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Some principles applied to Action Research in Lithuania

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The paper presents a conception of action research-based pedagogy in primary education, which is carried out by prospective primary school teachers, i.e. student teachers of a Lithuanian university. Action research is an appropriate way to implement educational practices that take into account the needs of each pupil, by solving problems and creating authentic educational content in each classroom. Since pupils' critical thinking skills in argumentation are a weak area in primary school in Lithuania, the article describes the methods and solutions to the problems applied in the practical activities. It should be noted that the choice of active learning methods, such as debates and group work, not only helped to improve the achievement of primary school pupils, but also increased their motivation to learn.

Mots-clés :
Primary school teachers, Pedagogical principles, Action research, Primary school pupils

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On Action Research

The article analyses the practice experience of future primary school teachers, i.e. student teachers of a Lithuanian university. During these placements, the student teachers, in consultation with highly experienced master teachers working in primary school, planned, organised and carried out action research in their work with primary school pupils. Research-based pedagogical activity has been a priority of Lithuanian educational policy for many years, emphasised in various educational documents and strategies. Through this action research-based practice is student teachers desire to have highly reflective, but also about their pedagogical activities based on the development of reflective skills, i.e. enabling primary school pupils to rethink what they have done, how and why they have done it, the result they have achieved. We recognise that the priorities identified are of great importance for the science and practice of education in Lithuania. However, we increasingly hear concerns from practitioners that there is a lack of research research to justify how these activities can be organised in a qualitative way. Many countries are adopting inquiry-based activities in the classroom: for example, *the French Scientific Council of National Education* identifies as educational priorities the strengthening of inquiry-based practices, the development of a plan for problem-solving strategies and the implementation of inquiry-based strategies in educational realities (Algan, 2021). The relevance of Action Research

and its application in updating pedagogical practices is highlighted by Lafontaine (2016), who argues that these practices are meaningful and useful, but rarely based on research literature. The researcher presented a study on how she trained primary school teachers to use Action Research methodology in small schools in socially disadvantaged settings. In general, Action Research is defined as the systematic exploration of how to change the current state of educational practice, to find new ways of doing things that will bring about positive change for all those involved in the educational process, i.e. to improve pupils' learning and attainment (Anderson, Herr&Nihlen, 2007; Menter, Eliot, Hulme&Lewin, 2011; Efron & Ravid, 2013; *The Education and Training Foundation*, 2021). This activity enables the planning of a strategy for action, which is then implemented, systematically monitored, reflexively reflected upon and modified (Clark, 2012; Lafontaine, 2016; Carignan, Beaudry &Larose, 2016; Eden & Ackermann, 2018). Action research engages the teacher as a researcher to take ownership of a particular learning problem (Macaire, 2007), as well as increasing teachers' capacity for professional development, autonomy, and the ability to evaluate and take responsibility for educational practice and its improvement (Efron & Ravid, 2013; Messikh, 2020). In the current study, the action research has contributed to improving students' linguistic reasoning skills in relevant subjects. The educational practices were changed in the presence of different social partners, i.e. student teachers, a master primary school teacher and a university researcher. All partners were able to find solutions for changing the educational practices in the context of developing students' linguistic skills in argumentation through collaborative inquiry.

General criteria

The OECD (2011) identifies a number of criteria related to the quality of education: the quality of the learning processes, the quality of the structured content of education, which constitutes the basis of the experience and the quality of the impact on the child. All of these components take place in a specific situation and can therefore be explored and improved through action research. Action research has been identified by the European Commission as a valuable educational intervention, taking into account the needs of children, especially in the early years, as a very favourable way to address educational situations in socially vulnerable contexts (according to Eurydice, 2009).

