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Quality Assurance, Action Research and the Concept of a Reflective Practitioner

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ABSTRACT

In the article we present action research as a factor in the teacher's professional development and as a part of processes in ensuring quality in education. Action research is characteristically performed by practitioners, in this case teachers, and directly oriented towards improvement in practice. In the article we analyse the main characteristics of action research and present the results of empirical research which were used to determine whether there are any differences evident between teachers who have experience in research and those without such experience in terms of their interest for participation in the research process and at which stage of professional development are the teachers prepared to do research the most. We discuss the concept of the reflective practitioner which emphasises the particular skills needed to reflect constructively upon ongoing experience as a way of improving the quality and effectiveness of a teacher's work. The concept encourages teachers and student teachers to reflect upon the effectiveness of a lesson or series of lessons through an attempt to evaluate what was learned, by whom, and how more effective learning might take place in the future. As such, it involves careful evaluation by teachers of their own classroom performance, planning, assessment and so on, in addition to and in conjunction with evaluations of pupils' conduct and achievement.

Key words:

Action research, teacher-researcher, reflective practitioner, quality in education

Introduction

The effectiveness of teaching in schools would be substantially improved if teaching were a research-based profession and if educational practitioners were to play a central role in carrying out educational research. In the field of the education (as well as in the humanities and social sciences), two paradigms of scientific research were developed in the past. Reflecting their attributes, they are referred to as quantitative and qualitative, respectively. In the present article, the expression “paradigm” is used in the sense of Kuhn’s contemporary definition of a scientific paradigm. According to Kuhn, paradigms are “the series of reciprocally connected assumptions about social phenomena, providing the philosophical and notional frame for studying them” (Kuhn 1974, p. 39). Therefore, a paradigm is the sum of the values, convictions and assumptions that, with regard to a particular scientific discipline, indicate which values, beliefs, convictions, assumptions, laws, etc., are shared by the adherents of a certain scientific paradigm, and according to which the adherents form their tradition of scientific research.

Quantitative research, with its empirical analytical methodology and unidirectional or linear research process, models research on natural sciences. The basis of quantitative research is the belief that there is a reality led by stable natural laws, independent of people and waiting to be discovered. Its objective is to reach reliable, exact, precise, measurable, verifiable, and objective observations, which in social sciences would have the same value as findings in natural sciences. In quantitative research, the research problem is handled part by part. We approach different aspects of the phenomenon and deal with individual variables but on a larger number of units, most frequently on a representative sample of a population, since our tendency is to generalise the established observations. The use of the standardised research instruments, use of statistical methods, forming hypotheses and their reliable verification are some of the major methodological principles of the empirical-analytical methodology.

With the expression “qualitative research” we denote that kind of research where the basic empirical material, collected in the research process, consists of verbal descriptions or narratives. Further, the collected material is worked on and analysed in words without numerical operations (Mesec 1998). According to Creswell, qualitative research is a research process designed on a clear methodological tradition of research, where researchers build a complex, holistic framework so that they analyse narratives and observations, conducting the research work in the habitat (Creswell 1998, p. 15). The researcher is directly included in the

environment, which helps him observe the object of the research. In this context, the researcher should be aware of the fact that with his or her participation and the researched situation itself they influence the happening which they are observing. Further, to qualitative research, we also attach attributes such as phenomenological approach, the use of hermeneutical procedures of explanation, an orientation towards the process and the dynamic. Qualitative analysis is finalised by forming a grounded theory (Glaser and Strauss 1967) which reads as a narrative of a phenomenon which was the subject of the study.

It needs to be stressed that the role of the researcher and the person studied differ in the qualitative and quantitative paradigms. The quantitative paradigm typically defines the role of a person studied – e.g., teachers – as mainly limited to data acquisition and the introduction of those changes established by other researchers into practice. In order to ensure the highest level of objectivity (as well as validity and reliability), a demand for separating the research object from the research subject is employed in quantitative research. This puts the researcher in charge of the research process, whereas the person studied primarily represents the source of information. It is typical for the qualitative paradigm that the researcher and those under research formulate the studied situation together, which means that teachers are supposed to participate in planning, data collection, data processing, interpretation, and informing the public about the study results. Qualitative paradigm sees education as a historical process and as a lived experience for those involved in educational processes and institutions.(cf. Kemmis 2007, p. 179). Its form of reasoning is practical; it aims to transform the consciousness of practitioners and, by so doing, to give them grounds upon which to reform their own practices. Its interest is in transforming education by educating practitioners.

