

Let's think together: The role of scaffolding in the
development of children's reasoning about poverty
and social inequalities

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Resumo

A pobreza e as desigualdades sociais continuam a ser uma realidade muito presente nos dias de hoje, o que significa que as crianças ainda têm de lidar com estes fenómenos, pensar sobre eles e, por vezes, vivê-los. Neste sentido, é muito importante que as crianças comecem, cada vez mais cedo, a compreender a natureza do dinheiro e o funcionamento da situação socioeconómica. Para que isso aconteça, as crianças precisam da ajuda do adulto para as orientar, clarificando os seus pensamentos e ajudando-as a organizá-las.

O principal objetivo deste estudo é compreender como a orientação e supervisão do adulto podem ser importantes aliados no desenvolvimento do raciocínio das crianças, nomeadamente sobre a pobreza e as desigualdades sociais.

A nossa amostra foi constituída por 31 crianças, de duas escolas públicas, do distrito do Porto, que foram entrevistadas, em dois momentos – início e fim do ano letivo –, por adultos através de uma situação de estímulo acerca destes temas.

Os resultados mostraram que a intervenção do adulto foi essencialmente positiva e parece apoiar as crianças no seu raciocínio sobre a pobreza e as desigualdades sociais. Além disso, do início para o fim do ano letivo, o número de interações diminuiu e as respostas das crianças tornaram-se mais objetivas. Mais ainda, foi possível verificar que as perguntas específicas foram a intervenção do adulto mais eficaz na mudança e evolução das respostas das crianças.

Palavras-chave: Pobreza; Desigualdades Sociais; Andaime; Intervenção; Criança; Adulto; Questões Específicas

Abstract

Poverty and social inequalities remain a very present reality nowadays, which means that children still have to deal with these phenomena, think about it, and sometimes live through it. So, it is very important that children begin, increasingly early, to understand the nature of money and how the socioeconomic situation works. For this to happen, children need adult's help to guide them, clarify their thoughts, and help them organize them.

The main goal of this study is to understand how adult guidance and supervision can be important allies in the development of children's reasoning, particularly about poverty and social inequalities.

Our sample consisted of 31 children from two public schools in Porto District that were interviewed in two-time points – beginning and end of the school year – by adults with a stimulus situation.

Results showed that adult intervention had a positive tone and appeared to promote children's reasoning about poverty and social inequalities. In addition, from the beginning to the end of the school year, the number of interactions decreased, and children's answers became more objective. Even more, it was possible to verify that specific questions were the most effective adult intervention in changing and evolving children's responses.

Keywords: Poverty; Social Inequalities; Scaffolding; Intervention; Child; Adult; Specific Questions

Résumé

La pauvreté et les inégalités sociales restent une réalité très présente de nos jours, ce qui signifie que les enfants doivent encore faire face à ces phénomènes, y réfléchir et parfois les vivre. Il est donc très important que les enfants commencent, de plus en plus tôt, à comprendre la nature de l'argent et le fonctionnement de la situation socio-économique. Pour ce faire, les enfants ont besoin de l'aide des adultes pour les guider, clarifier leurs pensées et les aider à les organiser.

L'objectif principal de cette étude est de comprendre comment les conseils et la supervision des adultes peuvent être des alliés importants dans le développement du raisonnement des enfants, en particulier en ce qui concerne la pauvreté et les inégalités sociales.

Notre échantillon était composé de 31 enfants de deux écoles publiques du district de Porto qui ont été interrogés à deux moments – au début et à la fin de l'année scolaire – par des adultes en situation de stimulation.

Les résultats ont montré que l'intervention des adultes avait un ton positif et semblait promouvoir le raisonnement des enfants sur la pauvreté et les inégalités sociales. De plus, entre le début et la fin de l'année scolaire, le nombre d'interactions a diminué et les réponses des enfants sont devenues plus objectives. Plus encore, il a été possible de vérifier que les questions spécifiques constituaient l'intervention adulte la plus efficace pour changer et faire évoluer les réponses des enfants.

Mots-clés : Pauvreté ; Inégalités Sociales ; Échafaudage ; Intervention ; Enfant ; Adulte ; Questions Spécifiques

Introduction

In an increasingly complex and developed world, poverty and social inequalities remain a very present reality. Children nowadays still have to deal with poverty, think about it and, sometimes, live through it, which is a recognized impediment to sustainable economic and social development (Sandu et al., 2017). According to the latest data available, the child poverty rate in Portugal stands at 15.2%, higher than the country's total poverty percentage of 12.8%. In the total of 25 European Union countries with the available poverty ratio, Portugal is the 10th country with the highest total poverty level (OCDE, 2023). Bearing in mind that they will be the citizens of the future, it is extremely important for children to understand the nature of money and how the socioeconomic situation works, so that poverty and social inequalities become an increasingly less frequent reality (Barrett & Buchanan-Barrow, 2011). Furthermore, according to Bennet and Sani (2004), middle childhood can be an optimal time to engage children into conversations about social issues, such as poverty and social inequalities.

Learning and development are interrelated from the child's first day of life (Vygotsky, 1978). As human beings, we are social beings, because, since day one, we are interacting with each other, with our parents, our family, and our friends, as well as learning with them and from them. Recent research shows differences in understanding the nature of money as a function of context rather than general development trends (Barrett & Buchanan-Barrow, 2011). Nonetheless, the social capability needs to be stimulated by the adults around the child, so that the social and emotional skills develop, which is a process that occurs gradually over time (Kostelnik et al., 2014).

