

Organizing Educational Activity of a Pupil on the Basis of Learning Technologies

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ABSTRACT

A pupil is in the center of contemporary educational process, and the educational process requires some reorganization, which adds topicality to this paper. The paper considers how pupils use learning technologies helping them to achieve certain personally and socially important goals. The main research method is the method of a pedagogical experiment through which the skills of a pupil which are necessary for learning activity, such as self-analysis, self-goal-setting, self-planning, self-organizing, self-control, self-assessing, and self-correction are revealed. The results are the following. The concept "learning technologies" is explained. The learning technologies called "I want to learn", "I can learn", "I know how to learn", are worked out and tested. Their influence on the process of the pupil's subject-activity, i. e. subjectness, is proved. This paper could be interesting to scholars dealing with contemporary education, as well as to teachers striving to improve the educational process.

KEYWORDS

Pupil's subjectness, pupil's learning activity, learning technologies

ARTICLE HISTORY

Received 10 March 2016
Revised 10 May 2016
Accepted 22 May 2016

Introduction

The Topicality of the Problem

Many contemporary scholars see a pupil as a learning subject. This means that a pupil should not only meet the requirements of the programs and standards, but also should have the right to fulfill his/her requirements in learning as a part of educational process.

The topicality of the research issue is based on the following controversial moments:

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- the controversy between the necessity of developing subjectness of a pupil and his/her learning needs and the necessity to meet the requirements of the state educational standards;

- the controversy between the importance to organize the learning activity of a pupil and the fact that the ways of its organization are not developed well enough still;

The aim of the research is to give theoretical grounding, work out and test the learning technologies for pupils with a different degree of subjectness as the basis for their learning activity.

Exploring the Importance of the Problem

The educational process supposes that each pupil is an object (as he/she should meet the requirements of educational programs and state standards) and a subject (as he/she has a need to fulfill their learning requirements). Despite of the fact that education is widely viewed as a source of personal development of a pupil, of his/her self-development and of revealing his/her creative potential, a teacher is still supposed to provide him/her with fundamental and systematic knowledge. Thus it is mostly the teacher who is being active at projecting and fulfilling the educational process. The teacher sets the aims, content, methods and organizational forms of education and all that he/she does according to his/her own idea of the activity, and little does he/she care if this would suit a certain pupil in any way. The researchers have come to the conclusion that all the set of didactic means is often of little effect, as the pupils have not got enough motivation and it is often not clear for the pupil what he/she should change in himself/herself. Many pupils actually do not see any sense in learning, and their knowledge has nothing to do with their real life. One of the main issues of contemporary education is the fact that a pupil is estranged from the educational process. So the learning motivation gets lower, thus formal educational values often prevail.

Characterizing the researcher's position

Subjectness of a pupil is understood as a process of realizing his/her own needs in education and changing himself/herself and the world around in course of setting and achieving personally and socially important aims. The development of subjectness of a pupil in the process of education takes place during his/her learning activity, i. e. his/her activity in learning, self-development and self-upbringing.

I have been researching the process of transformation of educational activity of the pupil within some years. On the one hand, this transformation is determined by new requirements of the educational system, on the other hand, by changes in educational needs of pupils. The research aims at revealing the main characteristics of educational activity of a pupil in contemporary conditions and in working out new learning technologies. The paper presents the concept of a learning technology as a system of actions of a pupil aiming at achieving personally and socially important educational purposes. The author argues that a learning technology should be determined by the wish of a pupil and it reflects the peculiarities of his/her subjectness development.

A.M. Novikov (2010) said that there are loads of papers dealing with educational technologies, still learning technologies had not been properly

researched yet. This paper aims to some degree to fill the gap and to present the learning technologies which have been worked out and tested by the author of the paper.

Working out learning technologies is based on the peculiarities of development of subjectness of a pupil who determines the way of his/her interrelation with the teacher, the aim, the content, and the result.

The learning technology «I want to learn» is for low-motivated pupils, for those who do not like school. They are not aware of their own educational needs. Their educational needs are not well-developed. They are seldom active in learning, their activity is “out-of-the-situation”, it is not directly connected with learning. And they are often not satisfied with their teachers, their school, and their education.

