PUPIL’S QUESTION IN RELATION TO TEACHER’S INSTRUCTION STRATEGY

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Abstract

This Pupils’ questions are considered a crucial condition for the successful start of pupil learning. The ability to formulate pupils’ questions demonstrates the pupils’ involvement in the teaching process, their motivation to discuss the schoolwork and desire to resolve the problem. The teacher’s dialogue strategy promotes active communication by pupils during teaching and places emphasis on communication between parties involved in the educational process. 5 maths teachers of pupils of the fourth and fifth years, who focus on the dialogue teaching strategy, were included in my pilot research. This concern two novice teachers (with up to two years experience) and three teachers with eight – ten years experience. The research sample was selected. I established which steps the teacher purposefully takes to promote formulation of pupils’ questions by means of a semi-structured interview. The research conclusions demonstrate that the teacher’s intentionally chosen strategy can help the teacher create opportunity for pupils’ questions. The most crucial finding is the information that, according to the teachers, the most important thing is for the teacher to create learning tasks, which mobilise the pupils’ thought processes during the teaching process and the pupil endeavours to name the problem by asking questions. Questions placed in this manner are distinguished by their greater cognitive demands. Compared to previous research, we can state that the active participation of pupils in the teaching process also provides feedback for the teacher and demonstrates the effectiveness of the teacher’s teaching methods.

Keywords: Pupil’s question, teaching strategy, pupil’s ability to ask.

1 INTRODUCTION

Pupils’ questions are part of a child’s life. Expert literature mentions pupils’ questions as a phenomenon that reflects the pupil’s understanding in relation to the specific issue. The pupils’ question may demonstrate his involvement in the situation being discussed. With reference to Křivohlavý (1987, 74), who also agrees with Gavorá (2005) we can state that “if the pupil places questions and queries during the taught subject, he indicates to the teacher how he perceives the matter or issue, what point of view he has of the situation being discussed, how he perceives relations and rules, possibly demonstrates his inconsistencies that need help, or where he does not proceed as he should.” The depth of the matter being discussed unlocks opportunity for potential questions, which reflect the depth of understanding, disputation of the unambiguity of the solution and subsequently also the questioner’s interest in learning something more about the subject being discussed. The fact that the teacher purposefully creates an environment that is not strictly defined for answers to the teacher’s questions, but intentionally incites the pupil to ask questions by appropriately selecting his own questions, supports the pupil’s learning process (Pavelková, 2018; Švaříček, Šedová, & Šalamounová, 2012). It is also crucial, as Kuřina states (2002), that “education should ask questions, particularly by means of tasks, teach pupils to see the need to introduce concepts, learn to seek formulation of definitions, including consideration of the possibilities of defining various concepts variously.” If we view expert literature we will find that authors who analyse pedagogic communication discuss pupils’ questions. However, we were interested in how far their attention to pupils’ questions reaches. We found that pupils’ questions are never discussed separately, but as part of the communication interaction between the parties to pedagogic communication. By asking a question the pupil expresses his effort to participate in pedagogic communication (Šedová, Schedláček, Švaříček & Šalamounová, 2014; Šedová & Sledlack, 2015; Šedová, 2014; Šedová, Suchaček & Majcič, 2015). Another important aspect of pupils’ questions is that they have significant activation value. And, as expert literature states, it is important, from the aspect of learning, to activate the pupil towards achieving deeper understanding during tuition. If situations occur during the teaching process, when the pupil is willing to communicate and actively ask the teacher questions in relation to the schoolwork, the pupil is prepared and willing to attentively fulfil the assigned tasks. Intentionally placed questions demonstrate the pupil’s interest in the specific schoolwork, the willingness to resolve the assigned task and thereby participate in joint resolution of the problem. As
Abdullah, Bakar & Mahbob (2012) state, actually asking the question provides the pupil with “pleasure in sharing thoughts”. The pupil is actively involved in the teaching process and this makes his learning considerably more effective.