Even so, other species interact with their peers too, and they impart knowledge and learning as well, but what sets us apart as humans is the fact that while teaching, we are, according to Csibra and Gergely (2011), appealing to the "cognitive mechanism that enables the transmission of cultural knowledge by communication between individuals" (Kirschner & Hendrick, 2020).

Teaching a child how to act and adapt to the multiple contexts of her life involves a certain expertise and availability from the adult, even though sometimes children act and respond by *imitating* what they see their relatives do in similar situations, by modeling their acts and behaviors on them (Kearn, 2000). However, in concrete thematic situations, like the perspective of poverty or understand how monetary management is done, children usually

need someone that helps them organize their thoughts. The term used by Kirschner & Hendrick (2020) to describe this process is “*scaffolding*”.

Scaffolding consists of helping the child into actions that have a recognizable-for-her solution (Kirschner & Hendrick, 2020), which is very closely related to the notion of *zone of proximal development* defined, by Vygotsky (1978), as the distance between the actual development level a child acquires – level of development defined by the scores a child reaches in intelligence tests – and the level of potential development the same child can reach under the guidance or in collaboration with more capable peers.

Scaffolding is important to children’s development because it promotes independent problem-solving and contributes to children’s positive outcomes (Mermelshtine, 2017). Furthermore, *scaffolding* strategies have been shown to relate to better cognitive abilities in children (Lowe et al., 2014; Mermelshtine & Barnes, 2016), such as more classroom competence (Mattanah et al., 2005), arithmetic and spatial problem-solving skills (Casey et al., 2014), early reading and number concepts (Bae et al., 2014), and decoding and reading comprehension (Dieterich et al., 2006). In the field of socioemotional development, *scaffolding* strategies promote socioemotional development, with more cooperation, better emotion regulation and less fussing in infancy, and prosocial behavior, such as instrumental helping and empathic helping (Mermelshtine, 2017). In their experiment, Wood et al. (1976) found that younger children needed more assistance than older ones which leads us to the notion that *scaffolding* is a process that follows and adapts to the child’s development and that the more developed a child is, the less she will need the intervention and the guidance of the adult.

As said before, *scaffolding* involves a certain expertise from the adult because guiding a child in the process of learning is a task of great responsibility and some cautions are needed to make this task as successful and enjoyable as possible. First, the adult needs to possess a range of emotional skills, such as empathy and patience, and use them in the interaction with the child, so that the learning process will be perceived by the child as a safe and joyful moment. By using empathy as the basis of the interaction, the adult will be able to perceive when and how to provide close support and when and how to take it away. Lastly, the adult needs to have the ability to hold two mental models at the same time – his own mental model and the mental model of the child – so that he/she can see the discrepancies between where they are at in their journey and the problem to be solved (Kirschner & Hendrick, 2020).

Wood et al. (1976) defined the function of the adult in the scaffolding process considering six aspects – recruitment, reduction in degrees of freedom, direction maintenance, marking critical features, frustration control, and demonstration. Adults must begin by recruiting the child’s interest and adherence to the task. Then, they must reduce the degrees of freedom, i.e., simplifying the task, reducing the alternative movements during skill acquisition to regulating feedback so that it can be used for correction. The following aspect is direction maintenance, which involves keeping the child in task while showing enthusiasm and sympathy to keep her motivated. It is very important that critical features are marked, so that the child can know the discrepancies between what she has produced and what the adult considers a correct production. During the process it is crucial that the adult controls the child’s frustration levels because this process “should be less dangerous or stressful with a tutor than without”. Finally, there is the demonstration. At this point, the adult must demonstrate or “model” the solution(s) to a task, which sometimes may involve an explication of the solution.

Scaffolding differs from *imitation* as it goes beyond the reproduction of what the child already knows and already is part of her knowledge (Wood et al., 1976), or even what is part of her *zone of proximal development* (Vygotsky, 1978). To properly scaffold children’s development, the adult needs to understand how and when to provide tasks that allow the child to evolve (Kearn, 2000).

On issues such as poverty and social inequalities, *scaffolding* can be used by providing children concrete and developmentally appropriate activities and engaging them in conversations about the topic, using approaches that can impact their developing beliefs about these topics (Mistry et al., 2017). Moreover, it is crucial to be aware that children impart knowledge from the ones close to them and the ones whom they interact with, but it cannot be forgotten the role of society in these topics, too. Social class influences children’s perceptions about what economic resources can allow them to have, but it also fosters their developing sense of self and perceptions of others (Mistry et al., 2015).

It is worth mentioning that the literature on children’s reasoning about topics such as poverty and social inequalities is still limited. Even so, it is possible to verify that children often have a perspective and something to say about social issues (Betz & Kayser, 2017), which include poverty and social inequalities. Children perceive the reasons for poverty in terms of three types of causes: fatalistic causes, in which the reason for poverty is due to luck, accidents, and/or fate; individualistic causes, in which the reason for poverty is the responsibility of the individual himself and his behaviors; and structural causes, in which the

cause of poverty is attributed to reasons from a social nature, that is external to the individual (Chafel & Neitzel, 2005; Hakovirta & Kallio, 2016; Costa et al., 2020). The literature also shows that these attributions given by children are congruent with the attributions given by adults (Crosby, 2000; Gonzalez et al., 2022), which reinforces the role of society in the transmission of knowledge (Mistry et al., 2015) and, consequently, of scaffolding, since children internalize and consider what adults think, share, and discuss (Gonzalez et al., 2022).

