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How do Kindergarten Classrooms Converse? Analysis of Linguistic Sequences in a Public and Private School in Chile

¿Cómo dialogan las aulas de kínder? Análisis de secuencias lingüísticas en una escuela pública y privada en Chile

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Abstract

The objective of this study was to identify, analyze, and compare linguistic sequences in two Chilean kindergarten classrooms, one public and one private. Using a mixed-methods approach, a video recording was made of a typical day in each classroom, and an activity initiated by the teacher was subsequently selected for analysis. Through a microanalysis of speech turns, linguistic sequences were identified, and each turn was classified according to its function: initiations, responses, and follow-ups. The results indicate that, in both classrooms, teachers made a greater number of initiations aimed at modeling behavior or classroom management. The children's responses were mostly low in complexity and short in length. As for follow-ups, low-level ones predominated, characterized by closed questions, repetitions of children's speech, evaluations, and instructions. However, the public classroom showed sequences with more turns of speech than the private classroom, as well as a greater presence of open-ended questions, both in initiations and follow-ups. The private classroom, in turn, shows more instructions and teaching statements than the public classroom. These findings raise questions about the quality

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of linguistic interactions in Chilean classrooms, highlighting the differences between public and private contexts. The implications of these results for improving initial training and professional development for teachers are discussed, with the aim of promoting higher-quality interactions that enrich learning and linguistic development in early childhood education.

Keywords: Early childhood education; verbal communication; social interaction; verbal learning

Resumen

El objetivo de este estudio fue identificar, analizar y comparar las secuencias lingüísticas en dos aulas de kínder chilenas, una pública y otra privada. A partir de un enfoque mixto, se realizó una videograbación de una jornada diaria en cada aula, seleccionando posteriormente una actividad iniciada por la educadora para su análisis. A través de un microanálisis de los turnos de habla, se identificaron las secuencias lingüísticas y se clasificó cada turno según sus funciones: inicios, respuestas y seguimientos. Los resultados indican que, en ambas aulas, las educadoras realizaron una mayor cantidad de inicios orientados al modelaje del comportamiento o a la gestión del aula. Las respuestas de los y las niñas fueron mayoritariamente de baja complejidad y corta extensión. En cuanto a los seguimientos, predominaron los de bajo nivel, caracterizados por preguntas cerradas, repeticiones del habla infantil, evaluaciones e instrucciones. Sin embargo, el aula pública mostró secuencias con más turnos de habla que el aula privada; así como mayor presencia de preguntas abiertas, tanto en los inicios, como en los seguimientos. El aula privada, con todo, muestra más instrucciones y afirmaciones de enseñanza que la pública. Estos hallazgos plantean reflexiones sobre la calidad de las interacciones lingüísticas en las aulas chilenas, destacando las diferencias entre contextos públicos y privados. Se discuten las implicancias de estos resultados para mejorar la formación inicial y el desarrollo profesional docente, con el fin de fomentar interacciones de mayor calidad que enriquezcan el aprendizaje y el desarrollo lingüístico en la educación infantil.

Palabras clave: Educación infantil; comunicación verbal; interacción social; aprendizaje verbal.

Introduction

Early childhood education is beneficial for children's present and future learning[2] (Bakken et al., 2017; Bendini et al., 2022; Egan et al., 2021; Falabella et al., 2018; among others). These benefits depend largely on the quality of education during these years, and

[2] The authors of this research adhere to a gender-inclusive perspective. However, for reasons of economy and clarity of language, the masculine form ("boys," "adults") is used in the text, following the recommendation of the Royal Spanish Academy. When referring to "educators," the feminine form is used, as in Chile more than 90% of teachers working in early childhood education are women (Undersecretary of Early Childhood Education, 2025).

it is mainly through verbal and non-verbal interactions that the teaching and learning process is constructed in classrooms at this level (Ansari et al., 2022; O'Reilly et al., 2022).

In line with the sociocultural approach, especially Vygotsky's (2001) vision, knowledge is co-constructed with others. Specifically, the concept of *the Zone of Proximal Development* implies that all people can learn what they do not know with the help of others. The ZPD is the space in which an individual can acquire knowledge or skills with the help of another who guides them, acts jointly with them, or interacts with them. Thus, from this perspective, processes take place at the intermental level, which can then be internalised by the participants, especially the learner, at the intramental level (Baquero, 2023; Mercer and Littleton, 2016). Collaborative inter taction is fundamental in this model (Newman and Latifi, 2021).

Studies focusing on interaction are strongly rooted in Vygotskian proposals (Egert et al., 2020; Hamre et al., 2014; Perlman et al., 2016; Ragni et al., 2021). Interactions are used to scaffold knowledge and skills, model ways of thinking or doing, and model cognitive tasks of varying complexity (Mercer and Littleton, 2016; Xi and Lantolf, 2021). Indeed, interactions have been shown to be directly related to children's social, emotional and academic learning (Gebauer and Narea, 2021; La Paro et al., 2014; Rowe and Snow, 2020).