1.1 Teachers’ dialogue strategies when teaching mathematics

Curricular documents specifying the teaching of mathematics at primary schools in European countries point out the primary goal, this being realisation of vigorous activities, which are distinguished by their work with mathematic objects. The goal is use of mathematics in real situations. However, everyone creates their own mathematic world on the basis of concepts that are formed on the platform of adoption of crucial concepts, procedures and operations (RVP ZV, 2017; Kuňa & Půlpán, 2006). In our opinion, questions asked during mathematics classes are a fundamental aspect of the learning process. Kvasz (2016, 18) also confirms this idea when he states that “One of the key findings in this area is the finding that mathematics arose from dialogue.” Šedová (2015) responds to this argument and states that by asking a question the pupil becomes involved in communication and thereby creates the dialogue teaching process together with the teacher. Foreign literature also points out the importance of quality in teaching mathematics. Helle and Skovsmose (2003) find this quality not only in correctly reading and writing a specific algorithm, but also in the ability to critically interpret existing situations, but with the awareness that they discuss their own findings and mathematical facts in the context of social interaction. Leading Czech mathematicians ask how to make mathematics comprehensible to pupils and what environment to create for formation of informal knowledge in mathematics. In their research Stehlíková and Tichá (2011, 161) discuss the question of how pupils actually learn mathematics and what is the effective method of establishing and describing this learning process. They refer to the nineteen eighties, when attitude, opinion and communication “driven by the teacher” predominates. Petlák & Komora (2003, 29). Authors state that this transmissive method of teaching persists but must be innovated by new activation teaching methods, which will implement elements of humanisation. For instance, as Hošpesová (2016, 117) states, research-orientated tuition of mathematics means creation of an environment for the “student to be able to discover some of the knowledge he is to learn himself.” Within the terms of pupils' questions this concerns a change in communication structure, which profiles itself as an IRF structure in the traditional method of teaching. As Mareš (2016, 259) states “IRF: initiation realised by the teacher – pupil’s replica – teacher’s feedback to the pupil. In other words, communication exchanges initiated by the teacher predominate.” According to Kašparová, Starý & Šumavská (2011, 5), the “the strategy is perceived as the word superior to the concept of method. Organisational form is part of the strategy or method.” We can say that Teachers who choose the dialogue method for teaching communication, which they support by using supplementary methods, i.e. demonstration, chose a dialogue strategy. This is “distinguished by the permanent dialogue between the teacher and the pupil and the democratic climate” and this strategy is credited to a constructivist approach (Kuňa & Hejný, 2015)

The teacher’s dialogue strategy is distinguished by the teacher’s perceptiveness, particularly of impulses that interest the pupil. By means of a dialogue with the pupils, the teacher complexly monitors the pupils so that he best understands the pupils and the specific situation. When making decisions the teacher asks questions of himself, these being: Which of the offered options is better and contributes to the pupil's development? The teacher accepts a respecting value system, He prefers democratic actions and bears full responsibility for rational organisation of work in the class (Lehesvuori & Viiri 2015, 177). From the pupil’s viewpoint, when this teaching method is used “pupils ask questions or spontaneously comment the words of other speakers – to a specific degree they can influence the topics that will be discussed, and the direction of the discussion between the teacher and the pupils” (Šedová, 2015).

Authors studying interaction between parties to the educational process (Tůmá, 2016; Šedová, Sucháček & Majčík, 2015) agree that the teacher’s dialogue strategy is appropriate for examining pupils’
questions in interaction between the parties of communication. This seems an acceptable method “mainly because it affects joint formation of the relevance in interaction, the mutual reactivity of the parties and the dynamic nature of interaction” (Tůma, 2016, 416).

2 METHODOLOGY

On the basis of theoretical foundation I decided to establish how teachers on the first level of primary school create opportunity for pupils’ questions. This was based on semi-structured interviews, which are based on inter-personnel contact and whose success depends on “creation of a rapport between the researcher and the respondent” (Gavora, 2000, s. 110). We interviewed individual teachers after the maths class. We chose open-ended questions for the interview. The goal was to objectively evaluate the teacher’s viewpoint of the pupils’ questions appearing during the maths classes and find out how opportunity for these questions is created. The semi-structured interview method created opportunity for use of supplementary questions during the interview. The data was acquired in December 2018, whereas collection of data included observation of maths classes and the interview took place immediately after this observation. This paper implicitly presents only the conclusions from the interviews with the teachers, whereas it must be emphasised that no connections can be made between the researcher’s observations during maths classes and the subsequent interview. 5 primary education teachers were included in this pilot step. I purposefully chose maths classes where the teachers based their methods on dialogue teaching strategy. I focused selection on older pupils. This is why teachers of fourth and fifth years took part in my research. 2 novice teachers and 3 teachers with 8-12 years of experience (professional teachers) were included in the research.

The research sample was selected. The steps the teachers purposefully took to promote formation of pupils’ questions were established by means of semi-structured interviews.

Research questions:
The basic research question asked was:

- How does the teacher create opportunity for pupils’ questions?
- How do mathematicians apply dialogue teaching strategy?

The research sample was chosen by selection. However, this essentially concerned teachers who conduct the teaching process on the basis of the dialogue teaching strategy. As a researcher I observed available maths classes and critically evaluated whether the basic traits of dialogue teaching appeared during the class.

3 RESULTS

At the beginning of our research I asked the main research question, this being how do primary education teachers create opportunity for pupils’ questions. We created basic categories, which arose from our interviews.