In short, the purpose of *scaffolding* is to help a child go further, by giving her little guidance on aspects she still hasn't mastered by herself (Vygotsky, 1978). Briefly, scaffolding begins by luring the child into actions that promote a recognizable-for-her solutions; after that, the role of the adult is to interpret discrepancies to the child; finally, the adult stays with a confirmatory role until the child is ready to explore on her own (Wood et al., 1976).

The present study is focused on the children's discourses about poverty and social inequalities, namely the causes to which they attribute them, through a stimulus situation about a family living in poverty exposed by the adult. As it is part of a larger project, the present study already had data collected at the time of its inception, which led to the familiarization with the information that raised the curiosity to study the position and intervention of the adult regarding children's attitude towards the central issue of poverty and social inequalities. Thus, the main goal of this study is to understand how adult's help, guidance, and supervision can be important allies in the development of children's reasoning, particularly about poverty and social inequalities. Accordingly, three study objectives were defined: (1) to characterize adult interventions in the interaction with children during the facilitation of the stimulus situation; (2) to characterize adult intervention at the beginning and at the end of school year by highlighting similarities and differences; (3) to understand child-adult-child loops through the identification of patterns between type of adult intervention and type of child responses, and in particular, to identify the types of adult interventions that most promoted the change and evolution of the children's answers, and consequently the development of the poverty reasoning of the child.

1. Method

This study is part of a larger project named “Bringing the world into the classroom: The development of global competence in elementary school”. It is about children’s understanding of global-to-local social issues, including poverty, inequalities, and interculturality, supported by the Portuguese Foundation for Science and Technology [SFRH/BD/143451/2019].

1.1 Participants

Participants included in the present study were 31 Portuguese children (64,5% female), attending two fourth-grade classrooms in Porto District (North of Portugal), aged on average 9.47 (SD = 0.32) at the beginning of the school year.

Regarding the parents’ education level, 14% of mothers and 32% of fathers completed up to secondary education, and 50% of mothers and 26% of fathers had a higher education degree. Most of the parents (76% of mothers, 100% of fathers) were working full-time. More than half of the families (62%) received school social support – a measure from the Portuguese Ministry of Education that provides a financial contribution for meals, school insurance, transportation, or other specific needs, to families with low to medium annual incomes.

1.2 Procedure

The project was reviewed and approved by the University Ethics Committee (reference 2021/03-10). Two public school clusters accepted to collaborate with the larger project. For the present study, two fourth-grade classrooms were selected by convenience, one from each cluster – one rural and one urban, both in Porto District. The teachers from both classrooms agreed to participate and signed informed consent letters that contained detailed information about the project goals and methods.

Children’s parents were also informed about the project and were asked permission for their children to participate. All of them signed informed consent letters, agreeing with their children’s participation in the project.

In September 2021, all parents filled in a questionnaire with sociodemographic information (child’s and parents’ nationality, parents’ school and work situation, and the socioeconomic situation of the family regarding the school social support).

Children answered an individual interview in a quiet room at their school, in two time points, at the beginning and end of the school year: (i) between September and October 2021 and (ii) May and June 2022. In the beginning of each interview, it was clarified by the

researchers/interviewers that there were no right or wrong answers. Children were told that they would only share their views and opinions. After this clarification, children were asked for verbal consent for their participation in the project.

For the individual interviews with children, it was used one single session, with a duration between 20 and 30 minutes. The interviews included a set of stimulus situations and open-ended questions so that the children could give a free answer. The stimulus situation used within the scope of this study was the one presented first about the situation of the family of Pedro or Jessica, according to the child's gender. The interview protocol was the same in the two time-points, as was the procedure of interaction, i.e., the stimulus situation was presented to the child by the adult and then the question was asked, and the response was listened to. Three junior researchers, with experience in data collection with children in educational settings, were previously trained and received instructions to intervene only when it was needed clarification about the stimulus situation or when there were questions from the child. Moreover, they could intervene to ask children for clarification with specific open-ended questions, or to encourage them to develop their ideas and points of view. Researchers should also be empathetic and respectful, valuing children's points of view and actively listening to their ideas. The interviews, conducted by these three junior researchers, were to be interrupted when the child stopped providing new information or when there was no clarification on any topic.

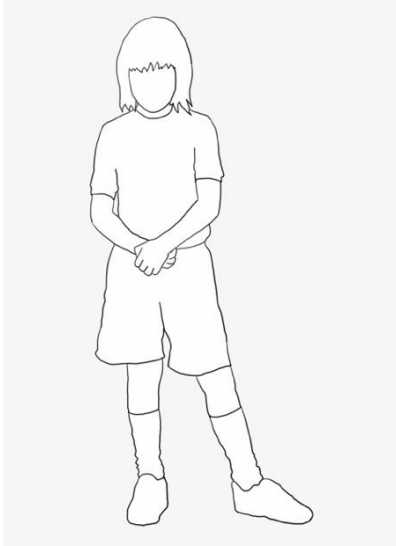
The training of the junior researchers involved learning and discussing the study procedures, observing each other, and discussing points of improvement. A senior researcher was involved too, to discuss specific cases and doubts, when needed, and for supervision. Each interview was audio-recorded and later subject to verbatim transcription.

1.3 Measures

Based on the work of Mistry and colleagues (2016), it was presented to children a stimulus situation about a hypothetical gender-matched child living in poverty and his/her family, accompanied by a black-and-white gender-neutral illustration of a child.

