

Using Active Learning Methods in Lower Secondary Schools

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Abstract

Every teacher has a choice to choose the teaching tools which attract pupils. Active learning methods are good tools to delegate the responsibility to pupils and thereby motivate them to be active. The paper focuses on using active learning methods in lower secondary school lessons. We conducted a sample of 120 respondents - 70 pupils and 50 teachers of lower secondary school in Slovakia. Hypotheses were statistically verified by the chi-square test. We have found that pupils see discussion methods most used in their lessons.

Most of pupils find active learning methods attractive. From the teachers' point of view, the discussion methods are the most used in lessons, as well as from the pupils' point of view. Teachers see pupils more motivated, more active and more engaged when active learning methods are used. The most common response of pupils to active learning methods is their activity and joy. We believe that the involvement of active learning methods in teaching brings benefits not only for teachers but also for pupils. Teachers agreed that the biggest disadvantage of using active learning methods in lessons is their time demanding.

From our own experience we know that not only preparation of the lesson, but also its realization is time demanding. The research has revealed interesting facts and we believe that teachers will continue to deliberately use active learning methods in their teaching. It is very important to know active learning methods well, because we are aware of the fact that some of them are not so time demanding either in preparation or in realization of lessons.

Keywords:

Active learning methods
Lower secondary school
Discussion methods
Research

1 Introduction

The work of a teacher is undoubtedly challenging. It must be constantly developed, whether in the field of knowledge and didactic skills. The teacher is responsible for achieving the educational objective of the lesson. To achieve it, he must choose the right methods to help him complete that goal. All these methods should be as effective as possible. Different teachers very positively describe active learning methods and consider them the most effective. On the other side, we also know the traditional learning methods, which have been proven over the time, but many teachers reject them because they leave the pupils passive in the teaching process. For this reason, that has become a stumbling block for traditional learning methods. Today's teaching requires activity and work from the pupil. Just this process that aims to bring pupils into the classroom as best as possible, which will help them not only to better remember, but also to use higher thought operations than just passive listening to interpretation.

Activating teaching methods have the task of achieving the set educational goals, in particular based on their own learning activities and pupils' work. From a certain perspective, this may give the impression that the teacher is releasing the responsibility for teaching in these methods. However, this is not the case. The teacher is the one, who must prepare all these methods and activities so that the pupils learn as much as possible from their own activity. This also involves organizing and working with time, which are often the most difficult

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pitfalls for their teachers to use. Active learning methods make use of the knowledge and skills already acquired by pupils in their previous experience, which helps to make learning more effective. Thanks to all mentioned advantages of activating methods we can state that the topic of our diploma thesis offers space for further research.

2 Analysis of other research using active learning methods in lower secondary schools

The meaning of improving the teaching process is an open question not only abroad but also in Slovakia. Active learning methods are a way to advance the quality of education. This is confirmed not only by the theory, but also by the research carried out in this area. In this part of the paper we focus on the review of the latest research studies in the field of using active learning methods, we describe the realized researches in lower secondary schools, which took place in Slovakia but also abroad.

The aim of the research of Novanská (2017) was to find out the teachers' perspective on the use of activating methods in environmental education. The research was carried out on the basis of a questionnaire method in 140 teachers at lower secondary schools. The author was interested in the methods most frequently used by teachers, to which 59% responded that they used both traditional and activating methods. Very often 32% of teachers use motivating methods, 11% of teachers from time to time and 0% never. The next step in the research was to find out which activating methods are most repeatedly used by teachers. After analyzing the above data, the author states that didactic games are the most widely used method in environmental education, as indicated by 94% of respondents. The second in the highest response rate are 89% discussion methods. Respondents also stated methods of problem solving 74%. Staging 37% and situational methods 34% show a lower frequency. Respondents declared that the choice of teaching method depends mainly on the objectives of the educational process 81%, the amount of the curriculum per class 70% and the content of the curriculum 61%. Research shows whether teachers are looking for information on activating methods and from what resources. All respondents said they were interested in the topic. The most common answer was that they find information from the Internet 75%, which is the fastest way to obtain information on the subject. In the research, the author investigated what is important for teachers in choosing activating tasks/activities. Teachers also emphasize working with ICT 58%, developing communication skills 49% and creative thinking 38%. The most respondents create education activities themselves 59% or draw on internet resources 56%. Many respondents still pulling ideas from existing textbooks, collections of tasks and activities 46% or are inspired by popular science literature 41%. Some teachers also have the opportunity to take suggestions from colleagues 24%. In recent questions, the author asked about the advantages and disadvantages of using activating methods in education. In particular, respondents consider developing pupils' communication skills 63% and increasing their motivation to learn 52%. They also see benefits in the development of autonomy 44% and the ability to work in groups 41%. Respondents consider the time constraint to be the biggest obstacle in using activating methods. Activating methods are more challenging to implement 71%, prepare lessons 60%, teaching aids 24%, and maintain discipline in the classroom 6%. According to respondents 56%, less curriculum content is taken in less time than in the method of interpretation, and pupils must already have some knowledge of the subject in order to solve the problem 11%.

