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Computer Aided Research in Managing Educational Process

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Abstract:

In the process of action research are trying to gather quantitative facts, as well as other empirical research. This, however, is basic and primary goal of action research. Action research is largely based on qualitative factors. Paradigm of action research is less scientific explanation, a more pedagogical and methodological understanding of the phenomenon that is the subject of research. That does not mean that action research does not strive for the quantitative facts. They tend to rely on quantitative and qualitative facts simultaneously. Action research differs from other types of methodological research and the fact that the researchers considered all the participants of activities (actions) which is the subject of research. Managing changes in education requires particular teachers knowledge. Managing innovations is very complex, because the teacher's resistance occurs due to insufficient capability and inadequate equipment in schools. Overcoming this problem involves active participation in seminars for teacher training. Development of information technology and constantly innovating educational technology causes changes in the methods and forms of teaching and organization that would be optimal in the era of mass application of Internet and electronic sources of knowledge.

Key-Words: Research, Management,, Informaitional technology, Internet, Eduacation, Physical education

1. Introduction

Computer Aided Research becomes the power tool for teachers to improve educational technology. We emphasize three main teacher activities: watching student's activities, measuring, and evaluating the results. There are a few differences between the action and other empirical (classical) research (for

example, applied, experimental, etc.). The best will be seen the basic features of action research classes. In applied research the main goal is to investigate (the exam, to determine) how does the general, the principal, legal, and so fundamental. knowledge of pedagogy, didactics and methodology can be practical (efficient, successful, high quality) to use in the educational work of the work, how can the

general knowledge be applied in practice teaching. In action research we are searching for new knowledge, but this is done primarily by changing (developing) the existing teaching practices. Action research seeks to not only learn something about what has been selected as a subject of research but also wants to change through research activities, develop, promote, organize differently, and thus more deeply explore what is the subject of action research. The subject of the action is to use both. The task of this research, in a word, is to also investigate and make almost everyday changes. It is a process of learning and change, altering understanding.

We made WEB portal with several types of instruments suitable for action and empirical research.

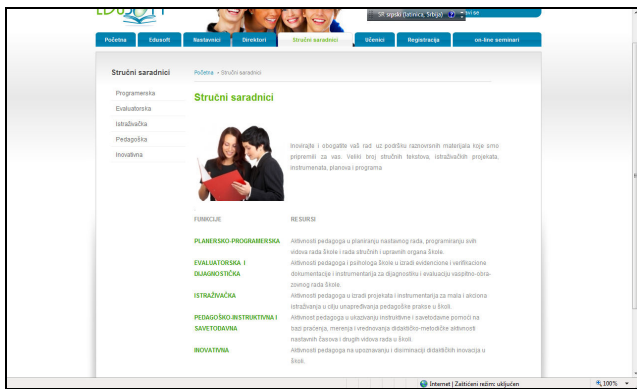


Fig. 1 WEB portal for researchers in education

In this module of portal we have more than 200 documents for planning school activities, research the results, evaluate teacher's and student's activities.