The stimulus situation was the following:

Vignette



I'm going to tell you about a girl/boy called Jessica/Pedro. Jessica/Pedro's family is poor and has little money. The house where she/he lives with her/his family is small and old. Because Jessica/Pedro's family does not have much money, she/he cannot buy many things that she needs or wants. The bag and trainers she/he wears used to belong to her/his older sister/brother, but now they are too small for her/him, so now Jessica/Pedro wears them. They are old and worn out, but her/his parents don't have enough money to buy new trainers or a new bag. Jessica/Pedro doesn't get to travel much or visit new places, but she/he likes to play games like tag and hide and seek with her/his brother and sister. Sometimes Jessica/Pedro's family doesn't have enough money for all the food they want, so she can't buy many sweets and snacks.

After reading the stimulus situation, the researcher asked the open-ended question “Why do you think Pedro/Jessica's family is poor?” to address the causes of poverty.

1.4 Data analysis

1.4.1 Causes of poverty

Children’s type of causes was analyzed following thematic analysis (Braun & Clarke, 2006). First, the full transcript of the interviews was read to foster the familiarizing process with the data, and then relevant ideas and statements from the children were identified to generate the first coding suggestions. Each relevant sentence was used as a unit of analysis, unless two or more different categories were present in a sentence. Then, concerning the causes of poverty, within the larger project, using 90 interviews from the 248 collected in the beginning of the school year, it was developed an exhaustive list of categories, following an interactive process, both inductive, allowing categories to emerge from the data, and deductive, informed by previous research (e.g., Flanagan et al., 2014; Mistry et al., 2016). After that, the categories defined so far were revised through a process of reading again the transcripts, discussing all the perspectives in the research team and reviewing the names of the categories. For the present study, only the four main categories were used to analyze the answers given by the children.

Three independent double coders trained to code a subset of ten interviews from the interviews collected at the beginning of the school year (Cohen’s Kappa ranged from .70 to .82) and discussed disagreements with a master coder. Then, the remaining the interviews

from the beginning of the school year were double coded by the three independent coders, and interrater reliability estimates were calculated (Cohen's Kappa ranged from .81 to .90).

1.4.2 Adult's intervention

Adult's intervention type of categories was analyzed following thematic analysis, in an iterative process, which allowed the categories to be increasingly adapted to the sample of the present study (Braun & Clarke, 2006). Furthermore, the process of creating the representative categories of the type of adult's intervention resulted from a combination of the inductive and deductive method. The inductive method, due to familiarization with the collected data and what emerged from it, and the deductive method, due to the adaptation from the works present in the "Life Narrative Co-Construction Analysis Manual" (Habermas et al., 2020) and in the doctoral dissertation entitled "Educational Interactions in the Family and Kindergarten" (Leal, 2002). Following Braun & Clarke's (2006) recommendations, the process started with the researcher's familiarization with the sample information, to integrate it better and better and automate the access to it. Then, it started the phase of finding a match between the categories of the Manual (Habermas et al., 2020) and those present in the Dissertation (Leal, 2002), so that it would be easier to find a single set that was more accessible and intuitive to work. Once the match process was completed, seven possible representative categories of the adult's type of intervention were identified: "Request for Narrative", "Specific Questions", "Give Clues", "Confirmation", "Approval", "Encouragement" and "Delay/Silence". Next, the categories were matched to the sample of the present study, referring to the step that Braun and Clarke (2006) define as reviewing the categories. This correspondence resulted in the refinement of some categories so that they were better adapted to the sample of the present study. Thus, the category "Narration Request" was renamed "Open Questions", as the adult did not ask the child to narrate more, but rather questioned if she/he had anything to add to what was said. The category "Giving Clues" fell out and was adapted to "Clarification/Addition of Information", as the adult did not add information in order to help the child to advance, which is a clue, but clarified certain questions at the child's request, also adding information to complete this request for clarification. The category "Encouragement" fell out, too, becoming "Verbal or Non-verbal Minimal Reinforcement", since the adult did not elaborate on the child's discourse, as defended by the meaning of the category "Encouragement", both in the Manual (Habermas et al., 2020) and in the Thesis (Leal, 2002), but only briefly reinforced what the child had said, encouraging her to continue. The category "Delay/Silence" was renamed

“Acceptance”, as the adult did not always delay in his intervention or remained silent, often choosing to convey to the child that it was okay that she did not know or did not want to elaborate the speech, thus aiming not to demotivate the child or make her feel incompetent, normalizing her attitude and posture. After the whole process, six final categories emerged.

2. Results

To address the first objective of this study, namely, to characterize adult interventions in the interaction with children during the facilitation of the stimulus situation, we (1) first present results regarding the types of causes of poverty mentioned by children in their responses to the stimulus situation, followed by (2) characterization of the types of adult intervention regarding children’s answers. Then, to address the second goal of highlighting similarities and differences in adult intervention at the beginning and at the end of the school year, we present (3) the types of adult interventions at each moment of the year. Finally, to understand child-adult-child loops, we present findings (4) regarding the identification of patterns in the adult’s intervention based on children’s initial responses, followed by (5) identification of the type of adult intervention that most promoted the change and evolution of the children’s answer.

