An observational study to assess the educational management of conflicts between young children in the Pikler-Lóczy educational approach. Implications in the early development of personality

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Personality develops during early childhood (0-3 years). As early childhood education is becoming a generalized trend worldwide, this means that school or secondary socialization overlaps with family or primary socialization during this key developmental stage. While conflict is fundamental in socialization, conflicts between peers are particularly important in secondary socialization. Our research aims to assess the educational management of conflicts between children in the Pikler-Lóczy educational approach. The choice of Observational Methodology entailed the design of an ad hoc instrument based on relevant theoretical framework and suitable to systematize the proposed observation. Quality control analyses show satisfactory agreement levels while results of data analyses indicate the existence of particular individual actions and relational behaviors in children depending on their role in the conflict: victim or instigator. Additionally, educators' intervention is adjusted to each child or situation and mainly focuses on behavior regulation and perspective taking, hence, promoting healthy early socialization.

Keywords: early childhood education; Pikler-Lóczy educational approach; conflict resolution; personality development; observational methodology.

1.   Introduction

Throughout child development, the child's personality is also shaped. Its evolution originates at the beginning of psychic life (Wallon, 2007), but several stages vital for later development are previous to reaching individuation.

In a first stage, due to the infant's immaturity, the human environment prevails over the physical world, so affective influences surrounding the baby determine mental development (Wallon, 2007). Infants fully depend on social others to satisfy their needs, so their first effective activity consists in communicating them through *emotions* (Wallon, 1985), understood as originally purely organic reactions to internal and external stimuli (Van der Veer, 1996). Babies can take the initiative and establish effective interactions with adult caregivers and the physical world from the beginning of life (Pikler, 2018). They actively participate in the formation of the affective bond, while caregivers' duty is to interpret and respond to babies' communications, guaranteeing their sense of security (López & Ortiz, 2003).

When they have been active participants during body cares and live a satisfactory emotional balance, babies learn that they can influence what is done with them (Tardos, 2018), and will take the initiative outside moments of care: they look for an object of interest, get to know it, manipulate it and play with it (Pikler, 2018). Precisely, a significant hallmark of the relationship between infants and their attachment figure is the combination of close physical contact moments with times of interaction across some distance (Ainsworth & Bell, 1970). This way, infants open to the physical world through *sensorimotor activity*, based on a mutual coordination of sensory and motor fields (Wallon, 1978). In a more evolved time, the movements performed by the infant are directed towards the appearance and development of mental formations, which will increasingly have a greater *symbolic* aspect (Wallon, 1978).

Regarding the development of *personality*, it is profoundly influenced by reactions with the social environment. In previous stages, babies are fused to the adults around them. To reach individuality, infants need to overcome this fusion and differentiate themselves from the social world, so they will have to set the frontier between themselves and everything that is not theirs, that is, everything that comes from the outside (Wallon, 2007). Until the age of three, the person that the child will become is still mixed with the environment; progressively, through the objects they move, give, take, lose, recover, etc., children realize objects' mutability in comparison to their person, which is always the same (Wallon, 2007). At around the age of three the affective symbiosis that had bonded infants to their caregivers is over, so the differentiation between the individual and the immediate environment takes place (Wallon, 1981).

Before reaching individuality, children will need to confirm their autonomy, so they will oppose others apparently without any reason other than the satisfaction of the feeling of independence (Wallon, 2007). To smoothen this process, adults should set clear limits while respecting children's need for autonomy (Falk, 2018). Rules and limits lay the foundations of socialization in early childhood, which guides the child in the process of becoming an active

member of society (Tardos & Vasseur-Paumelle, 2018). When part of that socialization happens in an early childhood education center (0-3 years) —and, thus, primary socialization, corresponding to the family, overlaps with secondary or school socialization (Tardos, 2013; Tardos & Vasseur-Paumelle, 2018)— children will need to respect the limits set by educators towards different situations, many of them related to the coexistence with a peer group. Until the age of three the group does not have an important role in children's life (Wallon, 1980), but in the nursery school they live inside it. What difficulties might this coexistence entail?

This work focuses on the educational management of conflicts between children in the nursery school (0-3 years). Previous studies have investigated conflicts in early education centers from different perspectives. Some of them have explored children's strategies to resolve their disputes. It has been demonstrated that children become progressively more capable to mediate in their own conflicts, so they use dialogue to maintain social participation with their peers (Baumgartner & Strayer, 2008). When they experiment with different conflict resolution strategies, children learn to resolve their own conflicts using negotiation (Arcano-McPhee et al., 2002), which is particularly the case when the educational environment supports children's social-emotional learning (Yang et al., 2020). Much has been said about educators' intervention during these episodes. Research has highlighted the importance of teachers not intruding children when a conflict takes place, as this could interrupt the natural cycle of its resolution (Majorano et al., 2015), and so that children are more likely to generate their own solutions (Killen & Turiel, 1991). However, educators' continued presence is considered key to scaffold the implementation of a solution (Church et al., 2018). In general, educators having a facilitator role (Yang et al., 2020), being contingent with the support each child needs (Myrtil et al., 2021), providing choice (Killen et al., 2010) and using cooperative methods to conflict resolution (Jenkins et al., 2008) are considered the most effective strategies to socialize children to the norms and expectations of the classroom (Moore, 2020). Regarding other variables that influence a conflict, its origin, intensity level, resolution strategies and outcomes have been stated as influential in their progress (Ashby & Neilsen-Hewett, 2012); also, classroom organization has been addressed as a regulator of children's behavior in conflicts (Singer & Hännikäinen, 2009).

