

The intentions of a science teacher: analysis of an episode from her classes

ABSTRACT

This article presents the results of an analysis of an episode from Science classes developed by an elementary school teacher. Given this context, the research question that guided this investigation was elaborated as follows: What are the Science teacher's intentions in her classes? To seek the answer to this question, we relied on the recording of Science classes by the teacher investigated in 2019, which was continued in 2021 for the continuation of the research, with the purpose of understanding, based on some more representative fragments of the classes, which were his intentions while carrying out his teaching actions. For data analysis, we relied on the assumptions of Discursive Textual Analysis. The research results came close to the theoretical conception of the intention proposed by Tomasello, which is close to the Action Plan composed of the path taken by the teacher during the recordings, understood as the Actions: Exposes, Draws attention, Manages the class, Ask specific question and explain. The Central Objective concerns the desire to be achieved by the Action Plan, which in this case was to meet the specificities and needs of the class in which he worked related to the students' content, behavior, and learning. This investigative proposal allowed an approximation of Michael Tomasello's assumptions, focused on the investigative areas of psychology and linguistics, the primary educational environment, and research pertinent to basic education.

KEYWORDS: Science teacher action. PROACTION. Intentionality.

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INTRODUCTION

Inspired by the Research Project PROAÇÃO – Programa de Pesquisa sobre a Ação Docente, Ação Discente e suas Conexões [Research Program on Teacher's Action, Student's Action and their Connections], which among its possible approaches adopts an explanatory perspective to investigate teachers' actions (Arruda; Passos; Broietti, 2021), this article seeks to understand a teacher's actions while teaching Sciences in basic education.

According to Arruda, Passos and Broietti (2021), this kind of approach aims to investigate why the subject does something, without being concerned with delimiting and prescribing what they should do. Influenced by what is proposed by those authors and considering that prescribing what a teacher should do does not guarantee professional's reflection upon their own practice, we saw the need to investigate a teacher's explanations when her actions were directly observed in the classroom.

For those authors, the focus then shifts to the explanatory approach, that is, the one that aids the teacher mobilization process. To follow this path, in addition to what Arruda, Passos and Broietti (2021) present, theoretical elements from Tomasello (2014), psychologist and linguist, were incorporated. His contributions on the construction of human cognition, in our view, confirm the explanatory approach and enhance this investigation regarding the cognitive reasons that lead people to develop and explain their actions.

Considering what was explained above, the following research question was elaborated: What are the Science teacher's intentions in her lessons? The main gap this investigation seeks to fill in is how teacher's intentionality can be used to express intention in a science class.

To answer it, lessons in which the teacher being analyzed taught the subject of sciences were recorded. Some episodes of such lessons were selected, transcribed and returned to the teacher questioning her about her intentions in those specific episodes. To organize the data and analyze it, the procedures indicated by the Discursive Textual Analysis (DTA) were employed.

Some details regarding this process and the investigation as a whole are addressed in the following four sections of this article, as follows: what was assumed as intention, according to Tomasello (2014), and as action, according to Arruda, Passos and Broietti (2021); the methodological procedures indicated by DTA, following Moraes and Galiazzi (2016); a summarized systematization of qualitative research; the data organization, presentation and analysis; and, finally, several concluding considerations.

THEORETICAL FRAMEWORK

Defining intention is necessary considering the circumstances of this study. Therefore, we opted for the conception defined by Tomasello (2014) regarding intentionality, since it was considered relevant for the discussion of the teacher's intention, a fact close to the education area, by means of observation of a classroom in basic education.

Tomasello (2014) defends the recognition of intentionality as part of the human cognitive process built over time. Such intent was gradually established by the cultural environment where “the individual” is inserted and other factors that resulted in humankind evolution, regarding its cognition, superior to that of other animals.

There is no guarantee that all human beings’ intentions are conscious; however, there is an understanding that perceptions are built by individuals, which are based on the groups to which they belong, for example, family, community and the cultural environment that surrounds them. Such situations experienced might set new costumes and determine the cognitive processes of individuals which, in turn, guide their actions.

Intention, according to Tomasello *et al.* (2005), consists of an action plan and an objective:

[...] an intention is a plan of action the organism chooses and commits itself to in pursuit of a goal. An intention thus includes both a means (action plan) as well as a goal (Tomasello *et al.*, 2005, p. 676).

