International Journal of Business, Human and Social Sciences
ISSN: 2517-9411
Vol:13, No:4, 2019

Pupils´ Questions at School Attendance Beginning and Teachers´ Teaching Strategy

Marie Pavelková, Hana Lukášová

Abstract**—**Pupils´ inquisitiveness at the beginning of their school attendance is reflected by characteristics of the questions they ask. Clearly most of the classroom communication sequences are initiated by the teacher. But the teaching process also includes questions initiated by pupils in the need to satisfy their need for knowledge. The purpose of our research is to present the results of our pre-research strategy of occurrence of pupil-initiated questions in math lessons at the lower elementary school level, and to reveal the extent to which they are influenced by the teacher´s teaching strategy. We used the research methods of direct and indirect observations of fifth year classes in primary school. We focused on questions asked by the pupils in their math lessons. Our research sample for the pre-research observation method was a collection of video recordings available online. We used them for analysing the nature of pupils´ questions identified there. On the basis of the analysis, we hereby present the results concerning the nature of pupils´ questions asked in math lessons on the lower elementary school level. The interpretation of the collected results will be the starting point for the selection of research strategies in the next research stages concerning pupils' questions in the future.

Keywords**—**Alternative strategies, 1ower elementary school level, pupil´s question, teaching strategies.

I. Introduction

PUPILS´ question is integral to the teaching process. The pupil initiates it for the following reason:

"*If a pupil asks a question, he/she suggests the way he/she sees the problem and its rules and relations and where the pupil´s knowledge has gaps or where the teacher does not proceed as he/she should"* [8].

The need to ask questions is natural to all human beings; we cannot act without knowing how an activity will be organised and what will be needed for it. Children of pre-school age abound with questions about their surroundings.

We hope that we will manage to contribute to learning about pupils' community via a microscopical view of pupils' questions in primary education. We tried to separate pupils´ questions from pupils´ questions with interrogative nature. The available research sample was analysed with regard to pupils´ questions and we tried to assess the real frequency and typology of the identified questions of the pupils.

II. Theoretical Background of Prior Research on Pupils´ Questions

The approach to pupils' questions and their function in the teaching dialogue is very broad today. One research direction is represented by research on pupils´ questions as a way to get an insight of the pupils´ thought. A research team of Michigan University implemented research on self-regulated learning [13]. If one has an insight into the pupil´s thought process, one can easily put oneself through one's own teaching objectives and adapt one's teaching strategy to the pupil´s limits and external objectives.

The authors present three categories of the pupil´s learning strategies which may generate various types of pupil questions: 1) Cognitive learning strategy 2) Personality regulatory strategy for knowledge control and 3) Resource management strategy [11]. If it is understood why the pupil asks his/her question and what he/she asks, one can get an insight into his/her thinking and thus contribute to his/her education at the very beginning of his/her school attendance.

Reference [1] speaks about appropriate question posing and how it can lead to creative and critical thinking and to the more effective learning of the pupil. Reference [5] describes that an appropriate teaching and learning strategy is important for pupils´ questions and that detailed questions help develop communication skills of the pupils.

Pupils´ questions in pupil-teacher communication can be understood not only as interrogative sentences but also as a problem or task to be addressed, and can be evoked by the teacher.

Questions are the starting point of every dialogue and are an integral part together with the answers [10]. At this point, it is also important to define the typology of interrogative functions of dialogue or questions revealing lack of knowledge of the speaker, expecting information and requiring an obligatory verbal answer of the partner in communication [15]. This typology reflects in pupils´ statements from our research strategy sample.

The other approach may be represented by analysis of the characteristics of pupils´ questions. Pupils ask questions at school, but what kind of questions? This question is answered by [15].

The authors [15] specify pupils´ questions by trying to answer the following questions about the context in which the pupils asked their questions:

1) **Finding out necessary information**, or "need to know" questions. A pupil called Mark asks: *What is the pronunciation of this name*?
2) Questions out of **curiosity,** or "I´d like to know" questions. Mark asks: *Did you buy it with your own money?*

Marie Pavelková is with the Faculty of Humanities, Tomas Bata University in Zlín, Czech Republic (corresponding author; phone +420 576 037 422; e-mail: mpavelkova@ fhs.utb.cz).