Linguistic sequences in early childhood education classrooms

Depending on the focus and approach of the research, interactions can be referred to in different ways. For example, in the systematic review conducted by Howe and Abedin (2013), *the* term *classroom dialogue* is used, and the concepts of conversation and verbal exchange, among others, are mentioned. Many American studies refer to verbal and non-verbal interaction to describe the exchange that takes place between two or more people within educational contexts (Egert et al., 2020; Ragni et al., 2021). In the now classic studies by Cazden (1991), Mehan (1979) and Sinclair and Coulthard (1975), it has been proposed that these interactions usually have a three-element structure: initiation, response and follow-up or evaluation (IRF or IRE), which have been termed linguistic sequences. Some research has taken up this designation, analysing whether the aforementioned structure always corresponds to what happens in the classroom (Degotardi and Han, 2020; Muhonen et al., 2020). The study by Degotardi and Han (2020) addresses the organisation of conversations or interactions between adults and children aged between 1 and 2 years old in early childhood education centres. Their conclusions show that adult initiations focused on knowledge construction or referring to specific information (e.g., descriptions, labelling objects in the context, questions seeking information) predicted more elaborate responses from the pupils, but these responses were more complex and extensive when the sequences had more than three turns (IRS),

i.e., they were part of a conversation in which adults asked questions to deepen and extend the topics.

Specifically, linguistic sequences begin with initiations that usually involve questions, descriptions, or instructions that request an action from the pupils. These are typically performed by adults, but they could also be performed by children, such as when they request information or an action from a person (Muhonen et al., 2020). Tornero et al. (2015) studied the cognitive level of the questions generated by Chilean kindergarten teachers during story time. Their results show that open-ended questions were asked, but that their cognitive demand was very low, since, in general, they asked students to identify or remember information about something that had been read. For their part, Mascareño et al. (2017) explored interactions in Chilean kindergarten classrooms of low socioeconomic status, also during read-aloud sessions: some focused on the meaning of the texts; others, on decoding skills. For the first type of experience, they observed more questions than instructions, with a slight predominance of closed questions, which was also reported by Deshmukh et al. (2019) in American contexts. Regarding the complexity of these initiations, a slight advantage was observed for inferential tasks over literal ones (Mascareño et al., 2017). For decoding experiences, instructions outnumbered questions and complexity was lower: literal (or retrieval or recognition) tasks exceeded inferential ones by more than 50%.

One of the most interesting aspects of initiations is that they determine the complexity of the sequences: if the opportunities provided by adults involve retrieving information, the conversation will be guided by this level of complexity; whereas, if they involve generating inferences or developing higher-level skills, the dialogue will follow this line (Houen et al., 2022; Mascareño et al., 2017; Sartori et al., 2021). Thus, the responses that follow these initiations are usually factual or literal (e.g., yes/no, red, up, etc.) and brief, responding to closed questions asked by adults in the classroom. In the case of the study by Sartori et al. (2021), conducted in kindergartens, these responses reach more than 80% in both play contexts and story reading contexts.

The third turn or follow-up should be contingent feedback on the student's response (Houen et al., 2022). This turn is an opportunity to support or increase a child's understanding based on their response and to encourage participation and engagement (Hu et al., 2022; Pianta et al., 2008; van de Pol et al., 2010). Follow-up can take different forms, such as repeating the response (given just before), evaluating what was said, counterarguing, explaining, among other options (Myhill et al., 2020). In the study by Mascareño et al. (2017), these follow-ups were found mainly in readings focused on meaning and less in activities focused on code or skills. Regarding their "types" or "actions," confirmation (responding with "yes" or nodding, or with "no") was the most common, followed by elaboration (or extension with more information than what the children had said) and evaluation ("good," "very good," etc.). Other studies in different parts of the world have shown the same results: follow-ups tend to "close" the dialogue, rather than scaffolding a deeper understanding of certain concepts or skills (Molinari et

al., 2013) or promoting only superficial levels of knowledge, involving identification, recognition or recall (Hu et al., 2021).

In Chile, few studies have been conducted to assess linguistic sequences in early childhood education, although there are studies that explain the general behaviour of interactions (Bertoglio and Piñango, 2024; Gebauer and Narea, 2021; Melo et al., 2025; Strasser et al., 2024), or the language (code) used at different moments in the sequences (Strasser et al., 2018; Treviño et al., 2015). This is similar for all levels of formal education (early childhood education, primary education, secondary education). Specifically, and considering the importance of early childhood education, it is important to be able to analyse what educators do when they initiate or follow up on sequences in which they are trying to teach students content or skills.