In more recent publications, Tomasello (2014), still elaborating on his definition of intention, proposes the idea of a shared intentionality. “In this proposal, intentionality understanding and sharing are key elements for human cognitive and linguistic development” (Allan, 2007, p. 6, our translation). Humans are gregarious beings who live in groups, thus establishing relationships with each other, a fact that contributes to the construction and reconstruction of human cognition. According to Tomasello and collaborators (2005):

Shared intentionality, sometimes called “we” intentionality, refers to collaborative interactions in which participants have a shared goal (shared commitment) and coordinated action roles for pursuing that shared goal (p. 680).

The two definitions presented above might be used as interpretive keys for the analysis of data obtained in education context, focusing on teacher’s actions and based on the so-called explanatory approach (Arruda; Passos; Broietti, 2021). Assuming that teacher’s actions, that is, what a teacher does in the classroom aiming at teaching and learning, is intentional, and adopting Tomasello’s (2014) ideas as theoretical background, we assume that while teachers develop their education practices, they are based on some intention (teacher’s intention), which result in a set of actions (action plan), which aim at a target (goal).

In addition, since teachers are inserted in a teaching community, their intention results from sharing. That is, there is a teaching intention directly related to groups teachers belong to and where principles, values and practices are shared. This involves them in cognitive development linked to the conception of shared intentionality, as proposed by Tomasello *et al.* (2005).

Believing that the concept of intention can support an investigation in the school environment, and considering the data collected, the teacher was asked about her teaching intentions in her science lessons.

METHODOLOGY

Qualitative research was developed for considering individuals and their natural environments, seeking to reveal the subjective and rebuild meanings (Flick, 2004). Thus, all the data collected was organized in the search for meaning identification, adhering to the theoretical framework adopted for the research (Lüdke; André, 1986), which aimed at the social construction reorganized by the individuals' situation – a science teacher – under analysis (Flick, 2009). The texts considered for interpretation were collected, organized and analyzed in two distinct moments: the first, when collected in the classroom in person, and the second when the recordings of the lessons were reviewed (almost two years later).

The investigation was submitted to Plataforma Brasil [Brazil Platform] for evaluation by the Research Ethic Committee involving Human Beings and is registered and approved with number CAAE 68485223.7.0000.5231 and opinion 6.060.079, valid until 31/05/2027. As indicated at the end of the previous paragraph, the data collection occurred in two phases: in the first, science lessons taught by a teacher in the final years of primary school, working in a public school in the state of Paraná in 2019 were recorded in person. The selection of this teacher was related to her availability and her willingness to participate in the research alongside the researchers.

During the data collection, two teachers, who had similar experiences, were invited to take part in the research, and in that data collection. Ten lessons of each of the teachers were recorded for later analysis by the researchers.

As part of that context, this article deals with the results obtained with the second teacher analyzed, highlighted in this investigation as (P2). Furthermore, this article considers two of the same teacher's lessons, specifically (5 and 6) of the 10 lessons recorded. These two lessons were selected for being those presenting the highest number of episodes provoking reflections. The specific lessons were recorded in audio and video and were related to the context of a sixth-grade class in the final years of primary school, where the teacher (P2) worked with content related to rocks.

In the second phase, which took place in 2021, an interview was conducted remotely, aiming to revisit parts of her actions recorded in 2019, and to understand her intentions, showing her some video fragments of one of her lessons (most relevant fragments considering their relationship with teaching and learning). This procedural approach is called "autoscopy". "Autoscopy employs the resources of videoing some practice, aiming at analysis and self-evaluation by one or more protagonists of that practice" (Sadalla; Laroocca, 2004, p. 419). Therefore, autoscopy can be carried out in "research in teaching, which consists in the use of videorecording of the practice of an active individual and then subject that individual to the observation of the content recorded, seeking the individual's self-analysis and self-evaluation" (Piratelo, 2018, p. 72, our translation).

Due to the large number of recorded lessons and the extensive amount of hours in this collection, we selected three minutes (3min) of a lesson, which was coded A5e6P2 in Episode 1, referring to lessons number 5 and 6 (paired) of teacher 2 (P2) regarding Episode number 1, to present to the teacher during the interview, for observation of her actions and to question her about her intentions.

