THE IMPLEMENTATION OF ACTION RESEARCH IN THE PROFESSIONAL DEVELOPMENT OF TEACHERS COMPETENCIES

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Abstract

The professional development of teachers represent one of the most important factors for insuring quality education. Action research enable the teachers to actively participate in the process of analyzing and improving their own work. Through them conditions for critical reflection and professional education are created. The teachers gain the opportunity to identify the challenges that they are faced with during the education process. At the same time, they develop planning skills, implementing and evaluating different teaching strategies. Action researches contribute to the improvement of teaching and learning quality. This approach prompts collaboration between teachers and exchange of teaching experiences. Moreover, action researches strengthen the feeling of professional responsibility and self confidence in teachers. They enable the connection of theoretical knowledge with the practical work in the classroom. In that way the base for competencies development is created which is needed for successful realization of the educational process.
The contemporary tendencies in teaching are stressing the importance of the teacher as a researcher of their own practice. Like researchers who work on a bigger project we identified action research as an important tool for professional development of teachers. The theoretical part of this voluminous research will be presented on this paper.

Keywords: Action research, professional development of teachers, professional competencies of teachers.

1. Introduction

Action researches are taking a significant place in the contextual and situational learning of a teacher. The specifics of an action research are more recognizable, more understandable and more acceptable because of the processing, focus on their own issues and focus on personal development and the development of their own classroom. Teacher's professional development is becoming more and more mandatory, a requirement for improvement and a necessity to anyone who is motivated and dedicated to achieve success in the teaching of their students. This paper intends to present the relation of action researches with the professional development of teachers in an original manner, meanwhile announcing empirical findings in the near future.

2. For critical action researches

2.1 Recognition of action researches:

To describe action research maybe it is necessary for us to make a comparison and a short elaboration of the traditional, or classical researches. For that purpose we will use the definition given by Mills and Gay (Mills & Gay, 2016, p. 5). According to them "the purpose of a traditional educational research is" to explain, foresee and /or control the educational phenomenon "(Mills & Gay, 2016, стр. 5). To achieve this, the researchers try to manipulate and control specific variables (the statement given by the researcher which predicts what will happen or explains what will the studies conclusion be). The education researchers are focused on the manipulation of independent variable and its impact on the dependent variable. The independent variable is an act or characteristic under the researchers control and for what is

believed that it impacts on another act or characteristic. A dependent variable is a change or a difference in the behavior or characteristic which presents itself as a result of an independent variable. The word control is not used here in a negative connotation: furthermore, it describes one of the characteristics of a traditional, quality oriented research, in which the researcher must control the environment for him to draw conclusions about action-consequence connection." (In: Mills E. G., 2018, pp. 4)

On the other hand Mills and Gay state that in action researches " Researchers- teachers who study their own practices are differentiated from traditional educational researchers (who research something other than their won practices) because they are dedicated on undertaking action and realization of positive educational changes in their own classroom and schools based on their findings. Traditional educational researchers maybe won't be able to influence on the subjects of their studies because they are out of their scope of control. "(Ibid, pp. 5). The sense of professional development through action researches is explained by Osterman and Kottkamp (Osterman and Kottkamp, 1993) and according to them it is "chalk for reflective practice" which means that "everyone has a need for professional development; all professionals want to improve; all professionals want to learn; All professionals are capable of undertaking responsibility for their own professional development and growth; people need and want information for their performance. Collaboration enriches the professional development. (pg. 46) "According to the same authors 'when teachers gain new understandings of their own behavior and their students' behavior through action researches, they are authorized to improve the lesson in many ways:

- They take informed decisions about what needs to be changed and what doesn't
- . They connect previous knowledge with new information
- They learn from experience (even from failure)
- They ask questions and find answers systematically. (Fueho and Coorland, 1997) "

(Hui M.F. & Grossman L. D., 2008) „ Emphasise that the creative aspect of action research and its development rely on the capability of the researcher to organize, implement, perfect and evaluate the new test product, plan or procedure." Other authors have also written for the essence of action research. Like Norton

(Norton S. L., 2009): „ The process of action research encourages the academic to undertake control over their own professional development by being active learners." (Norton S. L., 2009, pp. 23). Norton builds his stance based on the understandings of Hannay, Telford and Seller (Hannay, Telford and Seller, 2003) who agree with it because action research:

„ Encourages the teachers to have responsibility and initiative for change;
- Encourages collaborations;
- Increase the preparedeness of teachers to invest time on solving issues;
- gives teachers a voice."