Variation in linguistic sequences according to context

Some research has shown that the sequences or interactions that take place in classrooms vary depending on the time of day and/or the activity being carried out. In this regard, instructional moments or planned activities for child development have been contrasted with non-instructional moments or periods linked to daily care (e.g., feeding, bathing, etc.). Research in Chile, Argentina, and the United States shows that the first type of activities involves more enriching sequences, as there are more open-ended questions and greater responsiveness from adults to what students say, among other things (Cabell et al., 2013; Dwyer and Harbaugh, 2020). Specifically, Cabell et al. (2013) show that science activities organised in a "whole group" format perform best in terms of greater and better learning opportunities for children. Dwyer and Harbaugh (2020) find that in early childhood education settings, "less formal" activities (free play, feeding, transitions) offer fewer opportunities for students to learn through interaction than those led by adults. Meanwhile, in Argentine classrooms, comparing moments of free play and book reading, it was found that in the latter, speaking turns were longer and students showed greater lexical diversity related to more ideas or greater complexity (Pizarro et al., 2019). For Chile, Strasser et al. state that instructional activities are characterised by more linguistic stimulation, teaching, fewer instructions and more extended speech by children than non-instructional activities (Strasser et al., 2018).

Given the importance of these sequences or interactions in the classroom for learning, it seems necessary to investigate the differences to which children may be exposed, depending on their socioeconomic group. Chile is a highly segregated country (Bellei, 2015; Castillo-Canales, 2024), which means that, in general, students from poorer groups study in public schools and those from wealthier groups study in private schools. Thus, learning opportunities may differ for one group or the other, given that the context itself is dissimilar. Indeed, Espinoza and Rosas (2019) suggest that the Chilean education

system tends to perpetuate social inequalities, especially in aspects related to language, where private schools (high socioeconomic groups) show better results.

In this regard, studies of linguistic sequences have focused on low- r socioeconomic contexts (Mascareño et al., 2017; Pizarro et al., 2019; Sartori et al., 2021). Although the study by Hu et al. (2021) considers three distinct groups of classrooms at low, medium and high socioeconomic levels, this decision did not imply a comparison between these groups, but only the representativeness of the different contexts of a population. To our knowledge, there is no research analysing linguistic sequences in early childhood education, comparing socioeconomic groups. Added to this is the knowledge gap regarding the form that linguistic sequences take in Chilean early childhood education classrooms. In this sense, their description in two specific cases, but contrary in terms of the socioeconomic groups participating in them, is an opportunity to explore and advance the understanding of what happens in the classroom in discursive terms.

The first objective of this study was to identify the linguistic sequences of an activity initiated by the kindergarten teacher in a public and a private school in Santiago, Chile. A second objective was to describe the characteristics of the linguistic sequences in terms of the structure and function of speech turns between adults and children. Finally, a third objective was to compare the characteristics of the linguistic sequences identified in an activity at a public school and a private school.

Method

This study is a mixed-method microanalysis (Mascareño et al., 2016; 2017; Sartori et al., 2021) that examines linguistic sequences, specifically their beginnings, responses, and follow-ups, between educators and/or technicians (adults) and students during two learning activities led by educators in two kindergarten classrooms (one activity in each classroom). Microanalysis is a method used to study complex interactions, as it provides specific information on how understanding and conversational flow are managed (Nader et al., 2025). Furthermore, this research is mixed, non-experimental, cross-sectional and descriptive (Hernández et al., 2014): it combines qualitative analysis of linguistic sequences within classrooms with a quantitative descriptive analysis of the same.

Participants

The data were collected from an intentional and consensual sample, based on the voluntary participation of those involved and supported by the respective ethical consents. Two kindergarten classrooms participated: one from a public school—with a low socioeconomic status (SES) (68% School Vulnerability Index [National Board of School Aid and Scholarships, 2024])—and another classroom belonging to a private fee-paying school—high SES—both in the Metropolitan Region, Chile. The high SES classroom consisted of the teacher, a co-teacher, and 25 children. The low SES classroom

consisted of a teacher, a child education technician, and 11 children[3] . The students in both classrooms are between 5 and 6 years old.

Some demographic data that may help to understand both contexts relate to the ages and experience of the educators. Some of this data can be found in the following table (Table 1).

Table 1

Demographic data on the teachers in each classroom

	Public Classroom	**Private Classroom 1**	**Private Classroom 2**
Highest level of education	Complete university education	Full university degree	University degree
Years of experience as an educator	Between 6 and 10 years	More than 15 years	More than 15 years
Specialisation	Training at a state teacher training centre	Specialisation diploma	Specialisation diploma

In Chile, education for children aged 0 to 6 (known as early childhood education) operates under the mandate of the Undersecretary of Early Childhood Education, which reports directly to the Ministry of Education and is responsible for promoting policies that ensure inclusive, equitable and quality education (Undersecretary of Early Childhood Education, 2025). In this context, there is a national curriculum that sets out the compulsory learning objectives for all levels and classifies them into eight areas: identity and autonomy, coexistence and citizenship, physicality and movement, verbal language, artistic languages, mathematical thinking, understanding of the sociocultural environment and exploration of the natural environment (Undersecretariat of Early Childhood Education, 2018). Early childhood education is divided into nursery level (0 to 2 years), middle levels (2 to 4 years) and transition levels (4 to 6 years) (Undersecretary of Early Childhood Education, 2018). The latter level is divided into transition level 1 and transition level 2, but they are better known as pre-kindergarten and kindergarten. These are implemented in schools, unlike the previous levels (nursery and middle) which are

[3] Public school kindergarten classrooms usually have more students, approximately 30-35. It was decided to record this classroom with 11 children, mainly because the school was open to participating in this project and because, with fewer children, it would be possible to clearly capture the linguistic sequences.

found in kindergartens. Of the total number of students attending transition levels, 29% attend public schools, 62% attend subsidised private schools and only 9% attend private establishments (Undersecretary of Early Childhood Education, 2025). One of the characteristics of early childhood education is institutional heterogeneity, which is marked by socioeconomic status, conditioning access to and the quality of the experiences offered in the classroom.

