Research article

The concept of historical time in early childhood education: theoretical, methodological approaches and practice

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Abstract

This article focuses on an approach to the concept of historical time in early childhood education through the lens of cognitive psychology. It consists of three parts: (1) theoretical approaches, inspired by three broad scientific fields – cognitive psychology, pedagogy and history; (2) the presentation of educational examples, formed by empirical data and case studies; and (3) conclusions. Its main purpose is to combine theoretical approaches and findings from contemporary scientific research with empirical data from the educational process, so as to argue that kindergarten children can represent and be taught the concept of historical time and, with its help, can be introduced to history education.

Keywords historical time; early education; history education; cognitive psychology; educational practice

Introduction

The interest in the implementation of educational programmes with a historical orientation in preschool education developed during the last two decades of the twentieth century. This interest created an interdisciplinary field in the scientific and educational community, and within its frame researchers of social sciences, psychology, pedagogy and history study the boundaries, the limitations and the possibilities between history education and general education of young children. The issues that have so far occupied the exploratory interests of scholars have to do with matters of perception and comprehension regarding children, the claims and opinions of educators, and issues concerning the educational process (Barton and Levstik, 1996, 2004; Cooper, 2002, 2018; Levstik and Barton, 2011; Skjaeveland, 2017; Solé, 2019).

These issues are directly connected with the processes of acquiring and cementing knowledge, and broadening research towards a cross-scientific horizon, in which sciences such as history, history education, cognitive psychology and pedagogy meet. This creates a frame of scientific discourse on a global level regarding methodological approaches and research findings related to the transformation of historical thinking in the educational process and the perception of historical concepts in early childhood. This article combines methodological, theoretical and empirical data, with the aim of proposing an educational framework which creates the foundation for the introduction of young children to chronological thinking, historical education and culture, increasing the likelihood of them loving history.

The next section theoretically examines each concept in turn: the concept of time and the concept of historical time. The concept of time will be approached in the light of cognitive psychology, and the concept of historical time will be approached in the light of contemporary historical thinking. This strategy is followed because, on the one hand, we study the way in which young children think about time, and, on the other hand, we focus on the way in which the concept of historical time is expressed in history education. These are two very different systems of thought. Nowadays, there are studies from cognitive psychology that refer to young children's thinking about time, and also studies and bibliographical references about historical time in education in general and, especially, in the education of young children.

Theoretical framework and review of epistemological perspectives and findings

Cognitive psychology beliefs

The concept of time and the way in which it can be perceived by young children has been researched by cognitive psychologists since the middle of the twentieth century. Piaget's research on the issue sparked the interest of many researchers, because he studied the concept of time in children's thinking in a systematic way and using scientific methodologies (Lello, 1980; Piaget, 1948). The findings of these research studies were criticised by other cognitive psychologists, and they were also complemented, differentiated or negated to a great degree by research and studies in the following decades.

The end of the 1980s was a pivotal time for scientific research on the abilities and skills of children up to the age of 7, regarding the understanding and comprehension of historical concepts. Until then, scientific beliefs regarding the cognitive abilities of young children, and specifically those related to the acquisition of chronological concepts, were greatly affected by Piaget's theory (McLaughlin, 1988).

According to this theory (Piaget, 1964), for early education children, time is non-continuous and limited by the senses, which shape impressions in children's thinking that do not correspond to reality and valid conclusions in time-measuring activities (Goldschmid, 1971). Piaget's theory influenced other researchers as well (Halam, 1967; Jahoda, 1963; Siegler and Ellis, 1996), who investigated concepts with a philosophical meaning, such as time and historical time, in children's thinking, with emphasis on their natural characteristics and conclusions that associate the understanding of these concepts with the level of maturity of people. The next section will explain that historical time is differentiated from the physical characteristics of the concept of time. However, at this point, it is important to point out the influence of the theories of cognitive psychology on the study of time and historical time.

Since the 1970s, research has been conducted (in parallel with that mentioned previously) which studies time through other characteristics, such as rhythm. It has been observed that chronological

patterns are created by the human body (for example, by the beating of the heart), and that time can be perceived through these natural rhythms by people from a very young age (Brackbill and Fitzgerald, 1972), meaning that the perception of time through rhythmical patterns is a natural process with which even very young children are familiar.