They use a frame for action research in a Canadian school, as an alternative method of evaluating the teachers, and found many benefits, including significant changes of:

- to be and artificial process of rreal problem solving;
- events to process на;
- isolated towards collaboration (which had the benefit for the school because it made the individual unspoken knowledge into a collective explicit knowledge)
- Caution for the competences of professional learning." For Johnson A. action researches are… process for studying the school, classroom or the situation of teaching and learning with the purpose of understanding and improvement of the quality of education and activities.

For Bradbury and collegues (Bradbury H., Lewis R. & Embury C. D., 2019) „ Action research can be considered a path that enables the participants and interested parties to connect with each other, to discuss, to dream and to undertake action and to follow their efforts for creating

the classroom community they want. “For them action research is an invitation to observe, listen and undertake action together with others in different manners.
All authors especially unite to state that “ Action research unites action and thinking, also theories with practice, with others participation, in search of practical solutions for issues with urgent matter (Bradbury, 2015 pg. 1). “For better understanding of action research and the freedom who arises from their interpretation, we will state the hypothesis of understandings made by Piggot- Irvine) (Piggot-Irvine E. 2015)
On which is stated that: “ A certain degree of flexibility always exists and an open end in AR. The unpredictability related to what a real action research is” (pg. 69). Therefore, AR doesn’t always happen in a linear hierarchy and predictable manner. Stringer (2007) extends this by suggesting that it is also current when he states: “… a good action research project usually doesn’t have a well-defined ending” (pg. 164).
Action research is contextually specific therefore its results are usually considered as non-generalized…” Lasty Coshy (Finally, Koshi, 2010, pg. 9) describes action research like: constructive research, during which the researcher builds its knowledge for specific questions through panning, action, evaluation, refining and learning from his/her own experience. It is a continued process of studying in which the researcher studies, as well as shares the newly generated knowledge with the ones who might benefit from it.

2.2 Steps as a characteristic of action research

In this part we will emphasize the cyclicality, the sequence and order of realization of action research as a theoretical and practical tool for changes in instructing and studying. Many models of action research according to the number and the type of steps are differentiated and emphasized by Mills E. G. (Mills E. G., 2018). We talk about: “Kurt Lewin (1952) described a ‘spiral’ cyclical process that involves planning, acting, doing and reconnaissance; Stephen Kemmis (1988) created a well-known presentation of the ‘spiral’ of action research, which includes the essential characteristics of Lewin’s model. Kemmis’s model includes reconnaissance, planning, the first step of action, monitoring, reflecting, revising, and evaluation; Emily Calhoun (1994) described an Action Research Cycle that involves selecting an area or problem of collective interest, collecting data, organizing data, analyzing and interpreting data, and taking action; Gordon Wells (1994) described what he called an Idealized Model of the Action Research Cycle, which includes observation, interpretation, planning for change, action, and the ‘practitioner’s personal theory’ (p. 27), which informs and is informed by the action research cycle; Ernest Stringer (2004) described an action research cycle that involves looking, thinking, and acting as ‘phases of inquiry repeated over time’ (p. 10); John Creswell (2015) described action research as a dynamic, flexible process that includes the following steps: determining whether action research is the best design to use, identifying a problem to study, locating resources to help with problem solving , identifying the needed information conducting data collection, analyzing the data, developing an action plan and implementing the plan, and reflecting on whether it makes a difference; Richard Sagor (2005) described a four-step process that involves clarifying the vision, articulating theories, implementing action and collecting data, and reflecting and planning informed action; Sher Hendricks (2017) described an action research process that follows the principle of ‘systematic inquiry based on continuous reflection’ (p. 2), ...”I would like to single out and emphasize the steps and their elaboration by Prof. Iliev D. (2006). According to Iliev, action research, through what he calls the “Progressively Flexible Framework,” aims to guide and clarify, but not to restrict the action of anyone conducting action research in education. The steps of action research according to the Progressively Flexible Framework are:

1. Theoretical Action;
2. Communicative Action;
3. Action Action;
4. Critical Action;
5. Continuing Action.

(Iliev D. et al., 2022, p. 11).

