

## EARLY CHILDHOOD PRESERVICE TEACHERS AND PROFESSIONAL NOTICING

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### ABSTRACT

This study focuses on professional noticing of early childhood preservice teachers. In particular, I try to explore particular aspects that lead them to select a specific child's work and how they interpret the selected work. Methodologically, the research is situated within the interpretive tradition in educational research. Participants were 23 early childhood preservice teachers from a Faculty of Education at a large university in Spain. The findings help to characterize different ways of noticing children's works, and the difficulties of relating these characterizations with their academic background in general, and mathematical background in particular. In addition, they provide insight into how future teachers give meaning to instructional situations.

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**Keywords:** early childhood, preservice teachers, professional noticing.

### INTRODUCTION

The last few years have seen a growing number of national initiatives that have directed attention to early childhood education (U. S. Department of Education, 2012; Boletín Oficial del Estado, Gobierno de España, 2006), emphasising the idea that competent early teachers are very important to ensure positive outcomes for children. With respect to these teachers, two aspects can be considered. On the one hand, there is an unquestionable specificity in their work. And on the other, they are professionals that share tasks, problems and goals with other colleagues at every level. Among the critical components of teaching expertise that teachers are expected to deploy, research on teachers' professional development has emphasised the importance of professional noticing (Mason, 2002; Sherin et al., 2011). This component allows teachers to observe and make sense of instructional situations in a professional manner different to that of someone who is not a teacher. Approaching to this component in a context of early childhood teacher education becomes our object of interest in this work.

## BACKGROUND OF THE STUDY

Professional noticing has been conceptualized in a variety of ways, including distinct aspects in their definitions of noticing (see Sherin and Star (2011) for further discussion on these differences). Authors as Start and Strickland (2008) have focused on the identification of remarkable aspects of classroom events. Other authors as Van Es and Sherin (2008) have provided a three-part learning-to-notice framework that includes: identification of significant aspects of a classroom situation, reasoning about the classroom interactions on the basis of the teachers' knowledge about the context, and establishing connections between the specific classroom events and general principles of teaching and learning. Jacobs et al., (2010), have considered a specialized type of noticing, which they have called professional noticing of children's mathematical thinking, taking three interrelated skills into account: attending to children's strategies, interpreting children's understanding, and deciding how to respond on the basis of children's understandings.

In this article, without minimising the importance of other core propositions for teaching, I focus on a professional noticing of children's work. I conceptualize it on the basis on two skills: the particular aspects that teachers value in child's work/creation, and how they interpret them. I hypothesize that the ability to attend and interpret significant details of children's work could inform teacher's instruction. The relationship between these aspects and the preservice teachers' information provided in teaching methods courses can provide evidences about if these future teachers consider children's productions on a solid and professional basis. Since I particularize this competence in a context of early childhood teacher education, the characteristics of early childhood levels lead us to consider not a specific topic per se, but the ideas related to early childhood curriculum that can be present in preschool children-produced works and, especially, in mathematical topics that some authors consider relevant at this level (Clements, 2004). These topics are included in the subject matter contents of teacher education program.

The research questions behind this study are:

- What features do early childhood preservice teachers take into consideration when they select a preschool child's work?
- How do they interpret the selected work?
- Are they able to identify any mathematical characteristics in that interpretation?

In the following sections, I provide information on the methodology and results. I conclude by suggesting how the work could be of assistance in a sustained research effort and generate new insights in the field.

## **METHOD**

Methodologically, the study is situated within the interpretive tradition in educational research, since the aim was to comprehend the multiple relationships of the phenomenon under study, trying to capture the meanings, values, procedures and interpretations the subject reached. According to Ponte (2006), an interpretative perspective inspires a qualitative research, since it considers human activity a social experience in which each person involved generates meanings.

## **THE CONTEXT**

With respect to the institutional and systemic context in which we develop our research, in our country (Spain), the curricular guidelines of pre-school teacher education are set by national legislation stipulating the official degree at this level. Without going into specifics, the study plan of the University of Seville related to the early childhood education degree has different courses related to the history of education and educational systems, early educational psychology, sociology of education, pedagogy of education, classroom management, knowledge and understanding of the world, plastic, musical and visual education, among many others. In addition, there is a Mathematics Methods course in the second year, whose programme includes issues related to teaching and learning of several topics: Number, Measurement, and Geometrical and Spatial issues. In addition, there is a period of student teaching in the third year (Practicum), which becomes a period of direct experience with the field of early education, life in early childhood schools and the different tasks developed by the teachers.