Skutil (2015) conducted a research that resulted in a comparison of educational approaches at lower secondary schools in the Czech Republic and Spain. He also paid attention to the use of teaching methods in practice. He conducted the research through observations and interviews. The author showed observations of 15 teaching units and 15 subsequent interviews in the Czech Republic and Spain. Research found that traditional teaching methods are used in the Czech Republic in 42% and in 39% in Spain. Activating teaching methods are used by the Czech Republic in 28% and 23% in Spain. The most used activating methods in both countries are: discussion methods, heuristic methods and didactic games. It has been shown that the main focus is on the group method and there are also considerable differences based on current trends in both education systems. The author notes that both countries are moving in the same direction in the concept of education. From interviews and observations, he found that teachers in Spain put more emphasis on group activities rather than individual skills.

Research on the use of active learning methods at lower secondary schools was also carried out by authors Skutil, Havlíčková, Matějčková (2016). The research was carried out at schools in the northeast of the Czech Republic. The authors focused mainly on finding out how teachers use learning methods, how they perceive

their use in the teaching process. Their results show that teachers use discussion methods and conversations and interpretations the most. Behind them the methods of working with text and graphical demonstration methods ended very closely. The authors state that this is exactly in line with constructivist thinking and that the aim is not only to pass on the information to the pupils but also to understand and be able to put it into practice. Also, of interest are the findings of the conclusions which teaching methods most favor teachers. Teachers said that the most popular methods are those that require activity and are associated with group work. On the other hand, the authors ask why they do not use them much more in practice? The results obtained show that teachers' thinking goes in the right direction, taking into account today's paradigms of education. However, the authors believe that the pressure from the education system, which is built as a component testing system, usually focused on learners' knowledge, will not hinder teachers from introducing more activating methods into the teaching process. In their conclusions, the authors state that research has shown that teachers are internally convinced of the need for constructivist education in primary school, which is also reflected in their internal preferences in choosing the teaching method.

Further research in Finland was conducted by Lingling (2017), which guided research on activating methods. He showed the research through interviews with teachers and made observations. Research results have shown that most teachers use active learning methods in the teaching process. The author notes that the actual application of active learning methods in classes helps teachers to apply classroom thinking and learning to students in the classroom. The author states in his report that all learning is inherently active, and national reports in Finland have also demonstrated the need to use active learning methods in teaching. It also considers it is important that teachers learn how to use active learning methods correctly and that they can stimulate students' active thinking and learning with these methods.

3 Context of the research and its goals

The main aim of the research was to find out whether active learning methods are used in lower secondary school, both from the point of view of teachers and lower secondary school pupils. The partial goals we have set:

- To find out, what active learning methods are most often used by pupils in their schools.
- To discover, what subjects, from the point of view of pupils, most teachers use active learning methods.
- To find out, what active learning methods pupils are interested in.
- To detect, whether teachers know, what active learning are and whether they use them in teaching.
- To identify, which activating methods teachers use most often and on what subjects.
- To find out, what are the advantages and disadvantages of using active learning methods in teaching.

We conducted a sample of 120 respondents - 70 pupils and 50 lower secondary school teachers in Slovakia. As a research method we chose a questionnaire. We had two types of questionnaires. The first questionnaire was designed for pupils. Questions were asked due to the age of respondents. The questionnaire consisted of 11 questions, the first two questions being informational for the researcher. The questionnaire contained both open and closed questions. There was a predominant type of question where pupils had opportunities. The presence of the researcher during the research completed the whole questionnaire and pupils had the opportunity to discuss potentially unintelligible questions. The second type of questionnaire was addressed to teachers. The questionnaire consisted of 12 questions, both open and closed. The questionnaire contained questions with choice of options, but also space for self-expression. In two questions there was also Likert scale, where we wanted to know the time frequency of the phenomena examined

We set out the following research hypotheses, which we then statistically verified:

Hypothesis no. 1- We assume that, based on the testimonies of both teachers and pupils, discussion methods are among the most commonly used active learning methods.