The aim of this paper is to delve into the everyday reality of an educational setting that has a long positive experience in providing quality care and education for babies and young children: Emmi Pikler Nursery School in Budapest (Hungary). This nursery school follows the principles of Pikler-Lóczy education (Pikler, 1940, 1968, 1969, 1998; Pikler & Tardos, 1968), an early childhood educational approach developed by Dr. Emmi Pikler. Given the profound knowledge of child development the Pikler team has accumulated, every detail of this educational approach is designed and thought through for the benefit of children; and so is the case of their positioning towards conflicts that arise in a children group. Therefore, we aim to explore and assess the educational management of conflicts between children carried out in this educational approach. The interest of conducting this study lies on the comprehensive proposal of the Pikler education to children's conflicts, as it takes into account the different parties involved in a conflict and all the variables that influence their progress. All in all, this proposal is considered optimal for children's social development in the early years.

For that purpose, we decided to conduct a systematic observation (Caprara & Anguera, 2019) of this educational environment. The focus of this work is the everyday context of the classroom, and the object of study are the conflicts that arise naturally between children. More specifically, we study children's conflicts while they are playing freely in a purposely designed space. In the Pikler-Lóczy educational approach, when a conflict arises during children's free play, the educator gives children the chance to solve it first, and only intervenes if they do not succeed, they hurt each other or they are violent (Tardos, 2014).

To assess the educational management of conflicts between children, we designed and validated an *ad hoc* observation instrument (Anguera et al., 2007). It includes all the aspects that shape the classroom reality. So, we consider *physical* or *instrumental* features, which define the particularities of each moment, and we also pay attention to *human* or *relational* elements, which serve to comprehend how participants relate to each other (Wallon, 1985). The aim is to understand the "*what*" and "*how*" of what happens in these episodes. In both cases, elements related to children and educators are considered. Likewise, verbal aspects are included as well as paraverbal, proxemic and kinetic elements, so direct and indirect observation were combined (Anguera & Izquierdo, 2006).

Thus, the main objective of this work is to propose a methodological approach to delve into conflicts between children and their educational management in the Pikler-Lóczy educational approach. The specific objectives of this research are: (1) to describe the design process of an *ad hoc* observation instrument to analyze conflicts and their educational management, which combines direct and indirect observation; (2) to present the followed steps and conducted analyses to ensure its quality; (3) to detail the performed data analyses to assess the behavior of children in the two main roles within a conflict —victim and instigator— and the differenced educational intervention with each of them, which would confirm the instrument`s capacity to observe the reality for which it has been designed.

2.   Method

In this study we use observational methodology, a formal procedure to scientifically record human behavior by transforming the observed reality into data that can be assessed through quantitative analyses (Caprara & Anguera, 2019).

2.1.   Design

Following the criteria proposed by Anguera et al. (2011) to define the design of an observational study, the observational design of this research is, as follows: *nomothetic* —as it analyses the educational activity of two educators and the behavior of children involved in conflicts—; *follow-up* —because observations were made once a week during a pre-defined period of time, with intensive within- and between-session follow-up—; and *multi-dimensional*, given our interest in different aspects of the observed context.

2.2.   Participants

In this study we observe two classrooms at Emmi Pikler Nursery School. One group had 10 children —5 girls and 5 boys— and the second group had 12 children, 8 girls and 4 boys. Given our interest on the educational management of conflicts in the classroom, we considered as participants the educator of each group and the children involved in each conflict, to whom the intervention was directed. 9 of the children in educator 1's group —22- to 36-months-old— were involved in conflict episodes and 6 in educator 2's group, aged between 26 and 36 months.

All children's families and educators provided informed, written consent to be video-recorded and to be part of this research, and the study was approved by the Ethical Committee of the University of the Basque Country.

2.3.   Instruments

2.3.1.   Recording and analysis instruments

Observations were video-recorded using a SONY DCR-SR37 camera. The systematized recording of the sessions was performed in Excel. Data were later exported to HOISAN 1.6.3.3.6. (Hernández-Mendo et al., 2012) and GSEQ 5.1. (Bakeman & Quera, 2011) to perform data analyses. Polar coordinate analyses were graphed using R (Rodríguez Medina et al., 2019). HOISAN was also used to conduct quality control analyses.

2.3.2.   Observation instrument

The observation instrument enables the systematization of initially descriptive recordings to obtain an equivalent code matrix that is later analyzed through quantitative techniques (Anguera et al., 2021). We aimed to design a scientifically rigorous observational tool to assess the educational management of children's conflicts. Due to the particularity of the interested educational context, we developed a field format (Caprara & Anguera, 2019). Its design process is described in the next section.

2.4.   Procedure

2.4.1.   First steps to narrow down the reality of interest

The management team of Emmi Pikler Nursery School selected two of their most experienced educators and decided the day to carry out weekly observations in each group. In this nursery school, three educators are responsible of each group of children. Their schedule overlaps so the nursery school is open from 8 am to 6 pm every day. At specific moments —usually, around mealtime— the three of them are present in their group so each child has lunch with his/her referent educator. The remaining time one or two of them are around, depending on the time slot or the educational duties of each moment. Observed educators were present in the classroom when observations were made. Specifically, given our interest in conflicts during children's free play,

we video-recorded morning play sessions. The same observation day and time slot was respected in each group, and video-recordings were taken without interruption, ensuring between- and within-sessions consistency (Chacón-Moscoso et al., 2019; Portell et al., 2015).

Weekly video-recordings were made in a 3-month period. However, due to national public holidays and circumstances external to the research project the number of sessions recorded in each group were unequal. Precisely, we have 16 observation sessions for educator 1 and 11 for educator 2. Each session lasted between 1 hour and 1 hour and 30 minutes. Then, we identified conflict episodes within them. Inclusion criteria were: (1) there is a clear confrontation between children; (2) the parties involved have unequal roles —instigator and victim—; (3) the victim clearly manifests disgust or disconformity; (4) the educator intervenes in the conflict resolution; (5) the recorded episode is complete.

Video-recordings were visualized and episodes that met the cited criteria were selected. We had 25 conflict episodes in educator 1's group and 12 in educator 2's.