The person who is in an ideal position to carry out educational research is the educational practitioner. At present a tiny proportion of educational research – that is, funded research, carried out by proper procedures and then made public knowledge through publication – is undertaken by practising teachers: the vast majority of such research is conducted by university-based academics involved in teacher education who do not teach in schools (cf. Hargreaves 2007). One of the main problems of educational research conducted by academics is the dissemination of research findings to practitioners. Teachers often complain about a lack of access to the findings of educational research, and this is one of the main reasons for educational research failing to have an adequate influence on the improvement of practice. One way to change educational research so that it improves the practice of teachers in schools is changing the research agenda and research process. Changing the research agenda and research process means adopting as an essential prerequisite of improvement, the involvement

of practitioners in all aspects of the research process, from the creation of strategic research plans, the selection of research priorities and the funding of projects through to the dissemination and implementation of policies and practices arising from or influenced by research findings (cf. Hargreaves 2007, p. 10).

The idea of teachers conducting research on educational practice came from the work of the 1973-1976 Ford Teaching Project in the United Kingdom, under the direction of John Elliott and Clem Adelman. This project involved teachers in collaborative action research into their own practices. Its notion of the "self-monitoring teacher" was based on Lawrence Stenhouse's (1975) views of the teacher as a researcher and as an "extended professional". Stenhouse's view of educational research implies doing research as an integral part of the role of the teacher, just as a teacher who uses research into their subject as a basis for teaching implies that s(he) does research into the subject through their teaching. Another great impetus for the development of the "teacher as a researcher" movement was the work of David Schön, in particular his books *The Reflective Practitioner: How Professionals Think in Action* (1983) and *Educating the Reflective Practitioner* (1991). The discourse of the reflective practitioner emphasizes the particular skills needed to reflect constructively upon ongoing experience as a way of improving the quality and effectiveness of one's work. The discourse encourages teachers to take into account the whole picture – analysing the effectiveness of a lesson or series of lessons through an attempt to evaluate what was learned, by whom, and how more effective learning might take place in the future. As such, it involves careful evaluation by teachers of their own classroom performance, planning, assessment and so on, in addition to and in conjunction with evaluations of pupils' behaviour and achievement. It also implies a sound understanding on the teacher's part of relevant educational theory and research (Moore 2007). In order for teachers to commit to research, it is vital that they become aware already during their studies that research of educational practice is one of the instruments for establishing and ensuring the quality of this practice, that they recognise research as an important factor of the professional conduct of teachers, and that they should be fully qualified for research. It is therefore essential for student-teachers to acquire the necessary knowledge in research (i.e., at least in fundamental methodological concepts and basic statistical procedures that apply to education) and to gain their first specific experience in research work. Students need the opportunity to use theoretical knowledge in methodology, for example, when developing a specific instrument for collecting data and planning their own research. Understandably, students do not normally conduct major studies on their own (e.g., on representative samples). For the purposes of their training, small-scale studies are also

deemed appropriate, as they may be conducted on samples that are, for example, represented by their fellow students from the same course or faculty. In this way, student-teachers learn about the applicability of statistics and methodology and gain their first experience in research already during their studies. It can be expected that those teachers who have gained positive experience and basic competences in research already during their studies will further improve their knowledge during continuous professional training. According to Schön (1991), practitioners should: (1) participate in research of their own practice and (2) develop educational theories that directly reflect actual educational practice. Action research, as presented in below, provides an appropriate means for realising these objectives.