Type of interaction: teacher-initiator - pupil-performer.

Technology aim: to provide the pupil's understanding the reasons of difficulties in learning on the basis of learning the material under the requirements of the state educational standards.

Content: Working out and realization of the system of individual tasks aiming at increasing the pupil's learning motivation, intellectual development, organizing the educational activity on the basis of psychological and pedagogical diagnostics. This learning technology helps to cope with the following disparity: to increase the motivation a pupil needs the material, which does not require any brainwork effort, while to develop one's intellect one does need the material that requires brainwork. It's well-known that with different pupils one and the same difficulty can be caused by reasons of different nature, depending on what personality structure it touches upon, and pedagogical diagnostics is necessary for finding out the peculiarities of motivations and needs system of the pupil and his/her ability to learn. A system of individual tasks for a teaching year for each pupil was worked out on the basis of the diagnostics results which reflects the pupils' intellectual development and creative tasks which contribute to increasing learning motivation. The technology consists of the following stages:

1st stage - teaching a pupil to estimate oneself, to be able to compare the result of each task performed with the ideal, the paragon of a full and correct answer;

2nd stage — teaching self-control, the ability to see the degree of difficulty of the task and the ability to cope with it, the time, necessary for the task and whether it is necessary to ask for the teacher's help;

3d stage — teaching the pupil to choose the level, amount, type and form of performing the task;

4th stage — teaching the pupil to put a subjective aim, that is to put his/her own aim in learning.

Result: the pupil's realization of his/her educational abilities, improving his/her attitude to learning and to the teachers.

The learning technology «I can learn» is for pupils who show a positive attitude to their education from time to time. The pupil knows that there is some interrelation between the result of his/her learning and the effort he/she makes. Still such a pupil shows his/her activity only if there is some outer stimulus and

motivation. His/her success gives him/her some positive emotions. He/she is unsure and passive at the lesson.

Type of interaction: teacher-expert - pupil-organizer.

Technology aim: to make a pupil included in management of the quality of his/her own education.

Content: pedagogical help to the pupil with his/her subjective aiming, with his/her learning the obligatory material and choice of teaching-learning forms, development of reflexion. Individual, personal aiming is performed in the following way. The teacher explains the requirements to the results of learning the topic, gives the pupils some choice and offers them to put their personal aims in learning the topic. In case of difficulties the teacher is to support the pupils, asking them to finish one of the following sentences:

- I am interested in learning.....
- Learning this topic I want to find out (to lean, to understand)
- I have never coped with, that's why I will try.....
- No one has ever done that before (has not solved it, has not tried), so I will.....
- To get a mark (a credit) I will.....

At this stage it is important to help the pupil to determine the amount and the time of his/her work at the lesson and at home.

It is recommended to the teachers to organize the pupil's activity with the help of the following table:

Topic: _____ My aim of leaning this:

	<i>Date</i> (when?)	<i>Aim</i> (why?)	<i>Content</i> (what?)	<i>Form</i> (how?)	<i>Result</i> (what should it lead to?)
<i>Requirements</i>					
<i>FSES</i>					
<i>My notes</i>					

I suppose that teaching pupils to learn independently, by themselves, should take place by means of creating special choice situations at the lesson. This choice situation is viewed, according to Z.L. Yakovleva, T.I. Nemtseva and E.N. Stepanov (2004), as a part of a lesson prepared by the teacher when the pupils have to choose a variant of coping with some task and the ways of solving the problem and to show their activity, independence and an individual way of learning. So any pupil can choose not only the aims of learning but also its content (if beyond the federal educational standard), the level of the task, its type and character, and the form of coping with it: in written form or orally; individually or in a group; the tempo of learning and doing the task; the right to estimate the results of one's own activity.

The final stage is devoted not only to the pupil's report on the work done but also to searching the answers to the following questions: Which aims have I put at learning the topic (or the subject)? What new have I learnt? What have I

learnt? What was the most difficult for me? How did I overcome the difficulties? Did I get the right result? If I had such an opportunity, what would I change in my learning? What have I learnt about myself, about other people, about the environment, the world?