The semi-structured interview was held as follows: “directed by one of the people, aiming to obtain information from the other” (Bogdan; Biklen, 1994 p. 134, our translation). In this type of interview, it is expected that “the subject will discuss and express their thoughts, tendencies and reflections on the topics presented” (Rosa; Arnoldi, 2008, p. 37). The procedures allowed the interviewee to elaborate her arguments about what was observed in Episode 1, explaining subjective aspects and enabling the interviewer to revisit what P2 revealed.

The interpretation of the transcripts was based on the Discursive Textual Analysis (DTA), since the “Discursive Textual Analysis corresponds to a methodology of analysis of qualitative information, aiming to produce new understandings of the phenomena and discourses analyzed” (Moraes; Galiuzzi, 2016, p. 13, our translation). Therefore, this methodology is understood as adequate, aiming at its purposes.

The Discursive Textual Analysis can be understood as a deconstruction process, followed by reconstruction of a set of linguistic and discursive materials, producing new understandings about the phenomena and discourses investigated (Moraes; Galiuzzi, 2016, p. 134, our translation).

This involves going through the four focuses of ATD. The first “1 – Disassembly of the text” (Moraes; Galiuzzi, 2016, p. 33), concerns deconstruction of the text, emphasizing the delimitation of the research corpus. This occurred through the most evident fragments of the teacher’s actions during the Science lesson, and based on what she observed, at the time of the interview, she discussed her intentions. In other words, the teacher’s discourse regarding her visualized intentions and the questions asked from that context were considered the material for analysis. From that moment on, discourses were fragmented into sentences and coded in order as mentioned by the teacher, starting with number 1 onwards.

Regarding this focus, the transcription process also involved coding, which was highlighted in two ways for better understanding by the readers. The first refers to the codification of the recorded lessons, which, in turn, was related to example: A5e6P2F1. This code refers to the lessons (A5 and 6) which are analyzed in this article, according to teacher 2 (P2), based on her transcribed sentence number 1 (F1) during the lessons.

The second method coding was related to the time of the interview, which follows the example: (A5e6P2D1). Here the process changes a little, as it is the interview related to the lessons (5 and 6) referring to teacher 2 (P2) based on her discourse number 1, uttered during the interview.

In the second focus, “2 – Establishment of relations” (Moraes; Galiuzzi, 2016, p. 34), which points to the categorization process resulting from groupings of similar perceptions emerging from the analytical movements. Groups of actions of Peripheral Objectives and Central Objective were constructed to represent the analyzed circumstances. Here, considering the analysis carried out by the researchers, categories or groupings that represent the excerpts mentioned by P2 were observed, and in this way, categories that emerged from the interpretation process based on the results obtained are highlighted.

Next, we address the third focus, “3 – Capture of the emerging new” (Moraes; Galiuzzi, 2016, p. 34). At this point, the authors highlight the need to develop a metatext, which goes beyond the categorization process and can be considered a

new inference revealed in light of the analysis conducted by the grouping process. In this investigation, this process was organized alongside the categorization process, which made it possible to infer about the episode analyzed.

Finally, focus “4 – A self-organized process” (Moraes; Galiazzi, 2016, p. 34), can be called the closing of the analysis. It represents the organization of the procedures carried out.

RESULTS AND DISCUSSIONS

In the analytical approach employed in this section, the theoretical base works as a pre-existing conceptual network. The definition of intention, understood as the action plan and the objective, as defined by Tomasello *et al.* (2005), is applied deductively to organize and explain the empirical material collected.

The analysis consists of three steps: evidence presentation (data), in the form of tables; the application of the interpretive key (Tomasello’s intention definition (2014)); and the linking, that is, the comments on the articulation made between the theory and the data.

In this investigation, Episode 1 was analyzed and the analytical process organized in three tables, in addition to a synthesis of the Action Plan and the Central Objective highlighted. Table 1 presents the Action Plan; Table 2, the Central Objective, and Table 3 clarifies the relationship between the Peripheral and the Central Objectives. Finally, the relevant approximations that specify the Action Plan (constructed by the teaching actions in the first table) and the Central Objective (elaborated by Peripheral Objectives and other excerpts of the answers given by P2) are summarized.

The symbol “[...]” was used in the Episode transcript to represent the moments when the students spoke, and due to the fact that many of them spoke at the same time as the teacher, in some moments, it was not possible to capture her voice.