The Characteristics of Action Research

Action research is a form of self-reflective enquiry undertaken by participants in social (including educational) situations in order to improve the rationality and justice of (a) their own social or educational practices, (b) their understanding of these practices, and (c) situations in which the practices are carried out (Kemmis 2007, p. 168). The idea of action research originates from a work written by social psychologist, Lewin (1946), who described research as a set of steps in a spiral, each containing planning, action, and assessment of the achieved result. Lewin documented the effects of group decision in facilitating and sustaining changes in social conduct, and emphasized the value of involving participants in every phase of the action research process. Lewin believed that research has a double function – both to produce high-quality social science and to generate applications for human betterment. One of the initiators of action research in education was Corey (1953, p. 70), who was convinced that “the disposition to study /.../ the consequences of our own teaching is more likely to change and improve our practices than is reading about what someone else has discovered of his teaching.” Educational action research is a form of educational research which places control over processes of educational reform in the hands of those involved in the action. Educational practitioners must play a central role in carrying out action research if its relevance is to be assured. The role of outsiders, such as university academics and school counselling service, can only be as collaborators, providing assistance. On Stenhouse’s account “In action research real classrooms have to be our laboratories, and they are in the command of teachers, not of researchers” (Stenhouse et al. 1979, p. 20). For teachers who wish to perform action research it is assumed that in addition to their willingness and motivation to undertake research they also have the possibility or professional autonomy to make the decisions necessary for the

research (e.g., implementation of changes in the educational and training process) (cf. Fraenkel and Wallen 2006, p. 568).

In action research the researcher prepares a flexible indicative research plan which has to be updated throughout the entire research. The plan of the entire action research divides individual realisable action steps whereby each step is oriented towards activity with specific objectives. The action researcher will embark on a course of action strategically (deliberately experimenting with practice while aiming simultaneously for improvement in the practice, understanding of the practice and the situation in which the practice occurs); monitor the action, the circumstances under which it occurs, and its consequences; and then retrospectively reconstruct an interpretation of the action in context as a basis for future action. Knowledge achieved in this way informs and refines both specific planning in relation to the practice being considered and the practitioner's general practical theory (Kemmis 2007, p. 173). Action research is not distinguished by the use of a particular set of research techniques. It is true, however, that in general the techniques for generating and accumulating evidence about practices, and the techniques for analysing and interpreting this evidence more closely resemble the techniques employed by qualitative researchers than empirical-analytic researchers. These methods place the practitioner at centre stage in the educational research process: actors' understandings are crucial in understanding educational action. One of the central techniques recommended in the reflective practitioner discourse is the keeping of diaries or journals by teachers (Moore 2007, p. 122) in which they reflect systematically on their experiences as they perceive them, keeping a record that can be returned to and re-examined in the light of subsequent experiences and providing scope for the self-setting of targets and goals.

Action research is usually carried out in a single school or class. It is important that the description and analysis of the course of the action research, as well as the results achieved, are published and made publicly accessible. With the proper description of the execution of action research the reader obtains a model of how the participants studied a specific situation, solved dilemmas, and improved the quality of pedagogical practice, as well as influencing the circumstances that ensure a higher quality educational process. While remaining cognisant of their own circumstances, the reader can transfer the results of the action research to their educational practice by taking that which makes sense and acting according to it or by adapting the findings to the characteristics of their own specific situation.

2 EMPIRICAL RESEARCH

2.1 Purpose and Objectives of the Study

In this section we answer the following research questions: (1) What factors, in the teachers' opinion, cause a gap between research institutions and school practice? (2) What factors, in the teachers' opinion, could contribute to an increase in the research work of teachers? (3) Are there any statistically significant differences between those teachers who have prior experience with research work and those who do not, in terms of their willingness to cooperate in research work in the future? (4) Are there any statistically significant differences between those teachers who have prior experience with research work and those who do not as to which phase of the research process they are willing to take part in?

In so doing, we will rely on data collected by means of a questionnaire implemented within the empirical research aimed at establishing the degree to which teachers are involved in research work and the views they hold about research.