Procedure

At the end of 2023, two video recordings were made of a day in the natural context of the classroom at each educational establishment, which involved non-participant observation. The microanalysis is based on recordings of interactions in natural contexts, followed by an analysis of selected episodes through detailed transcripts of the turns taken by the educator and the pupils (Nader et al., 2025). This decision responds to the aim of capturing the linguistic interactions between adults and children in their daily activities. Analysing dialogues in natural classroom contexts allows for the observation of linguistic interactions between adults and children in an iterative and interpretative process (Nader et al., 2025) in order to gain a deeper understanding of how pupils and educators are learning and teaching, respectively (Cazden, 1991; Green et al., 2019).

The schools were intentionally selected based on socioeconomic status and established contacts with them. First, the school principal was contacted, and once they agreed to participate in the study, they contacted the level coordinator and the educators. The adults in the classroom in this study voluntarily agreed to participate, and both administrators and educators and assistants signed the informed consent form. The educators and the research assistant collaborated in obtaining informed consent from parents for their children to participate in the study. Likewise, the children in the classrooms were asked for their assent.

The research assistant was trained to record the sessions. The position of the camera was crucial: it had to be placed in a location that allowed for observing and hearing as many interactions between adults and children as possible. Only if the entire group (or a majority) moved to another corner that could not be observed was the camera relocated. In addition, recording was only carried out inside the classroom, in line with the research objectives, so recording was paused while the pupils were in the playground (break time). Audiovisual recordings were made during school hours at each establishment: approximately three hours.

Analysis tools

Two analysis instruments were used in this study. First, an *instrument* was applied *to identify the different moments of the* kindergarten *day*, using the Elan 6.7 programme (Wittenburg et al., 2006). This involved watching the videos in their entirety, pausing every five minutes (Cabell et al., 2015; Mascareño et al., 2017) to identify the *moments of*

the day (greeting, feeding, activity initiated by the educator, among others), their *purpose* (objectives of each moment), *organisation* (e.g., whether they were in small or large groups) and *resources*. It should be noted that, in Chile, early childhood education sessions take place between approximately 8:00 a.m. and 12:00 p.m. During the day, learning experiences or activities are implemented that respond to the different areas of the national curriculum and are interspersed with different permanent or fixed moments: greetings, meals, hygiene, among others. For this study, an activity initiated by the educator in each classroom was selected.

Secondly, an *instrument* was applied *to analyse the linguistic sequences*, which was developed in-house based on previous studies (Mascareño et al., 2016, 2017; Sartori et al., 2021; Tornero et al., 2015). The instrument guided the identification of: 1) linguistic sequences (IRS); 2) the beginning of the sequence, the response, and the follow-up, identifying a turn of speech for each of these elements; and 3) categories for each of the elements of the sequence. In the case of this study, the focus is on linguistic sequences and the turns of speech that compose them.

Data analysis

Each audiovisual recording (video) was coded using the guidelines described above. First, each video was coded every five minutes to mark the time of day, which could be: greeting, feeding, hygiene, activity initiated by the educator, play, playground or recess, closing and transition. If two or more moments occurred in those five minutes, all of them were marked and the five-minute count began again. For this purpose, two coders were trained in the above guidelines by both authors.

Once both videos had been coded, an activity initiated by the educator in each classroom was selected, taking into account what previous studies had shown: the probability of educators monitoring pupils' responses is higher in activities led by adults than in play situations or other moments (Sartori et al., 2021). An important decision was made to note that, although the activities initiated by the educator in each classroom varied in length, a maximum of 15 minutes per activity would be coded (following the methodology of Cabell et al., 2015; Lee and Kinzie, 2012).

After this, the research assistant, who was trained by one of the authors, transcribed these experiences, which were reviewed by both authors. All verbal interactions were transcribed verbatim. Finally, in Excel, each participant's turn of speech was assigned to each row of the programme (following Sartori et al., 2021; Zucker et al., 2021), and the authors of this study coded the linguistic sequences using the second instrument they had developed (see Table 2). This allowed each sequence and each speech turn to be identified as , as well as categorising each turn according to its function and structure. To ensure reliability in the application of this guideline, a process of intersubjectivity (Maul et al., 2019) was developed between the two authors, who were the coders. This involved

applying this instrument to other videos at least four times in order to make decisions and ultimately arrive at a guideline suitable for the research.