2.4.2. Development of the "Educational management of conflicts between children" observation instrument

Our aim to tackle participants' verbal and nonverbal behavior involved the combination of indirect and direct observation (Anguera & Izquierdo, 2006), respectively. Therefore, the design of the observation instrument combined two parallel but ultimately complementary processes.

The starting point was a previously designed field format, which targets the educational activity during children's free play at Emmi Pikler Nursery School (Sagastui & Herrán, 2021). Field formats are open, self-regulated systems (Caprara & Anguera, 2019; Lareo, 1984) especially appropriate for the study of complex situations and processes of change (Caprara & Anguera, 2019), such as our object of study.

Aiming to identify important aspects in their resolution, we repeatedly viewed conflict episodes, creating a list of educators' and children's observable behaviors, known as *catalogue*. These behaviors were later divided in groups: dimensions and subdimensions.

Our final field format has two dimensions —instrumental and relational— that unfold in a series of subdimensions (see Table 1). Under the *instrumental dimension*, we included: (1) the *phase* of the conflict when observations happened; (2) the *educator's* instrumental action (Wallon, 1980) and elements involved in it; (3) subdimensions that define the action of the *child* to whom the intervention is directed. Under the *relational dimension* —divided in educator's and children's perspectives— following Weick's (1968) proposal, we included: (1) *verbal behavior* (i.e., linguistic); (2) *paraverbal behavior* (i.e., extralinguistic); (3) *proxemic behavior* (i.e., spatial; Hall, 1966); (4) *kinetic behavior* (i.e., nonverbal; Ekman, 1976; Ekman & Friesen, 1969; Poyatos, 1986).

Table 1

Dimensions and subdimensions of the "Educational management of conflicts between children" Observation Instrument

Dimension	Level I subd.	Level II subd.	Level III subd.	Code
INSTRUMENTAL dimension	Phase			F
	Educator	Educator		H1
		Instrumental action		A2
		Educator's object		A2B
	Child(ren)	Child in the foreground		H3
		Role of the child(ren)		H3B
		Child's action	Individual	AN1
			With object	AN2
		Child's object	Object	A3
			Function of object	A3B
RELATIONAL dimension	Educator	Verbal behavior	*	*
		Paraverbal behavior	Pitch	P2
		Proxemic behavior	Vertical distance	P3B
			Horizontal distance	P5B
		Kinetic behavior	Visual gestures	P6
			Emblems	P9
			Illustrators	P10
			Regulators	P11
	Child	Verbal behavior	*	*
		Paraverbal behavior	Vocal behavior	RN1
		Proxemic behavior	Static	RN2
		Kinetic behavior	Centripetal gestures	RN3
			Centrifugal gestures	RN4
			Mediating gestures	RN5

Subdimensions of educators' and children's verbal behavior will be presented in the upcoming section.

After defining dimensions and subdimensions, we designated a decimal encoding to their behaviors, establishing a hierarchical system (Anguera et al., 2007). Codes corresponding to subdimensions are shown in Table 1.

Once this process was finished, we developed behaviors to include under the verbal behavior subdimensions. After transcribing and translating recorded episodes, the text was divided into units of analysis through the text-liquefying process (Anguera, Jonsson & Sánchez-Algarra, 2017; Anguera et al., 2018). The longest unit of analysis was the participant's complete talking turn but, in most cases, different units of analysis were found within them.

Units of analysis were labeled depending on their communicative intention, following the steps of field formats' design process (Anguera et al., 2007). Due to the complexity of verbal communication, we obtained a long list of verbal behaviors. After a thorough revision, some behaviors were merged, others were removed, and we created more general behaviors in some cases. An important step in this process was behavior definition, to clarify their implications and set the limits between them.

Then, behaviors in the resulting catalogue were divided in level III subdimensions. These progress from the social conventions of verbal communication, through purely informational messages, to progressively more complex dimensions of human communication; and this is the case both in educator's (Appendix 1) and children's (Appendix 2) verbal behavior. Thus, subdimensions form steps on a ladder that grows in communicative complexity. This is a remarkable aspect of the designed indirect observation subdimensions, as we did not find any similar cases in previous literature.

2.5. *Recording and coding*

This step consisted in the elaboration of a list of configurations through a chain of codes corresponding to concurrent behaviors, which represents a comprehensive recording of the analyzed episodes (Anguera et al., 2007).

The recording process started with indirect observation. Once verbal units of analysis were recorded, educators' and children's verbal interventions were identified in their corresponding time during conflicts. In the second phase, elements included in the direct observation subdimensions were recorded. Both direct and indirect observation recordings were performed by one of the authors of this paper, and another two researchers participated in the process to ensure the quality of the data, as explained in the upcoming section.

2.6. *Quality control analysis*

Performing necessary procedures to guarantee the designed instrument's quality and its suitability to systematize the interested reality is essential in observational studies. Quality control analysis was complex in this research for various reasons: (1) the high number of subdimensions and behaviors in the instrument; (2) the inclusion of different participants' behavior; (3) the combination of direct and indirect observation. Therefore, it entailed a thorough reflection prior to conducting corresponding analyses.

2.6.1. *Intraobserver quality control analysis*

The same researcher who recorded the whole sample conducted a systematized recording of a random 10 % of the total sample after some time. This way, the level of agreement between the two systematic recordings could be calculated. Agreement was assessed through Cohen's (1960) Kappa coefficient. The result of intraobserver quality control analysis is presented in the upcoming section.

2.6.2. *Interobserver quality control analysis*

Interobserver quality control analysis requires a minimum of three datasets in indirect observation, due to a major risk to inference (Anguera, 2021). In our case, three observers participated in the entire process. A 10 % of the sample was selected to perform quality control analyses.