2.2 Description of the Sample

Our research was conducted on a purpose sample. The questionnaire was completed by 274 teachers teaching at partner institutions, of which 87.8% were women and 12.2% men. More than half of the interviewed teachers (58.4%) work in primary schools and almost one quarter (23.3%) in secondary schools. Of those taking part in the research, more than one tenth (14.1%) are educational workers who work in pre-school educational institutions and 5.2% work in other institutions (e.g., secondary school boarding homes, libraries, institutions for children with special needs). The average age of the teachers interviewed is 40.87 years (with a standard deviation of 7.74 years). On average, they have 17.58 years of work experience (standard deviation of 8.93 years). Approximately half of the teachers interviewed (51.9%) hold a university degree and one quarter (25.2%) have completed high school education. One tenth of the educational workers interviewed (10.0%) have secondary level education and less than one tenth of the teachers (9.3%) have completed higher professional education. Of the teachers interviewed, 3.7% have completed a specialist, master's or doctoral degree.

2.3 The Data Collecting Procedure

Data collecting was carried out in September 2006. We prepared a questionnaire composed of four evaluation scales: about factors that influence the level to which the teachers are involved in educational research in schools; about factors that, in the teachers' opinion, cause a gap between research institutions and school practice; about factors that could contribute to an increase in the research work of teachers; and about the teachers' willingness to cooperate in individual phases of the research process. The questionnaire also includes three semantic differentials (which characteristics teachers ascribe to research, to an average teacher and to an average researcher), a set of questions with which we try to determine the teachers' opinion on how much knowledge they had obtained about research during their studies and programmes of continuous professional training.

In the present article we will only show the data collected with the evaluation scale about the teachers' willingness to cooperate in individual phases of the research process (S 1), with the evaluation scale about a gap between research institutions and school practice (S 2) and with the evaluation scale about factors that could contribute to an increase in the research work of teachers (S 3). On the basis of Cronbach's Alpha Coefficient, the evaluation scales reached a sufficient level of reliability (S 1: $\alpha = 0.87$, S 2: $\alpha = 0.68$, S 3: $\alpha = 0.86$) and validity (with the first factor we explain: S 1: 52.16%, S 2: 31.51%, S 3: 38.45% of the variance). Validity was additionally checked by factor analysis. According to the law $r_{tt} \geq \sqrt{h^2}$, the evaluation scales (S 1: $r_{tt} = 0.82$, S 2: $r_{tt} = 0.80$, S 3: $r_{tt} = 0.72$) have a good level of validity.

2.4 Methodology

In the empirical research we employed the causal-nonexperimental method of educational research. The data from the questionnaires were processed using methods of descriptive and inferential statistics. The statistical procedures employed were: frequency distribution (f, f%) of the attributive variables, basic descriptive statistics of the numerical variables (mean, standard deviation), the χ^2 -test of hypothesis independence, Levene's test for homogeneity of variance (F-test), t-test for an independent sample, factor analysis to test the instrument validity (% of explained variance with the first factor) and reliability (% of explained variance with common factors), as well as Cronbach's Alpha Coefficient as a measure of instrument reliability. The data is represented in tabular form.

3 RESULTS AND INTERPRETATION

How can the gap between research institutions and school practice be bridged?

In view of the fact that also amongst the Slovene public one can often come across the opinion that there exists a gap between research institutions and school practice, or that the findings of researchers do not reach teachers, we asked teachers to assess the degree to which individual reasons, in their judgement, condition the gap between researchers (research institutions) and teachers (school practice). The teachers assessed the reasons on a five-level assessment scale, where 5 indicates that the reason has a very significant influence on the fact that the findings of researchers do not reach teachers, and 1 indicates that the reason is not significant.