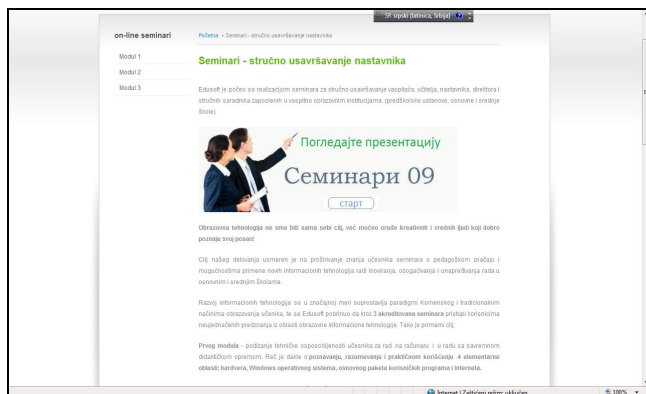


Fig. 2 On-line seminars

Action research differs from other types of methodological studies in that they are very flexible and flexibly organized. The project of such research is, in fact, only a specified framework of research. The project continually during the research (improve, amend, correct and, if necessary, and changes from stage to stage action research. According to the results teachers can change educational technology, teaching process and evaluate knowledge continually. In the process of action researchers are trying to gather quantitative facts, as well as other empirical research. This, however, is basic and primary goal of action research. Action research is largely based on qualitative factors. Paradigm of action research is less scientific explanation, a more pedagogical and methodological understanding of the phenomenon that is the subject of research. That does not mean that action research does not strive for the quantitative facts. They tend to rely on quantitative and qualitative facts simultaneously. Action research differs from other types of methodological research and the fact that the researchers considered all the participants of activities which is the subject of research. All of them together (with the organizers, initiators, professional researchers, etc.). The research team. immediate action artists (researchers) even have a key role in the assessment exceeded the stages of research, the proposed new directions of research, as well as in the conclusion of all research and evaluation. In the teaching of certain subjects, including the teaching of physical education can be successfully prepared and implemented an action (activity) investigations, or, as some of them due to the active involvement of teachers in all phases of research activity figuratively referred to as teacher research. The implementation of these trials, compared to the classical, is flexible (elastic), and the project research is more open and unfinished. Action research are also organized to provide, other than a professional researcher, and each teacher and colleague, to be actively engaged in the research process, from selection (identification) and the formulation of the problem (cases) research, project development, data collection and processing, to interpretation (the analysis and evaluation) the results of research and their application in the direct teaching work. At the same time, action (activity) and promote the research include, if it has reasons

to change the course of the research process itself^{2 2} research. Thus, for example, professional researchers and educators (teachers directly organized and carried out educational work and do some research tasks: construct informal measuring instruments, applied them in the research, collect data from their students, etc..) Jointly analyze each stage in the action research study and during the discussion time evaluating methodological soundness of research and, in connection with this, continue the same path or change. Changes can be made several times during the research. It is considered that the most effective action research, the most direct and most natural way to simultaneously change and improvement (improvement) teaching practices. They are in a natural way to check or analyze the methods, forms, means the teacher's work (in fact, of course, participate and I am a teacher) or other practically oriented teaching issues. Describing the legality of certain pedagogical action research is the primary task. Therefore, action research in the teaching of nature and society are primarily focused on checking the pedagogical, didactic and methodological values of different (new) teaching (teacher's) procedures. True, it is possible to achieve the realization of other experimental and methodological research. However, due to parasitic effects of variables in experimental research and the efforts of researchers at all costs to the variable control (eliminate, neutralize) leads to violations of naturalness of the teaching situation, which is not the case in action methodological research. Action research is simply understanding within the paradigm of methodological phenomenon instead of the paradigms of interpretation (as much as striving for objectivity, exactness and accuracy of cognition of phenomena and their interaction links. The emphasis is, therefore, instead of the mathematical exactness of the results and their objectivity (paradigm of interpretation) in the creative game ideas, especially in the so-called. brainstorming - hermeneutic understanding of the phenomenon and critical checking of practical teaching problems. Action research is more pronounced than qualitative or quantitative approach. Statistical analysis, within the quantitative approach, limited to basic descriptive statistical indicators (usually a percentage and measures the average). Procedures for entering the field of statistics (conclusive

