Reflective Journal **RR:** Researcher's Reflective Journal **Ph:** Photographs and still images.

possibilities, further supporting the narrative spaces as the teacher had the chance to be involved at different stages (stepping back and forth). It is interesting to note that the strategy of wait time during classroom discussions was also evident in earlier studies (Rowe, 1986; Stahl, 1994; Tobin, 1985), but not in relation to PT.

Upon reviewing the episodes mentioned earlier and revisiting the relevant literature, it was observed that the strategy of 'Simulation' shares similarities with the findings of this study. Notably, in the broader context of educational literature and pedagogies, simulations are designed to motivate learners by engaging them in problem-solving, hypothesis testing, experiential learning, schema construction, and the development of mental models (Duffy & Cunningham, 1996; Winn & Snyder, 1996). In this study these simulations were either through a narrative scenario or an exploratory narrative questioning combined with the pedagogy of Wait time 1 and Wait time 2. This study explored further these simulations focusing on the teacher's role/involvement for fostering children's PT using museums as part of their learning process. Throughout the narrative scenarios, which lasted from the beginning to the end of the lesson, the teacher had different levels of engagement by stepping forward or backwards from the children's narratives based on their specific needs.

This current paper focused and unpacked further the pedagogy of stepping back and forward or 'meddling-in-the middle' used by the teachers before, during and after the museum visit for nurturing their children PT and creativity. The pedagogies of narrative scenario or narrative exploratory questioning combined with Wait Time 1 and Wait Time 2 were working in complex combination with the pedagogy of stepping back and forward rendering it a resonant process. The teachers used these pedagogies having different level of engagement according to the needs of their children. The analysis revealed that educators had three distinct stages of involvement: creating the narrative (taking an active role), participating in the narrative (actively engaging), and supporting the narrative (taking a more passive role at times). This constituted an important step beyond what had been previously identified regarding the pedagogical features that the teachers used for fostering their children PT as this was explored for older children. Consequently, these findings make a valuable and significant contribution to the field.

**6. Concluding remarks**

Previous research on PT has not extensively investigated the specific dynamics of the teacher's stepping back and stepping forward during the aspiration of children's PT, particularly for this age group. However, the study conducted by Cremin et al. (2013) unveiled

**Table 3**  
Data analysis process example 2.

Data Analysis Process for Example 2 Stage one: Open Coding The main ideas of thematic topics of the data analysis	Instruments of data collection					Stage two: Axial Coding Grouping of ideas into similar content	Stage three: Selective Coding Combined the main categories which drawing together the overarching categories
	Int	Ob	TR	RR	pH		
Creation of a plot/scenario for the whole lesson	✓	✓	✓	✓	✓	Stepping in	Creating the Narrative
Creation of a narrative question		✓					
Creation of a narrative based on children's ideas		✓	✓	✓			
Creation of a narrative based on the museum programme	✓	✓	✓	✓	✓		
Cross-curricular nature of teaching	✓	✓	✓	✓			
Use of different kind of learning activities	✓	✓	✓	✓	✓		
Teacher has a role	✓	✓	✓	✓	✓	Stepping in	Participating into the Narrative
Lead the discussions	✓	✓	✓	✓	✓		
Teacher's personal contact with the students	✓	✓	✓	✓	✓		
Eye contact		✓	✓	✓	✓		
Giving Feedback		✓	✓	✓	✓		
Clear instructions	✓	✓	✓	✓			
Teacher's caring relationship with students	✓	✓		✓			
Use of different types of materials	✓	✓	✓	✓	✓		
Teacher active participant to the discussions		✓	✓	✓			
Flexible role playing activities		✓		✓		Stepping back	
Flexible cross-curricular activities		✓		✓			
Flexible written narrative activities		✓		✓			
Role-playing activities	✓	✓	✓	✓	✓		
Narrative simulations driven by children		✓	✓	✓			
Time for group discussions	✓	✓	✓	✓			
Exploring a scenario in a given time	✓	✓	✓	✓	✓		

**Int:** Teacher's Interview **Ob:** Observations (classroom and museum visit).

**TR:** Teacher's Reflective Journal **RR:** Researcher's Reflective Journal **Ph:** Photographs and still images.

that narratives emerge through the joint efforts of both teachers and children, while the teacher alternates between stepping back and stepping forward. This current research signifies a significant contribution in the study of PT and museum education, highlighting the crucial role of the teacher's involvement and illuminating how this involvement manifests in inspiring children's PT for children 9–10 years. The identified stages of teacher involvement include creation (stepping forward), active participation (stepping forward), and support within the narrative spaces (alternating between stepping back and stepping forward).

In summary, this study provides valuable insights into the pedagogy of stepping back and forth employed by teachers in cultivating narrative and PT aspects. An intriguing and worthwhile question to explore is how these findings apply to different age groups of children in the context of museum education. Do these three types of teacher involvement continue to facilitate the nurturing of children's PT? Additionally, it is important to consider the applicability of these three types of teacher involvement in inspiring children's PT across other contexts. Further investigation and in-depth analysis of these concepts are necessary for a comprehensive understanding.

#### Author statement

I am writing to provide an author statement for the submission of my manuscript to be considered for publication in the journal *Thinking Skills and Creativity*.