More recent research has shown that children from the age of four and a half can perceive characteristics of time such as duration, period and alternation between time periods characterised by specific stimuli, that they possess a primitive feeling about time, an 'internal clock', a premature ability to represent time and a basic mechanism that allows them to learn about time (Droit-Volet, 2003, 2011; Droit-Volet et al., 2004; Droit-Volet and Wearden, 2002; Provasi et al., 2011). The development of the ability to learn about time does actually exist in children of a young age; however, it also depends on attention, as well as on other cognitive functions (such as working memory), on the ability to follow and adapt to instructions (self-regulation and on the development of linguistic abilities) (Droit-Volet and Meck, 2007; Droit-Volet, 2003), processes that differentiate according to age. Furthermore, children aged 4 or 5 can comprehend the sequence of experienced events that have taken place in the past, or events that have not been experienced but are connected to the immediate social environment (family), and their sequence, and can create the narration of said events (Case et al., 1996).

Forman (2015) connected 'time-keeping' (the calculation of time) with important events from the social and family life of children, a claim that is in agreement with the sociocultural theory about children's learning and development (social cultural theory) (Vygotsky, 1986). Specifically, Forman (2015) observed that the invention of the mechanical clock in its modern form appeared in the history of human culture in the thirteenth century. Her observation helps us realise that the use of mechanical clocks as a cognitive ability did not exist in human culture before that time. That is, she pointed out that apart from the calculation of time using modern mechanical clocks, people create mental temporal patterns, combining important events from their personal, social and family life. Through her research she proved that these mental processes can also be observed and initiated by children, from the age of three and a half.

The selection of important events of human activity, placing them in order, duration and the sequence of daily activities or events inside the frame of a time period create 'event scripts' (Friedman, 1990). These scenarios create the mental background for time-keeping and managing the past and memory. In the second half of the 1980s, Friedman (1986) observed that children at the age of 4 have the ability to comprehend the temporal relationships between events of their daily lives, such as life in the kindergarten, an afternoon stroll, dinner and bedtime. Therefore, the original opinions put forward in the field of cognitive psychology regarding young children's abilities took a more optimistic form: children from the age of 4 (or earlier) could comprehend and 'keep' time through chronological patterns such as rhythm, time periods, and shifting between time periods specified by stimuli and 'event scripts'. This means that children from a very early age can perceive time not through its physical and measurable characteristics, but through their social life, their personal history (even if it is very short) and their family history. Furthermore, in the field of cognitive psychology, it is acknowledged that time can be perceived through children's social life and mental and patterns life, such as rhythm, repetitiveness, periodicity, classification, succession and sequence. This is a significant change from studying time only through its physical characteristics.

Historical time as a mental pattern in young children's education

Researchers in the recent literature claim that the analysis of the concept of historical time, and its study regarding history teaching, can lay the foundation for a field of research in historical education inside which theoretical approaches and educational applications are connected to historical thinking and consciousness (Wilschut, 2010, 2012, 2019). Historical consciousness is perceived as the certainty people have regarding the distance between present and past, and the comprehension of the historicity of social phenomena, situations and people which are assessed as important to know and remember (Seixas, 2017a). Historical time is a concept which organises and comprises historical discourse, a second-order concept which, together with others such as continuity and change in time, constitute the fundamental elements of historical thinking (Seixas, 2017b).

According to Wilschut (2012), historical time consciousness is defined through a matrix of meanings, such as: dating and periodisation, the sequence of generations, avoidance of anachronisms and the relations between time periods (order, succession, sequence and others). Contemporary research and studies have shown that understanding the concept of historical time is not related to the development

of children's thinking, but is a learning process that can start from early childhood (De Groot-Reuvekamp, 2014). This means that it is not necessary for special individual abilities to exist; neither is the development of additional skills necessary, apart from those that a child already has, depending on their age.

Furthermore, it has been proven that from the age of 5 or earlier, children have the ability to place events from the past pictured in visual sources in chronological order, to notice changes that happen due to the passage of time affecting elements of material culture, to include in their vocabulary general expressions about time, and to understand and create narratives about the past (Barton, 2002; Barton and Levstik, 2004; Cooper, 2002; Vukelich and Thornton, 1990). Some researchers have focused their interest on the educational process through which children could come in contact with the historical past, and have suggested programmes with a historical orientation which are meant for kindergarten and the first classes of elementary school. In these educational programmes, we can find a variety of subjects and methodological approaches, such as: acquainting children with people (personal stories and biographies) and past events, using timelines instead of dates (Vukelich and Thornton, 1990), acquainting children with environmental (natural and artificial) traces of the past (castles, old children's toys, buildings, monuments, photographs, advertisements, timelines and so on) (Cooper, 2002), exploring items that exist in a child's environment and are directly connected to local history such as artefacts and everyday objects, books, museum guides and personal testimonies from familiar people (O'Harra and O'Harra, 2001).