Result: Developing educational needs of a pupil, forming the universal ways of learning activity, reflection.

The learning technology «*I know how to learn*» is for pupils who are aware of their own educational needs and whose learning skills are already formed. A pupil puts personally important aims in learning, which are beyond the normative activity, he/she shows intellectual initiative and activity. Such a pupil has skills of productive individual work. Can manage the quality of his/her education.

Type of interaction: teacher-consultant — pupil-initiator

Technology aim: the pupil is given an opportunity to fulfill his/her educational needs and to manage his/her educational activity;

Content: teacher's support of the pupil at projecting his/her individual educational program on the subject (putting an aim, selecting the teaching material (deepening, broadening, systematization), setting the time limits of learning, forms of control and self-control. An individual educational program can embrace different learning periods: a lesson, a day, a week, a term, an academic year. The logic of the analysis of changes in the pupil himself/herself in the process of learning indicated the issue of difference between individuals. The learning management makes these different individual features even more conspicuous. V.V. Davydov and A.K. Markova (1981) speak of the possibility of forming individual features in learning at school deliberately, arguing that it is not enough just to take the individual featured into account, but to treat them as the background in teaching.

1st stage – a teacher's diagnostics of the level of the pupils' educational abilities and educational needs in the subject;

Diagnostics can be made in class, it can be done in different forms, such as answering the questions, the review of the new topic, as well as choosing tasks and tests of different type by the pupils. It is necessary to explain to the pupils that they have a right to put their own aims in learning any subject. For example logical or presentative, deep or encyclopedic, introductory or advanced presentation of the topic. It is necessary to inform the pupils of the obligatory, invariant elements of learning (the knowledge and skills which are to learn according to the state educational standard, the tests and control, the time limits), and to show some possibilities of choice (the extra, non-obligatory material and the forms of work with it, such as reports, presentations, projects, observations, as well as the forms of control, such as a credit, a presentation)

2nd stage – putting personally important aims by the pupil (with the teacher's help) in learning the subject, outlining the final result and the form of its presentation, making a plan of work, selecting the means and ways of work, control and estimation of the work.

Pupils can put aims definitely and clearly, and also controllably. The aim chosen determines the approach to selecting the teaching material. Researchers suggest different strategies in choosing the content of the teaching material. For example, A.I. Savenkov (2001) suggests the following strategies:

- *speeding strategy* supposes speeding one's learning, that is a higher speed of a definite pupil as compared with the others;

- *enrichment strategy* means enriching the learning material, its deepening and broadening;

- *intensification strategy* (is in many ways an alternative to speeding strategy) is aimed at increasing the intensification of learning and it is for the pupils who are in advance with the others.

It is very important that the content of the individual educational program should include the all the teaching material required by the state federal educational standard.

3d stage – expertise of individual learning activity of a pupil;

This stage is necessary in case the teachers and the pupils have not enough experience of projecting individual educational experience. The expertise procedure made by other teachers will help the teacher supervising the individual work of a pupil to feel more sure. At the same time the pupil who estimates his/her future learning activity gets an opportunity either to get more sure in his/her plan, or change it.

4th stage – individual educational activity and summing up its results;

Individual educational activity can result in a report, a presentation, a paper, a research, an experiment, a project, an observation, etc.

Result: the pupil's achieving personally and socially important result of learning.

Status of a Problem

The issues of an individual's self-actualization in learning presented in the works of A. Maslow (2002) are of great importance. F. Coffield (2004), I. Setwala (2014) are concerned with teaching pupils being active and responsible. D. Petit (2010) offers the technology of educare, oriented at educational needs of pupils and developing their subjectness. The analysis of works of Russian and foreign researches has shown that the issues of developing subjectness in a pupil requires also special technical equipment.

The Hypothesis of the Research

It is necessary to work out learning technologies as the basis for educational activity of a pupil and its experimental testing. The aim of this paper is in revealing the content and the order of the experimental research of learning technologies productivity. The hypothesis consists in the idea that organizing pupils' educational activity on the basis of learning technologies will contribute to forming a set of skills (self-analysis, self-goal-setting, self-planning, self-organization, self-control, self-assessing, self-correcting). The skills would determine the stage of development of the pupil's subjectness.