Action research-based pedagogical practice is one of the most realistic ways of implementing a teacher's deep understanding and reflection on their own practice, which involves getting to know the pupils, planning the activity in the light of the pupils' experiences and contexts, setting and implementing specific expectations and outcomes, and reflecting on the process and the outcome. It should be emphasised that it is not only the teacher who needs to do this, but also the students who need to be aware of all the steps. Miehakanda (2014) emphasises the organisation of education in the context of different cultures, and also points out that students still have limited participation in the educational process, and that educators rarely choose pedagogical methods that take into account the individuality of students. Furthermore, education is seen as the construction of knowledge through active engagement, to which each

student brings his/her own attitudes and values. For these reasons, it is necessary to take the pupil into account and provide him or her with the necessary support or activities in at the right time. According to Miehakanda (2014), the teacher must carry out continuous action research in relation to pupils' achievements, which includes three key interrelated areas: selection of curriculum content and activities/methods, facilitation of interactive tasks, and dynamic inductive knowledge building/skill development. An important role is played by the 'permeation' of the whole educational process with reflective procedures, i.e. inductive and deductive reasoning, whereby there is continuous empirical monitoring of activities, breaking them down into detail, grouping them and synthesising them. These reasoning operations enable the educator to make informed and reasoned decisions about the education of students. The goal of education is the progression of each learner, and it is therefore essential to tailor teaching materials and methods to the pupils.

Action research is the way forward organising a progressive educational process, as the pedagogical approach involves both pupils and teachers. Choosing the right methods is important to ensure that every pupil can learn in a way that suits them. An inductive posture allows the teacher to continuously analyse the situation and evaluate the meaning of the chosen learning tools, which helps to develop the pupils' logical and critical thinking. Action research leads learners to take responsibility not only for their own learning, but also for that of their classmates in the cooperative group (after Ys, Mara, 2011). This strategy a systemic approach to enquiry that enables people to find effective solutions to problems encountered in the implementation of educational content and to deal with them appropriately. This research allows teachers to focus on a specific situation and address it qualitatively. If the right tools are chosen, the effectiveness of their teaching can be increased. Action research is particularly useful in classrooms, where teachers act as researchers, making decisions and changes to improve the quality of their own teaching. Unfortunately, if the methods chosen are not very advanced or appropriate, the pupils suffers because their reflective procedures are not developed (Miehakanda, 2014). In Lithuania, the priority for future student teachers is actively involved in the organisation of action research, increasing the quality of practice (*The Regulation on Teacher Education,* 2018). If the goal is to achieve educational practice based on action research, school teachers should be willing, to show each other successful cases, to analyse them and to support each other in this process, and then is likely that change could occur (after Ys, Mara, 2011). In order for the pupil to develop, he/she should be offered different strategies from which the child, after activating his/her thinking and attention, can choose and give reasons for his/her choice. The arguments presented allow the pupil to develop and summarise his/her point of view on various issues.

Empirical principles

Inquiry-based education goes hand in hand with active pupil engagement and participation. The key features of this type of education are the following:

1) Pupils must be active participants in activities rather than passive listeners;

2) The focus is on developing and improving skills rather than anly knowledge, and listening to information;

3) Pupils are engaged in a wide range of activities;

4) They learn to reflect on how they learn (from Ys, Mara, 2011).

Lafontaine (2016) points out that primary school teachers tend to support students by organising activities according to the individual needs of pupil. Teachers are looking for ways to reach pupils who live in low socio-economic environments, but they are often reluctant to find these ways themselves, and are therefore willing to collaborate with researchers. It is not only a question of finding ways to develop academic skills, but also of stimulating and supporting pupils' motivation. Most researchers provide the elements of action research such as *preparation, implementation* and *integration* (Gauthier, 2010; Riente, 2010; Lafontaine, 2016). Before carrying out a complex task or activity, the future primary school teachers must think about the three phases which consist of learning and evaluation activities.

In term of approaches

The *preparation phase* provides a scenario describing how, what and why the learning will take place. All this allows students to activate their prior knowledge of the subject and to reflect on the objectives on the objectives of the proposed activity, the expected product, outcome and the implementation instructions provided.

The *implementation phase* is more oriented towards learning activities, with active participation of pupils in relation to the learning and assessment objectives. In this phase, support is provided, which can be provided by the teacher or by the students. In addition, feedback is rendered and one or more interim assessments may be carried out after each learning activity. These assessments give an indication of how the child is progressing towards the desired outcome.