According to Prof. Alive, "Theoretical Action opens the process of thinking about action research, broadens the horizons of the principal and the teacher-practitioner, and develops critical awareness of the environment and self-criticism towards oneself."

"Communicative Action is the step in which possible solutions to problems are considered, decisions are made regarding dilemmas related to the focus of action, and the available personal, collegial, and institutional capacities for working on the problems are assembled, etc."

"In the third step of our action research, the so-called Action, the focus is on preparation for the action and on the implementation of the action."

"Critical Action, as a step in action research, provides an answer to the question: What have we learned from the action research?", while the fifth step is Continuing Action, within which "...the researcher makes decisions on two important questions: whether and how the research will continue and what the next steps should be regarding the actions, procedures, and instruments, as well as decisions about possible ways and forms of disseminating the research results."

3. Professional development of teachers

3.1 Basic professional teacher competencies

Basic professional teacher competencies are the basis of primary education of teachers in North Macedonia, but it is based on professional and career development of teachers. We conclude this based on the actual dedication of the system for professional development which is based on the document named "Basic professional competencies and standards for teachers". (Basic professional competencies and teacher standards, 2016), created within the project of USAID, and released by the Macedonian center for civic education. In the document six fields of teacher professional development are defined: "Knowledge for the educational subject and educational system; *knowledge for the educational subject and educational system,*

Learning and teaching- Planning and preparing lessons; teaching the lesson, evaluating the students, knowing the students and fulfilling their needs, creating a stimulating learning environment, creating safe and stimulating learning environment, school environment.

Social and educational inclusion: Communication and collaboration with the parents and community; professional development and professional collaboration-*Professional development; Professional collaboration.* ." (In: Iliev D., Mehmedi L.& Barbareev K 2025, pp. 26).

Teachers' professional development in North Macedonia is defined and determined with "Guidelines for basic professional competencies of primary and high school teachers). In "Guidelines for professional exam program for teachers – professional collaborator – administration and the method of examining" (The regulation of the program for teacher's professional exam collaborator or administrator and methods of conducting the examination) in act 10 it is defined that: 'the professional exam is consisted of:

- Action research or case study;
- A lesson held by the teacher or teaching practitioner for a teaching collaborator and
- Oral exam.'

Furthermore in the same document there are also mentioned the topics that need to be prepared by the teachers and teachers counselors. “The practitioner prepares action research or a case study related to a concrete problem and that he/she was assigned to overcome during the internship period, and that is related to working with students.’
In this document it is explicitly stated that action plans attain their position in the education system and teachers development. This conclusion finds its base in the operationalization of the development process of teachers competencies determined in act 2 with the defining of the roles in the process of mentoring of a teaching practitioner. The law for teachers and teaching collaborators in primary and high schools foresees that ‘The mentor of the practitioner should have the title teacher-mentor or teacher-counselor, or professional collaborator- mentor or professional collaborator- counselor. ‘(in: Law for teachers and professional collaborators in primary and high schools)
According to the already stated, we can conclude that in our state as well teachers’ competencies development are essentially and importantly linked, but also the teachers’ career and professional development.
In a Cambridge document it is stated that ‘Teachers professional development aims to improve teachers and their practice through the implementation of a holistic process which supports continuous development of the teacher as a professional practitioner. It is a continuous process which supports continuous development of practice during the teachers’ entire career. The teaching practice includes many fields, of which any field can become the aim of professional education activities. For example, in the model TPACK (Mishra and Kohler, 2006) there are three overlapping fields- technological, pedagogical and content knowledge. The activities for professional education could therefore focus towards the knowledge of the subjects’ content or instead of that they can focus on the pedagogical knowledge specific to the subject (the overlapping areas of pedagogical and content knowledge). Each activity which supports the teachers to think, to learn, and then to act towards improving their practice can be classified as the teachers professional education, and these type of activities can take place in a personal or online environment. Some examples are given in Photo 1. The teachers can be included in professional education activities in micro (individual) or macro level (while collaborating with teachers in different contexts; Photo 1).” In the document the benefit from a developed education development is also stated: “Better student results; increased teacher motivation; benefits for the schools and sector”.
Според наведеното, можеме да заклучиме дека и во нашата држава многу суштествено и значајно се поврзани акциските истражувања со развојот на кометенциите на наставниците, но и професионалниот и кариерниот развој на наставниците.