2.1 Representative causes of poverty

The answers given by the children to the question “Why do you think their family is poor?” can be organized in four representative categories of the causes of poverty, according to the results obtained from the thematic analysis – naïf or fatalistic, unspecified, individualistic, and contextual. Naïf or fatalistic causes are those in which the child considers chance and unreasonable events or facts as the causes of poverty. Unspecified causes consist of general causes that make sense and can be considered as a valid possibility for the family’s poverty but cannot be attributed neither to individual or contextual causes, because the answer is vague, and children don’t explore it or specify it. Individualistic causes are those centered on the specific attributes or behaviors of the person in the situation, such as abilities to work and study, effort, or money management. Finally, contextual causes are the ones outside of the individual and located in the context, namely access conditions to work or study, country-level conditions, or lack of social support (see Table 1).

Table 1*Representative Causes of Poverty*

| Category name | Meaning/Label | Representative examples |
|--------------------|---|---|
| Naif or fatalistic | Chance and unreasonable events or facts as the causes of poverty. | <p>“It was... maybe someone, for example his father could be rich and could have died, or someone stole the money.”</p> <p>“Because parents have made mistakes in the past.”</p> |
| Unspecified | General causes that make sense and can be considered as a valid possibility for the family’s poverty but cannot be attributed to individual or contextual causes. Children have a point, but don’t explore it or specify. | <p>“Because her mother had no job to work.”</p> <p>“Because he can’t afford to go to work.”</p> |
| Individualistic | Causes centered on the specific attributes or behaviors of the person in the situation, such as abilities to work and study, effort, or money management. | <p>“Sometimes, I’m not saying it’s her problem, but sometimes people spend too much and then they become poor.”</p> <p>“Because parents don’t want to work.”</p> |
| Contextual | Causes outside of the individual’s control and located in the context, namely access conditions to work or study, country-level conditions, or lack of social support. | <p>“Because there are people who say that because they are poor, they say, no, it’s like the gypsy people, there are people who say that and don’t accept them in jobs because they are like that, and I think that’s why they are poor.”</p> <p>“As they were poor, they did not have a car to get to work on time.”</p> |

2.2 Representative categories of the adult's intervention

The interaction carried out by the adult was also explored through the steps of thematic analysis, as proposed by Braun and Clarke (2006). Thus, it was possible to cluster the adult's intervention into six representative categories – specific questions, verbal or non-verbal minimal reinforcement, open questions, confirmation, acceptance, and approval. Specific questions take place, as the name suggests, when a specific question is asked by the adult to the child concerning a subject or cause mentioned by the child with the purpose of making her more specific in her point of view. Verbal or non-verbal minimal reinforcement occurs when the adult briefly reinforces the child's answer, using a minimal verbal expression or non-verbal communication (smile or head's shaking), aiming for the child to move on and not making any comments or judgements of value. Open questions category is considered when the adult invites the child to express herself more about the topic, opening again the discourse. Confirmation occurs when the adult confirms the information provided by the child, repeating it, so that the child knows what he understood about what she said. It may also be considered confirmation when the adult brings a conclusion to the child's statement, seeking her approval. Acceptance is when the adult accepts the child's behavior when she doesn't know how to answer or is not interested in thinking further about a certain question. The adult normalizes the child's position, stating that she can move forward. Approval takes place when the child's answer is approved by the adult, and she/he offers her praise and shows satisfaction with the content of the answer (see Table 2).

Table 2

Representative categories of the adult's intervention

| Category name | Meaning/Label | Representative Examples |
|--|--|--|
| Specific Questions | The adult asks a specific question concerning an issue/cause mentioned by the child. | “Child (C): Because... they are unemployed. Adult (A): And why are they unemployed?” “C: Because they went through something bad. A: What could have happened?” |
| Verbal or non-verbal minimal reinforcement | The adult reinforces very briefly the child's answer through a minimal verbal expression or non-verbal | “A: Okay.” “A: Hm-hm.” “A: Yeah.” “A: (laughs).” |

| | | |
|----------------|---|--|
| | communication, encouraging the child to move on. No comments or value judgements are made. | |
| Open Questions | The adult invites the child to express herself more about the theme, opening again the discourse. | <p>“A: Do you have any more ideas?”</p> <p>“A: Any more reason you remember?”</p> <p>“A: Do you have any other hypothesis?”</p> |
| Confirmation | The adult confirms the information provided by the child, repeating it. It may also be considered confirmation when the adult brings a conclusion to the child’s statement, seeking the child’s approval. | <p>“C: Because they can’t get a job. A: ...they can’t get a job.”</p> <p>“C: Because some companies ask for qualities they might not have. A: So, they can’t get a job because of that... C: Yes...”</p> |
| Acceptance | The adult accepts the child’s behavior when she doesn’t know how to answer or is not interested in thinking further about a certain question. The adult normalizes the child’s position, and states it is ok to move forward. | <p>“A: It’s okay.”</p> <p>“A: If you don’t know we can skip ahead, it’s fine.”</p> <p>“A: Be my guest, think freely.”</p> |
| Approval | The adult approves the child’s answer, offering her praise and showing satisfaction with the content of the answer. | <p>“A: That’s a good point!”</p> <p>“A: Very good!”</p> <p>“A: Right!”</p> <p>“A: Good!”</p> <p>“A: You’ve given several possibilities!”</p> |