Hana Lakášová (Prof. Ph Dr.) is with the Faculty of Humanities Tomas Bata University in Zlín, Czech Republic (e-mail: hlukasova@fhs.utb.cz).

3) "**I don´t understand"** questions or questions requiring explanation, i.e., in the words of the authors, autonomous questions, when the question seeks details of a problem. Adeleide asks: *Was it indecent or what?*
4) **Polemic about a problem** is expressed by questions like "Isn´t it different," or confrontation with an understanding. Tony asks: *Miss, is "what I have not seen in my life" the first sentence?*

These types of questions are seen by the authors as the most frequently asked in the pupil-teacher dialogue. We do not want to analyse the frequency of asking but rather the quality of the nature of the pupil´s question at the beginning of school attendance. We will primarily use the name "autonomous question" for questions concerning particular maths themes.

The first observations already revealed that the occurrence of pupils´ questions might be related to the teaching strategy. Strategy in this context is understood as superimposed to method. The form of organisation is part of the strategy, or method [7]. **Transmissive teaching strategy** can be characterised in terms of an emphasis on concentration of the teacher on the lesson content with the ability of the pupil to comprehend it retreating to the background. Characteristic features of transmissive teaching include frontal teaching, or lecture-type presentation. Thus, pupils receive "ready-made" information [15]. **Alternative teaching strategy** means constructivist teaching model where the pupil - the subject - actively overcomes controversies, integrates new knowledge into the existing constructs and creates new constructs on a higher level. The most important feature of this strategy is inner activity of the pupil in the process [9].

II. Purpose and Procedure of Pre-Research Strategy

Current research shows that pupils are only rarely positioned at the beginning of the classroom communication sequence [3]. We tried to verify previous research results with our own observations.

The purpose of our pre-research strategy was to map the occurrence of pupils´ questions in maths lessons at lower elementary school level.

The pre-research strategy was implemented by indirect observation and analyses of video recordings of maths lessons; these were systematically selected to correspond to the research sample of fifth class elementary school pupils. Further direct observations were implemented across five maths lessons. For the purpose of the pre-research, we chose 10 maths lessons with 59 pupils in total.

Every observed maths lesson was analysed and the exact number of pupils´ questions was recorded together with their literal formulations. In the course of the video recording analysis or observation protocols, we observed strict rules of recording of the analysed questions. We noted down sentences ended with a question mark as questions. Also, interrogative [6] sentences requiring an answer were recorded as questions as their aim was to be replied to [4].

Our pre-research strategy was extended with an analysis of five maths lessons observed by a research worker personally present at the lesson. We would like to note in this place that on the basis of interviews of the teachers, we found that the presence of the research worker may affect pupils´ questions; this is why we systematically observed only maths lessons in two classes of elementary school. As the pupils accepted the research worker as their friend, we hope we managed to prevent communication shyness of the pupils. As shown by research Comadena and Prusánková (2008), on communication shyness [12], there is a significant inverse relationship between quality of pupils´ communication and their educational results. The higher the shyness, the poorer the results of their education, and vice versa.

III. Methods of Pre-Research Data Collection

We tried the observation method in our pre-research stage. As stated in the pedagogical research methodology [12] and [2], observation as a research method has been used in pedagogy for descriptions of certain real phenomena, on the basis of direct perception or instrumental registration of selected phenomena. Thus, one can distinguish between direct and indirect observation of pedagogical phenomena. We chose both observation variants in our pre-research. Direct observations were executed at the Emil Zátopek elementary School in Zlín and the Elementary School at Tečovice. The time of direct observations was 10 forty-five-minute lessons. The pre-research population included 59 pupils of the fifth form of the experimental elementary schools. Indirect observations were performed by recording pupils´ questions asked in the lessons (which we watched in the video recordings). In the case of longer pupil´s turn, the video recording was stopped, and the turn was noted down literally. Direct observation was performed by natural coding by the research worker. The coding meant that whenever a pupil finished a question interrogative sentence, we noted it down.

The pre-research strategy was based on non-structured observations [2]. Non-structured observation is not based on predefined observation systems. This observation notes down sample events or field notes. The observer works with detachment, unlike in the case of participative observation. Description of Pre-Research Subject Population

We chose a sample of ten lessons for our observations. We worked with the ten lessons. Five lesson recordings were taken from the database where lesson recordings are publicly accessible as part of the projects “Helping Schools to Succeed.”