Materials and Methods

Research Tasks

The following tasks were solved during the research: 1) to explain the concepts «pupil's educational activity» and «learning technologies»; 2) to find out and to characterize the set of educational skills of a pupil; 3) to organize

educational activity of a pupil on the basis of the technologies worked out; 4) to test the learning technologies productivity

Theoretical and experimental methods

To prove the hypothesis I have used a complex of complementary research methods:

-theoretical: philosophical and psychological-pedagogical literature analysis, legislative, analysis of normative and instructional and methodological documents on the research issue; studying and generalizing the pedagogical experience;

- empirical: longitude observation, focus-groups consisting of teachers, expert assessment method, pedagogical experiment, qalimetric method.

Research base

The research base is the following:

- 12 educational institutions of the Kirov region: Slobodskoy Gymnasium; Municipal budgetary general educational institution Secondary General School with advanced study of some subjects №1, Kotelnitch; Municipal budgetary general educational institution Secondary General School №48, Kirov;

- 18 educational institutions of the Surgut district of Khanty-Mansiisk autonomous region, the Tyumen region.

Stages of the research

The research is done in three stages:

1st stage – ascertaining (2008-2012).

During this stage theoretical approaches to the learning activity of a pupil in research literature were considered, the author's individual research principles were formed, the program of the empirical research was made, the research basis was prepared. The basic educational abilities of pupils were estimated, which served the basis for forming experimental and control groups.

2nd stage – forming (2013-2016).

At this stage work with the teachers participating in the innovative educational process was organized. The teachers participating in the research were provided with special teaching aids and methodical programs, seminars were delivered, model lessons were given, the teachers got the necessary help with their professional difficulties, and the reasons of the difficulties were analyzed.

3d stage – control (2016).

This stage was devoted to the analysis of the results of innovative teaching. Final diagnostics of the pupils' self-educational ability was made. At scientific-methodical conferences and seminars on regional and municipal levels the teachers got to know about the innovative experience of their colleagues-researchers. The main results were presented in scientific and methodical papers in journals and collections of abstracts.

Assessment criteria

Federal State Educational Standard (2008) requirements to the results of education at elementary, secondary and high school were analyzed and a set of pupils' skills was determined:

- self-analysis consists in the ability of a pupil to investigate his/her readiness to correspond to the requirements to his/her learning and the results of it;
- self-goal-setting is the ability not just to follow the goals set by the teacher, but also to put individually important educational goals;
- self-planning means choosing the ways of achieving one's goals;
- self-organization is a set of actions aiming at achieving the educational goals by the pupil;
- self-control is carrying out constant control over the process of one's own activity by the pupil;
- self-assessing performs a function of summation of the results of the work and determining by the pupil of how the result achieved corresponds with his/her goals;
- self-correction is the analysis of reasons of some inconsistency of one's activity and choosing the ways of improving things.

Taking into account the idea of V.P. Bespal'ko (1989) a set of skills of educational activity of the pupil was presented in 4 stages (beginning, algorithmic, heuristic, creative), they reflect the degree of development of the skill. During the work of focus-groups of teachers the content of every skill at each stage was determined and the diagnostic features were pointed out. For objective control diagnostic tests were worked out, they consisted of tasks of any definite level of every skill and the paragon of a full and correct answer.

The Experiment

At the ascertaining stage of the experiment the teachers-researchers diagnosed the pupils' ability of self-education. Besides, a special month-long program of longitude observation of pupils' showing subjectness at the lesson was worked out. The records on each pupil were registered in a special table. Thus a rich empirical material was gathered, and it has been serving as a basis for forming experimental and control groups of pupils of different ages.

At the forming stage of the experiment the teachers who participated in the innovative teaching were working individually with the pupils who needed this or that teaching technology. A pupil himself/herself, sometimes with the help of his/her parents was making a decision whether to use or not to use the teaching technology.