Hypothesis no. 2 - We undertake that, the frequency of using active learning methods is, according to teachers, once a week.

Hypothesis 3 - We take on that, teachers as the main reason for not using active learning methods indicate primarily the time required for preparation.

Hypothesis 4 - We assume that, teachers make the most use of active learning methods in foreign language lessons.

We verified the hypotheses using the Chi-square test (χ^2) and the level of significance, also called alpha. Its value is equal to 0.05 or 5%.

3.1 Analysis and interpretation of research results for the research subject

In the first part of the evaluation of the questionnaires we analyze the questionnaire intended for pupils and their view on the use of active learning methods at lower secondary school. Participated in the research was 70 pupils of the lower secondary school. We were interested in how pupils work most often. Pupils had the opportunity to mark several options. Most often, 21 % of pupils use teacher interpretation, lectures, teacher monologues and the same number 21 % of pupils agree that they also discuss with teacher and classmates. Subsequently, 13 % of pupils replied that they most often worked in groups in classes. A little less, therefore 9 % of pupils said that they most often play in the lesson game. The same number of pupils 9 %, agreed that they were using problem-solving tasks, computer work and an interactive whiteboard in equal proportions. At least pupils expressed the opinion that in the hours they examined, research and discover. It is clear from the above that the traditional methods of interpretation, lecture and teacher monologue still prevail at present. We were pleasantly surprised by the fact that in the same number of lessons there were also discussions with pupils and teachers. We assumed that heuristically oriented teaching would be in the smallest representation, which was eventually confirmed.

We also found out whether the teacher is trying to engage in the lessons of pupils, to involve them in teaching. Of the 70 pupils, 94% responded positively, which means that in their opinion the teacher is trying to involve them in the learning process. Only 6% of pupils said their teacher did not involve them in the process. In the affirmative response, we asked the pupils to express on what subjects the teacher most involved in teaching. We consider it important and effective for pupils to be constantly encouraged to take action and to teach more dynamically than just the teacher's explanation. Pupils are most often involved in the lessons of the Slovak language. English and German lessons are approaching the given number. It can therefore be assumed that the primary activity of primary school pupils is precisely in teaching foreign languages. An almost identical number of pupils stated that they were also active in mathematics, biology and history lessons. However, the number is lower than in foreign languages. We undertake that the reason is that language lessons have a higher subsidy at school, such as biology or history lessons. We also found out what subjects pupils work most actively on. It turned out that pupils are most active 30 % in Slovak language lessons. It is interesting to note that it is in the lessons of the Slovak language that the teacher is most interested in attracting pupils and engaging them in teaching. While 19% of pupils agreeing that they are most active in biology lessons, and 17% of pupils say they are in English lessons. When asked if pupils would welcome more such hours where they would be active, up to 77% would answer more hours where they would be active. We believe that 23% is a relatively high percentage of pupils who do not like hours where active learning are used. We believe that at present there is still a high percentage of pupils who are accustomed to traditional learning methods, and that is why they refuse more activity on the pupil. We also investigated whether pupils were also interested in teaching with the help of discussion methods, didactic games, problem tasks and other pupils. It turned out that 76% of pupils responded positively, which suggests that the use of activating teaching methods in teaching is more interesting to them. Many questions from the questionnaire confirm this statement. It can be assumed that pupils see the positive aspects in both traditional and activating methods in teaching.

Furthermore, we evaluated a questionnaire intended for lower secondary school teachers and their perspective on the use of active learning methods. Of the total number of teachers addressed, 96% said they knew what active learning methods are. Only 4% of respondents said they do not know what active learning methods are. Research results have shown that up to 74% of teachers use active learning methods in their lessons. The remaining 26% of teachers stated that they did not use activating methods in their lessons. We were impressed because, according to our expectation, lower secondary school teachers use more traditional methods than active learning methods. Most teachers 68% of responding to the question why they do not use active learning methods argue that their preparation was time-consuming. From the knowledge gained so far in the field of active learning methods, we know that, according to the authors dealing with the problem of active learning methods, it is one of the most frequently mentioned disadvantages of their use in teaching. Only 12% of teachers stated that they did not know any active learning methods as a reason for not using active learning methods and 2% agreed that their use in learning did not work well. We were also interested in the subjects in which active learning methods are most used. It turned out that most teachers apply active learning methods in Slovak and English lessons. In the case of the pupil questionnaire, the largest number of pupils agreed that the teacher is trying to involve pupils most in Slovak language lessons. Pupils also stated that they were most active in Slovak language lessons. An equal number of teachers reported that active learning

methods use in Biology and German language lessons. 12% of teachers said they used active learning methods in History and Geography lessons. When asked by teachers whether their pupils were more active, biased, more motivated in lessons when active learning methods were applied, up to 84% of teachers said yes, the remaining 16% answered no.

