Introduction

Pedagogical diagnostics is a trend, directed towards the quality of education. It presents a main component in the monitoring, which is a standardized way for data collection, processing, analysis and interpretation in an attempt to obtain true information for the conformity between the process and the result of the education, according to the normative requirements. Each study-session always requires the necessity for determining the result from the involved effort. This process has been used for ages of pedagogical control together with methods, which according to today’s belief are doctrinal. Only in the last couple of centuries, scientifically-controlled methods have been incorporated. By its nature, pedagogical diagnostics involves independence. It has adopted its methods more or less from the psychological diagnostics. The pedagogical diagnostics today tends to be more actively discussed and questioned than a settled doctrine. Only in the last couple of centuries, scientifically-controlled methods have been incorporated. By its nature, pedagogical diagnostics involves independence. It has adopted its methods more or less from the psychological diagnostics. The pedagogical diagnostics today tends to be more actively discussed and questioned than a settled scientific study, therefore, it shall not come as a surprise that there are a number of different definitions for the education’s diagnostics, i.e. the consequences and the achieved results. In the diagnostics, wider and deeper meaning has been incorporated, than in the traditional means for checks and balances of the education. The checking process only determines the results, but it does not explain their source. The diagnostics, on the other hand, is looking at the results in terms of the path, the means for their achievement, it determines the tendencies, the dynamics for the creation of the final educational product. The diagnostics involves control, checks, examination, data collection, analysis, dynamics’ identification, tendencies, foreseeing the development of the events. In this way, the pedagogical diagnostics is directed towards optimizing the process of individual education, also to provide the rightful determination of the results and to lead to minimum errors in the process of moving from low to a higher level of education.

Pedagogical control

The control in the educational system is used to determine how this very same system achieves its means - common ones, related to the quality of education and the preparation of the learners according to educational levels and subjects. It is also directed towards the efficiency of the work of those subjects (namely teachers, students, and other managerial positions). The main object of control and assessment is the level of efficiency of preparation and education of the students, also how well proposed standards have been achieved in the process of preparation in terms of their capabilities, of the Bulgarian traditions and world achievements and how well the engaged with education people and institutions perform their functions and responsibilities. The pedagogical control is a specialized control over the whole educational-raising process,
being used in the educational system. Its nature consists of regular collection of information for the behaviour of the system, in terms of taking effective managerial decisions for its functioning and development. The control as an educational mean is performed not like a check of the qualities for the learned from the education, but like reaching and performing active track of the inapplicable bit of their studying habits. The control is also a mean for getting information for the quality of the educational process. The control of the pedagogue is directed to the performances of the student, also to the level of interaction between the student and the pedagogue. Essential role plays the mechanism of control, which performs the following functions: nurture, education and control (Hrusanov, 1976; Draganov etc., 1981), orientation, education, control, management, diagnostics, development, nurture (Krivoshapova, Silutina, 1981); gnoseology, deduction, control-awareness, nurture, diagnostics and prognosis, regulation, selection and stimulation (Andreev, 1987) and others such as management, informative, simulative, emotional and social functions. The main idea behind the control function is the establishment of a reverse relation (out: student – teacher and in: student – student), but also assessment of the results of the control. It has the following stages of fulfillment: 1. Evaluation of the goals, criteria, and figures, according to which the measurement is performed; 2. Information collection and its application for determining the factual state of the controlled event, process or result; 3. Comparing of the two present states – the planned and the reality; 4. Evaluating and assessment of the similarities and differences between the two; 5. Discovering the reasons for deteriorations (Radev, 1996). The educational function of the control consists of perfection of the knowledge and skills, and on their systematization. In the process of checking, the learners are repeating and they learn the learned material. They not only re-create the learned from before, but they acquire knowledge and skills in a new situation. The control helps for separating the main, the core knowledge and to systemize the whole. The educational function forms motivation for successful action, true criteria for self-control and self-assessment, stimulate new ideas, experience, contemporary technology and approaches. Diagnostics function - getting information for: errors, disadvantages and missing details in the knowledge and skills of the learners; the emerging reasons, preventing them from learning the material; the number and character of the errors. The results of the diagnostics control help in the choice of the most efficient and intense methodology of education, also for determining the directions for future improvement of the content of methods and means for education. The regulative function of the control helps in the bypass information for the educational process. As a result of the control check, reasons for the prognosis of a certain stage of the educational process is being attained. The results of the prognosis are used to create a model for future behavior of the learner, who made mistakes of a certain type or has missed some details in his studying history. The prognosis helps to make right conclusions for future planning of an educational process. The developing function of control consists of stimulating the educational curiosity of the learner for the achievement of their creative skills. During the process of control, the speech, the memory, the attention, the imagination, the persistence and the thinking of the learners are developing, motives and skills for application of the learned material are being developed. The control plays an important role in the development and emergence of such qualities of the person, such as ability, tendency, interests and necessities. The orientation function – getting information for achievement of the goals of education for everyone – how much it has been consumed and in what stage the learned material has been studied. The control informs the learners about their difficulties and achievements. The educational function of control consists of developing a responsible behaviour towards the education, the discipline, the accuracy, the honesty and the taken responsibilities. The check-control forms consistency and asks for more serious behaviour, for more regular self-control towards the achievement of the set goals. It emerges as a requisite for the will, persistency and learning habits and desire for self-control. The regulative function relates to making the relevant decisions for future action of the control system, incorporating corrections for the removal of the weaknesses and deteriorations, through project-planning and optimization of a stability in the system. The emotional function relates to the fact that each type of mark creates a certain emotional reaction in the assessed person. The main idea is that the learners are meant to not only interpret for themselves the learned, but to feel it, cognitive and behavioral reactions, which develop their competencies. In fact, the mark could inspire, could direct for getting over the difficulties, support, but it could hurt, form low personal self-assessment, ruin the contact with others. The utilization of this important function in the control-check of the results of the education consists of the idea that the emotional reaction of the teacher has to correlate to the emotional reaction of the learner. The situation of success, and social welfare are prerequisites for easy acceptance of the mark, and common analysis of the errors and mistakes, which need to be removed. The social function relates to the requirements of the society towards the level of preparation of the learner. In the pedagogical literature a common approach on the period for tracking the information for the results of the educational activities does not exist. The analysis of the different views leads to the conclusion that the control has to be performed regularly and to be based on diagnostic level, which would increase its effectiveness.