Specifically, the *beginning* of the IRS sequence is classified into two types (see Table 2): questions from the educator and statements or instructions from the educator. Questions are classified according to cognitive level, i.e., open or closed, high or low level. The type of statement or instruction corresponds to the communicative intent of the adult, i.e., whether it is for learning and teaching, for socio-emotional support and social conversations, and for behaviour modelling or classroom management.

The pupils' *responses* were classified according to their level of complexity (high and low) and length (closed/short or open/extensive). Finally, the educator's *follow-up* to these responses is classified according to the opportunities for the children's cognitive development: at the high level, there is feedback with open questions, clarifications or extensions. In contrast, a low level of feedback from the educator could be a closed question, a repetition (of what the child says) or giving the child a clue or help to achieve learning. Table 2 presents the IRS sequence analysis tool for transition levels (pre-kindergarten and kindergarten) developed by the authors, with an example of the teacher and student turn-taking.

To systematise the results, a frequency analysis was performed in the SPSS 30 programme for each of the turns in each classroom (IRS), as well as for the number of sequences in each activity. In addition, a Chi-square test was performed to analyse the relationship between the characteristics of the adults' questions and the characteristics of the pupils' responses. Given that this is a small sample, no statistical comparison was made between the linguistic sequences in the public and private classrooms.

Table 2

Self-developed coding scheme for linguistic sequences at transition levels with an example of a turn of speech in each subtype

Component	Type	Sub-type	Examples
Initiation	Question	Open high level	E: "What was the beach like and how did it differ from the city?"
		Low-level open question	After finishing reading *Ramón Preocupón*, E: "Who can tell me how the story we read began?"
		Closed high level	E: "Could you find another word that rhymes?" (another word that rhymes with apple).
		Closed low level	E: "And what sound does it start with?" (what Mateo has in his hand).
	Affirmation or instruction	Teaching and learning	E: "Yesterday we worked with these colours on our sheets of paper to make a work of art. I told them that art can be made with different colours using pencils, felt-tip pens, tempera paints, among other tools."
		Support and social conversations	Crouching down with a child who is crying, E: "I know you feel bad, I also fell the other day and it hurt."
		Behaviour modelling or classroom management	E: "It's important that we sit quietly so we can start reading."

Response	Complexity	High	E [introduction]: Look, what's happening today to our friend Andrés the calendar? N [response]: "**It's the last day of the month.**"
		Low	E [introduction]: "Do you remember we were looking at geometric shapes? What geometric shapes can you identify in the room?" N [response]: "**The door**" (pointing)
	Extension	Closed/short	E [initiation]: "Did you like the story?" N [response]: "**Yes.**" N [response]: "**Very much.**"
		Open/extensive	E [initiation]: "What happened at the beginning of *Ramón Preocupón*?" N [response]: "**Ramón was worried.**"
Follow-up	High level	Open question	E [introduction]: "What did you like most about this game?" N [response]: "I had a good time." E [follow-up]: "**And what else did you like?**"
		Extension	E [initiation]: "Could you find another word that rhymes?" (another word). N [response]: "Truck." E [follow-up]: "**Exactly, lorry and mouse are words that rhyme, they both end in -ry.**"
		Clarification	T [initiation]: "Who was the main character in *The Copycat Crocodiles*?" N [response]: "The crocodiles." T [follow-up]: "**No, it was just one crocodile.**"

Low level	Closed question	T [initiation]: "What colour did you paint your picture?" N [response]: "Blue." T [follow-up]: "**What colour is similar to blue?**"
	Repetition	Teacher [initiation]: "Here we have a row of animals. Which is the fourth animal?" N [response]: "The lion." E [follow-up]: "**The lion.**"
	Cues or prompts	T [introduction] (working with objects and scales): "I'm going to put this cube here. Is the cube heavier or lighter than the feather?" N [response]: ... (shrugs) T [follow-up]: "**If the feather is lighter, the cube would be more...**"
	Assessment	E [initiation]: "What colours do I have to mix to make green?" N [response]: "Blue and yellow." E [follow-up]: "**Correct.**"
	Instruction (or response to what needs to be done)	T [initiation]: "Go to the carpet and, using the materials we left there, try to build the tallest tower you can." N [response]: (is building with blocks of different sizes and the tower falls down). T [follow-up]: "You **have to put the bigger ones at the bottom and the smaller ones at the top.**"

Note. E = educator; T = technician; N = child.

In summary, the study of linguistic sequences in kindergarten classrooms in Santiago, Chile, involved two classrooms from establishments with different socioeconomic levels or dependencies: one public and one private. Table 3 shows a summary of the actions taken for analysis.

Table 3

Methodological summary of the study

Participants	Information collection technique	Data analysis and coding tool
A public kindergarten classroom: 1 educator 1 early childhood education technician 11 children. A private kindergarten classroom: 1 teacher 1 co-teacher 25 children.	Non-participant observation through a video recording of the daily routine.	Guidelines for identifying different moments of the daily routine using the ELAN programme.
	Transcription of the experience initiated by the educator by turn of speech in Excel.	Instrument for analysing linguistic sequences (own creation): identification and classification of turns.
	Systematisation of data from the scheme for analysing linguistic sequences	SPSS 30: Descriptive statistical analysis. Chi-square.