Solé (2019) tested the ability of children in the early years of elementary school to develop perceptions of the past, and to understand history, historical time, and continuity and change in time, within the frame of a broad research programme. The results of this research showed that all children, from the first up to the fourth grade of elementary school, could find typologies regarding placing images in chronological order, and that they could identify continuity or change in time and the typologies they had created.

According to the American Historical Association (AHA, 2022), chronological thinking is part of history education. Students should develop skills regarding the meaning of historical time, such as distinguishing between past, present and future time, using chronology in writing their own histories, interpreting data presented in timelines, recognising historical change, and sensing that time is culturally constructed. Furthermore, UCLA (2022) argues that chronology provides the mental scaffolding for organising historical thought, and suggests that the basic standard for historical thinking is the student's ability regarding chronological thinking from the early stage of their education. Chronological thinking skills are presented in seven points: (1) distinguishing between past, present and future time; (2) identifying the structure of a historical narrative or story; (3) establishing temporal order in constructing the students' own historical narratives; (4) measuring and calculating calendar time; (5) interpreting data presented in timelines and creating timelines; (6) reconstructing patterns of historical succession and duration, and explaining historical continuity and change; and (7) comparing alternative models for periodisation.

Contemporary educational institutions, scientific associations and the global literature argue that the concept of historical time is significant for the development of historical thinking and education from the early years. This concept forms mental patterns in history education and in the educational process. Historical time in education could be connected with chronological thinking, language, social life, personal and family history, other fields of history education such as local history, and public uses of history (museums, films, books and so on).

The present study

The main purpose of the present study is to investigate the probability of creating educational patterns based on cognitive structures such as 'event scripts', which cultivate chronological thinking and introduce children to the concept of historical time and history education. The research questions are:

1. Can the educational process produce educational patterns to foster children's chronological thinking?
2. What is the relationship of these patterns to the concept of historical time?
3. What are the interdisciplinary features of these patterns?

Methodology

The educational patterns are presented below as case studies. They have been investigated using the 'action research' method (Cohen et al., 2017; Beaulieu, 2013; McNiff and Whitehead, 2002, 2010), a methodological approach with qualitative features by which teachers can investigate and evaluate the educational process and reflect on their work. It is a research method applied to the 'field' of the work of teachers (educational institutions, schools, high schools, nursery schools and so on), and to social, cultural and health agencies, among others. In the case studies presented below, the 'field' of application was a Greek kindergarten class in an urban area for a prolonged time period (2013–20), in which each of these educational activities was repeated about once a year. The investigation was focused on the educational practice, and not on children's performance or other parameters of educational process, such as the role of teachers or the educational material. This choice explains the use of a methodology with qualitative characteristics, such as action research.

The educational activities created for this action research are fully compatible with the Greek curriculum, and they draw their inspiration from Greek and international literature. The steps for each case study were: (1) designing the educational programme; (2) putting the educational programme into practice; (3) keeping a diary for each educational activity; (4) studying the diary; (5) reflecting; (6) redesigning and improving each educational activity; and (7) implementing the improved educational activity in the next school year. Data were collected and studied from the kindergarten teacher's diary using qualitative discourse analysis. Educational action research is an exploratory process that requires teachers to work with each other – it is a collaborative task. However, in some cases, and for special reasons, it is possible to be implemented by only one person (Altrichter et al., 2005). For these case studies, the research was implemented by a kindergarten teacher who was also the researcher, because it was not possible to ensure constant collaboration with the rest of the kindergarten staff, as this changed every school year. However, when it was necessary to have a discussion, exchange feedback and interact with other teachers in the school unit during the educational process, this was done depending on the involvement in certain educational activities. The educational activities presented below are in their final form. They are activities that took place during the 2019/20 school year.

That school year, the study of the teacher's diary and the collection of the data from previous years show that children repeat a form of narration which simulates the 'event scripts'. When I refer to this pedagogical strategy, I call these narrations 'TimeStories' to differentiate them from other narrations or approaches to historical time. TimeStories emerged as a result of exploring the children's personal history, the history of life in kindergarten, the study of the daily life of other children in other times through historical sources and through the public uses of history (museums, children's knowledge, books and so on). The narratives were created by the children themselves, in group activities and in the plenary of the classroom. These narratives were written by the preschool teacher in the presence of the children, and corrections were made to the children's speech if necessary. These narratives are the result of a collaborative process and, according to the research data, all the children in the class participated in their creation. The linguistic rendering of the stories in English and Greek may have a literary form, because the exact rendering of the original narratives from the spontaneous speech of the children would probably make these narratives incomprehensible to adults.