The *integration phase* delivers activities that allow pupils to summarise their learning and show the final outcome, which should also be assessed. Time for celebration and reflection on the activities carried out by the pupils is very important in this phase. It is useful for both the researcher and the teacher to be involved in the action research (Lafontaine, 2016). The discussions can take many forms, including classroom observations, video analysis of students' activities and remote consultations between teachers. The actions and activities are the key elements and the link between research, teaching and learning.During the activity, there is interaction between the primary school teacher, the student teachers and the university researcher. Of course, an educator can occupy two roles at the same time, both teacher and researcher.The teaching component and the data collected during learning allow research to inform and improve educational practice. Let’s note that Lafontaine (2016), Wennergren (2016),

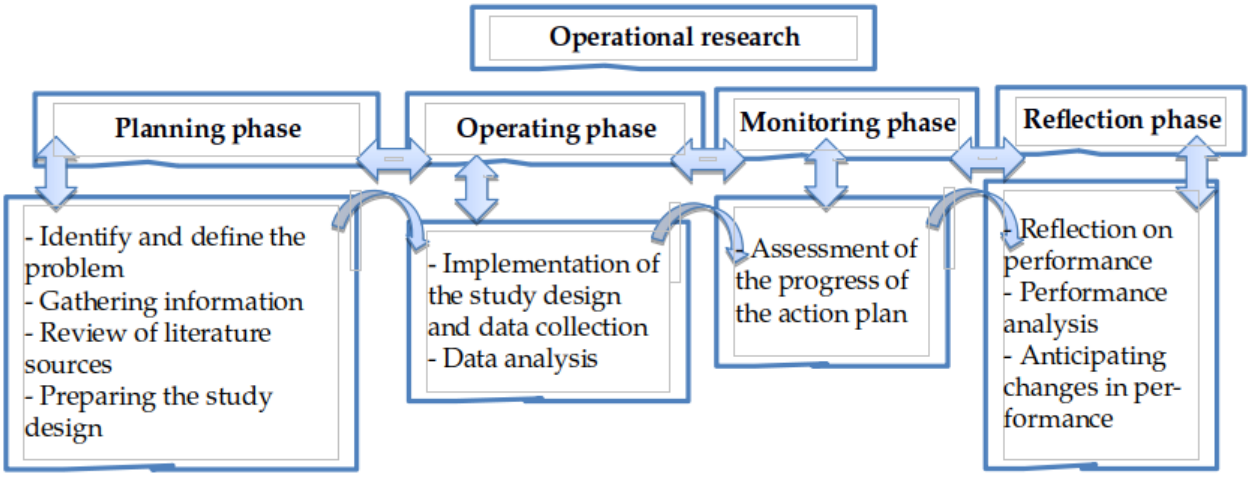
Wenger (2018) and Johannesson (2020) respectively emphasise that during professional development events, educators should reflect on their own practice, analyse and discuss what is going well, and look for ways to overcome what is problematic. Indeed, such activities, where participants reflect on their practice, adopt and experiment with new ways of working in their classrooms, bring about lasting change. For this to happen, the learning needs to take place over a sufficiently long period of time, and educators need to come together systematically to reflect on their experiences, discuss what they are doing and what has improved.

In the context of action research, researchers such as Charlier (2005), Lafortune (2006), Prud'homme et al (2011), Miehakanda (2014), and again Lafontaine (2016) suggest that young teachers who have chosen to study pedagogy should also be trained in action research. This way of working allows them to reflect and build social relationships, to go back and reflect, and at the same time to deepen their knowledge. Through deep reflection, teachers will have a better understanding of their daily activities and make more informed and reasoned decisions. This research combines academic research, reflective practice, pedagogical innovation and teacher education. However, we find that according to Wennergren (2016) and Davis et al. (2018) that conducting action research in educational practice is difficult for student teachers, given it requires a lot of time and professional skills to conduct action research. Therefore, school communities themselves should be involved in conducting action research in the classroom, especially when the aim is to improve pupils learning (Dimmock, 2016; Johannesson, 2020). Teachers need to have a good understanding of the conceptual foundations of student learning. It is recommended that teachers have a colleague in the school with whom they can consult, they can engage in deep critical reflection and discussion about classroom activities. In this case, both educators can expect pedagogical growth if they not only consult each other but also try out new practices that they reflect on (according to Wennergren, 2016). Otherwise, teachers tend to opt for a comfortable presence, which does not lead to qualitative change in the educational process. On the other hand, it has been found that if teachers spend too much time reflecting, the planning and quality of the activities they lead may also suffer (according to Johannesson, 2020), as well as changes in the assessment system, where the criteria are oriented towards improving the results of each student rather than their ranking (Rey, 2012; Rey, Feyfant, 2014; Béduchaud, 2021).