For the learning technology «I want to learn» the teachers had to characterize the difficulties of the pupils in learning different subjects, as well as their attitude to the subjects. It was stated that many pupils do not want to participate in the innovative teaching as they do not believe that it is possible to overcome their difficulties. They all have some way of compensating their learning failures: sport (13%), television and computer (21%), idling away the time with friends (35%), no hobbies (31%). As a result of the work done the following conclusions were made: educational retardation starts at elementary

school and it gradually increases. Then there appears the disability to learn in the necessary tempo. At this stage the attempts to overcome the retardation get useless and such qualities as passivity, indifference, unconcern are formed.

The pupils who want to use the technology «I want to learn» were offered to learn the requirements to the result of their work at the lesson, as pupils often see that the reason of their failures consists in bad attitude of the teacher to them. The task done had to be compared with the paragon, an example of a full and correct answer. The skill of self-control is shown in the ability of the pupils to set time limits and to choose the necessary resources for coping with the task. It was very difficult both for the teachers and the pupils to cope with the choice situation when it is necessary to choose the task, set the time limit for doing it, and select the form of stating the results. The aim of working with this technology is in forming the ability, the skill of goal-setting. It is natural that exactly this skill crowns all the work as a pupil gradually accumulates a positive experience and then he/she can use it as a basis for one's own educational activity.

The learning technology «I can learn» was used both with definite pupils and with groups of pupils. Innovative learning using this technology is the most effective. About 30% pupils who were taught with the use of this technology made a decision to continue using it during the next teaching year. Innovative learning indicated that the most difficult thing is to achieve axiological unity of all the educational participants: the teachers, the pupils, and their parents. There was a certain disagreement between the parents who had high social claims as for success in learning of their children and the teachers who had certain requirements to knowledge and skills of the talented pupils. To get rid of this disagreement the learning technology «I can learn» was used. It helped to coordinate social and personal educational goals and the ways of their achieving.

The learning technology «I know how to learn» attracted the pupils who have a definite interest in some subject. According to the forming stage of the experiment the pupils with high-level educational needs did not know about the possibility to organize educational activity at the lesson. It is important to note that the learning technology «I know how to learn» gave them the chance to demonstrate their potential preparing for subjects olympiads, different, exams and tests, and competitions.

Considering the peculiarities of learning technologies working at different stages was very important for the research.

Innovative teachings at elementary school revealed the practicability of using learning technologies at the lesson, which is a minimal period of learning. It is found out that by the 2nd and 3d form of elementary school some pupils already show definite educational needs, we well as the ability to fulfill the learning technology «I know how to learn» (within short periods of time), while other pupils have difficulties in learning, and with them the learning technology «I want to learn» is needed.

Experimental teaching of teen-ages took place within pre-project and project specific training which require subject skills and qualities. At secondary school the effect of the learning technology «I want to learn» decreased, while the effect of the technology «I can learn» increased. It is also effective to include pupils of secondary school in management of the quality of education on the basis of the technology «I know how to learn» and to use this technology at the

lessons. At secondary school it is of great importance to use a set of skills of support of the teacher.

At high school pupils' subjectness is to take place in individual work according to the technology «I know how to learn» in learning the subjects which are personally important for the pupil.

At the control stage of the experiment the main results of the research were presented in scientific and methodical papers, journals and books of abstracts. I was writing about it in more detail in my previous works (Selivanova, 2014).

Results

The learning technologies had been checked during several years in educational institutions of the Kirov region and the Surgut district of Khanty-Mansiisk autonomous region, the Tyumen region. The experimental (167 people) and the control (185 people) groups were formed for the research.

For assessing the results modern qualimetric methods were used. Each skill was represented as a hierarchy, and the significance of each element within each quality under research was calculated and presented numerically. The significance of each index and the skill on the whole is expressed in a constant and it was determined with the method of expert assessment. The calculations show that the assessment of the qualities under research are rather similar in the two groups.