TimeStories

TimeStory 1: moments of personal history

The first case study is an educational programme for kindergarten children with the aim of culminating in a short narration of a part of personal history that takes place in a short time period. The goals of this educational approach are: (1) to connect human activities more familiar to children to a short time period; (2) to enable children to track activities that happen both before this activity and after, so that they can make a first contact with the schema past–present–future, in a short time period; and (3) to create motives for learning through the empirical educational process and to allow children to create their own narrations.

The educational process takes place in a scenario of a series of activities, including: (1) to begin with, a 20-minute discussion; (2) activities that begin from the start of a school day at kindergarten, with observation and photo-shooting of activities from groups of children; (3) a 20-minute activity during which

children put printed photographs in the correct chronological order; and (4) a 20-minute activity during which children create a narration about a time period of short duration.

The narration in which this educational process culminates is an individually or group-played game, whose name could be: 'before', 'now' and 'after', 'tell us their tales'. The instructions given for this game, are: (1) find a picture that shows an activity that you like; (2) find a picture with an activity that took place before that activity; and (3) find a picture with an activity that took place after the first activity. Once the selection of photographs and their placement in chronological order is completed, the child or children create the narration – their TimeStory – expressing the temporal schema 'now', 'moments-before', and 'moments-after'.

TimeStory 2: the story of one of my days in kindergarten (or at school)

This second case study can be the continuation of the previous one, or it can be used individually, without the previous activity having taken place. The aims of this activity are for children: (1) to connect the meaning of history with real events and human activities; (2) to create narrations with elements of their personal history; and (3) to express representations and interpretations about the concept of 'history'.

The educational process develops through a series of activities including observation, games, collages of photographs, language literacy, the creation of a narration and discussion (questions and answers). Children put printed photographs that depict their activities during a day in the kindergarten in chronological order. After that, they glue their photographs, one below the other, putting the activities in chronological succession, creating a collage. They place a title caption next to each picture, writing on impulse, or with the help of the teacher, a word or short phrase that describes each activity (for example, 'on our way to the kindergarten', 'chatting', 'eating', 'painting'). This collage is placed somewhere in the classroom which is visible to all the children. In another organised activity, children create a narration – a TimeStory – by observing the collage and putting in their narration the activities depicted, in chronological sequence and order. This is an indicative narration from a 5-year-old child:

> Every day, come rain or shine, kindergarten's life is joy and smile. Early in the morning, we come to the kindergarten and our teacher is there to meet us. We sit together in our discussion corner [*pareoula*], we hang out and talk. After that, we go to our desks and paint, or play board games. After that, we have breakfast. We play in the yard; we go back inside [the classroom] and we play with puppets. After that, we have lunch, we play some more and then we sleep. When we wake up, we chat with our friends, we put on our shoes and leave. So today, we had a great time and tomorrow, it will be even better!

Such a narrative is a simple, common narration that can be created by every kindergarten child. The elements that turn it into a TimeStory are: (1) the activities that preceded the TimeStory, which create educational experiences with numerous learning motives for children (observing daily activities, taking photographs, printing photographs and putting them into chronological order, creating collages); (2) creating links between temporal and mathematical concepts such as order, sequence, succession, continuity and change; and (3) connecting history to the scientific fields of cognitive psychology (event script) and historical education (fostering second-order concepts such as historical time, continuity and change, as well as connecting historical time with the formation of historical consciousness).

After the creation of the TimeStory, the teacher could ask: 'What does the word HISTORY mean?' It is a question that aims to give meaning to words such as 'history', which children might have heard through public history, but to which they cannot yet attribute meaning. The meanings that are attributed to this word as a result of organising the educational process with the help of TimeStories are directly connected to the personal lives of children and human activities of everyday life. Some indicative answers could be: 'history is something that people do', 'history looks for what people did', 'history talks about something that happened previously', 'history talks about something we do, or whatever other people do too', 'history talks about our own, but also about other, places in the world'.