## **PARTICIPANTS**

The participants were 23 early childhood preservice teachers (22 female and 1 male) from a Faculty of Education at a large university in Spain, with ages ranging from 21 to 23 years. They were voluntary participants in the study. All the students were born in Spain and did their Primary and Secondary Education studies in the country. These students were enrolled in the Practicum period, so it was only to be expected that they had completed the subject matters corresponding to previous courses.

## **THE RESEARCH INSTRUMENT**

To access student teachers' expertise in attending to children's thoughts and ideas we asked them to choose one child's drawing, and to explain in detail the reasons for their selection. The children's

drawings were selected by preservice teachers in their student teaching period, and the justifications of their decisions had to be written in a separate sheet. Children's drawings are both a natural form of expression of children's feelings and a common activity in preschool classrooms. They have been used in very different ways: for explaining cognitive development in children (Clemence et al., 1996), for developing children's imagination and creativity (Cox, 1992), as a way of self-expression (Hawkins, 2002), among many others. If we consider that doing a drawing is an act of representation that can illustrate children's ideas related to different issues, preservice teachers' approach to children's drawings could become a research instrument that allows us access to how preservice teachers notice these ideas.

In addition, interviews were carried out at the end of this period. The interviews were carried out at the end of the practicum period. They lasted about 15 minutes. During the interview process, student teachers were encouraged to validate the written opinions they had given regarding the drawings they had selected. In addition, they were asked if they could identify any mathematical ideas in those drawings.

### **DATA ANALYSIS**

Student teachers' criteria for selection of the children's drawings were analysed following an inductive process. First, units of analysis that expressed preservice teachers' significant ideas related to the drawings were identified. After that, these units of analysis were classified taking their nature and characteristics into account. From here, I was able to identify different ways of attending the drawings.

Second, the explanations or opinions of what drawings meant for the preservice teachers were examined in detail, looking for relevant features that allowed us to access to their interpretation of the drawings.

With respect to the interviews, they were analysed looking for both the coherence with the previous decisions related to the selection of the drawings and the presence/absence of any kind of acknowledgment of mathematical ideas in their answers to the interview questions.

### **FINDINGS OF THE STUDY**

From the data analysis of preservice teachers' justifications related to selection of the drawings and the final interviews, I was able to identify different ways of attending to and interpreting the drawings, which are presented here-below:

### ***Attending to characteristics coming from inside the drawings***

Five student teachers appreciated details of the drawings related to characteristics such as colours (Student4), shapes (S18, S19), or types of lines (S15, S16). Nevertheless, the interpretation of those features was very different. For instance, S19 considered the shapes of the selected drawing from the personal feelings they suggested to her, as can be seen in the following protocol:

*“This drawing caught my eye because this child is very fond of me and instead of drawing a sun he drew a heart as a symbol of his appreciation of me”* (S19, Justification sheet 1).

This preservice teacher interpreted the shapes in the drawing as a manifestation of affection towards her, linked to her own affective domain.

Other colours or shapes of the drawings were interpreted as an indicator of children’s personal problems (S4, S18). The following protocol is representative of this interpretation:

*“I have chosen this drawing because the use of black and the absence of shapes surprise me; the child in question is aggressive ... [the rest is omitted from the protocol to respect the privacy of the child]”* (S4, Justification sheet 1).

Unlike the previous way of interpreting the drawings, these interpretations were closely linked to the children’s affective domain. We can say that both interpretations were situated in the ‘feelings’ field. Nevertheless, the first interpretation was situated in the preservice teacher’s affective domain. In S4 and S18, the interpretations were situated in the children’s affective domain.

Finally, S15 and S16 attended to the lines or sketch included in the drawings, focusing on the identification of attempts at handwriting the child’s name in the drawing. They tried to establish relationships between her first name and her family name (S15), or the meaning that the child ‘saw’ in these sketches (S16).

*“I chose this drawing because they are very abstract lines, but the young girl knew that, she knew that those lines represented a lady with her name...”* (S16, Justification sheet 1).

These preservice teachers interpreted these features as a representation of the child’s abilities, an aspect that could be useful in their future work.