statistics) over that in these studies are not used. Action research is particularly outstanding in terms of critical epistemological-methodological orientations in didactics and methodology. In this research emphasizes the application of research procedures and instruments to collect data. The action research is liberally applied systematic observation, especially participating (observations with share), followed by interviews and research documents (diaries, records, students' and teachers' work, teachers' written preparation, etc..), Because they, especially the work on the documents, usually less than pedagogical methods testing, scaling and kinds. In short: action research is usually achieved by using pedagogical practices and instruments in the paradigm of understanding with a pronounced qualitative and structural analysis. Action research starting from criticizing the theory of teaching in which the relationship of learning and teaching is understood as a process of interaction in which students, with support from teachers, they should increasingly adopt certain forms of self-knowledge, the possibility of reasoning, evaluation and action, to actively deal with the reality of teaching, to include the acquisition of skills for further learning through this process. Thus learning must be understood in it's essence be a learning and teaching to reveal meaning and understanding. Download reproductive knowledge, skills and habits that are acquired, although not necessarily, the pedagogical acceptable only from the standpoint of discovering and / or understanding learning. The researchers realized that action research is made to bring the interactive relationship and understand the many factors involved in teaching, instead of didactic analysis and description. The action research in the teaching of nature and society emphasis is placed on the model of methodical action - in which teacher and student and the active subjects - instead of the model of methodical decision-making, where they are not. Meaning methodically, action consists in understanding what to teach and research (teacher) with those who primarily teach (student). Almost every methodological problem in the teaching of nature and society (for example, mutual assessment and student self-assessment, establishing assessment criteria, student absences from school, the relationship between students and teachers in the department of social climate in the classroom

teaching of nature and society, the burden of students in physical education , flexible schedule of teaching classes, etc.), whose solution involves both knowledge, change and improvement (improvement) teaching on the go, may be subject to action research. True, the same problems may be the subject of other research. The difference is that the methodological research in action rather than wait for completion (end) research in order to apply the results (used), as is the case with other studies but is already used during the research. Therefore, identification (research section) and application (application part) results in the action research exercise at the same time, are one and the same. The team is changing and improving the subject of research and research situation itself and the participants of research, action research and become an integral part of the teaching process. Action research conducted in physical education are specific, not only in relation to other studies, but in relation to the action research carried out in other subjects.

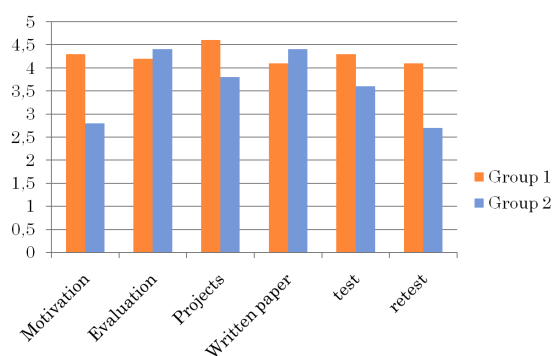


Figure 3 Results of student' activities

When it comes to action research in physical education (they plan, implement and evaluate the direct implementers of instruction - teachers together with students), it is necessary to choose, especially France burning educational problems (some have already mentioned), which must be sufficiently narrow (hence the name of a small research), application (because the name applied research) and focused on continuous (permanent) innovation (the innovative research) of physical education.

4. Conclusion

Action research helps teachers to change educational technology, teaching process and evaluate knowledge continually. In the process of action researchers are trying to gather quantitative facts, as well as other empirical research. The instruments used in action research are usually already applied in other empirical research. If you study participants, however, made specifically for research, they are mostly ad hoc prepared instruments - instruments that are not preliminarily checked. However, before their application is necessary to conduct a joint debate (discourse) and obtain the consent of all participants (students and teachers) to be used in the study. The action research methods most commonly used content analysis of documentation (that are, for example, students' work, teacher preparation, minutes and notes, magnetic, film, video clips and other educational classes, protocols written record, teachers and students diaries, etc.) then participation observation procedures (procedure when the researcher involved in the group, events, processes, etc. that follow, examine), and interviewing and surveys (questionnaires especially prevalent where issues open type) and, very rarely, other research methods (scaling, testing, etc.). Processing the collected data is mainly qualitative. Quantitative analysis is limited, usually to calculate and determine the percentage and ranks. Due to the atypical and generally small sample the results of action research is difficult generalise, but they can and should be documented. When participants in a joint action research works (that is, and cooperative research) that have been set successfully solve the problem, writing reports on the completion of the survey. We can conclude that Computer Aided Research becomes the power tool for teachers to improve educational technology.

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