The Action Plan is identified in Table 1, which regards the course of actions carried out by the teacher to achieve her objectives. It was elaborated according to the transcriptions of lesson fragments, visualized by the teacher during the interview, which provided evidence of her intentions. It is organized into three columns: the first and second contain the actions and their description, respectively, and in the third column, there are examples illustrating the action’s emergence and naming. Regarding the codes accompanying the sentences, they can be understood as previously mentioned: A5e6P2F1 – A5e6, representing that the Episode is part of lessons 5 and 6, which were paired, P2 refers to the teacher 2 and F1 the first sentence uttered by her in the episode under analysis.

Table 1 – Actions found in A5e6P2 in Episode 1

Actions	Action description	Examples
Exposing	Exposure of some fragments (minerals/rocks) or video cuts on the television	(A5e6P2F1) I want to hear your opinion about this animation.

Drawing attention	Drawing students' attention	(A5e6P2F2) Shshsh. (A5e6P2F3) (student's name). (A5e6P2F4) Shshsh. (A5e6P2F5) Look. (A5e6P2F6) Pay attention. (A5e6P2F7) Shshsh. (A5e6P2F8) Shshsh. (A5e6P2F9) If you are going to continue playing, put it there for me. (A5e6P2F10) Shshsh. (A5e6P2F11) (student's name) pay attention, look here.
Managing the class	Managing students' action for the continuation of the episode, according to her objective	(A5e6P2F12) No problem, give it to me. (A5e6P2F13) We [...]. (A5e6P2F14) yes. (A5e6P2F15) We extracted [...].
Asking specific questions	Asking specific questions aiming to clarify students' ideas and/or lead them to the correct answer	(A5e6P2F16) This third type of rock, what was it called? (A5e6P2F17) Me? (A5e6P2F18) What did it suffer? (A5e6P2F19) Me-ta-mor?
Explaining	Explaining content, or activity, or experiment to the class	(A5e6P2F20) Metamorphic. (A5e6P2F21) phose. (A5e6P2F22) I wanted to show you [...]. (A5e6P2F23) That rocks, they [...]. (A5e6P2F24) We extract, minerals, we use them [...]. (A5e6P2F25) Extract substances from them that we use in daily life [...]. (A5e6P2F26) And when men [...]. (A5e6P2F27) When humankind started to use them [...]. (A5e6P2F28) Our life became easier.

Source: Research data (2021).

Table 1 shows that the episode featured five actions, as follows: Exposing, Drawing attention, Managing the class, Asking specific questions, and Explaining. Soon after P2 watched it, following the self-observation process that was designed for this investigation, a dialogue occurred between E1 and P2 (Table 2).

Table 2 shows the teacher's Central Objective with the practices she carried out, regarding Episode 1. This process involved the initial identification of Peripheral Objectives which, alongside all excerpts, originated the Central Objective identified for that episode. This development was carried out for the various P2's classes; however, in this article, only one three-minute episode is presented. However, the complete data is available in Meneguete (2023), Meneguete *et al.* (2023), Arruda *et al.* (2024) and Meneguete, Passos and Arruda (2024). It was organized into 2 columns. In the first column the questions asked by

the interviewer E1 appear alongside the Peripheral Objectives that could be abstracted from P2's manifestations.

Table 2 – Dialogue between E1 and P2 about Episode 1 of A5e6P2

Questions asked by E1 and Peripheral Objectives highlighted	P2's Comments
Question: Why do you use different videos? And why these videos? Objective: To choose videos bearing the class context in mind.	(A5e6P2D1) [...]The choice was because the language was easier [...]. (A5e6P2D2) There weren't many scientific terms that would be difficult for students to interpret. (A5e6P2D3) There were quite interesting images that made learning easier. (A5e6P2D4) Now, let's say, what was the other question? (A5e6P2D5) Let me see, because it's been some time I showed it, and to each class. (A5e6P2D6) Do it again because it's been a long time, and each class, and in each year, I get a different animation, for example, I like Luna's show a lot, the blue dot, then depending on the class, I get a specific type of video, you see? (A5e6P2D7) Or, I might get a short excerpt, or I get the whole film, and based on the film I start exploring the topic, and because it's been a long time, I don't remember exactly in this sense. (A5e6P2D8) But I always try to choose videos with that in mind, the image, for being clear and objective, the language being accessible to students and to the grade I am teaching, and I don't like to show everything at once, because if it takes too long, mainly for a noisier group, they get lost. (A5e6P2D9) They get tired, children tire easily if you get a long excerpt, then, I prefer to go slowly. (A5e6P2D10) Especially in two paired lessons, see? (A5e6P2D11) Yes, then, I try to do it, I keep showing, I tend to reduce in this sense.
Question: On the video, the teacher appears letting all students who want to take part in the class speak, she always listens to students, what is your intention with that? Objective: To seek a lesson with dialogue and interaction among the	(A5e6P2D12) To give a lesson, you know, a more enjoyable lesson, the teacher is not only, how can I say it, the teacher is not the center. (A5e6P2D13) It's a student-centered lesson. (A5e6P2D14) They are, my objective is to teach them. (A5e6P2D15) If I am the only one transmitting, there is no point. (A5e6P2D16) I usually say, television teaches, the internet teaches, the father and the mother teach. (A5e6P2D17) Now, have you thought about having a monologue the whole lesson?