To overcome difficulties in the process, we considered the proposal made by Arana et al. (2016) and adapted it to the specific needs of our study, so we distinguished four consecutive stages: (1) training stage; (2) initial recording and first analyses; (3) adjustment and team reflection; (4) modification of recording and final analyses.

In the training stage, qualitative *consensus agreement* was used (Anguera, 1990; Lapresa et al., 2021) for indirect observation, so the three observers discussed and agreed on the most suitable code for each unit of analysis, and definitions of behaviors were clarified. Then, the three observers completed their individual recordings. For quantitative analyses, we used Cohen's (1960) Kappa coefficient and Krippendorf's (2013) canonical agreement. These were carried out twice. Agreement levels obtained in each phase are discussed in the results section.

2.7.   *Data analysis*

We used *lag sequential analysis* (Bakeman & Gottman, 1997), a technique that shows regularities in observed behaviors and reveals possible associations between them through the calculation of observed and expected probabilities (Bakeman & Quera, 2011). Based on the study aims, a *criterion behavior* is chosen, and those that precede and follow it are calculated —*conditional behaviors*— through retrospective and prospective lag sequential analysis. Results are called adjusted residuals, and a behavior's likelihood of appearing is higher than the effects of chance when its adjusted residual is higher than 1.96 ($p < 0.05$). In our study, lag sequential analysis was used to calculate the concurrence of behaviors, considering results in lag 0. We deepened in children's individual action and their paraverbal, proxemic and kinetic behavior depending on their role in the conflict.

Then, we performed *polar coordinate analysis,* a data reduction technique developed by Sackett (1980) and later optimized by Anguera's (1997) concept of genuine retrospectivity. It integrates the prospective and retrospective perspectives of lag sequential analysis to discover associations between a behavior —focal behavior— that is believed to trigger some connections with other behaviors, known as conditional. Once sequential analyses are performed, Z results with a delay range between -5 and +5 are calculated. These values are used to determine prospective and retrospective Zsum parameters. Results are graphically presented through vector maps, which depict the complex network of interactive associations between behaviors quantitatively —length of the vectors— and qualitatively —angle of the vectors. The quadrant where vectors are located indicates whether the focal and conditional behaviors activate of inhibit each other, as follows:

- Quadrant I: Prospective and retrospective activation.
- Quadrant II: Prospective inhibition, retrospective activation.
- Quadrant III: Prospective and retrospective inhibition.
- Quadrant IV: Prospective activation, retrospective inhibition.

We used polar coordinate analysis to discover educators' verbal behaviors that activate and are activated by the different roles children have in the conflict by studying results in quadrant I.

3. Results

3.1. Results of quality control analyses

3.1.1. Initial phase and first analyses

Intraobserver quality control analysis using Cohen's (1960) Kappa coefficient showed an agreement level of 0,90 in the verbal recording and 0,95 in the complete recording (0-1) (almost perfect; Landis & Koch, 1977).

For *interobserver quality control analysis*, we calculated Krippendorf's (2013) canonical agreement using the three observers' *verbal recordings*. It showed a 0,7 agreement level. Even if this result is favorable in indirect observation, we wanted to delve into the agreements and disagreements between observers. Thus, we identified units of analysis with lower agreement levels.

Concerning the *complete recording*, we first calculated Krippendorf's (2013) canonical agreement using the three observers' recordings, which showed a 0,73 of agreement. Then, we used Cohen's (1960) Kappa coefficient to obtain agreement levels between two observers. Results showed substantial and almost perfect agreement levels (Landis & Koch, 1977; Table 2). Aiming to detect confusing behaviors, we used an option of the Cohen's Kappa value, called "K of all criteria", included in HOISAN. This analysis shows Kappa values of each subdimension. Those with "moderate", "fair", and "poor" values (Landis & Koch, 1977) were reconsidered in the adjustment phase.

3.1.2. Adjustment phase and team reflection

In this phase we developed new definitions for unclear verbal behaviors and confusing concepts, and we also clarified specific situations in which they would be used. Concerning the complete recording, behaviors from subdimensions that obtained lower results were better defined. The goal was to clarify the difference between confusing behaviors, so anyone using the observation instrument would agree on the behavior used to code the same observation.

3.1.3. Modification phase and final analyses

After adjusting the verbal recordings in accordance with the decisions made in the team reflection, Krippendorf's (2013) canonical agreement was calculated again, obtaining a 0,88 of agreement between the three recordings. This result is very favorable, especially considering the risk to inference in indirect observation (Anguera, 2021).

Finally, analyses were repeated with complete recordings. Krippendorf's (2013) canonical agreement indicated a 0,78 coincidence between the three recordings. Table 2 summarizes agreement values in each phase.

Table 2

Summary of interobserver quality values in the initial and final phases for the verbal and complete recordings

	Verbal recording		Complete recording		
	3 observers Krippendorf (2013)	3 observers Krippendorf (2013)	2 observers Cohen's (1960) Kappa		
			Observers 1 & 2	Observers 1 & 3	Observers 2 & 3
Initial phase	0,7	0,73	0,78	0,75	0,81
Final phase	0,88 (↑)	0,78 (↑)	0,81 (↑)	0,79 (↑)	0,83 (↑)

3.2. Results of data analyses

We first analyzed the distribution of educators' attention between participants of conflicts, so we calculated the time victim and instigator were in the foreground of their attention. Figure 1 shows the percentage of time dedicated to each child from educator 1 and 2. The distribution is similar in both cases: a half of the time educators turn their attention to the instigator, and the victim is in the foreground of their attention approximately a third of the time.
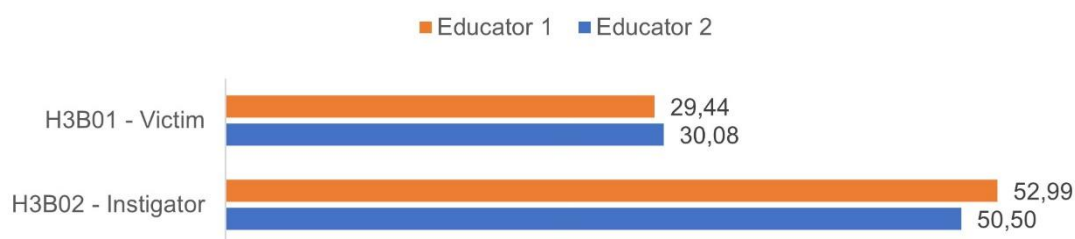
Figure 1