TimeStory 3: Social Stories and TimeStories

This section describes an educational strategy (the third case study) which combines Social Stories with TimeStories to create a programme of inclusive education for children in kindergarten and in the early grades of elementary school. These programmes combine valid practices from the education of children

with special needs with educational programmes of a typical, general education class, so as to achieve the coexistence of children with special educational needs with those of general education on equal terms, in inclusive programmes (same classroom, same schedule) (Lindsay, 2007; Stubbs, 2008).

The use of Social Stories (Karkhaney et al., 2010; Leaf et al., 2012) is a method that targets children with developmental disorders (high functioning) who have trouble developing social skills. It is also a method appropriate for children of a young age who have not developed their social skills to a great degree because of a lack of relevant experiences, as well as children with developed social skills, because it enriches pre-existing knowledge and experiences with new ones. Social Stories increase students' communicative skills in regard to their parents, educational professionals or their therapists. They are used to convey clear messages and information, and to describe a social framework (family, educational or social in the broader sense) which must be understood by children if they are to function within one. Social Stories are narrations with sentences that are descriptive, affirmative and instructional, through which interpretations and a perspective about things are given. In this section, I refer to the combination of Social Stories and 'TimeStories' in an educational programme, with the topic being 'the everyday life of people in ancient years', with on-location observation at an archaeological museum.

The visit to the museum is enriched by an educational programme which includes activities that have been organised before the visit (activities to prepare the children), during the visit (activities inside the museum organised by specialists in museum pedagogy) and after the visit (activities to process new knowledge, and to evaluate and assess the visit). The educational programme presented at this point is part of the activities that correspond to each one of the previous phases and that follows the pattern: Social Story–TimeStory–Social Story.

The Social Story created for the period before the visit nurtures the skills that children need to have developed for a smooth transition to the museum. Therefore, its content includes behaviour rules and models that children must know and become familiar with. The children, in a plenary class session, talked about behaviour rules that they had to follow, and wrote down their ideas with the help of the educator. Those children who had developed social skills, or who had visited cultural centres such as museums, helped the other children who did not have equivalent experiences or had not developed social skills. Writing down the experiences of children (with the help of the educator) organised the 'events' of the transportation from the school environment to the museum, which composed the narration of this first Social Story. This is an example of such a story:

> The day of the visit to the museum, we will be ready and we will wait for the bus. We will move carefully from the kindergarten to the bus, where the driver will be waiting for us. Our teacher and the driver will help us take our seats. We will put on our seatbelt and we will sit down quietly in our seats, without talking loudly. When we arrive at the museum, we will get off the bus very carefully and follow our teacher, who will show us where to go. At the museum, the experts will be waiting for us: the archaeologist, the guide, the museum pedagogy specialist. We will listen very carefully to all the things they have to say.

The second narration that the children prepared was a TimeStory, which was created based on everything they had observed and learned during their visit to the museum. In this narration, they did not use real time, but historical time and, specifically, the distant period of ancient times. During the visit to the archaeological museum, the children attended a special education programme which, through historical sources (representations of ancient pottery, statues and so on), presented children with elements from education in ancient Greece. Through this programme, children learned about everyday living and educational conditions of children in ancient Greece (children's everyday life from another time). At the end of the educational programme, they took part in various activities inside the museum, such as painting, recreating scenes from ancient pottery with the help of theatrical games in education and so on. One of these activities was the creation of the following TimeStory, which is based on information in Koening (2010):

> In ancient times, the pedagogue accompanied the child from their home to their teacher. When the lessons began, the child would sit quietly, and behind them would sit their pedagogue. If the child was restless, wanted to get up to play or did not pay attention to the teacher, the pedagogue would punish them. The teacher who taught them to write and read was called *grammatistis*. The child would learn to write on a clay tablet, using a stylus. When the lessons were over, the pedagogue would escort them back home.

The third narration of this inclusive educational programme corresponded to the third part of the programme, that is, the activities that took place after the visit to the museum. It was the second Social Story of the programme, and the topic was the transportation from the museum to the kindergarten. It was created after the children had returned to the kindergarten, and it was the same as the first Social Story, with a small change in the grammatical tense – that is, instead of future (will go, will be waiting and so on), past tenses were used (went, were waiting and so on), so that children could understand the difference between the two Social Stories (the one created before the visit and the one created after). Furthermore, it began from where the first Social Story ended. This is one example of such a story:

> At the museum, the experts would be waiting for us: the archaeologist, the guide, the museum pedagogy specialist. We listened very carefully to all the things they had to say. On the way back from the museum to the kindergarten, our teacher and the driver helped us take our seats. We put on our seatbelt and we sat down quietly in our seats, without talking loudly. When the bus arrived at the kindergarten, we got off carefully, we went inside the building and got ready to talk about all the things we learned in the museum.