Results

The results that respond to the objectives of this study are presented below. First, the number of linguistic sequences present in each activity is reported, in addition to their general structure. Then, each of the turns is described, based on the types of questions, follow-ups, among others, that occur most frequently. In both cases, comparisons are made between the public classroom and the private classroom.

Structure of linguistic sequences

A total of 446 speech turns were analysed for both classrooms: 246 correspond to the public classroom and 200 to the private classroom. It is possible to identify a difference between the speakers who utter these turns, as shown in Table 4.

Table 4

Frequency of turns for each classroom

	Public Classroom	Private Classroom	Total
N Adult shifts	153 (62.2%)	132 (66%)	285 (63.9%)
N Student shifts	93 (37.8%)	68 (34%)	161 (36.1%)
N Total shifts	246 (100%)	200 (100%)	446 (100%)

Of the total number of turns, in both classrooms the majority are made by the adults in the classrooms (educators or technicians). This means that adults have more turns (speak more) than children. These speech turns are linked together, forming sequences, the frequency of which is described in Table 5.

Table 5

Frequencies of sequences and their initiation for each classroom

	Public Classroom	Private Classroom	Total
N Sequences Initiated by Adults	21 (87.5%)	29 (93.5%)	50 (90.9%)
N Sequences Initiated by Infants	3 (12.5%)	2 (6.5%)	5 (9.1%)
N Total Sequences	24 (100%)	31 (100%)	55 (100%)

In line with the distribution of speaking turns, sequences in both classrooms are mainly initiated by adults. However, this is slightly more pronounced in the private classroom, where more than 90% of sequences are initiated by adults. Furthermore, if we look at the total number of sequences per classroom and relate this to the number of turns, we can hypothesise that the sequences in the public classroom have more turns than those in the private classroom: the public classroom has fewer sequences and more turns, while the private classroom has more sequences and fewer turns.

The structure of the linguistic sequences varied in terms of turn length and differed from the traditional three-turn dynamic: IRS. This means that, in general, the sequences had multiple turns by adults and pupils, with varying lengths. For example, Figure 1 shows a sequence from the public school with multiple turns between the teacher and the children:

Figure 1

Example of an extensive linguistic sequence in a public classroom

Educator (E): What do you remember about family? Who knows? Let's think about it and put our fingers on my head so I can remember. I'll close my eyes and think. What do I remember about family?
C (Child): A heart
C: That there are sisters
E: Yes, there are families with sisters
C: Dad
E: There are families, yes, dad
N: Uncles
E: Uncles
N: Grandparents
E: Grandparents already
N: Grandmothers
E: Who else remembers the family? Or what can we say about the family?
N: Mum
E: Mum
N: Me
N: Mum
N: Mum
E: Mum
N: Me
N: Dad
E: Let's listen to what we're saying so we don't repeat ourselves, but let's think in general terms. Apart from the sister, the dad, and the mum, what else can we know about the family?
N: Auntie, me
N: There's a baby
E: Right, there's a baby
N: Me
N: The sister
E: What sister?
N: Words I don't know
E: There are words, a family that can't say words?
N: I said yes they can, but they can't say them.
E: Yes, but then what can we say? Ana, what do we remember about the family then?
E: What can we say, Andrea?
N: Everything.
E: That everyone what?
N: That we all have a way of being.
E: What! Oh, I love that! That's it, Andrea, I'm going to take what Andrea said and keep it here, I'll take it and keep it in my little head. That all families have a way of being.

The previous example would correspond more to a structure of introduction, response, response, follow-up, response, follow-up, response, follow-up, response, follow-up, response, response, etc. Both types of classrooms feature this type of sequence. Many of the sequences are extensive because the educator, in the follow-up, asks the same question over and over again in different ways to elicit a more precise response from the

students. In addition, the adults repeat the question to give more than one child a chance to speak, which generates a chain of complementary responses.

Characteristics of linguistic sequences in two kindergarten classrooms

Of the total number of *initiations* in the public classroom, 41% were questions and 59% were statements or instructions. In contrast, in the private classroom, 27.4% were questions and 72.6% were statements or instructions (see Table 6). Examples of initiations that correspond to statements or instructions with a behaviour modelling or classroom management function (which had the highest number of turns in both schools) are as follows:

> "I come back to life, I breathe. Hands up, I bounce, Juan[4] , let's go again, I bounce [...] and we meet again." (Public classroom).
>
> "Think of a word that starts with /P/ (only say the sound of the letter) and now when you want to speak you have to raise your hand, Juan, please." (Private school).

The greater presence of this type of opening indicates that much of the interaction between educators and students has to do with ensuring "good" behaviour. It should be noted that, in the case of the private classroom, in addition to a greater number of statements to model behaviour, teaching statements stood out, i.e. those turns where adults presented content, modelled or gave instructions to develop a skill.