In the opinion of the teachers surveyed, the most significant reason conditioning the gap between research institutions and school practice is that researchers have a poor knowledge of school practice and actual conditions ($\bar{x} = 4.38$) and that in their reports researchers place too little emphasis on practical instructions concerning how the research findings can be applied in practice, or that they state too few concrete examples ($\bar{x} = 4.34$). According to the surveyed teachers, the poor transfer of knowledge (findings) from research to school practice is also due to the infrequency of contact between researchers and teachers ($\bar{x} = 4.12$), as well as to the fact that researchers do not deal with questions that are of interest to teachers, or that they treat cases that are not relevant to school practice ($\bar{x} = 3.83$). In the final places the surveyed teachers placed reasons that relate to the ability and motivation of teachers to involve themselves in research work: teachers do not follow specialised literature often enough ($\bar{x} = 3.57$); teachers do not know how to apply the results of research, i.e., how to implement changes in pedagogical work based on published scientific findings ($\bar{x} = 3.56$); the incomprehensibility of scientific articles due to the style of writing and the specialised language ($\bar{x} = 3.38$); and a lack of interest on the part of teachers in scientific and specialised findings that are not directly connected to their work ($\bar{x} = 3.35$). For a precise interpretation of the results obtained, and in order to prepare changes that could improve cooperation between research institutions and school practice, it would be necessary in the future to also obtain answers to the same questions from researchers and those employed in research institutions. Nonetheless, the implementation of projects in which research is conceived as a collaborative process in which both teachers and researchers participate is one of the most efficient ways of contributing to linking research institutions and school practice, to encouraging an improved transfer of findings. We developed this dimension of interpersonal cooperation in the project Partnership of Faculties and Schools, within the framework of

which we also implemented the empirical research whose results are presented in the present article.

The preparedness of teachers for involvement in research work

In the continuation we determine the degree to which the teachers are involved in research, and the extent to which they are prepared to involve themselves in research work in the future. It was explained to the respondents that research is the planned and systematic acquisition, analysis and interpretation of data for the purpose to contribute to the progress of professional understanding and educational practice (cf. Bassey 1995).

We asked the teachers if they had ever conducted a study or if they had participated in any kind of research work. Among the 274 teachers surveyed, almost three fifths (58.8%) answered that they had neither conducted nor participated in any research. More than two fifths (41.2%) answered that they had already conducted or participated in research. More than one third (37.2%) were prepared to participate in research and just over one fifth (22.6%) declined to do so. Two fifths of the interviewed teachers (40.1%) could not decide whether they would take part in research work or not.

We were interested in the extent to which experience in research work influences a teacher’s interest in further research.

Table 1: Answers from teachers with experience in research work and those without as to whether they are ready to participate in research work

	Are you prepared to participate in research work in this school year?							
	yes		no		I do not know		total	
	f	f%	f	f%	f	f%	f	f%
Yes. I have research work experience.	64	57.1	16	14.3	32	28.6	112	100.0
No. I do not have research work experience.	38	23.8	46	28.8	76	47.5	160	100.0
Total	102	37.5	62	22.8	108	39.7	272	100.0

Between the answers of those teachers who already have experience in research and those who do not, there are statistically significant differences in their willingness to participate further in research ($\chi^2 = 31.582$, $df = 2$, $P = 0.000$).

More than one half (57.1%) of the teachers who have prior research experience are also prepared to participate in research in the future. On the other hand, this willingness is expressed only by less than one quarter (23.8%) of the teachers who do not have any research experience. Almost half of the teachers without research experience (47.5%) cannot decide whether they would like to participate in research or not. More than one fourth (28.6%) of the teachers who have research experience remain neutral in their decisions. Whereas more than one tenth (14.3%) of the teachers with research experience are not prepared to participate further in research, only slightly more than one fourth (28.8%) of the teachers without research experience are not prepared to participate further in research.

From the data presented above we may conclude that experience in research has an effect on the willingness of the teachers to do research in the future. On the one hand, the data show that in more than 50% of cases teacher-researchers have had a positive experience with research. However, it would also be sensible to investigate the reasons for which slightly more than one tenth of the teachers who have already conducted research do not wish to continue this activity. These reasons may be found in specific schools with an unfavourable atmosphere for conducting research; they may also arise from a lack of research knowledge or funds, excessively ambitious and thus unfeasible plans, or from the fact that the final effects were not as good as expected relative to the invested effort.