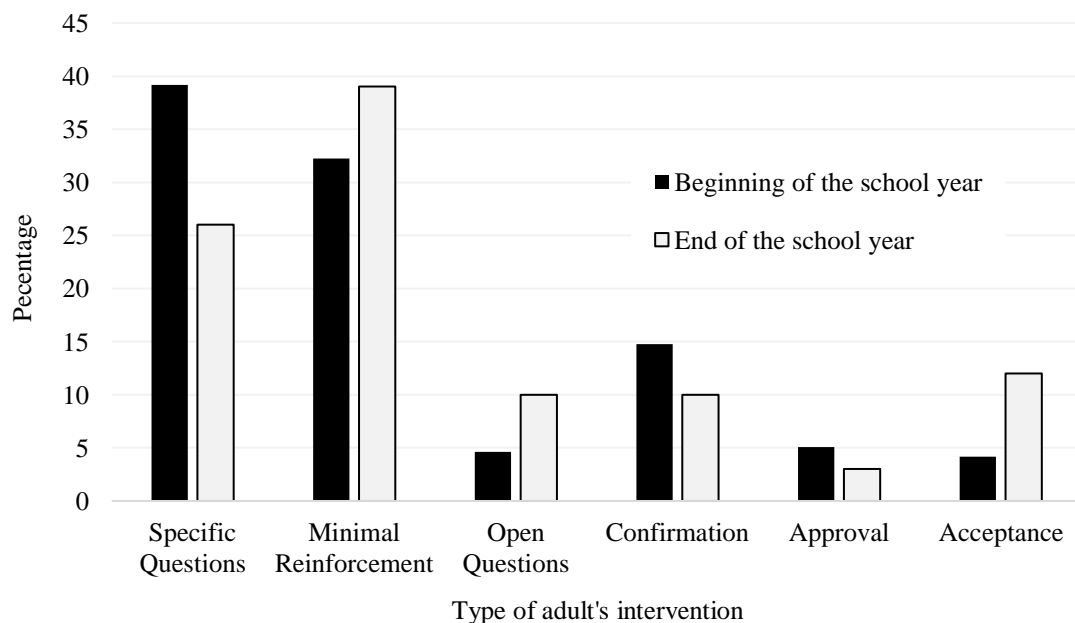
2.3 Adult’s intervention at the beginning of the school year and at the end

The analysis further pursued to address the adult intervention from the first interview, which took place at the beginning of the school year (i), to the second interview, which took

place at the end of the school year (ii). More specifically, the aim was to understand the changes in the adult’s intervention from the beginning of the school year (i) to the end (ii). Figure 1 shows the total number of adult interventions, in percentage, in each representative category at the beginning and at the end of the school year. Results showed that the adult intervention decreased regarding to those interventions that most appealed to the child’s response exploration, such as “specific questions”, “confirmation” and “approval”, as well as the number of interactions child-adult. On the contrary, adult intervention increased regarding to those that most appealed to the end of the interaction or to the search for new ideas, such as “verbal or non-verbal minimal reinforcement”, “open questions” and “acceptance”. Specific questions went from accounting for 39% of adult interventions at the beginning of the school year to 26% at the end of the school year. Verbal or non-verbal minimal reinforcement went from 32% at the beginning of the school year to 39% at the end of the school year. Open questions went from 5% at the beginning of the school year to 10% at the end of the school year. Confirmation went from 15% at the beginning of the school year to 10% at the end of the school year. Acceptance went from 4%, at the beginning of the school year to 12% at the end of the school year (see Figure 1).

Figure 1

Percentages of the Types of Adult Intervention at the Beginning and End of the School Year



2.4 Identification of patterns on child-adult-child loops

Next, to analyze the adult's intervention within the interaction with the child, an attempt was made to identify patterns in the loop of interaction, starting from the children's initial answers, then the adult's intervention and finally children's response to the adult's intervention. We were interested in identifying whether specific categories of the adult intervention were associated with specific types of child's initial responses and whether children's final response was changed based on the adult's input. For example, we wanted to find out whether when the child's answer mentioned an individualistic cause of poverty, the adult chose a recurring type of intervention, for example, acceptance. For this verification, an exhaustive analysis was made of each adult-child interaction, in which it was verified, taking into account a certain type of adult intervention (specific questions, verbal or non-verbal minimal reinforcement, open questions, confirmation, approval, acceptance), what was the child's initial response, i.e., before the adult intervention, and what was the response resulting from the adult intervention, i.e., after the adult intervention. This way, it was possible to understand, in a more legitimate way, if a specific type of adult's intervention promoted a change in the child's response, also to a specific type, and if that change was consistent in several children or only in an isolated case.

2.4.1. Types of adult intervention based on categories of children's initial answers

From this analysis, it was possible to verify that, regarding adult's intervention in face of the child's initial response, there were no clear patterns in the adult-child interaction. The adult could either ask a question, approve, confirm, or accept the answer, regardless of the category of the children's answer. The type of adult intervention varied, with no clear patterns.

2.4.2 Identification of the type in response to adult's intervention

In regard to children's changes in their response due to the intervention of the adult, it was possible to find one pattern. Particularly, specific questions of adult intervention led to changes in the children's answers, both at the beginning of the school year (i) and at the end (ii). In this analysis, we were most interested in understanding whether children's initial answers moved from more naïf categories to more sophisticated answers. According to the literature, throughout development, children improve their ability to reason about issues such as poverty and social inequalities, by using progressively more structural and abstract explanations and more multidimensional approaches to the issue (e.g., Costa et al., 2020; Flanagan et al., 2014; Mistry et al., 2016). In the present study, this can be seen in the type

of answers given by children to the causes of poverty: Evolution is considered when a child moves from a response that appeals to a more naïf or unrealistic cause of poverty to a response that appeals to a more complex, reasoned, and realistic cause, namely, focusing on the individual, or on the context.