From the above we can conclude that the use of active learning methods has a positive effect on pupils. We rightly assumed that by using them, pupils would be more motivated, but especially more active than in lessons using only traditional methods. In finding out what the pupils' reactions to the use of active learning methods in classroom were, we learned out that the most frequently induced response in pupils in their use is activity. In some cases, teachers see the joy of using them. Surprisingly, it also provokes feelings of inactivity and boredom among pupils. We think that this is precisely because they do not want to work or are afraid to express their emotions and opinions. For this reason, we recommend alternating and combining methods, as it is very important to realize that not everyone is comfortable with the method chosen by teachers.

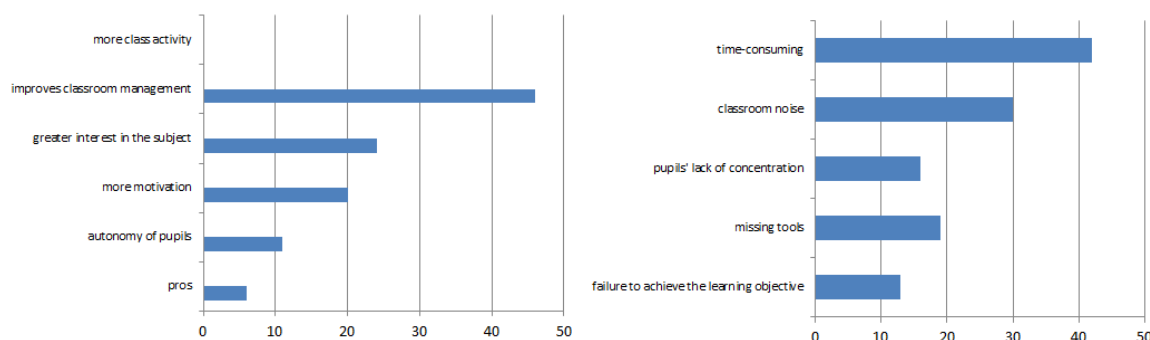


Fig. 1: The pros and cons of active learning methods

Each method has certain advantages and disadvantages. As can be seen from fig. 1 the most common benefits teachers have identified as the most pupils activity in the classroom. This statement was agreed 32 teachers. While 17 teachers believe that their use helps to improve classroom relationships. On the contrary, 14 teachers replied that pupils' interest in the subject in which activating methods are being used is increasing. Only 8 teachers claim that these methods increase motivation among pupils. And 4 teachers agreed that pupils were more independent in using these methods. As can be seen from the graph, the greatest number of teachers identified the time-consuming disadvantage of using active learning methods. We are inclined to claim that the use of these learning methods is not only difficult for the teacher to prepare for the lesson, but it is also time consuming to implement them directly into the lesson. Other disadvantages reported by teachers were: pupil's lack of concentration, lack of teaching aids and failure to achieve the teaching goal. We agree only to a certain extent with the last case, ie failure to achieve the teaching objective, as we assume that this phenomenon may also occur if the teacher chooses the wrong active learning method.

3.2 Interpretation of research hypotheses

In hypothesis no. 1, we assume that discussion methods are the most commonly used active learning methods.

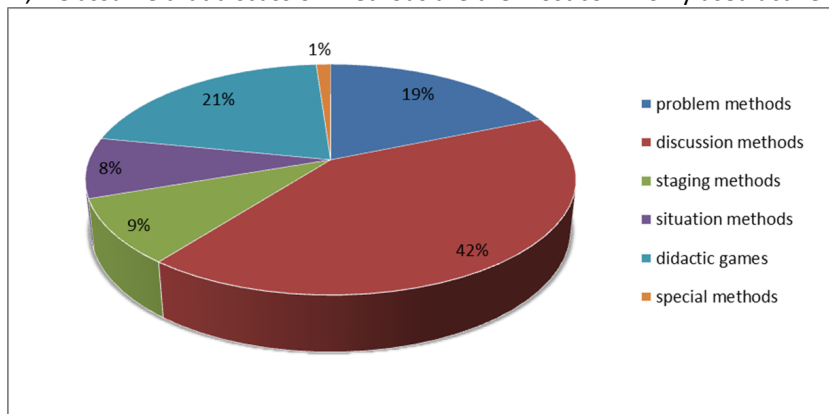


Fig. 1: The most commonly used active learning methods

As we can see from fig. 2 and statistical verification confirmed that we accept the null hypothesis at all common levels of significance, and reject the alternative hypothesis, that is, discussion methods are among the most commonly used methods in learning. Our assumption as to whether the discussion methods are the most commonly used active learning has been confirmed.