The stages of the research process where teachers are prepared to participate

In the following sections we have determined the stages of the research process where teachers are prepared to participate.

Table 2: Stages of research work where teachers who have and those who do not have research work experience are prepared to participate

	\bar{x} with experience	\bar{x} without experience	t	df	sig
planning of research contents (what to research, goals of the research...)	3.86	3.52	2.978	270	0.003
methodological planning of the	3.71	3.38	2.728	270	0.007

research (research plan, the sample, the data-collecting procedure...)					
preparation of techniques and instruments for data-collecting	3.58	3.34	2.066	211.181	0.040
data-collecting	3.95	3.78	1.618	270	0.107
processing and interpretation of the results	3.70	3.38	2.672	270	0.008
writing of reports	3.45	3.00	3.648	217.259	0.000
acquainting interested public (other teachers, parents ...) with the results of the research	3.63	3.16	3.928	270	0.000
introducing the findings and improvements to school practice	4.11	3.86	2.172	270	0,031

Teachers evaluated their willingness to participate in individual phases of the research process on a five-step grading scale. We established that teachers (regardless of their experience in research) are mostly prepared to participate in implementing observations and improvements in school practice ($\bar{x} = 3.97$), which is understandable as teachers usually judge the value of research according to its 'applied value', i.e. the possibility to change and improve school practice. The purpose of each study is to solve the problem, which means changing practice in the widest sense possible. Next is the teachers' willingness to participate in data collection ($\bar{x} = 3.84$). An interesting fact is that teachers are largely prepared to participate in planning the content of a study – what to research, research objectives etc. ($\bar{x} = 3.66$) than in the methodological planning of the study – the research plan, process of data collection etc. ($\bar{x} = 3.51$). We can assume that content planning relates more to them since they have more knowledge in this field. Less interest in participation was expressed by teachers in data processing and interpretation ($\bar{x} = 3.50$), informing the public about the research results and the preparation of techniques and instruments ($\bar{x} = 3.36$). The teachers were the least interested in writing the research report ($\bar{x} = 3.18$). Writing a research report, which requires an in-depth reflexion of the research problem, and informing the public with the results from the study are two factors which are not normally strictly bound to the teacher's everyday professional role but which significantly influence the teacher's professional development. According to Ebbutt (1985), the phase of writing a research report and presenting the results

to the public, in addition to developing research questions and systematic data collection, is the main dividing line between the teacher – thinking practitioner and teacher – researcher. The teacher-researcher is expected to perform the entire research process, i.e. they will know how to form a research problem, analyse it in terms of research questions, hypothesise, create a plan for data collection and processing, know how to interpret the obtained data, and write a report on the course of the study.

Next we have examined whether teachers with experience in research statistically significantly differ and at which stages of the research process they are prepared to participate in comparison to teachers without such experience. By taking into account the assumption of the homogeneity of variance, the T-test for independent samples (see Table 2) has shown statistically significant differences between teachers with experience in research work and those without regarding their interest in participation in individual stages of the research process. Statistically significant differences were present in all phases of the research process, except in data collection, and teachers who had experience in research work are largely prepared to participate in all phases of the research process compared to teachers without experience in this field. Again we can say that collecting data is a step which is also present in ‘traditional’ or quantitative research and does not require much effort from the teacher and it is therefore understandable and expected that in this area there were no statistically significant differences among teachers with previous experience in research work and those without.

Measures for encouraging teachers to undertake research work

We also asked the teachers surveyed how they thought teachers in general could be encouraged to undertake research work. We asked them to assess seven reasons on a five-level assessment scale. From the results it is evident that teachers do not undertake research more frequently primarily because they are (over)occupied with the duties they are obliged to perform at school ($\bar{x} = 4.28$), and because the research work of teachers is not appropriately valued in a professional and financial sense ($\bar{x} = 4.14$). Teachers are also critical of their own qualification to undertake research work ($\bar{x} = 3.77$) and, furthermore, believe that the pedagogical work of teachers in school is currently not conceived in such a way that research is understood as an integral part of their regular duties ($\bar{x} = 3.69$). Regarding the qualification of teachers for research work, we refer to the following data. After the reform of the previous higher education system to university education (1987–1988) or the reorganisation of the previous Academy of Education to the Faculty of Education (1990) all teachers are required to complete a four-year university study programme where they acquire knowledge in the