3.2. Assumptions for implementing of action research in the development of teacher competencies

Looking at teachers as the most important variable which determines the quality of education that the students receive and the amount of learning that is happening “it is worth noting in the context of the role of the action research in the development of professional competencies of teachers. Namely, to make this changing variable even more important there should be continuous investment in the teachers’ professional development. Action research can be effective and efficient method which can be used in this point of view. “Johnson A. in a creative way connects action research with teachers’ professional development. According to him, action research help the teacher to become an expert on its own and through the strengthening of the two elements of teacher expertise; knowledge and reflection. For Johnson ‘Action research can be used to gain new pedagogic knowledge while using problem-solving and analytical evaluation”. Besides pedagogic knowledge, according to the same author action

research contributes in the pedagogic content knowledge. Certainly with action research the expertise is improved also in "Content knowledge is never static and constantly has new information in all the subject areas, similar to new research topics." In the end, maybe most important part of knowledge, action research contribute in the development of the expertise of Knowledge of students and learning which is also changeable and developing category. (Johnson A., 2019, pp. 261)

For Johnson A. Action research can be used to also include three levels of teacher reflection", expressed by "… efficiency of instruction…, also the values and philosophy. (More in: Johnson A., 2019, pp. 262-267).

Action researchers consider that:… real solutions for dealing with the challenges in the education of current students lies on the teachers professionalism and how he efficiently uses the information or "the data" that are generated by his/her students in their classroom every day. Action research is basically organized, proved and secure process to ensure that you are using the data of your classroom to develop into a high quality educator which is needed and deserved by your students. "Exactly because of that "Understand it as a method of thinking about teaching. That is a powerful method of thinking about teaching because it accentuates your role as a reflective practitioner who is constantly an observer, thoughtful and prepared to question personal actions in the light of the best possible practices for your students. To become an action researcher it goes way beyond of just conducting a project for action research; that includes developing a way of thinking 'reflection in action' towards your lessons.

Through action research analysis Elliot J. came to a conclusion that action research by a teacher can have the following qualities: 1. "Expreses dedication towards the realization of a target which embodies the educational ideal or a collection of values; 2. The assumptions and beliefs (unspoken theories) which support and structure the classic practice are problematized; 3. Includes holistic experimentation: creation and experimentation with new forms of influencing in the changing of the practice or make it more consistent with the goal. 4. It is an advanced process characterized with reflectiveness on the part of the practitioner. 5. Includes the reconstruction of the theories that support and shape educational practice. 6. Includes a dialogical process in which teachers "factor in" a range of diverse perspectives on their practice during their action research (triangulation), for example, those of their students, their professional peers, and parents."An analysis of the views of teachers who have conducted action research shows that: Teachers who have carried out action research often report significant changes in their understanding of teaching" ... "Action research also gave me a sense of professionalism and a desire to continue researching."

4. Benefits of action research application in the professional development of teachers' competencies

The application of action research in the professional development of teachers demonstrates an increased quality in the development of teaching competencies explicitly and the development of teaching competencies implicitly. This means that some of the competencies which are being developed relate to the teacher as an expert in teaching, while others relate to the positive impact of action research on pedagogical practice and on the recipients of teachers' pedagogical influences.

In the following section, we will examine and elaborate on those that we believe deserve special attention:

4.1 Improvement of the teaching practice

Action research enables teachers to systematically analyze their own work. They identify the strengths and weaknesses of the teaching process. Through data collection and analysis, better decisions are made regarding teaching. Teachers experiment with new methods and strategies. As a result, the quality of teaching is significantly improved.
In the action research process, the teacher first identifies a specific problem or challenge in teaching. The improvement of teaching practice through action research is most commonly achieved through: identifying weaknesses in the teaching process; analyzing students' needs and interests; introducing new teaching methods and strategies; improving communication between teachers and students; adapting teaching to students' different abilities; improving assessment and progress-monitoring methods; increasing students' active participation in the teaching process.
Teachers constantly re-examine their teaching methods, improve their professional competencies, and create a higher-quality learning environment. In this way, action research contributes to the continuous improvement of teaching practice and to higher educational achievements of the students.