Methodology of empirical studies in Lithuania

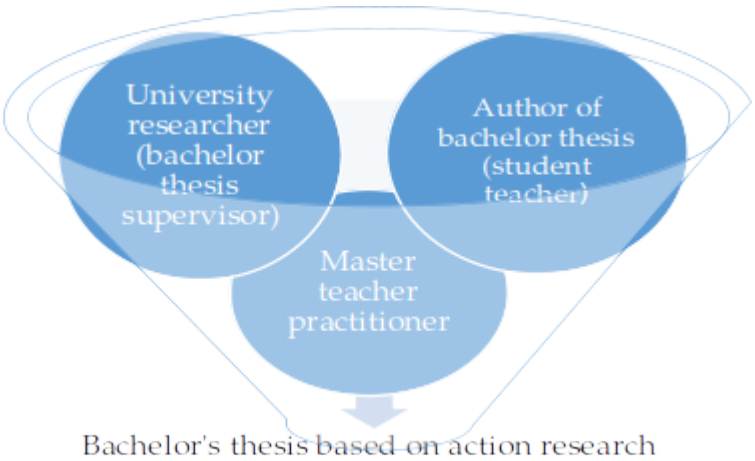
We have analyzed 40 undergraduate theses that were submitted by student teachers to obtain a B.A. in Primary Education at Vytautas Magnus University. These theses were all on the subject of action research. We analysed the work for common themes to understand how student teachers implement action research in student teaching tasks. The study was conducted using a thematic analysis strategy. The analysis of the works

was carried out by selecting them according to their connecting themes and the educational problems they analyse. The data was analysed by discussing the themes of the action research, the research questions/problems to be solved, the chosen approach to problem solving (method), and the identified benefits and difficulties of action research. The development of teacher research competence is linked to the ability to choose in educational practice: the educational strategy, the structure, the appropriate research methods and the organisation of professional research (*Description of Teacher Professional Competence*, 2007).



Performance review flowchart covering all phases of the activity (by Mertler, 2009, p. 31)

The practice of a future primary school teacher in the preparation of his/her bachelor's thesis is a practice that focuses on the performance of pupils in solving specific learning problems, i.e. on optimising this performance (Sensevy, Toullec-Théry & Nédélec-Trohel, 2006). The first step in the planning phase of an action research study is to define the research question or identify the problem the student teacher wants to investigate. Then you need to gather information, review the relevant literature and look at similar studies that have already been carried out on a similar problem. Once the information is available, it is possible to plan specifically the methods of conducting the research, i.e. how the pupils will be taught how to solve the problem, and the methods of collecting the data, i.e. how the researcher will record the data. In the operational phase, both the educational process and the data collection take place. In the observation phase, the researcher analyses and interprets the data, the information available on the educational process and the outcome(s). In the reflection phase, conclusions are drawn, shared, but also changes in activities are envisaged; new problems may be identified, and the same process is repeated in a cyclical way(according to Efron & Ravid, 2013).In order to carry out the research activity (action research) and solve the identified problem, each student teacher, author of the bachelor's thesis, collaborated with the supervisor of the bachelor's thesis (university researcher) and a master teacher:



Collaboration scheme for action research (for a bachelor thesis)

Analysis of descriptions of student teachers' interactions (behaviours, actions, intentions, emotional reactions), facts, events, their reflections and reasoning recorded in the action research reports took into account the implicit alignment of the roles of the student teachers and the master teacher, and probably provided a higher level of data reliability (Bitinas, RupšienÄ and Å½ydÅ¾iÅ«naitÄ, 2008; Norton, 2010). Qualitative content analysis (Å½ydÅ¾iÅ«naitÄ, Sabaliauskas, 2017; Weber, 1990) identified significant thematic categories/units: topic, research question-problem to be solved, method(s) of problem solving, evaluation/reflection of the activity (benefits, difficulties), anticipation of changes in the activity. These thematic categories allow for a systematic evaluation of the phenomenon under study.