In hypothesis no. 2 we assume that the most frequent use of active learning methods in teachers is once a week. At the 5% significance level, we were unable to reject the null hypothesis, which means that they use the most frequent habit of active learning methods most once a week. By verifying the hypothesis using the statistical test Chi - square, the assumption has been confirmed, so the frequency of using the most frequent routine of active learning methods in teachers is once a week.

Hypothesis no. 3 we verified whether the time required is the main reason for not using the active learning methods in education.

Observed frequencies (reality):

	time demands	classroom noise	pupils' lack of concentration	missing tools	failure to achieve the teaching objective
Teachers	29	21	11	12	9

Table 1: The main reason for using the active learning methods

At all common levels of significance, we accept the null hypothesis, which means that time consuming is the main reason for not using active learning methods. The statistical verification confirmed our assumption, which means that teachers do not use active learning methods because of the time required.

In hypothesis no. 4 we assume that the most active learning methods are used by teachers in Foreign language teaching.

	Geography	History	Biology	Mathematics	Foreign language	Slovak language
Pupils	8	8	10	4	24	16
Teachers	12	10	22	35	19	35

Table 2: The most often objects in which are using active learning methods

At all common levels of significance, we reject the null hypothesis, that is, teachers do not use active learning methods most in foreign languages. In fact, research has shown that most teachers practice active learning methods in Slovak language lessons. For this reason, our assumption has not been confirmed.

4 Summary of research results

The main aim of our work was to find out whether teachers use predominantly methods or traditional methods in learning. Based on the research findings we can say that at present lower secondary school teachers use active learning methods more than traditional methods. Surprisingly, teachers and pupils agreed on statements about the practice of active learning methods in teaching. We have found that discussion active learning methods are the most widely used. We think that communication is very important in all areas of human life, so we were pleasantly surprised by this fact. We were intrigued by the fact that 2 out of 50 teachers did not know what active learning methods were. We assumed that the teacher was educated throughout the whole teaching period. According to the findings, teachers who have worked in the teaching team for 20 years or more responded. We recommend these teachers to lifelong learning, as we know that technology is a quick step forward. We believe that the involvement of active learning methods in their teaching will bring benefits not only for teachers but also for pupils. Using questionnaires we found that teachers use active learning methods once a week. We value this fact positively as we are of the opinion that it is not effective to use only one type of methods in teaching, or to use only active learning methods or only traditional methods. The most important thing is the right choice, but also the correct timing of the methods for the teaching process. One of our partial goals was to find out which subjects teachers use the most active learning methods. Our assumption was that they were most used in foreign language lessons. However, the statistical verification of the hypotheses proved that our assumption was incorrect. According to research findings, teachers mostly use active learning methods in Slovak language lessons. Last but not least, we were interested in the reasons why they do not use activating methods in teaching. From the theoretical point of view, we know that many authors cite time-consuming as the main reason for not using these methods. Research has confirmed this claim and also our hypothesis. Lower secondary school teachers agreed that the biggest disadvantage of using active

learning methods in teaching is time. From practical experience we know that it is time-consuming not only preparation for the teacher, but also the realization during the lesson. We consider it very important to have enough knowledge about active learning methods, because some of us knows that they are not so time-consuming, either in terms of preparation or realization during the class. We recommend that teachers consider choosing the right methods. We believe that it is not appropriate and effective at all costs to be innovative in teaching, and teachers should therefore not underestimate traditional learning methods.

5 Conclusion

Using active learning methods, the outcome of learning itself is deeply rooted. And even with very enthusiastic and committed teachers, it is often difficult to change pupils' habits in traditional teaching. Such a changes require constant training of teachers who should be familiar with the different forms and methods of working with pupils and should understand the benefits of using active learning methods. Their use is already a must if we want to attract and interest pupils in learning. We think it is important to emphasize that working with active learning methods can be more challenging for some teachers, but secondly, the goal of the lesson is fulfilled effectively. Active learning methods are intended to provoke a greater interest in learning by pupils and therefore it is necessary to base their assignment on the previous knowledge and experience of the pupils, to let them find new solutions, not to let them justify the procedure, to help them in justification.