4.2 Development of reflective practices

Action research encourages teachers to constantly reflect on their work. They analyze their own actions and their impact on students. Reflection helps identify successful and unsuccessful approaches. Teachers learn from their own experience. In this way, professional self-awareness and responsibility are developed.
The development of reflective practice represents a process in which teachers consciously and critically reflect on their own work in order to improve teaching and professional practice. Action research plays a significant role in this process because it enables teachers to systematically analyze their actions, decisions, and results. Through continuous observation, data collection, and reflection on their own practice, teachers gain a deeper understanding of what works successfully and what needs to be changed.
Reflective practice is not limited to thinking about a completed lesson; rather, it represents a continuous process of self-examination and professional learning. The development of reflective practice through action research includes: critically analyzing one's own teaching methods; assessing the effects of teaching activities on students; identifying strengths and weaknesses in one's work; re-examining one's own attitudes, beliefs, and expectations; making decisions based on evidence and results; planning specific activities to improve teaching; continuous professional learning and self-improvement

4.3 Improvement of professional knowledge

Through research teachers gain new knowledge about the teaching process. They relate the theoretical knowledge with practice. Research activities motivate them read professional literature. In that way they broden their professional knowledge. This contributes to a more qualitative and contemporary teaching.
During action research the teacher collects data from different sources, analyzes results, reads professional literature and compares his experience with contemporary, scientific and pedagogical findings. This process contributes for a better understanding of teaching methods, the process of learning and developmental needs of the students. In that way the professional knowledge doesn't remain static, but it is continuously upgraded and perfected.

Upgrading professional knowledge through action research is achieved through: studying of contemporary pedagogical and psychological theories; researching new teaching methods and stratedies analyzing teaching practice results; relating theory with practice work in the classroom; following scientific and professional publishings; exchangeing experiences and knowledge with collegues; gaining new information for studends needs and characteristics.
For example, the teacher can research how the implementation of digital tools affects students' motivation for learning. For that purpose he will research professional literature, will apply determined digital resources in teaching and will analyze the results. Through this process he will not only gain an answer for a concrete question but he also gains new knowledge for technology usage in education.

4.4 Problem solving in the classroom

Action research are directed towards concrete problems in the teaching practice. Teachers identify the reasons for specific difficulties. Then develop and test possible solutions. The results help them choose the most effective strategies. In that way the working atmosphere and students' success.
Problem solving in the classroom represents one of the most practical and most significant benefits from applying action research in professional development of teachers. In everyday teaching practice theachers are faced with various challenges, such as low student motivation, discipline problems, low success rate, low engagement in the teaching process or difficulties on learning specific teaching content. Action research enables that these problems be solves not through intuition but through systematic and science based access.
Applying action research into classroom problem-solving contributes on to teacher's becoming more analytical and more efficient in their job. Instead of applying universal solutions, they develop strategies which are based on real needs and specifics of their students. In that way the quality of the teaching process is improved, a more positive learning environment iss created and better educational results are incited.

4.5 Encourageing inovations

Through action research teachers implement new methods and working techniques. They try different approaches for lesson improvement. Research ensures evidence for innovation success. Teachers become more open to change. This contributes to the modernizing of the education process.
Encouraging innovation through action research means applying new ideas, methods, and approach in the teaching practice with the goal of improving teaching and learning quality. Action research enable teachers to research existing practices and to search for more efficient work methods. Through this process they become more open towards change and inovations in education.

4.6 Developing research skills

Action research enable teachers to collect and analyze data. They learn how to ask research questions. They are introduced with different research methods and techniques. These skills can be used in other professional activities. Through that their professional competencies are strengthen.
Developing researching skills through action research means the teachers being able to do systematic studies and analyzing the new phenomena in teaching practice. Through this process the teachers learn how to identifu a concrete problem or question that demands research. They

gain data collecting skills through observation, surveys, interviews and other researching techniques. Moreover, they learn how to correctly organize and analyze the collected information. Action research help them draw conclusions based on proof, and not just by personal assumptions. With time teachers' develop critical skills for evaluating results and to suggest appropriate solutions.