To explore this topic, a thorough analysis was made of each interaction between the adult and the child to check whether the child's answer changed to a more sophisticated category, i.e., if there was a change of category regarding the cause of poverty, from a more naïf category to a more cognitively elaborated one. From this analysis it was possible to conclude that specific questions were the most effective adult intervention in changing and evolving children's responses, both at the beginning of the school year and at the end. Below, some examples are provided to illustrate this pattern:

Example 1 (at the beginning of the school year)

Child (naïf cause): "because his parents made mistakes in the past.",

Adult (specific question): "what kind of mistakes?"

Child (changed her answer to an individualistic cause of poverty): "for example, they had bills to pay, and they didn't pay, they were evicted, and they had to move to a worse home. They couldn't get a job because they were too rude with people and this kind of mistakes."

Example 2 (at the beginning of the school year)

Child (unspecified cause for poverty): "because her parents lost their jobs."

Adult (specific question): "why did they lost their jobs?"

Child (changed to contextual cause): "maybe they didn't have the possibility to put their children in school and as they are under age their parents stayed at home with them."

Example 3 (at the end of the school year)

Child (unspecified cause for poverty): "parents may not be working because they can't get a job."

Adult (specific question): "why there are people who don't have a job?"

Child (changed her answer to an individualistic cause): "because some companies ask for qualities, and they may not have those qualities."

Example 4 (at the end of the school year)

Child (unspecified cause for poverty) "maybe because the parents couldn't find a job."

Adult (specific question): "why couldn't they find a job?"

Child (changed her answer to a contextual cause): "because there may be many jobs that may already be occupied, that have no vacancies".

3. Discussion

This study is part of a larger project which has, as one of its goals, the study the perspectives of children, in middle childhood, about poverty and social inequalities, namely the causes they identify for the existence of these phenomena. Even though poverty and social inequalities remain to be a very present reality nowadays, little is known about children's understanding of its causes during this developmental phase. The present study began by focusing on this theme of children's perceptions of the causes of poverty and social inequalities through two-time points – at the beginning and at the end of the school year. However, as the analysis data had already been collected, it was possible to become more and more familiar with this data, which allowed a deeper exploration of the interactions and raised curiosity about the role of the adult in this process of children's reasoning about social issues, particularly about poverty and social inequalities. The results showed that the children in the sample of this study identified four types of causes for poverty that had been organized into four main categories: naïf, unspecified, individualistic, and contextual. Next, the analysis proceeded with the categorization of the adults' interventions into six representative categories: specific questions, verbal or non-verbal minimal reinforcement, open questions, confirmation, approval, and acceptance. Even more, the adult's interventions were analyzed at the beginning and at the end of the school year in order to understand the changes in the adult's intervention from the beginning of the school year (i) to the end (ii). Results showed that, from the beginning to the end of the school year, some types of the adult interventions that most appealed to the child's response exploration, such as specific questions, confirmation, and approval, decreased. On the contrary, those that most appealed to the end of the interaction or to the search for new ideas, such as verbal or non-verbal minimal reinforcement, open questions, and acceptance, increased. Regarding the goal of identifying patterns in child-adult-child loops, no clear patterns could be identified in the interactions of the sample in this study, with one exception. Specifically, when analyzing which adult intervention was the most effective in promoting the evolution of children's responses, it was possible to verify that specific questions led to changes in child answers, from more naïf to more complex reasoning.

By exposing to the 31 children of the sample of the present study a stimulus situation of a family living in poverty and asking them what they thought the causes were, it was possible to identify four representative categories – naïf and fatalistic causes, unspecified

causes, individualistic causes, and contextual causes, in order of complexity, respectively, i.e., each category is more structural and abstract on the explanation and allows a more multidimensional approach to the issue (e.g., Costa et al., 2020; Flanagan et al., 2014; Mistry et al., 2016). These findings are consistent with those found by the previous literature, which also found fatalistic causes, individualistic causes, and structural causes as the most mentioned by the children as reasons for poverty and social inequalities (Chafel & Neitzel, 2005; Hakovirta & Kallio, 2016; Costa et al., 2020). By enumerating naïf and fatalistic causes for poverty, children show that they do not yet have a very clear sense about how society works, believing that issues related to fate and luck might be something normative rather than an exception or coincidence. When evolving to more individualistic beliefs, by presenting answers in which the causes are based on the individual's own responsibility for living in poverty, children demonstrate maturation in their social reasoning, since they can find meaningful causes in which the individual lives in poverty for reasons caused by himself, either because he worked poorly, was lazy, or spent all his money. As mentioned in the literature (i.e., Costa et al., 2020), also in the present study it is possible to see the control locus of the situation shifting to the individual, instead of being focused on luck or chance issues. The most complex answers fall within the contextual category in which children demonstrate that they are starting to realize that poverty and social inequalities are not always the result of luck or even the responsibility of the individual himself, but of more structural issues, which are not always within their reach to change (Chafel & Neitzel, 2005; Hakovirta & Kallio, 2016; Costa et al., 2020), such as the examples of the answers provided by the children from the present study, i.e., the lack of vacancies for a job or discrimination by employers towards poor people. Even more, the category of unspecified answers also included meaningful answers, but the children didn't attribute the responsibility either to the individual or the society. In this category, there are examples such as "they can't afford to go to work" or "they are unemployed" which is a meaningful explanation for poverty, but they don't explore it, i.e., children say that the family is poor because parents don't work, but they don't specify why: whether they don't look for a job, whether the employers who don't hire them or other possible reason.