subjects with the purpose of students' learning.	(A5e6P2D18) There must be dialogue in the classroom, teacher and students must interact during the lesson, student-student too. (A5e6P2D19) There is conflict in the classroom. (A5e6P2D20) Unfortunately, we cannot have this perfect classroom as in the television, in soap opera, or in <i>Malhação</i>¹, because it doesn't exist, only on TV. (A5e6P2D21) Each class is your class. (A5e6P2D22) You might be prepared to have give them lessons, five in the morning, and five in the afternoon, each one is different. (A5e6P2D23) You might use the same videos, or even write the same things, but when you're there with the students, it is different. (A5e6P2D24) Because this participation, this duel, this discursive interaction, this exchange of knowledge enriches the lesson. (A5e6P2D25) That's why I said that a very quiet class does not always mean there's learning going on.
Question: How do you evaluate the class? What do you think of them? Objective: To adjust teacher's actions and methodologies considering the class context.	(A5e6P2D26) Look, it was difficult the whole year, right. (A5e6P2D27) I was always in favor of having a classroom balancing the number of boys and girls, well, this does not mean that girls are always quiet and boys are always noisy, it is not that, for God's sake, it's not that. (A5e6P2D28) But when there is a larger number of one group than the other, I end up inhibiting one more than the other. (A5e6P2D29) Then I try to give. (A5e6P2D30) I'm in favor of that, you see, the same number. (A5e6P2D31) At least not being so. (A5e6P2D32) Because in this class, it was surreal, then, the number of boys was double, so the girls did not have a voice, they couldn't express themselves, and there were excellent female students there, so, they always, this class was always the most complicated. (A5e6P2D33) But we tried different ways, we, teachers throughout the year, trying. (A5e6P2D34) We had inter- and multidisciplinary projects. (A5e6P2D35) We tried to match to access it, but this was a difficult class. (A5e6P2D36) Difficult in this sense, exactly because, because the different number of students there, the girls were so inhibited that they did not speak, we could hear the boys' voices better, and because there were boys who really wanted to dominate the environment, there was a lot of conflict among them.

	(A5e6P2D37) And there was the specific case of this diagnosed student. (A5e6P2D38) Then, that was the case, all the time, I'll tell you, be quiet, these conflicts were very frequent all year long. (A5e6P2D39) That's why it was a difficult class. (A5e6P2D40) But at the same time, teachers like challenge, then we tried everything and more to overcome. (A5e6P2D41) We got to the end of the year and said 'pew' and now? (A5e6P2D42) Then, for the next year, for example, we already sit, teachers who teach sixth grades, for knowing the classes, yes, we work very close to the teachers of sixth grade, they are always the same. (A5e6P2D43) We already readjust the class for the seventh, you see? (A5e6P2D44) Providing students with the environment they need. (A5e6P2D45) Then, for example, (student's name), he needed a quieter class, because if he were in a noisy class like this one, he would not be able to learn. (A5e6P2D46) Then, we, for the following year, we removed (student's name) from this class, we placed him in a quieter class, see? (A5e6P2D47) Not that he could disrupt the class, on the contrary, silence might calm him. (A5e6P2D48) And that's what happened. (A5e6P2D49) He did very well in the seventh grade in the following year. (A5e6P2D50) Because exactly, for this reason, we removed those duels that there were there. (A5e6P2D51) When doing the mapping, we sought to have neutral people around him, those who wouldn't motivate him precisely to cause trouble. (A5e6P2D52) Then, it's not saying, geez, will I put another hyperactive next to him? (A5e6P2D53) Then it turns into, nobody can stand that. (A5e6P2D54) Then, we create our methodologies, and keep changing all the time, so, there are challenges all over the year. (A5e6P2D55) This class was difficult, but we managed.
Question: In the videos you sometimes reprimands students, what's the reason of these actions?	(A5e6P2D56) Ah all the time we have to call them, hey, guys let's pay attention, you have to save time with it. (A5e6P2D57) See, I speak all the time, it's not just my issue, I really like to advise, you understand? (A5e6P2D58) And in this class in special, I was not the counselor teacher, because each class has one, but all the