fundamentals of educational methodology and statistics. More than two-thirds of interviewed teachers said that during their undergraduate studies they attended a lecture where they learned about statistics-related topics (67.9%) and methodology (69.0%). One-fifth of the interviewed teachers (20.5%) attended a training programme (seminar, workshop, lectures etc.) on research within their ongoing professional training. The interviewed teachers assessed their knowledge in statistics according to a five-step assessment scale with the average mark of 2.54 (standard deviation 1.03), their methodological knowledge with an average mark of 2.70 (standard deviation 1.09).

In the opinion of the teachers, their more frequent involvement in research would also be facilitated by a more suitable working schedule, which should be organised so as to enable research ($\bar{x} = 3.64$). It is encouraging that amongst the reasons for not undertaking research work more frequently the teachers attributed the lowest ranking to a lack of interest of teachers in research ($\bar{x} = 3.56$) and the prevailing atmosphere within schools ($\bar{x} = 3.30$). The atmosphere in the school in which the research takes place is very important for conducting action research successfully. School leadership and those teachers who evaluate the research work of teachers as one of the criteria for improving educational work, and who encourage teacher-researchers and in various ways cooperate in their research work, constitute an essential pillar of quality action research.

Conclusion

The Common European Principles for teachers' competences and qualifications (Zgaga 2006) provide a starting point for the modernisation of study programmes in the field of education on four principles and three sections of competences. These principles are: (1) teaching as a highly qualified profession (2) placed in the context of lifelong learning, (3) mobile and based on (4) partnership. The three sections of competences are: (a) ability to work with others, (b) ability to work with knowledge, and (c) ability to work with and in society. Furthermore it is extremely necessary to encourage teacher's readiness to research and demonstration of one's own professional practice towards the progress of new knowledge (ibid). The effectiveness of teaching in schools would be substantially improved if teaching were a research-based profession and if practitioners were to take an active role in shaping the direction of educational research. In order for this to be possible teacher education must equip teachers with research-based knowledge. The critical scientific literacy of teachers and their ability to use research methods are considered to be crucial. Teacher education programmes require

studies of both qualitative and quantitative research traditions. The aim of these studies is to train students to find and analyse problems they may expect to face in their future work.

The teachers' experience with research work had a significant influence on their affirmative responses to the question as to whether they would be willing to participate in research in the future. In this sense, experience in research increased the teachers' willingness to decide to take part in research at all. This was confirmed by the results presented above: more than one half of the teachers (57.1%) who already had experience in research were also willing to cooperate in future research projects. For the teachers without prior experience in research, the same willingness was expressed by less than one fourth (23.8%). Therefore, we must enable teachers to gain their first experience with research work already while studying, and their pedagogical work must be planned so that it enables them to undertake research (e.g., an appropriate concept of the tasks that teachers must perform, which also includes research; partial relief of other obligations, and an appropriate adaptation of the organisational work in school; the financial and professional valuing of research work, etc.). After the completion of studies, teachers should also be provided with an opportunity to remain in contact with research work (e.g., by participating in further training seminars and various projects) and constantly upgrade their knowledge in this field in order to make research an integral part of their everyday practice. Another important factor is school culture, which should establish favourable conditions for research efforts. If school leadership offered more support and encouragement to research work in schools, and provided the necessary assistance for such work, teachers would most certainly undertake research activity more often. Readiness for inclusion in research work, qualification to conduct action research and participation in research projects are important factors that increase the quality of the practice of teachers. The responsibility for professional training in this field, for stimulating teachers to study their ongoing educational practice and for disseminating results should, therefore, not only be assumed by teachers and schools but by all institutions concerned with the training of teaching staff: faculties educating future teaching staff, educational institutions employing teaching staff and relevant state institutions.

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