Distribution of educators' attention towards victim and instigator measured by time percentage

To deepen in the behavior of those children, we studied the concurrence of codes corresponding to victim and instigator and behaviors under the child's individual action subdimension (AN1). Obtained results (Table 3) indicate a clear prevalence of a specific action depending on the child's role in the conflict. While the victim shows an emotional response, the instigator is most commonly performing a personal action.

Table 3

Concurrence between the child's role and his/her individual action (AN1)

	None	Emotional response	Sensorimotor activity	Symbolic play, individual	Symbolic play, in group	Personal action
	AN100	AN101	AN102	AN103	AN104	AN105
EDUCATOR 1						
H3B01 Victim		**6,57**				-8,64
H3B02 Instigator	-2,76	-3,93	-5,81	-3,49		**11,42**
EDUCATOR 2						
H3B01 Victim		**13,28**	-5,07	-2,23		-4,99
H3B02 Instigator	-3,75	-8,69			**2,3**	**6,34**

Moreover, the two main roles children have during conflicts also translate into particular relational behaviors. Concurrences between the child's role and their paraverbal, proxemic and

kinetic behavior are shown in Tables 4 and 5. Most vocal elements are found in the victim: protests (RN103), whines (RN104) or cries (RN105); the instigator in educator 2's group uses an energetic pitch (RN108). Children's proxemic behavior also depends on their role: the victim's tension translates into a static position (RN201) whereas the instigator shows movement, such as climbing (RN203) or general body agitation (RN204).

Table 4

Concurrence between the child's role and his/her vocal (RN1) and static (RN2) behavior

|	Protests	Whines	Cries	Energetic pitch	Tense and static	Tense and climbs	Tense and agitated
	RN103	RN104	RN105	RN108	RN201	RN203	RN204
EDUCATOR 1							
H3B01 Victim	**3,18**		**4,19**	-2,38	**8,86**	-2,46	-6,48
H3B02 Instigator	-2,83				-3,81	**3,66**	**9,27**
EDUCATOR 2							
H3B01 Victim	**7,04**	**2,45**	**4,96**	-2,23	**11,74**	-2,47	-4,21
H3B02 Instigator	-4,48		-3,25	**2,85**	-8,05	**3,78**	**5,67**

Centripetal gestures —towards oneself— are only present in the victim in educator 2's group, while there is a distribution of these gestures in educator 1's group: the victim commonly shows a centripetal gesture to the face (RN302), while the instigator sometimes takes a hand to the mouth (RN301) or closes arms (RN304). Centrifugal gestures —outwards— appear in the victim: pushes another child (RN404) or bites in the air (RN410) in educator 1's group slaps to the air (RN412) in educator 2's group. Finally, there is a tendency to specific mediating gestures depending on the child's role: the victim points at another child (RN501) and requests the educator's assistance (RN510), while the instigator points at an object (RN502) and rejects the educator's gaze (RN511).
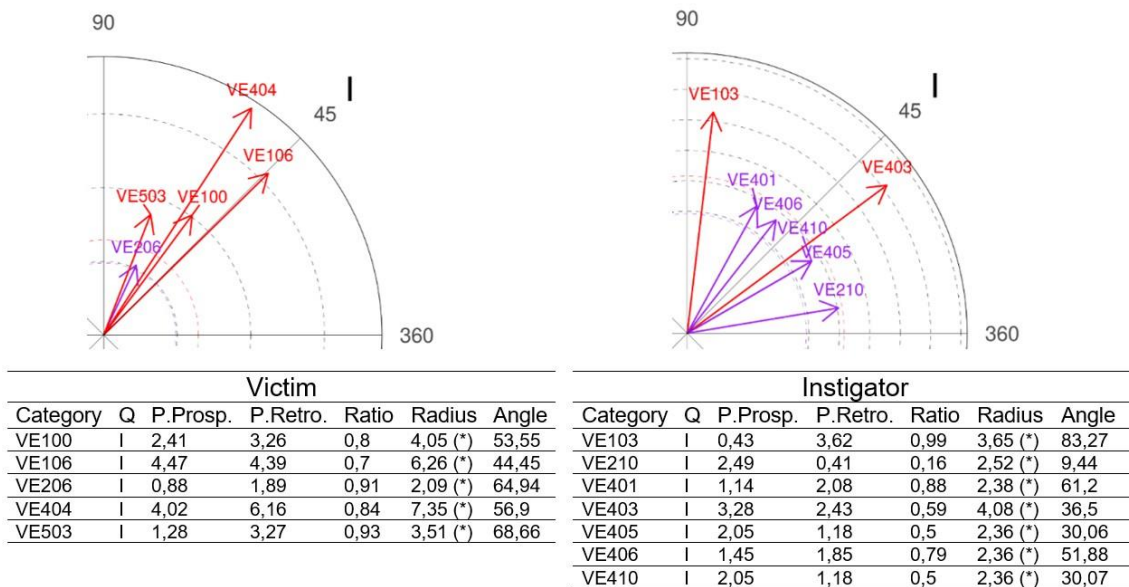
Table 5

Concurrence between the child's role and his/her centripetal (RN3), centrifugal (RN4) and mediating (RN5) gestures