Objective: To call students' attention and to seek different methodologies so that they have more learning time.

time I have to stop, and say: Hey everyone, this is not right, it's not like that, there is no point, for example, in hitting the table, I'll get hurt in the end!
(A5e6P2D59) Then I reprimand them, hey psst, let's pay attention, let's write, let's sit here, I move a student from one desk to another, trying to favor him/her.
(A5e6P2D60) Because, what happens, another colleague is doing something, and this distracts them from learning, it disturbs their attention, then, I need them to focus, then I move them from one desk to another.
(A5e6P2D61) Because when I do that, maybe they'll help, or there is another quiet student willing to learn next to them, and this student will say: Hey you, keep quiet, I want to learn, see?
(A5e6P2D62) Then they have to give voice to the other too, give voice for the colleague to say: enough, it cannot be like that anymore, I want to learn, understand?
(A5e6P2D63) Then that was my way, I don't like, I don't have.
(A5e6P2D64) In the past, the ruler was used.
(A5e6P2D65) Teachers cannot hit students anymore, teachers can no longer do any of that.
(A5e6P2D66) The only thing that the teacher has is their voice.
(A5e6P2D67) Hey, keep quiet, let's sit down, please, because many times the child wants exactly that, because they don't have it at home, so they call attention, because there is nobody to set their limits at home.
(A5e6P2D68) And this is where the teacher is, we wear out, we arrive home, you know, voiceless, without anything, giving them this "behavior guidance" they don't have at home.
(A5e6P2D69) Sit down, please, excuse me.
(A5e6P2D70) Open de notebook, grab your pencils, hey, don't throw it.
(A5e6P2D71) There was a time when I arrived in this particular classroom, during another teacher's lessons, and they had made a paper ball (gesturing with her hands), this size, and were playing inside the classroom.
(A5e6P2D72) I said, I don't believe what I'm seeing, people (covers the face with her hands), what are you gaining from this.
(A5e6P2D73) Then, that is, I give some advice, talk to them, make them apologize to each other, understand?
[...].
(A5e6P2D74) I mean, this is some time you waste, but you also gain it, understand?

	(A5e6P2D75) We could see that the class changed after (student's name) left, when he came back the noise problem started all over again. (A5e6P2D76) But I was teaching everyone in the same way. (A5e6P2D77) I was giving all of them the same right. (A5e6P2D78) Then, teaching occurs through interaction. (A5e6P2D79) It's between my will, I want it, because nobody manages to put learning inside another person's head, unless they want it, I don't know if you've noticed it already. (A5e6P2D80) Among opportunities, the exchange, the sharing and dialogue. (A5e6P2D81) Through monologue, nobody achieves anything. (A5e6P2D82) I say it to you, because we teachers, we did not have courses to work with kids that have medical/psychological diagnosis of this, or that, all kinds of disorders. (A5e6P2D83) I did a teaching course preparing for basic education, but many teachers didn't do it. (A5e6P2D84) And literally, we are not prepared to work with certain diagnoses. (A5e6P2D85) The opposing personality, for example, was the first time, see? (A5e6P2D86) And from the moment the child is monitored by a medical doctor, the family helps, it's another story. (A5e6P2D87) Thank God after he (gestured with her hand forward) got calmer [...]. (A5e6P2D88) Girl, we tried everything, a "U"-shaped classroom, we would sit him on the one side, then we sat him on the other side, together, sitting in pairs, so that one student could help the other. (A5e6P2D89) Nobody wanted to sit with him anymore, ah (hands on the cheeks). (A5e6P2D90) It was difficult. (A5e6P2D91) Methodologies more methodologies, resources and more resources. (A5e6P2D92) But in fact, I like using resources and more resources, methodologies and more methodologies, if it works, okay, if it doesn't, at least I tried. (A5e6P2D93) [...] nobody can say I didn't try.
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Source: Research data (2021).