According to the research in both groups the educational activity skills of pupils were formed. Still the results show that the pupils of the control group have improved their results only in the skills of self-analysis (by 3%) and self-organizing (by 1%). The skills of self-goal-setting, self-planning, self-control, and self-correction were on the same level. No one of the pupils has achieved the 3rd or the 4th level. At the same time 9% pupils of the experimental group improved their ability of self-analysis, self-goal-setting and self-planning up the 4th level, the same level in self-organizing was achieved by 15% pupils and of self-assessing – by 5% pupils. The results suggest that the most difficult skill to achieve is the skill of self-correcting.

The final diagnostics of experiment results assessment of each skill was done, as well as a complex estimation (Table 1).

Table 1. Complex assessment of the pupils' educational skills before and after using the learning technologies

Complex assessment	Preliminary assessment	% maximum possible result	Final assessment	% of maximum possible result
<i>Experimental group</i>	15.56	43.8%	22.83	63.4%
<i>Control group</i>	15.78	43.8%	18.16	50.4%

Each skill is introduced as a succession of levels of their mastering (beginning, algorithmic, heuristic, creative) according to the diagnostic indices. Complex assessment was calculated according to the formula $\sum K(n, j) M(n, j) = K$, K is a quality-of-mastering coefficient, M is the weight, that is the importance of diagnostic character having a numerical index, n is the level considered, and j is

the number of the feature. The table shows that, the weight of a comprehensive assessment after training in the experimental group more, than in the control group. It is $\sum K(n, j) M(n, j) = 22.83$ from 36 possible, which is 63.4%. At the same time the final assessment in control group is $\sum K(n, j) M(n, j) = 18.16$, that is 50.4%. The effectiveness of the approach proves the fact that innovative teaching causes positive dynamics of the indices. Thus the result of the research consists in showing the increase of the ability of the pupils to manage their education, as a result of innovative way of teaching.

Discussions

The issue of subjectness v. objectness of a pupil in educational process is still to be considered and discussed. One must keep in mind that a pupil is a subject of the process of learning and at the same time he/she is an object to professional teacher's instructions. Disagreement of the two positions causes some negative consequences such as if dominating of objectness of a pupil interferes with the humanistic function of education, while prevailing of subjectness of a pupil can make the teachers not able to manage the process of active development of the pupil as a subject of the learning process. I argue that organizing educational activity of a pupil on the basis of learning technologies contributes to making the pupil's social (making the quality of education be compatible with his/her personal potential) and individual, personal (fulfilling one's needs in information, in knowledge) educational goals and the ways of their achieving.

Conclusions

The main results of the research are the following:

1. The hypothesis is proved that a pupil as a subject in the process of learning can manage his/her educational activity, if he/she has the skills of self-analysis, self-goal-setting, self-planning, self-organizing, self-control, self-assessment and self-correction. A set of the above-mentioned skills is represented by a learning technology viewed as a system of actions of the pupil aiming at achieving personally and socially important aims.

2. 3 learning technologies are worked out, they reveal the aim, content, algorithm of pupil-teacher interaction and the expected result. The learning technology «I want to learn» is for pupils with a low degree of learning motivation, for those who are not contented with themselves, their teachers, their school. It consists in a pupil's coping with a set of individual tasks which contribute to development of his/her intellectual abilities. The learning technology «I can learn» is for pupils with the positive attitude to learning and the teacher's support at all the levels is required: goal-setting, learning the material, choice of the ways, and reflection. The learning technology «I know how to learn» is for pupils with the well-formed learning skills who are aware of their educational needs, in this case the teacher is to be a supervisor of the pupil in the process of achieving his/her learning goals.

3. The experimental work with the learning technologies last 8 years, it was taking place in 30 schools, thus the research material is considerable. It is

proved that the learning technologies contribute to the pupil's subjectness if they correspond to his/her educational needs and learning abilities.

Recommendations

The practical value of the research consists in the fact that the theoretical conclusions made during the research contribute to forming new pedagogical consciousness and they need to contribute to the shift to the person-oriented educational paradigm. The theoretical analysis of the laws of developing subjectness of a pupil, of his/her age and personal peculiarities allows the teacher to provide the pupil with the needed pedagogical support in learning.

Acknowledgement

The work is performed according to the Russian Government Program of Competitive Growth of Kazan Federal University.

Disclosure statement

No potential conflict of interest was reported by the authors.

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