3.1 Teaching tasks

The most important finding is that the teachers unanimously agreed on the fact that if we want: “our children to ask questions, then we have to think about choosing suitable learning tasks, which do not require repetition of factual information, but will support the child in considering the assigned task. The child can then work independently at his own rate and possibly ask questions, both of the teacher and his classmates.” (Lucie, teacher – professional). This testimony can be present the testimonies of the other teachers, who expressed similar opinions of the learning task. As Lukášová (2010) states, an appropriately chosen learning task provides opportunity to think and opportunity to discuss during tuition. And also opportunity for pupils’ questions as our results confirm.

3.2 Appropriately chosen teacher’s question

Another crucial finding is the teacher’s awareness of his approach in communication, or how he asks questions. As expert literature states (Mareš, 2013) the teacher’s question is also a learning task and the teacher should purposefully choose an appropriate question to mobilise the pupil’s thought processes. Teachers from our research sample stated the following about the aspect of the how well thought-out the questions asked by the teacher were. “I don’t want to tell them the result, which they
often ask me for, but I want to guide them onto the appropriate path for resolving the problem by asking thought-provoking questions” (Jana – novice teacher).

3.3 Organisational form

The typical and traditional mass organisational form of teaching is the most typical for teaching mathematics and other subjects. However, teachers participating in our research state that changes to the organisational form create the “perfect” environment for pupils’ questions. One of the research participants emphasised the importance of the method of pair teaching, which generates a great number of questions during his maths classes, which are intended for the pupil who is in the pair. “If possible, I use pair teaching. This is an organisational form that creates opportunity for pupils’ questions, the pupil receives an answer and can ask additional detailed questions. The children achieve better results and I know from their statements that they enjoy this organisational form very much.” (Lucie, teacher – professional). On the basis of the interviews we can state that a suitably chosen organisational form is based on democratic rules for the entire group and can help the pupil to penetrate deep into the specific problem being resolved.

3.4 Independence and freedom of choice

Another important category, which appeared during the interviews with the teachers, is support of the pupil’s independence when resolving a task. Teachers view independence as the basis for understanding mathematical tasks. “After reading the specific task not all the children have the same procedure as I do. They do not understand it. This is why I wait to see how they handle the task themselves. I wait to see how they approach the task. This strategy has also shown me to what degree the parents do the children’s homework for them”. Lenka (Novice teacher).

4 CONCLUSIONS

I endeavoured to address dialogue teaching in this text and establish how teachers on the first level of primary school create an environment for pupils’ questions. Teachers from the research sample agree on the fact that pupils’ questions are very important to them, but subsequently state that if they do not purposefully consider the strategy for pupils to be active in communication and willing to communicate during tuition, then pupils’ questions do not appear. Research has shown and the testimonies of the respondents have confirmed the words of Bachtina (1980, in: Šeďová, et al. 2012), which state that we can call it the actual dialogue method when “it includes alternation of different mental perspectives and each party involved in communication brings something original and unique to the communication and dialogue arises from the blending of various elements” (Bachtin, in: Šeďová et al. 2012, p. 162). Dialogue teaching demonstrates the actual situation in the class, when two pupils or the pupils and the teacher discuss a specific topic together. The teacher mobilises the pupil’s thought processes by asking one or more questions and the pupil answers. This well thought-out strategy is different and original for each teacher. This is certainly because each age group requires a specific approach and also because each teacher has his own pivotal approaches to teaching.

In-depth analysis of interviews with primary education maths teachers indicates that teachers practicing dialogue teaching methods consider pupils’ questions and the type of pupils’ questions, and purposefully focus on creating situations that produce these questions. Research results show that a purposefully and thoughtfully chosen teacher strategy may create suitable conditions and opportunity for questions asked by the pupil. On the basis of in-depth comparison with previous research we can say that during teachers using the dialogue teaching method guide the process towards active the participation of pupils in teaching communication. The questions asked by pupils also provide feedback to the teacher, reflection of the pupils and demonstrate the effectiveness of their teaching methods. We know from theory that pupils formulate their concept of the schoolwork immediately after communication and the mental processes that take place during tuition between parties involved in communication.

The second research question was how do maths teachers apply the dialogue teaching strategy? Teachers apply this teaching strategy purposefully using a suitably chosen learning task, which, in their opinion, is the basis for creating an environment for resolving the problem in the context of dialogue. Their testimonies comply with Mareš, who states that dialogue teaching is “a process that occurs during interaction with the teacher and through which pupils realise what is being taught themselves. It considered clearly more effective” (Mareš, 1997, p. 321).
However, there are boundaries within the terms of the executed research that lead us away from generalisation. This is factual information about the fact that the research was of a pilot nature and was based on interviews with teachers in relation to dialogue teaching. We see additional boundaries in the personal preferences of the respondents, whereas we know that three of the five participants support dialogue teaching strategies, but the others refused to express an opinion of their teaching strategy.

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REFERENCES