The most frequently repeated questions in the private classroom were low-level closed questions, while in the public classroom there were equal numbers of high-level open and closed questions. Some examples of these questions are:

> "José, José, what object do you have?" (Private classroom, closed question, low level).
>
> "What is your family like, Andrés?" (Public classroom, open-ended question, high level).
>
> "The Ñ (saying the sound of the letter), what is it?" (Private classroom, closed question, high level)

Table 6

Characterisation of the beginnings of linguistic sequences in public and private classrooms

Questions	Public	Private
Open high level	6	1
Open low level	2	0
Closed high level	6	2
Closed low level	2	14

[4] All the names of children and adults have been intentionally changed to protect their identity.

Subtotal questions	**16 (41%)**	**17 (27.4%)**
Statements		
Teaching and learning	5	19
Behaviour modelling or classroom management	17	25
Support and social conversations	1	1
Subtotal affirmations	**23 (59%)**	**45 (72.6%)**
Total initiations	39 (100%)	62 (100%)

With regard to the students' *responses* to the adults' questions, it is worth noting that in the public classroom, 39% corresponded to high complexity and 42.1% to open-ended (extensive) responses; In contrast, in the private classroom, only 9.4% of children's responses were of high complexity and 14.1% were open-ended (Table 7).

Table 7

Characterisation of responses from children in public and private classrooms

Complexity	**Public Classroom**	**Private Classroom**
High	37 (39%)	6 (9.4%)
Low	58 (61%)	58 (90.6%)
Total	95	64
Extension		
Open/Extensive	40 (42.1%)	9 (14.1%)
Closed/Short	55 (57.9%)	55 (85.9%)
Total	95	64

A Chi-square test was performed to explore the relationship between the characteristics of the questions asked by adults and the responses given by students. To this end, only the initial questions and the consecutive responses to them were considered. The analysis showed a significant relationship between the questions and complexity ($\chi^2(8) = 103.728$, $p < .001$), as well as with the length of the pupils' responses ($\chi^{(2)}$ (8) = 81.265, $p < .001$), i.e., while adults provide more opportunities for extended speech and challenging thinking, the responses of children tend to be more extensive and complex. The following examples illustrate this:

E: "Why wouldn't [this] be a family?"

N: "It looks like a telephone."

E: "And why wouldn't it be a family?"

C: "Because it's like a song thing" [...] "because it's an object." (public classroom, high-level open-ended questions, extensive and highly complex responses).

E: "How does that sound? It comes from here [shows a picture]. This is the last one we're going to look at today.

Children: ga ge gi.

E: "OK. And the ache, what is it?"
N: "Silent." (Private classroom, low-level closed questions, short answers and low complexity).

Of the total number of *follow-ups* to the answers given in the activities guided by the teacher, 33.6% of the public classroom correspond to high-level follow-ups, while 66.4% correspond to low-level follow-ups. Something similar occurs in the private classroom, where 22% correspond to high-level follow-ups and 78% to low-level follow-ups (Table 8).

Table 8

Characterisation of follow-ups by the educator in public and private classrooms

High Level	**Public**	**Private**
Open question	12	0
Extension	13	10
Clarification	13	7
Subtotal	**38 (33.6%)**	**17 (22%)**
Low Level		
Closed question	17	16
Repetition	19	11
Hints or help	7	3
Assessment	16	14
Instruction	16	16
Subtotal	**75 (66.4%)**	**60 (78%)**
Total	113	77

With regard to low-level follow-ups, in both classrooms there were more closed questions, instructions, assessments and repetitions. Furthermore, although high-level follow-ups appeared to a lesser extent, open questions were only found in the public classroom. Some of these characteristics are illustrated below:

E: "Already, Martin? Martin, what do you have?"
N: "Bear."
E [follow-up]: "Bear, what sound does it start with?"
N: "O."
E [follow-up]: "With o, then you can look for another one." (Private classroom, repetitions, closed question and instruction).
E: "They are all different and all families can be different, of different colours, as we know, there are different colours, different people." N: "hearts".

E [follow-up]: "Do they have different hearts?" N: "Yes." E [follow-up]: "How is that?" (Public classroom, closed question and open question).

Discussion

This study had three closely related objectives: to identify sequences and account for their structure, to identify the turns in the sequences and categorise them, and to compare these characteristics in a public and a private classroom. To this end, a microanalysis was carried out to accurately identify and analyse the linguistic sequences of activities initiated by the teacher in the two Chilean classrooms.

In the public classroom, there were 24 linguistic sequences, compared to 31 linguistic sequences in the private classroom. In both cases, these were mostly initiated by adults. This is consistent with the findings of Muhonen et al. (2020) for early childhood education classrooms: in general, conversations are initiated by adults, leaving little room for children to initiate conversations.