	No gesture	To mouth	To face	To head	Arms closed	Pushes another child	Bites in the air	Slaps to the air	Points at another child	Points at object	Asks educator's assistance	Rejects educator's gaze
	RN300	RN301	RN302	RN303	RN304	RN404	RN410	RN412	RN501	RN502	RN510	RN511
EDUCATOR 1												
H3B01 Victim			**3,21**			**2,25**	**2,25**		**3,82**			-2,26
H3B02 Instigator	-3,82	**3,36**			**2,81**				-4,19			**2,31**
EDUCATOR 2												
H3B01 Victim	-5,47	**3,81**		**2,54**	**2,54**			**2,03**	**2,37**	-2,47	**1,99**	-2,47
H3B02 Instigator	**3,11**								-2,37	**2,47**	-1,99	**2,47**

Finally, polar coordinate analysis was used to study a potential predisposition for specific verbal elements from educators to children depending on their role in the conflict. Results in quadrant I —mutual activation between focal and conditional behaviors— are shown in figures 2 (educator 1) and 3 (educator 2), and demonstrate that educators talk differentially to victim and instigator. A deep analysis of obtained results and their implications are presented in the discussion.
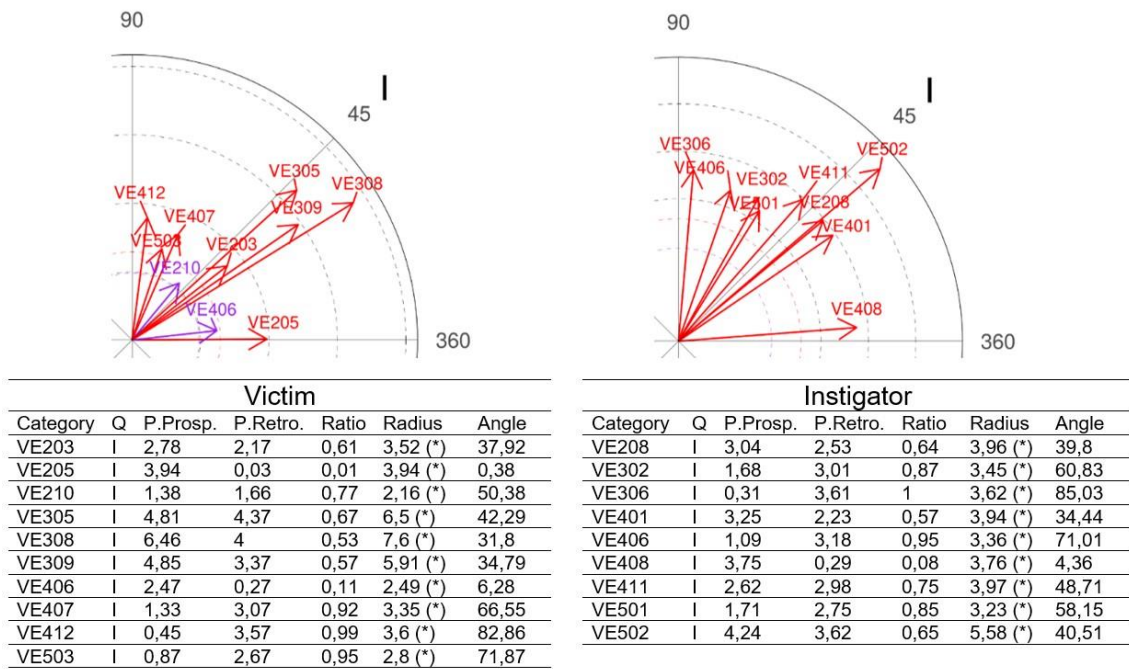
Figure 2

Polar coordinate significant results in Quadrant I and their vector maps for Educator 1. Victim (H3B01, left) and instigator (H3B02, right) as focal behaviors

Victim						
Category	Q	P.Prosp.	P.Retro.	Ratio	Radius	Angle
VE203	I	2,78	2,17	0,61	3,52 (*)	37,92
VE205	I	3,94	0,03	0,01	3,94 (*)	0,38
VE210	I	1,38	1,66	0,77	2,16 (*)	50,38
VE305	I	4,81	4,37	0,67	6,5 (*)	42,29
VE308	I	6,46	4	0,53	7,6 (*)	31,8
VE309	I	4,85	3,37	0,57	5,91 (*)	34,79
VE406	I	2,47	0,27	0,11	2,49 (*)	6,28
VE407	I	1,33	3,07	0,92	3,35 (*)	66,55
VE412	I	0,45	3,57	0,99	3,6 (*)	82,86
VE503	I	0,87	2,67	0,95	2,8 (*)	71,87

Instigator						
Category	Q	P.Prosp.	P.Retro.	Ratio	Radius	Angle
VE208	I	3,04	2,53	0,64	3,96 (*)	39,8
VE302	I	1,68	3,01	0,87	3,45 (*)	60,83
VE306	I	0,31	3,61	1	3,62 (*)	85,03
VE401	I	3,25	2,23	0,57	3,94 (*)	34,44
VE406	I	1,09	3,18	0,95	3,36 (*)	71,01
VE408	I	3,75	0,29	0,08	3,76 (*)	4,36
VE411	I	2,62	2,98	0,75	3,97 (*)	48,71
VE501	I	1,71	2,75	0,85	3,23 (*)	58,15
VE502	I	4,24	3,62	0,65	5,58 (*)	40,51

Figure 3

Polar coordinate significant results in Quadrant I and their vector maps for Educator 2. Victim (H3B01, left) and instigator (H3B02, right) as focal behaviors

Victim						
Category	Q	P.Prosp.	P.Retro.	Ratio	Radius	Angle
VE100	I	2,41	3,26	0,8	4,05 (*)	53,55
VE106	I	4,47	4,39	0,7	6,26 (*)	44,45
VE206	I	0,88	1,89	0,91	2,09 (*)	64,94
VE404	I	4,02	6,16	0,84	7,35 (*)	56,9
VE503	I	1,28	3,27	0,93	3,51 (*)	68,66