Another five lessons were noted down on the basis of direct observation where the research worked was physically present in the classroom. We believe that direct observation provides equally as objective research material as online video recordings available.

IV. Pre-Research Results

The results were processed into two tables, one for direct and the other for indirect observations. The tables differ in classification of the observed lessons according to the prevailing teaching strategy of the teacher (transmissive and alternative, see below). The third table shows the results of the pre-research.

Comments on the tabulated research results:

1) Table I shows lessons based on the traditional transmissive teaching strategy of the teacher using frontal teaching.
2) Table II shows lessons recorded on video, intentionally selecting those using alternative teaching methods.
3) Table III shows the complex results of our pre-research.

TABLE I
LESSON BASED ON THE TRADITIONAL TRANSMISSIVE TEACHING STRATEGY

	Noted Down Pupils´ Questions	Organisational Question	Autonomous Question
Lesson 1	May I Do It?	X	
	May I Say Me?	X	
	Do You Know The Result?		X
Lesson 2	He Is Absent Again? Organisational	X	
	He Is At Home For Two Weeks Already?	X	
Lesson 3	I Only Want To Ask Where The Task Is, Please?		X
	What?		X
Lesson 4			
Lesson 5	What Do You Have, Jack?	X	

TABLE II
LESSON RECORDED ON VIDEO, INTERNATIONALLY SELECTING THOSE USING ALTERNATIVE TEACHING METHODS

	Noted Down Pupils´ Questions	Organisational Question	Autonomous Question
Lesson 6	May I Use This?	X	
	Do You Know the Result, Jack?		X
	So What Is The Result, Naty?		X
	How Much Were the Gloves If Their Price Was CZK 60?		X
	One Third?		X
	The Jacket Was Worth 1800?		X
	Satisfied?	X	
	Did You Want to Correct It?		X
	Is It A Quarter?		X
	This Does Not Show How You Calculated?		X
	Do You Know Where You Made the Mistake?		X
	Clara, How Much Is It?		X
	3 Times 0 Is What?		X
	Do You Agree or Not?		X
	12 Times 2?, 660: 2?,		X
	With Net D?		X
Lesson 7	Another One Would Fit, Am I Right?		X
	Another One Would Fit, Am I Right?		X
	Did I Confuse Two, Miss?		X
Lesson 8	How Shall I Proceed?	X	
	Can I Take More Stickers?	X	
	Give Us Five More Minutes, Please.	X	
	I Would Like to Ask Whether I Can Use A Different Procedure?		X
	They Were Fewer, Weren't They?		X
Lesson 9	Shall I Do It Again?	X	
	Barbara, Do You Have It?	X	
	Can I Take More Stickers?	X	
	Thirty-Seven?		X
	Can I, Miss?		X
Lesson 10	Do You Calculate?	X	

V. INTERPRETATION OF PRE-RESEARCH RESULTS OBTAINED

On the basis of the obtained research results one can state that they can be classified [15] according to our Table III, with the added category of interrogative function of sentences, for these turns were also recorded in the observed lessons.

We identified 38 pupils´ questions in the 10 observed lessons and the questions were of all the types we defined in our question typology, with different frequencies. The highest number of pupils´ questions were of the information findings type, 21 of the total 38. The questions requiring explanation were 6 of 38. The questions focused on problem polemic wer 4 of 38 and interrogative sentences were 4 of 38. Inquisitive questions out of curiosity were 3 of the total 38.

TABLE III
THE COMPLEX RESULTS OF OUR PRE – RESEARCH

Question Types	Number Of Questions	Transmissive Teaching	Alternative Teaching
Finding Out Necessary Information, or "Need to Know" Questions	21	4	17
"Do Not Understand" Questions Asking for Explanation	6	1	5
Polemic About A Problem, Expressed by Questions Like "Isn´t It Different", or Confrontation with an Understanding.	4	2	2
Interrogative Questions	4	1	3
Questions Out of Curiosity, or "I´d Like to Know" Questions	3	1	2

Clue: *Alternative teaching strategy*, *Transmissive teaching strategy*

If we finally compare the nature of pupils´ questions in lessons based on *Transmissive teaching strategy* and *Alternative teaching strategy*, we can see that the questions finding out necessary information were most frequent, 17 of 38. In the case of the transmissive strategy-based lessons, there were 4 questions of this type out of the 38. Generally, one can conclude that:

1) **More questions were asked in** Alternative teaching strategy-based lessons (Alternative teaching strategy = 29, transmissive teaching strategy = 9)
2) Order of questions from the most frequent in the case of Transmissive teaching strategy

1. **Finding out necessary information**, or "need to know" questions (4)
2. **Polemic about problem** expressed by questions "Isn´t it different" (2)
3. "**I don´t understand"** questions or questions requiring explanation, questions out of **curiosity** or "I´d like to know" questions with interrogative function (1, 1, 1)

3) Order of questions from the most frequent in the case of ASV

1. **Finding out necessary information**, or "need to know" questions (17)
2. "**Do not understand"** questions asking for explanation (5)
3. Interrogative questions (3)
4. **Polemic about problem** expressed by questions "Isn´t it different" questions out of **curiosity** or "I´d like to know" (2, 2)

VI. CONCLUSIONS

On the basis of the pre-research results obtained, pupils´ questions in maths lessons can be said to focus mostly on finding out information, 21 out of 38 total questions. We would like to emphasize that questions focused on finding out necessary information were also represented by more than a half of the total number of questions in lessons based on alternative teaching methods, namely 17 of 38. Interestingly enough, questions out of curiosity were represented in lessons based on alternative teaching methods in the proportion of 2 to 38 and in lessons based on transmissive teaching in the proportion of 1 to 38.

The method of indirect observation in pre-research was tested. On the basis of the obtained experience, we can say that this method will remain one of our preferred methods in future too. We will try to extend the research sample and grasp more detailed relation between pupils´ questions and field record of sample events in the context of which pupils´ questions can be identified.

ACKNOWLEDGMENT

The contribution came into being thanks to support from the IGA grant agency of Tomas Bata University in Zlín under reference number IGA/FHS/2017/005. Characteristics of pupils' questions at the beginning of schooling.

REFERENCES

[1] Fischer, R., 2011. Učíme děti myslet a učit se: praktický průvodce strategiemi učení.Praha: Portál.
[2] Gavora, P. 1995. *Výzkumné metódy v pedagogike*. Bratislava: Univerzita Komenského.17 - 56.
[3] Gavora, P. 2005. *Učitel a žáci v komunikaci*. Brno: Paido.
[4] Hirschová, M. 2013. Pragmatika v češtině. Praha: Karolinum, s.285.
[5] HU, Hsin-Wen, CHIOU & Guey-fa 2012. Types, Frequency and Quality of Elementary Pupils´ questions in an Online Enviroment. 11, no. 4, s. 325-335.
[6] Grepl, M. & Karlík, P. 1998. Skladba češtiny. Olomouc: Votobia. (460 - 466).
[7] Kašparová, J., Starý, K, & Šumavská 2011. Výukové strategie v praxi pilotních odborných škol. Praha: Národní ústav pro vzděláváníS s.5.
[8] Mareš, J., & Křivohlavý, J. 1995. *Komunikace ve škole*. Brno: Masarykova univerzita s.74.
[9] Mazáčová, N, 2014. Vybrané problémy obecné didaktiky. Praha: Pedagogická fakulta Univerzity Karlovy s.18.
[10] Nelešovská, A. 2005. *Pedagogická komunikace v teorii a praxi*. Praha: Grada s.39.
[11] Pintrich, P.1999, Role of motivaton in promoting and sustaining self – regulated learning.31(6), s.470.
[12] Průcha, J. 1995. *Pedagogický výzkum – uvedení do teorie a praxe*. Praha: Pedagogická fakulta Univerzity Karlovy s.37.
[13] Paris & Paris, 2001. Classroom Applications of Research on Self-Regulated Learning self-regulated learning. Educational Psychologist, 36(2), 89-101.
[14] Schvarz, J. 2002. Typologie interrogativních funkcí v dialogu. In Hladká, Z., Karlík, P., Čeština – Univerzália specifika 4. Praha: Lidové noviny s. 353.
[15] Švaříček, Šeďová, & Šalamounová, 2012. Komunikace ve školní třídě. Praha: Portál s. 9 - 150.
[16] Zormanová, L., 2014.Obecná didaktika.Havlíčkův Brod: Gradas. 27.