After reading the information organized in Table 2, we observed that the teacher's Central Objective in the episode analyzed was to cater for the specificities and needs of that class in relation to the content studied in the lesson, students' behavior and learning outcomes.

To justify what was observed, the code of several excerpts that provide clues for the elaboration of the Central Objective are listed below: (A5e6P2D1), (A5e6P2D2), (A5e6P2D3), (A5e6P2D8), (A5e6P2D9), (A5e6P2D13), (A5e6P2D14), (A5e6P2D18), (A5e6P2D19), (A5e6P2D23), (A5e6P2D24), (A5e6P2D25), (A5e6P2D26), (A5e6P2D27), (A5e6P2D28), (A5e6P2D30), (A5e6P2D32), (A5e6P2D33), (A5e6P2D34), (A5e6P2D35), (A5e6P2D36), (A5e6P2D37), (A5e6P2D38), (A5e6P2D39), (A5e6P2D54), (A5e6P2D55), (A5e6P2D56), (A5e6P2D57), (A5e6P2D59), (A5e6P2D60), (A5e6P2D66), (A5e6P2D67), (A5e6P2D68), (A5e6P2D73), (A5e6P2D76), (A5e6P2D77), (A5e6P2D90), (A5e6P2D91), (A5e6P2D92) and (A5e6P2D93).

Thus, the Central Objective was established considering the highlighted codes and Peripheral Objectives, based on each question and answer regarding the intention. Therefore, Table 3 was elaborated, which clarifies the elements of Peripheral Objectives (underlined) used to compose the Central Objective. The table presents 3 columns and a single line, as they related to the Central Objective constructed, taking into account the elements of the Peripheral Objectives.

Table 3 – Approximations between Peripheral Objectives and Central Objective in Episode 1 of A5e6P2

Central Objective	Peripheral Objectives	Approximations
To cater for the specificities and needs of the class related to content, students' behavior and learning.	Choose videos based on the <u>class context</u> . To give a <u>lesson with dialogue and interactions between subjects aiming at students' learning</u> . To adjust teacher's actions and <u>methodologies according to the class context</u> . To call attention and <u>seek different methodologies so that students have more learning time</u> .	Considering the Objectives highlighted, P2 is concerned with providing personalized support to students in a contextualized way according to students' reality and their effective learning.

Source: Research data (2021).

The approximations between Peripheral Objectives, which together with the other excerpts highlighted gave rise to the inference process of the Central Objective, became clear (Table 3).

Thus, summarizing and synthesizing the results found, according to the two components of the intention, we found that P2's Action Plan in Episode 1 involved the actions described in Table 1. Such episode starts with the presentation of the video on television (Exposing), and during this action, P2 Calls attention and Manages the class, considering side conversations during the video presentation. Later, she pauses the video and asks students specific questions related to the content presented (Asking specific questions). After listening to the students, she explains (Explaining) the content related to rocks. And, finally, presents a second video related to the content studied (Exposing).

Considering the Action Plan, the teacher's Central Objective is identified in Tables 2 and 3, which according to the inferences made was: To cater for the specificities and needs of that class related to content, students' behavior and

learning. This fact leads us to recall the necessary knowledge for planning and development of an educational practice (Freire, 1996), which touches upon numerous teaching situations in the classroom, including: respecting students and their knowledge, taking freedom and authority into account in the education process, making conscious decisions, and listening to the others.

Thus, the analysis of the episode related to lesson A5e6P2 was concluded. It enabled the identification of P2's Action Plan and Central Objective, identifying the two components of the teacher's intention. Therefore, the results obtained are in accordance with the theoretical proposal put forward by Tomasello (2014) regarding intention construction, which as observed in this investigation is built up by the action plan in relation to the actions that the subject carries out in the classroom. These are then supported by the Peripheral Objectives that give rise to the Central Objective. Thus, by means of these two components described, the purpose of the analysis is to establish P2's intention in the development of her lesson, considering the teaching and students' learning.