References

- ČAPEK, R. (2015). *Moderní didaktika*. Lexikon výukových a hodnotících metod. Praha: Grada. 2015. 624 s. ISBN 978-80-247-3450-7.
- DORGU, T. E. (2016). *Different Teaching Methods: A Panacea for Effective Curriculum Implementation in the Classroom*. International Journal of Secondary Education. Volume 3, Issue 6, February 2016, p. 77- 87.
- HANULIAKOVÁ, J. (2015). *Aktivizujúce metódy*. Bratislava: Iris, 2015. 127 s., ISBN 978-80-8153-036-4
- HARAUŠOVÁ, H. (2011). *Ako aktivizujúco vyučovať odborné predmety*. Bratislava:MPC, ISBN 978-80-8052-396
- HRMO, R. – KRIŠTOFIKOVÁ, L. – BILČÍK, A. (2017). Quality Assurance in the School Environment. In : R&ESOURCE. ISSN 2313-1640. Special Issue 12, 2017, pp. 58-64.
- KOTRBA, T., LACINA, L. (2015). *Praktické využití aktivizačních metod ve výuce*. Příručka moderního pedagoga. Brno : Barrister&Principal, 3. vydání, ISBN 978-80-7485-043-1.
- LINGLING, X. (2017). *Preparing for Classroom Activating Teaching Methods durin Teacher Education in Finland*. Dostupné online: [https://www. utupub.fi/handle/10024/143438](https://www.utupub.fi/handle/10024/143438)
- NOVANSKÁ, V. (2017). *Postoje učiteľov k využívaniu aktivizujúcich metód v environmentálnej výchove na základných školách*. Č. 1,roč. 21, 2017, TU PdF Pedagogická fakulta, ISSN 1338-1024
- ORBÁNOVÁ, D. (2010). Prístup učiteľov k aktivizujúcim vyučovacím metódam. In: *8. Ročník mezinárodní konference Alternativní metody výuky*. Hradec Králové. Gaudeamus. 2010. ISBN 978-80-7435-043-6
- POKORNÝ, P. (2014). *Aktivizující metody ve výuce praktických činností na druhém stupni ZŠ*. Brno: PdF MU.
- PECINA P., ZORMANOVÁ L. (2009). *Metody a formy aktivní práce žáků v teorii a v praxi*. Brno : Masarykova Univerzita, Pedagogická fakulta, 2009., 147 s., ISBN 978-80-2104-834-8
- SKUTIL, M. (2015). *Teaching Methods in Primary School-Comparison of Approach in the Czech Republic and Spain*. 2nd International Conference on Education Reform and Modern Management ERMM 2015, s. 198- 200, Atlantic Press
- SKUTIL, M, HAVLÍČKOVÁ, K. , MATĚJČKOVÁ, R. (2016). *Teaching methods in primary education from the teacher's point of view*. SHS Web of Conferences 26. Dostupné on-line: [https://www.shs- conferences.org/articles/shsconf/pdf/2016/04/ shsconf_ erpa2016_01001.pdf](https://www.shs-conferences.org/articles/shsconf/pdf/2016/04/shsconf_erpa2016_01001.pdf)
- SZŐKÖL, I. (2019). *INNOVATED STATE EDUCATIONAL PROGRAM FOR PRIMARY EDUCATION*. In. Journal of Language and Cultural Education, 2019, *Special Issue 17*, s.256-261., ISSN 2313-1640
- TÓBLOVÁ, E. (2019). *Aktivizujúce vyučovacie metódy – analýza využívania aktivizujúcich metód*. Bratislava: Univerzita Komenského v Bratislave, 2019. 1. vydanie, 146 s., ISBN 978-80-223-4817-1
- TROJAN, V. (2016). Sdílení pedagogického procesu jako východisko rozvoje školy. In: Veteška, J.: *Východiska a inspirace pro teorii a praxi vzdělávání dospělých*. Praha, ISBN 978-80-905460-6-6
- ŠOLTISOVÁ, Z. (2014). *Aktivizujúce metódy pri vyučovaní odborných predmetov. Osvedčená pedagogická skúsenosť edukačnej praxe*. Prešov, 2014. Vydavateľ: Bratislava MPC