The linguistic sequences in both classrooms tended to be longer and involve multiple turns, which goes beyond the classic IRF (or IRS) model. The study by Muhonen et al. (2020) identified four types of sequences in early childhood classrooms: IRS exchanges, open *naming*, informal open discussion, and educator-led exploration. Unlike that study, in which most sequences consisted of three turns, in this case the adults make an effort to extend the children's conversation and language. This seems to be more characteristic of the public classroom, which could have features of an informal open discussion, i.e., a more extensive dialogue for developing ideas, in which the pupils contribute to the conversation based on their ideas or points of view. However, this could be due to the focus of the activity: a conversation about the family. In contrast, the private classroom activity, which showed fewer turns and more sequences, worked on phonological awareness. The linguistic sequences in this activity could be closer to an exploration led by the educator, a type of dialogue with more than three turns guided and led by an adult where the questions have a set of possible answers (Muhonen et al., 2020). The study by Mascareño et al. (2017) also contrasted activities focused on meaning with those focused on skills and found more open questions, more extensions, i.e., more dialogue in the first type of activities. This could be an explanation for the characteristics of the dialogue that takes place in these kindergarten classrooms.

Regarding the characteristics of the turns, this study confirms what has been said: both at the beginning and in the follow-ups, the adults asked unchallenging questions, requesting recognition or retrieval of information (Hu et al., 2021) and closed questions, which do not allow for deeper exploration of content or skills (Mascareño et al., 2017; Tornero et al., 2015). Furthermore, the characteristics of these questions were directly related to those of the answers given by the students (Mascareño et al., 2017; Sartori et al., 2021). In the present study, the adults in both classrooms, at the beginning of the sessions, frequently made statements to regulate behaviour and manage activities, rather than asking questions to scaffold learning. Finally, the follow-ups carried out by the adults were mostly of a low cognitive level, which is consistent with the findings of various

studies around the world (Aragón et al., 2021; Hu et al., 2021; Mascareño et al., 2017; Santolària, 2021; Tornero et al., 2015).

Rapanta et al. (2023) designed an intervention to encourage dialogic and argumentative interactions that led educators to move from asking closed questions to engaging in more dialogic interactions, which in turn allowed students to acquire more developed linguistic, argumentative, and metalinguistic skills. In the current study, as well as in previous studies (Gest et al., 2006; Hu et al., 2022), there is an attempt on the part of adults to engage in dialogue with children, especially in the public classroom, where the adult returned to the initial question again and again, both to give the students a turn to speak with the same question and to arrive at a more complete or complex answer based on their follow-ups. Based on the study by Rapanta et al. (2023) and van der Wilt et al. (2023), it could be hypothesised that if Chilean educators received a professional development programme on how to generate linguistic sequences, dialogues and argumentative or academic discussions (Grossman, 2024), they could ask more challenging questions that would promote knowledge beyond the topic under discussion. Future studies of interactions and linguistic sequences could explore these issues in greater depth.

This leads us to reflect on how essential it is to explicitly develop, in the initial and continuing training of educators and professionals working in early childhood, ways of generating questions, interactions, and sequences in the classroom, in order to focus on teaching strategies that favour a dialogic and argumentative approach (Grossman, 2024; Rapanta et al., 2023). This would allow for interactions that, on the one hand, are more responsive to authentic classroom contexts, i.e., that respond appropriately and assertively to what children want to convey both verbally and non-verbally (Gest et al., 2006) and, on the other hand, would be more extensive and complex, resulting in greater development of linguistic and cognitive skills in early childhood education students.

Although the findings of this study may be interesting, some limitations are apparent. First, the research was conducted in only two Chilean classrooms, which limits the variability in terms of socioeconomic status and educational context. To obtain more generalisable conclusions, it would be necessary to expand the corpus to include a larger number of classrooms from different contexts. Second, the analysis focused on the identification of linguistic sequences in activities initiated by the teacher, so future research could explore linguistic sequences at other times in the classroom, as well as those initiated by students or other educational actors, which would allow for a broader understanding of the dynamics of interaction in the classroom. Thirdly and finally, as mentioned above, the comparison made may be due to other factors, such as the topic at the centre of the sequences or conversation. In this sense, in order to make a more reliable comparison, it would be necessary to contrast learning experiences that share the same topic, the number of adults in charge, their training and experience, among other aspects. Another possibility is to make comparisons between a larger number of classrooms, on the understanding that, with the increase in classrooms, the variability of contexts will

increase, but that, taken as a whole, it will still be possible to make connections.

Likewise, with a larger sample, it would be possible to apply more sophisticated analysis techniques, which would allow linguistic sequences and their impact on learning to be examined from another perspective. Future studies may broaden the methodological scope to further understand linguistic sequences in early childhood education.

Unlike previous research that has focused on the analysis of interactions or linguistic sequences in the context of story reading at early childhood levels (Mascareño et al., 2017; Sartori et al., 2021; Zucker et al., 2021) or in dyads at home (Valenzuela et al., 2024), this study analysed sequences that arose in activities initiated by adults in authentic classroom contexts. This microanalysis allowed us to explore and compare Chilean linguistic interactions beyond the realm of story reading, which represents an original contribution to Latin American literature on the use of language by adults in early childhood educational settings. This broadens our understanding of how different linguistic sequences develop between adults and students at various times and in various contexts within the early childhood education classroom.

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