Instigator						
Category	Q	P.Prosp.	P.Retro.	Ratio	Radius	Angle
VE103	I	0,43	3,62	0,99	3,65 (*)	83,27
VE210	I	2,49	0,41	0,16	2,52 (*)	9,44
VE401	I	1,14	2,08	0,88	2,38 (*)	61,2
VE403	I	3,28	2,43	0,59	4,08 (*)	36,5
VE405	I	2,05	1,18	0,5	2,36 (*)	30,06
VE406	I	1,45	1,85	0,79	2,36 (*)	51,88
VE410	I	2,05	1,18	0,5	2,36 (*)	30,07

4. Discussion

The objective of this research was to propose a methodological approach to assess and delve into the educational management of conflicts between young children during free play at Emmi Pikler

Nursery School. Taking the everyday context of the classroom and the usual behavior of educators and children as a starting point, we developed a field format (Caprara & Anguera, 2019; Lareo, 1984) that allowed us to get to know the episodes of interest in detail.

To guarantee the quality of the instrument and its suitability to study conflict episodes in depth, quality control analyses were especially thought through. Obtained results are very favorable given the complexity of the studied episodes. Specifically, we obtained substantial and almost perfect agreement levels (Landis & Koch, 1977). Moreover, the followed stages have contributed to improving agreement levels and refining the observation instrument. This demonstrates the importance of continuous reflections during an instrument's design process aiming to develop detailed definitions of the behaviors to be studied (Caprara & Anguera, 2019) as a guarantee of subsequent positive results.

The advantage of the designed instrument is that it includes the multiple aspects that influence the development of a conflict. It captures the perspectives of the different parties involved —children and educator— and combines the instrumental and relational —physical and human— dimensions (Wallon, 1980) of participants' behavior. Another strength of this field format is the combination of direct and indirect observation (Anguera & Izquierdo, 2006; Anguera et al., 2018), which serves to capture the relation between what participants say verbally with what they do through their instrumental behavior and the paraverbal, proxemic and kinetic aspects that define it (Weick, 1968). This combination of modalities involved a methodological challenge but contributes to a new perspective in the study of educational contexts.

Data analyses confirm the instrument's capacity to delve into this educational reality and reveal significant preliminary results. The distribution of educators' attention shows a difference in the time dedicated to the child in each role. Educators' intervention is directed to the instigator for a half of the time, while the victim is in the foreground of their attention during one third of it. The remaining time they focus on other children, who are either interested in what is going on or outside the conflict; so, educators inform them about the situation or show their interest in those children's activity, making sure they never leave the rest of the group alone.

To better understand what this result entails, we deepened in the characteristics that define each role. The study of the concurrence of behaviors showed that the studied roles systematically translate into a particular individual action and specific relational behaviors.

As anticipated in the introduction, the instigator's action is mostly personal, given the critical developmental stage the child is in: he/she is developing his/her personality (Wallon, 2007), establishing the limits of what he/she is and what he/she is not in relation to the environment, from which he/she separates progressively. The complex processes that go from the affective symbiosis with their environment, through reciprocal relationships, until individuation (Wallon, 1981) can easily evolve into conflicts with their peers when part of children's development takes place in an educational setting; in these cases, the child claims his/her person through an action that collides with the interests of another child. This, in turn, translates into specific relational behaviors (Wallon, 1980): an energetic vocal behavior, a motor agitation along

15

with a hand in the mouth, arms closed and a rejection to the educator's gaze. In addition, this claim is also apparent in the object pointing gesture in educator 2's group, which is probably the element of interest, now the apple of discord. As we see, the instigator's behavior combines emotional elements with more evolved ones, such as the act of pointing, considered a symbol itself (Wallon, 1985).

Concerning the victim, he/she shows an emotional response (Wallon, 1985) towards the instigator's action. Likewise, this response is reflected in his/her relational behavior, through which he/she complains and, in some cases, takes action. On the one hand, complaints are made through vocalizations —cries, whines and protests— which translate into centripetal gestures towards the mouth —sucks finger—, the face —wipes tears—, the head —touches ear or hair— or the arms closing, in addition to a tense and static muscle tone. All these relational aspects reflect the emotion the victim is experiencing and communicating (Wallon, 1985). Additionally, when the instigator crosses some of the victim's limits, centrifugal gestures appear as signs of defense —pushes, tries to bite another child or slaps to the air as a protective attempt— or, in some other cases, the victim asks for the educator's mediation, pointing at the child who has caused the situation.

Results from polar coordinate analyses show that educators speak differently to each child. Educators make sure that the verbal intervention with victim and instigator helps children place themselves on the ongoing conflict and give them resources adjusted to the support each of them needs. Educators are contingent with children (Myrtil et al., 2021) and, thus, support each child's social-emotional learning (Yang et al., 2020).

When it comes to the instigator, educator 1 promotes perspective taking through information about the child's personal action or questions about it and using questions to place the child in what has happened. The same educator assists the instigator to take perspective on the victim's emotion and action. Educator 2 tries to broaden the instigator's perspective through information about the material environment, so the child is aware of the toys and alternatives available (Kálló & Balog, 2013; Tardos, 2014), in case this was the source of the problem or part of its solution. This is in line with studies that demonstrate the importance of the organization of the environment, as it can regulate children's behavior (Singer & Hännikäinen, 2002). Lastly, both educators use many verbal behaviors classified in the *regulation* subdimension with the instigator: they set a limit, offer alternatives and solutions, express the classroom rules, etc. Through the establishment of clear limits and, at the same time, the respect for the child's autonomy, they facilitate the instigator's understanding of the classroom norms and expectations (Moore, 2020), which ultimately fosters their social integration (Falk, 2018).