### ***Attending to the meaning of the whole drawing***

Fifteen preservice teachers took the people, things, or events the drawings represented into account. Three of them mentioned the representation of different things that had caught their attention: the representation of a mermaid (S13), an igloo (S14), and a doll (S23). Other preservice teachers valued the children’s capacity for representing people or situations. They selected drawings in which

people from the child's environment were represented: teacher (S10, S22, S23), family (S3, S11, S12, S21) and the preservice teacher him/herself (S5, S6, S20). All these future teachers interpreted the drawings on the basis of what they represented, without establishing other relationships. Finally, two preservice teachers focused on the pupils' representation of some topics or ideas developed in the classroom: a famous Spanish writer like Garcia Lorca (S1), or the preparation of a Carnival party (S12), as can be seen in the following protocol:

*"This drawing was made by a three year old student when the carnival project was being prepared. We had chosen a "coloured worm" outfit as carnival costume, which consisted of three coloured felt circles, partly because the circle and colours were the subject being taught in class at that time. I believe the young girl wanted to portray what the topic meant to her. I chose this drawing because I found it intriguing to find that in a free drawing the girl portrayed both her vision of the carnival theme and her knowledge of the contents studied in class"* (S12, Justification sheet 1).

In all these cases the representations of the drawings were linked to issues originating from classroom instruction.

#### **Attending to the comparison with other drawings**

Three preservice teachers established comparisons between drawings. S9 emphasised the brightly coloured drawing by a child compared to those by other pupils. S7 and S8 established comparisons with other drawings made by the same child, as we can see in the following excerpt:

*"This was the first drawing I chose because it is a special case. It was drawn by a child with speech and behaviour problems. They are two different drawings; one is from one day and the other from another day [...]. The one on top was drawn on any given day and the one on the bottom was drawn the day after he attended an early care class. I was greatly surprised by the difference between the two..."* (S8, Justification sheet 1).

All of them interpreted the drawings as an improvement compared to other works.

#### **Mixed approach**

Finally, one of the preservice teachers (S6) interpreted the selected drawing while considering both characteristics and representation.

#### **Identification of mathematical aspects in the selected drawings**

In relation to mathematics, only three student teachers mentioned the identification of any kind of mathematical idea in the children's drawings in the final interview. S15 saw the beginning of the establishment of logical relations in the intent of the child in relating name and surname. S10 recognised

some geometrical shapes such as a circle in the drawing, and S6 noticed the child's attempt at reproducing a numbers graphic and some features of spatial orientation in the drawing.

To sum up, all these results have allowed us to appreciate different ways of attending to the children's drawings: based on the internal features of those drawings, by considering them globally or by establishing comparisons. Through them, we can see how future early teachers have different perspectives when considering the work of their pupils. Knowing the adopted position and reflecting about it can be useful for their future work. Along with this, different interpretations of the drawings have been identified. In these interpretations, they are considered in very different ways, as indicators of affective relationships, skills, understanding, or progress of the children. These indicators can be taken into account in teacher education courses and their role may become a research subject.

## **DISCUSSION AND FURTHER CONSIDERATIONS**

In this article I have tried to approach the features that early childhood preservice teachers noticed in children's works. Similarly to Jacobs et al. (2010), I found that these future teachers attended the works in different ways. Some of them focused on different details in the drawings and others considered them as a whole. Furthermore, their interpretation of children's work was mainly linked to the drawings and not to children's understanding in general, or mathematical understanding in particular (of course, I do not try to generalize to other students). Only a few of them possessed the skill of relating these details or considerations to their academic background. We might think that this is only reasonable when there were no indications about how they had to consider the children's works. But, even when they were asked directly about the possibility of appreciating any mathematical characteristics, they found it difficult to recall any details related to children's mathematical ideas or concepts' understanding coming from teacher education courses. We can say that noticing is a worthwhile goal, but it is not an easy task. The ability to recognise significant ideas becomes an important issue in teacher education. I agree with Jacobs (2010) that "to interpret children's understanding, one must not only attend to children's strategies but also have sufficient understanding of the mathematical landscape to connect how those strategies reflect understanding of mathematical concepts" (p.195). How to provide that mathematical landscape is a challenging task for teacher educators.

This study, on the basis of a particular consideration of attending and interpreting as interrelated skills that underlie the expertise of professional noticing, has tried to highlighting the aspects that early childhood preservice teachers noticed in children's works. These future teachers need

opportunities to foster these skills. This research has opened up new avenues for research and practice in early teacher education and poses new questions. To what extent do these courses affect the generation and development of critical components of teaching expertise? We need to progress in this direction.

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