These three narrations (Social Story before the visit to the museum, TimeStory during the duration of the visit and Social Story after the visit) helped the children to develop social skills and to come into contact with the life and education of children of another age (that of ancient Greece) in a quick and easy way. Furthermore, when the creation of the three narrations is completed, an activity could be organised, during which the children discover similarities and differences between time and time expressions (for example, different grammatical tenses). They can discover similarities and differences, continuity and change in time, the difference between real and historical time, and other elements which they could compare. Some of these elements are: (1) the differences between their education (modern education) and education in ancient Greece (now and then); (2) similarities such as the fact that children also went to school in ancient Greece, as children do now; (3) similarities such as having a teacher, but children in ancient Greece also had a 'pedagogue', something that does not exist today; and (4) there was a lot of punishment involved in the educational system, which was strictly limited, while today school is child-centred and allows children many freedoms.

Conclusions

TimeStories are educational templates that can be applied to programmes with historical orientation in kindergarten, either long term or short term. In the frame of the educational process, they act as 'organisers of time', that is, an educational subsystem which is part of the systematic approach of historical education, and which aims to organise time and historical time in children's thinking. According to this viewpoint, TimeStories contribute to the growth of 'meta-cognitive awareness' for the duration of the development of the educational process. They increase the abilities and skills of children regarding the realisation of the process needed to complete a task and its requirements, the strategies and ways to deal with various tasks, the adjustment of behaviour, and the self-check that a student needs to possess in order to complete a task. From the field of cognitive psychology, we know that it is possible for these processes to start from an early educational grade (from kindergarten) (Whitebread et al., 2007).

This study shows that children in early childhood education have the need to organise time and historical time by combining their experience of social life with the spontaneous speech in narration created by them. This is an observation from longitudinal action research in which educational programmes with historical orientation were included, such as studies of personal and family life, studies of historical sources regarding the life of children in other periods (such as education and play in ancient Greece), visits to museums and other activities. During this action research, new questions were raised which identify with the research questions of the present study. It became a visible fact that children create narrative patterns in order to organise daily, social and historical time. After this observation, a study was conducted on the literature in the field of cognitive psychology, and it was found that children's need to create cognitive and mental structures for time had already been observed as mentioned in the theoretical part of this study (the 'event script'). Furthermore, the answers to the research questions of the present study are positive. The educational process can produce educational patterns and cognitive structures (such as TimeStories) with the participation of the children regarding daily and social time, as well as historical time (for example, time from everyday life in other periods). The relationship of

these patterns (models such as TimeStories) with the concept of historical time is connected with the standard for chronological thinking (discussed in the theoretical part of this article) and the concept of continuity and change over time. Children have the opportunity to compare their lives with the lives of the children in distant times, and to represent in narrative forms their mental structures. This educational process is interdisciplinary because it combines the cognitive structures (field of cognitive psychology), chronological thinking and connection with the experiences of historical time (history education), the development of children's spontaneous speech, the creativity of the children and children's participation in the educational process (pedagogy). TimeStories are narratives though which the past and historical time become visible in the mind of early education children and help them to develop cognitive and metacognitive skills. This is a way, an educational and a mental path, through which children could be introduced to history education from kindergarten onwards.

The present study has certain limitations, being the result of empirical studies and case studies which were developed for a prolonged time period (Fardi, 2013, 2020), but which cannot be generalised. Furthermore, these case studies are not experiments such as the observations within the environment of psychology laboratories. They are not observations regarding the children's behaviour, speech or mind; neither can they provide quantitative data related to children's performance. They are repetitive cognitive patterns identified during the educational process that appear frequently in children's narratives. It is possible that these case studies and observations may raise new research questions. Further research could study the points and opinions of other educators about this topic, and could involve larger-scale research and study, which could combine quantitative and qualitative data, create additional narrations with greater thematic variety, and combine them with other educational activities.

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Declarations and conflicts of interest

Research ethics statement

The author conducted the research reported in this article in accordance with the educational research standards and legislative framework of the country in which the research was carried out (Greece).

Consent for publication statement

The author declares that research participants' informed consent to publication of findings – including photos, videos and any personal or identifiable information – was secured prior to publication.

Conflicts of interest statement

The author declares no conflicts of interest with this work. All efforts to sufficiently anonymise the author during peer review of this article have been made. The author declares no further conflicts with this article.

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