The manuscript I am submitting represents the culmination of extensive research and dedication. I would like to highlight that this manuscript has not been previously published, nor is it under consideration for publication elsewhere.

The researcher has carefully reviewed the submission guidelines and formatting requirements of this journal and ensured that the manuscript adheres them. I have provided all the necessary supplementary materials and disclosures as required by the journal's policies.

Thank you for your time and consideration. Should you require any additional information, please do not hesitate to contact me at the email address provided.

**Table 4**  
Data analysis process example 3.

Data Analysis Process for Example 3						Stage two: Axial Coding	Stage three: Selective Coding
Stage one: Open Coding						Grouping of ideas into similar content	Combined the main categories which drawing together the overarching categories
The main ideas of thematic topics of the data analysis	Int	Ob	TR	RR	pH		
Creation of a plot/scenario for the whole lesson	✓	✓	✓	✓		Stepping in	Creating the Narrative
Creation of a narrative question		✓	✓	✓			
Creation of a narrative based on children's ideas		✓	✓	✓			
Creation of a narrative based on the museum programme	✓	✓	✓	✓			
Cross-curricular nature of teaching	✓	✓	✓	✓			
Use of different kind of learning activities	✓	✓	✓	✓			
Teacher has a role	✓	✓	✓	✓	✓	Stepping in	Participating into the Narrative
Lead the discussions	✓	✓	✓	✓	✓		
Teacher's personal contact with the students	✓	✓	✓	✓			
Eye contact		✓	✓	✓			
Giving Feedback		✓	✓	✓			
Clear instructions	✓	✓	✓	✓			
Teacher's caring relationship with students	✓	✓		✓			
Teacher active participant to the discussions		✓	✓	✓			
Flexible role playing activities		✓		✓		Stepping back	
Flexible cross-curricular activities		✓		✓			
Role-playing activities	✓	✓	✓	✓	✓		
Time for group discussions	✓	✓	✓	✓			
Exploring a scenario in a given time	✓	✓	✓	✓			

**Int:** Teacher's Interview **Ob:** Observations (classroom and museum visit) **TR:** Teacher's Reflective Journal **RR:** Researcher's Reflective Journal **Ph:** Photographs and still images.

**Table 5**  
Method and data type.

Instruments/Methods	Data type	Number of collection	Who were involved
Interviews	Transcribed audio-recordings and notes	37 semi-structured interviews (teachers) 16 semi-structured interviews (museum educators)	Teachers and Museum Educators
Observations	Field-notes and transcribed digital recordings	50 classroom observations (before and after the visits) 8 museum visit observations-4 in each museum	Children (group) Teachers (individual) Museum Educators (individual)
Teacher's Reflective Journal	Notes	58 reflective journals (teachers and museum educators)	Teachers (individual) Museum Educators (Individual)
Researcher reflective Journal	Notes, Photos, Drawings	66 reflective journals	
Documents	Documents with activities, lesson structures, leaflets, and children's written work	110 documents	

### Declaration of Competing Interest

The author report there are no competing interests to declare.

### Data availability

Data will be made available on request.

### Appendix 1

**Table 6**  
The three episodes for exemplification in this paper.

Teacher	Episode
Museum Educator	Museum A developed a program centred around Greek mythology. In this program, children embark on a time-travelling journey with the assistance of a magical mermaid and Triton, both characters from Greek mythology, to uncover the secrets of the sea. The program's concept revolves around using these characters to leverage the children's existing cultural experiences as an engaging entry point to explore the museum's exhibits. The students assume the role of archaeologists and, through an underwater excavation, unveil the discoveries of the Kyrenia wreck. They then board the 'Kyrenia II,' a replica of the original Kyrenia I displayed in the museum and embark on a Mediterranean voyage. During their travels, they encounter new places, people, and engage in trade exchanges. Overcoming obstacles such as pirates and crafting paddles, they successfully return to the golden beaches of Cyprus, enriched in both knowledge and spirit. Meanwhile, the mermaid's sea wanderings continue as she explores and searches for Alexander the Great, her brother according to legend.
Case 4	<b>Kings conference:</b> Following a prompt by the teacher, children were provided with a map displaying all the ancient kingdoms in Cyprus. The children then decided which king they wanted to portray and, using classroom resources and the knowledge they had acquired, they explored their respective kingdoms. At the end of the activity, they took part in a role-playing exercise called the 'Kings conference,' during which they collaborated to develop a strategic plan for exporting goods. This episode occurred before the classroom's visit to Museum A.
Case 5	<b>The Legend of Odysseus and Aeolus:</b> The teacher prompted a discussion based on the legend of Odysseus. In the story, Odysseus and his men visited King Aeolus, who welcomed them warmly and listened to their war stories for a month. As they prepared to depart, Odysseus approached Aeolus and asked for help in returning home to Ithaca. Aeolus created a special sack made of tightly sewn ox-hide, using silver thread, which would keep all winds trapped inside. Upon reaching Ithaca, Odysseus would release the winds and restore normalcy. However, Aeolus warned Odysseus not to open the sack until the right time. Unfortunately, while Odysseus slept, one of his sailors opened the sack, unleashing a powerful and chaotic gust of winds. This episode took place during a follow-up classroom lesson after the students' visit to Museum B. Inspired by the teacher's question and the legend, the children engaged in a discussion and shared their thoughts on the topic.

## Appendix 2

Table 6

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