We present below only a small part of the study in order to illustrate the problems that were addressed by applying action research in primary teaching practice:

Objective-based problem solving in learning to argue in the context of different subjects

Subject of the action research study	Method used in the activity	Solutions/outcomes of educational problems
Developing critical thinking through argumentation	Debates based on the analysis of a literary work (n=1)	*Debates encourage pupils to think, listen, express themselves and argue.* Pupils learn to formulate a thesis and to argue it.
	Discussion on reading the works (n=1)	*Pupils are able to express an opinion in a sentence and support it with arguments.* Pupils are better at oral argumentation than at written argumentation. Pupils are able to evaluate their own and each other's performance in a discussion.
	Written argumentation skills in the context of integrated teaching (n=1)	*Pupils are able to express an opinion in a proposition and support it with at least one logical argument*, but they have difficulty explaining the concept of argumentation and recognizing an argument.
	Analysis of historical sources (n=3)	*Pupils are able to identify an appropriate source to support a claim and correctly identify the arguments given in the source; argue for the evaluation of past events; and present credible arguments.* Challenges include using sources to make a valid claim, supporting arguments with evidence (primary sources), assessing the credibility of a source and selecting a credible primary source.
	Getting to know the area according to the plan (n=1)	*Pupils use different signs to represent the route*, sometimes drawing what was in the environment. *Pupils are able to justify their opinions and give different arguments;* they understand and can represent the directions of countries around the world*; they are able to compare maps and plans and explain how a plan differs from a drawing. Pupils find it difficult to determine distance by eye.*
	Exploration of the aquarium (n=1)	*Pupils can only argue if they are talking about content that they have experienced themselves.* They should be taught to argue systematically, analysing the different contents of the natural sciences.

The development of critical thinking through argumentation can be developed in different subjects by allowing pupils to formulate theses and arguments based on the content they analyse, for example by referring to texts they have read, historical sources or by studying an aquarium. The study showed that primary school pupils are able to formulate a thesis and arguments on the basis of the analysed material, and are able to justify their opinions. It is recommended that similar activities be carried out more frequently and systematically so that pupils can learn to use arguments to justify different aspects of the subject content.The right conditions must be set up for such an educational process: creating a safe, attractive classroom environment, linking the development of language skills to other subjects, learning about cultures, and developing critical thinking skills. It is important to base the educational process on the concept of the dialogical space (pair or small group discussions : Pitsia, Karakolidis & Lehane, 2021). It is useful to use technology in a targeted way: to record pupils'

reflections, conversations, presentations and to analyse this content by listening to audio recordings or watching video recordings (Wagner, Skaftun & McTigue, 2020; Monteiro, Mata & Nóbrega Santos, 2021).

Some conclusions

Putting action research into practice, with the right approach and tools, tends to improve pupils' learning outcomes and their motivation to learn. The use of active learning methods (debates, discussions, analysis of historical sources, comparison of several objects over time, experimental practice, learning in green spaces, nature, etc.) was clearly appreciated by the pupils.

Learning together, working in pairs or small groups are activities that pupils enjoy because they can interact, discuss and be left alone. They learn to express their opinions in a reasoned way, supported by facts, verified by reliable sources. Pupils feel that the support of their classmates is important and they feel and receive respect.

Master teachers usually advise student teachers doing action research to help them get to know the classroom. Student teachers can choose their own active learning methods that increase pupil motivation and achievement. They also benefit from training courses, as the attendees can learn from student teachers who base their practice on active learning methods and learn from each other.

In conclusion, the use of action research in the training of future primary school teachers in Lithuania has proved to be successful. Student teachers learn to identify and solve problems that enable them to improve the quality of the educational process and pupils' learning achievements.To further change educational practice, teachers with extensive experience should also be trained in action research methodology.This issue is also related to the changing practice of teacher education in Lithuania. Twenty years ago, teachers were trained in content, i.e. they analysed what topics to teach, but mostly they did not learn how to teach, i.e. what advanced methods to use to make pupils learn.The biggest change in contemporary educational practice is in the way future student teachers learn how to teach, i.e. thinking about choosing the right methods and adapting them to each pupil in primary school.

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