Concerning the victim, educator 1 first ensures the child's sense of security by accepting his/her emotion or describing the situation in a way that helps the victim understand it and place him/herself in what has happened. The importance of avoiding an intruding intervention (Church et al., 2018; Majorano et al., 2015) and, instead, promoting respect among children is, thus, highlighted (Arcano-McPhee et al., 2002). In addition, they both talk to the victim about everyday

aspects of the classroom or the child's action: educator 1 describes the child's sensorimotor activity and informs about the objects in the classroom, while educator 2 describes the child's symbolic play and anticipates an immediate transition to another space. These messages are combined with others that, similarly to the intervention with the instigator, aim to regulate the child's behavior. Educator 1 offers the victim a new object or an exchange and educator 2 suggests a future action. Finally, both educators use perspective taking to clarify the instigator's intention. This is particularly interesting as it is vital in understanding the intentions of others, which do not have to be the same as one's own as was previously the case, marking the transition from primary to secondary socialization (Tardos & Vasseur-Paumelle, 2018). Overall, through their intervention, educators keep a distance from the victim's emotion, they avoid it to pass on them. This way, they can show real empathy towards the victim: they understand the child's suffering and make themselves available if the victim needs it; so, they assist the victim as appropriate with their proximity, gestures, pitch, questions, descriptions, suggestions, etc. Educators believe that, by doing so, they help the victim take awareness and responsibility of the situation and make his/her own decisions about it.

These results show that the studied educational intervention is closely related to the support each child needs (Myrtil et al., 2021; Tardos, 2014). Given the complexity of the instigator's developmental stage educators spend more time with this child. However, they do not leave the victim aside: they intervene with the victim, ensuring his/her physical integrity and emotional security (López & Ortiz, 2003). They accompany the child's emotion without encouraging it, they give it space and an alternative (Killen et al., 2010), which helps the victim come out of that emotion autonomously (Falk, 2018). Therefore, educators' objective is twofold: they seek to ensure the victim's physical and emotional security while they pay special attention to the instigator's behavior regulation, aiming to make him/her aware of the rules and limits that govern the classroom and that represent the values agreed upon by society (Tardos & Vasseur-Paumelle, 2018). In short, the educator's role is essential to ensure healthy social integration while respecting the child's need for autonomy (Falk, 2018).

4.1. Limitations and future directions

Given the exhaustive process followed to guarantee quality of data, conflicts' educational management has only been analyzed superficially. A future study should focus on the selection of data analysis techniques that could provide interesting results to add to the presented ones, aiming to reach a thorough understanding of these episodes. It would be interesting to explore the conflicts' full structure to determine if the educational management of these episodes follows a specific pattern or if there is variability in educators' behavior to adapt it to the particularities of each child, circumstance or moment. Moreover, in this study we just observed two educators and the children who were involved in conflicts in each of their groups. Future research should try to include more participants, so that comparisons can be carried out and in order to make the reached conclusions more generalizable.

Declaration of interest statement

The authors declare that they have no conflict of interest.

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Appendix 1. *Subdimensions of educators' verbal behavior and their corresponding indirect observation behaviors*

VE1 Social conventions	VE2 Information	VE3 Cognitive support	VE4 Regulation	VE5 Perspective taking
VE101 Calls	VE201 Accepts child's response	VE301 Describes with valuation	VE401 Invites emotional self-regulation	VE501 Describes another child's emotion
VE102 Welcomes	VE202 Mirrors child's emotion	VE302 Asks orienting	VE402 Suggests new action	VE502 Tells another child's action
VE103 Apologizes	VE203 Accepts child's emotion	VE303 Asks about emotion	VE403 Suggests alternative action	VE503 Interprets another child's intention
VE104 Asks to wait	VE204 Informs present sensorimotor activity	VE304 Asks about sensorimotor activity	VE404 Suggests future action	
VE105 Introduces quality care	VE205 Informs past sensorimotor activity	VE305 Asks about symbolic play	VE405 Offers new object	
VE106 Introduces another space	VE206 Informs present symbolic play	VE306 Asks about personal action	VE406 Offers substitute object	
VE107 Emotional expression	VE207 Informs past symbolic play	VE307 Repeats child's words	VE407 Offers object exchange	
	VE208 Informs present personal action	VE308 Offers help	VE408 Expresses limit	
	VE209 Informs past personal action	VE309 Describes orienting	VE409 Expresses rule	
	VE210 Informs material environment		VE410 Expresses prohibition	
	VE211 Informs human environment school		VE411 Expresses imperative	
	VE212 Informs human environment out of school		VE412 Expresses order	

Appendix 2. *Subdimensions of children's verbal behavior and their corresponding indirect observation behaviors*

VN1 Social conventions	VN2 Claim	VN3 Solicitation	VN4 Answer	VN5 Expression
VN101 Calls	VN201 Claims space	VN301 Asks action/orders	VN401 Offers help	VN501 Repeats
VN102 Says please	VN202 Claims ownership	VN302 Asks object	VN402 Gives permission	VN502 Describes own action
	VN203 Claims ability	VN303 Asks for permission	VN403 Accepts	VN503 Describes educator's action
	VN204 Claims inability	VN304 Asks (question)	VN404 Rejects educator's suggestion	VN504 Describes another child's action
	VN205 Expresses desire	VN305 Offers exchange	VN405 Rejects educator's object	VN505 Describes fact
	VN206 Expresses another's fault		VN406 Rejects educator's claim	VN506 Describes object
	VN207 Expresses dislike		VN407 Rejects another child's object	VN507 Explains finished fact
	VN208 Emotional expression		VN408 Rejects another child's action	VN508 Explains past action
			VN409 Prohibits action	VN509 Gives opinion
			VN410 Denies educator's word	VN510 Expresses project
			VN411 Denies another child's word	VN511 Expresses own experience
				VN512 Symbolic telling