4.7 Imrovement of teacher collaborations

Many action research are done in teams. Action research significantly contribute on improveing collaboration between teachers because they motivate group work in the process of identifying, analyzing and problem- solving in the teaching practice. Instead of each teacher indivitually dealing wth challenges in the classroom, action research create possibilities for exchanging experiences, ideas and professional knowledge. In that way a culture of collaboration is developed and mutual support in the school.
Action research advance the collaboration between teachers through: mutual experiences; team planning and conducting research activities; mutual observation and lesson analysis; joint analysis of research results; sharing of successful teaching methods and strategies; creating professional communities for learning; developing a culture of trus and collegial support.
For example, a group of teachers can conduct an action plan for increasing student motivation for learning. Each teacher applies determined specific strategies in their classroom, and then together they analyze the results and approve which approach gave the best results. Through this process not only do they solve a concrete problem, but they also enrich their professional knowledge.

4.8 Improvement of students' achievements

The main aim of action research is learning improvement. Teachers research the factors that influence students' success. Based on the results they adapt their teaching strategies. Students gain a more efficient support in the process of learning. This creates better educational results. When the teacher conducts action research, he collects data for learning, participation and student results. Based on the results they can conclude which teaching methods give the best results, and which should be changed or improved.in that way the lesson becomes better adapted to the students' needs and abilities.
Action research contribute in improveing students achievements through: adapting of teaching methods to students' needs; identifying the reasons of poor results; increasing learning motivation; supporting active participation in the learning process; applying more efficient learning stratedies; improveing the evaluation process and following their progress; insuring additional support for the students' who have difficulties; creating positive and stimulating learning environment.

4.9 Strengthening of the professional authonomy

Teachers professional autonomy represents an ability to independently and responsibly make decisions related to planning, realisaton and advancement of the teaching process. Action research have a key role in the strengthening of this autonomy because it enables the teacher to research problems of his own practice personally and to suggest evidence based solutions. Instead of only leaning on to outside directions, guidelines or foreign experience, the teacher gains the ability to individually evalutate what is more appropriate for their students and the concrete teaching context.

Through action research the teacher becomes an active participant in the process of profesiona decelopement. He analyzes students' needs follows the results of his own work and based on the gained information makes informed decisions. This process increases his self conficence and feelings of professional responsibility.
Action research not only contribute in improving teaching, also it strengthens the professional integrity and teacher independence. They enable them to be a researcher, creator and bringing change in the teaching and education process, which represents the basic characteristic of a contemporary and competent teacher.

4.10 Supporting of continuous professional developement

Action research represents a form of lifelong professional learning. Teachers continuously reassess and improve their competencies. Each research cycle brings new knowledge and experiences. This process creates a habit of continuous improvement. In this way, the sustainable professional development of teachers is ensured.
Through action research, teachers identify areas in which they need improvement, set development goals, and apply new approaches to enhance teaching. The research process encourages them to acquire new knowledge, develop critical thinking, and apply contemporary educational strategies. Action research fosters a culture of continuous learning, self-improvement, and professional responsibility, in which teachers actively participate in developing their own competencies and improving the quality of education.

5. Conclusions

The implementation of action research in the development of teachers professional competencies represents an important access for improving the quality in teaching and education process.
Action research enable the teachers to systematically study their own practice, to recognize the issues and implement appropriate solutions. Their basic characteristic is the connecting of the research work with the practical activities in the classroom. The teacher through this process becomes active researcher who plans change, follows the results and evaluate the success rate of the applied techniques. Action research are done in steps which include identifying the problem, acting, observing and reflecting.
Teacher's professional competencies include knowledge, skills, abilities and stances needed for successful realization of the teaching- educating job. Their development is a continuous process supported by the laws and institutions in education. Professional development enables the teachers to perfect their competencies and to make them resolve contemporary teaching challenges.
Action plans represent effective tool for professional development because they ignite analysis, change and improvement of the teaching practice. For their successful implementation we need motivation, preparedness for change, collaborative and supportive school environment. One of the most important benefits of action research is the improvement of teaching practices through implementing new and more effective working methods. They contribute in the development of reflective practice, through with teachers reevaluate their own actions and make better professional decisions

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