FINAL CONSIDERATIONS

To begin this final section of the article, we return to the research question stated earlier: What are the Science teacher's intentions in her lessons? To answer it, 3 min - an Episode of one of her lessons – was analyzed seeking to identify her Action Plan and Central Objective, which regard the two components of intention, according to Tomasello's (2014) theoretical proposal.

It is argued that intentions are composed of the Action Plan and that they were characterized by the course of the teacher's actions to achieve her purpose. Considering the investigation anchored in the episode analyzed, the following actions were identified: Exposing, Calling attention, Managing the class, Asking specific questions and Explaining, which led to the composition of the following Central Objective: To cater for the specificities and needs of the class related to content, students' behavior and learning.

These results allowed us to answer the research question and bring Tomasello's (2014) theory into the educational environment, with regard to teacher's intention. Other analytical movements that consider various episodes from P2's lessons, as well as other teachers', can be accessed in Meneguete (2023), Meneguete *et al.* (2023), Arruda *et al.* (2024) and Meneguete, Passos and Arruda (2024).

Considering all this investigative movement, conceived and executed in the last few years regarding some teachers' intentions, this research concludes that there is evidence that, in fact, there is an intention when the teacher carries out an action, which is composed by a set of actions aiming at the teacher's final purpose. For this reason, we highlight the relevance of Tomasello's (2014) proposal for investigations linked to Basic Education and Higher Education in Brazil, thus giving voice to teachers.

It is also worth highlighting the novelty of this research regarding the justifications that connect Peripheral Objectives to the Central Objective identified. For this reason, this article broadens the perceptions and inferences constructed over the years dedicated to this theme and which will likely underpin future research.

Furthermore, it is noteworthy that there have been advances in the PROAÇÃO Program regarding research related to teacher's action from an explanatory perspective, since what was carried out enabled the reinterpretation of the data analyzed and contributed to the reflections that supported the adaptation and readjustment of Tomasello's (2014) proposal for the circumstance investigated.

Thus, we believe that this investigation can assist teachers in the process of identification and reflection on their intention, and we intend to continue and broaden the research, to understand how the perceptions of a group are built up and shared by the teacher according to their intentionality, that is, a subject with intentions that can be made explicit by themselves.

AS INTENÇÕES DE UMA PROFESSORA DE CIÊNCIAS: ANÁLISE DE UM EPISÓDIO DE SUAS AULAS

RESUMO

Este artigo apresenta os resultados da análise de um episódio proveniente de aulas de Ciências ministradas por uma professora do Ensino Fundamental. Tendo em vista este contexto, a questão de pesquisa que norteou esta investigação foi assim elaborada: Quais são as intenções da professora de Ciências em suas aulas? Para buscar a resposta a esta interpelação, conta-se com a gravação das aulas de Ciências da professora investigada no ano de 2019, que, em 2021, prosseguiu a pesquisa com a finalidade de compreender, a partir de alguns fragmentos mais representativos das aulas, quais eram suas intenções, enquanto realizava suas ações docentes. Para a análise dos dados, assumem-se os pressupostos da Análise Textual Discursiva. Os resultados de pesquisa aproximaram-se da concepção teórica de “intenção” proposta por Tomasello (2014), que se alinha ao Plano de Ação, composto pelo caminho executado pela docente durante as gravações, compreendido como as Ações: Expõe, Chama atenção, Gerencia a classe, Faz pergunta específica e Explica. E o Objetivo Central, que diz respeito ao desejo a ser alcançado pelo Plano de Ação, que, no caso, foi: Atender às especificidades e às necessidades da turma em que atuava relacionadas ao conteúdo, ao comportamento e à aprendizagem dos alunos. Essa proposta investigativa permitiu uma aproximação aos pressupostos de Tomasello (2014), voltados às áreas investigativas da Psicologia e da Linguística, no âmbito do ambiente educativo básico, isto é, de pesquisas pertinentes à Educação Básica.

PALAVRAS-CHAVE: Ação do professor. PROAÇÃO. Intencionalidade.

NOTES

1 A teenagers' TV show set in a school.

Authors' contributions: Author 1 was responsible for data collection and first draft of the manuscript presenting the first impressions regarding the investigative process.

Author 2 assisted the structural refinement process of the data analyzed, indicated improvements in the categorization process and carried out language revision in the Portuguese version of the manuscript.

Finally, author 3 assisted the elaboration of the whole manuscript, indicating and rewriting, mainly regarding the novelty of this investigation in relation to its approximation to the education context.

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