By analyzing the adult's intervention at the beginning of the school year and at the end, it was possible to conclude that, in general, the total number of interactions between the adult and the child decreased from the beginning to the end of the school year, which can be due to the characteristics of the task, i.e., novel vs. familiar information/stimulus situation. At the beginning of the school year, the stimulus situation presented to the children was new

to them as they had never thought about that specific situation. On the contrary, at the end of the school year, when the stimulus situation was presented again to the children, they already knew it, and knew what was expected from them, which could have made their answers more direct and concise, showing familiarity with the situation. Also, in their experiment, Wood et al. (1976) promoted the familiarization of the children with the objects to be used in the experiment. In the scaffolding process, this can be seen as the reduction of the degrees of freedom, in the sense that when familiarized with the situation, the child can give a more clear and concise answer, because she knows what is expected from her (Kirchner & Hendrick, 2020). Even more, the interventions that most appealed to the child's response exploration, such as specific questions, confirmation, and approval, decreased, which can lead us to the idea that in the second moment (end of the school year), children already knew what was expected from them, due to familiarization with the stimulus situation but also because of the feedback provided by the adult, showing that the scaffolding process was well-conducted, at least according to what is defended by Wood et al. (1976) and by Kirchner & Hendrick (2020). On the contrary, those adult interventions that most appealed to the end of the interaction or to the search for new ideas, such as verbal or non-verbal minimal reinforcement, open questions, and acceptance, increased. This can be due to the fact that, because children already knew what they had to explore, they were clearer in their answers, the adult didn't have to focus his intervention on these points, seeking instead to see if the child could evolve the number of possibilities, taking into account her zone of proximal development (Vygotsky, 1978), exploring it and trying to increase it, or ending the interaction once the child has already achieved the intended goals of the task. Moreover, also in their study, Wood et al. (1976) found that the older the children needed fewer instructions regarding the intended task, but needing, however, adult confirmation or supervision.

With respect to the attempt of identification of patterns on child-adult-child loops, our study showed varying interventions on the part of the adult, since the adult could either ask a question – specific or open –, approve, confirm, or accept the child's answer. It may be that, in the process of scaffolding, the adult attempted to keep the child interested in the task, using different types of interventions such as asking a specific question or using minimal reinforcement or confirmation (Wood et al., 1976; Kirchner & Hendrick, 2020).

Although it was not possible to identify clear patterns on child-adult-child loops, it was possible to identify one pattern in regard to children's answers in their responses to adult intervention. Specifically, results showed that specific questions of adult intervention led to

changes in the children's answers, at both two time points - beginning and end of the school year. By changes in the children's answers, we mean a child that first gave a naïf or unspecified answer, after the specific question from the adult, change her answer to a more structural and complex one, such as individualistic or contextual. Specific questions can be seen as direction maintenance and marking critical features on the scaffolding process (Wood et al., 1976; Kirchner & Hendrick, 2020), as the adult seeks to maintain the direction of the child's thinking in what she has said, trying to explore as much as she can identify, while at the same time, by directing the conversation to a specific subject, she is demarcating and demonstrating to the child where she needs to go and what she needs to explore, without telling her, however, the intended response or the one that would be expected.

It is important to point out some limitations of our study. The size of the sample is small, which may have conditioned some results. So, these results cannot be generalized to all Portuguese children in middle childhood. Another limitation is the fact that there was no quantitative analysis that would allow more objective results, namely, to understand if the differences found, both in children and adults, were statistically significant or not. However, despite its limitations, our study may be useful for future studies, in the sense that the representative categories of adult intervention may be informative about the best way to help and scaffold a child to explore her reasoning potential, by asking her specific questions, but without inducing her an answer.

For future investigations, it might be interesting to replicate the study with larger samples. Similarly, using a mixed analysis approach to the data, i.e., qualitative, and quantitative, could aid in the interpretation of the results. Moreover, in the present study, all the adults who conducted the interviews were psychology graduates and had received prior training and instructions about how they should intervene with children. According to this, perhaps in future studies, with adults with other professional background and experience, the representative categories of the adult intervention would be different. Likewise, the positive tone of all interventions may not correspond to the more common pattern in other situations.

4. Conclusion

Poverty and social inequalities remain a very present reality nowadays, which implies that children still have to think about it and, sometimes, live through it. Children need the

help of an adult since the first day of their life and when it comes to think about certain phenomena it isn't different. However, little is known about the adult's role in this process of social thinking of the children, particularly about issues such as poverty and social inequalities. Our study arises in an attempt to understand this very important role of the adult in the development of children reasoning about social issues, specifically poverty and social inequalities. Scaffolding may be an important ally to promote the harmonious development of the child's reasoning to its fullest potential, since the adult, as a more capable peer, will be able to see the discrepancies between the level of development the child will be at that moment and the level that she will be able to achieve with adult's help. More specifically, through the use of the types of adult intervention mentioned in this study, especially specific questions, the adult will be contributing to the development of the child's autonomous thinking, and to the child being able to make the most of her abilities, since children are not always aware of how much they can do.

This study contributes to practice and research in the sense that it can enable adults to adapt their intervention in children's reasoning in the best way to enhance their development.

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