The above functions of control set a variety of requirements for it, such as purposefulness, diversity, individualism, systematization and a motivated character. The purposefulness determines the set goals, priorities and tasks, which the controlled subject sets for himself, i.e. related to the questions of why, what and how it is going to be controlled. The goals of the pedagogical control are directed at determining the condition and results of the educational process, the efforts of the teachers, those of the students and of the educational system as a whole. Each controlled subject sets the goals for its controlled activities in terms of the priorities of the educational system, which it manages. The structure of the controlled activity is set in terms of the position and responsibilities of the controlled subjects through the whole hierarchy of the educational system. The diversity is a requirement which supposes realization of control over the content, the format, the depth, the freedom and the independence of the exposition. The individualism not only provides a personal assessment of each of the controlled
subjects, but its individual explanation and its individual categorization. The systematization supposes a regular control with clear stages, which would motivate for individual work. The motivated character maintains the moving forward, each effort and hard work.

In the literature, there are many and different meanings to the nature of the control. This unequivocal aspect is provoked by its different dimensions. According to U. Balabanski in a wide meaning, the control means a principle of a reverse effect, typical for self-regulative systems. The control over the educational system provides for external reverse relation (control, executed by the teacher) and internal reverse relation (self-control of the student). The control is a main part of the education process, organically related to the studied material, its learning, its application, the habits and skills related to it (Balabanski, 1989). E. Bozhovic believes that the control is orientated mainly towards the knowledge, the skills, and the habits and is effective only when it is related to the diagnosis of the reasons for mistakes and difficulties of the students. In force is the line control-diagnostics – correction of the educational work of the students (Bozhovic, 1979). V. Voronov looks at the control as a main component of the process of education, meant to determine the level of achievement of the goals, to determine the level of knowledge and the skills, including the ability to resolve issues, to do practical tasks. The control needs to show the level of development of the students, the formation of established individual qualities. The latter is a difficult task, as the main important role of the control is to check and assess the knowledge (Voronov, 1999). I. Gac defines the control as discovering, measuring and assessing the knowledge and skills of the students. Its main component is the check (Gac, 2003). The word check means activity, having in mind to clarify something, to certify its rightfulness and wrongfulness, i.e. to clarify, to certify with the help of specific means. The check of the knowledge and skills, helps to provisionally establish the actual and final condition of their volume and quality. This process does not necessarily need to end with a mark, but it proposes for one, under the form of a feedback. For the check, there are different principles which present: immediacy, volunteering, obligation, going public, discreet, openness and so on. They can be chosen selectively according to the specific need. Other authors accept the pedagogical control as a common didactical and methodical system of a controlled activity, which is done under the supervision of a pedagogue, which brings a strong character, connecting the pedagogue and the student and is directed to the marking of the results of the educational process (Zvonikov, Chelioshkovka, 2007). L. Kruisin and S. Ojegov build up on the check with supervision over the check (Kruisin, 2006; Ojegov, 1999). V. Migala and E. Migala maintain this view and extend it as a process, guaranteeing achievement of a set goal (determining the criteria, measurement of results and making corrections if differences occur) (V. Migala, E. Migala, 2003). The point of view of certain authors in terms of the nature of the control, defines control as a matter to be compared to the planned result with some requirements and standards. M. Kasyanenko believes that the control in the pedagogical matter includes not only the assessment of the condition of the process in relation to the normative background, but also its recommendations, correction of the process, support for the teacher and the student (Kasyanenko, 1986). To a certain degree, a plausible definition is the one given by M. Chelioshkovka: The control is both an object of theoretical examination and a ground for practical activity of the pedagogue. With its help, the advantages and disadvantages of its methodology can be discovered, the relation between the works of different pedagogues can be compared, the achievements of the different students can be marked, the missing bits of their education discovered and thus to be able to give the necessary information to the person in charge for taking some policy measures (M. Chelioshkovka, 2001).

The principles of control are: objectiveness, systematization, neatness, clarity, wideness, complexity, differentiation, counting the aging and individual characteristics, democracy; humanism; applying different kinds of approaches and methods of control; educational character etc. The objectiveness is related to the scientific explanation of the content of the diagnostics' tests (tasks, questions), diagnostics' procedures, precise and clear criteria for marking of the knowledge and skills. The practical objectiveness means, that the established marks are independent from the methods and means for control and from the pedagogues, doing the diagnostics. The principle systematization consists of the necessity of performing a diagnostics control on each stage of the didactical process – from the adoption of knowledge to its practical application. The systematization means that all students get under regular diagnostics from the first to the last day of their education. This principle requires a complex approach for doing the diagnostics, under which the different forms, methods and means of control are used interchangeably, following the same goal. This kind of approach excludes the universality of the different methods and means for diagnostics. The neatness principle consists of doing open exams with all of the students under the same criteria. The rate of each student, established in the process of diagnostics brings neat, comparable character. This principle also requires publicity and motivate for a mark. The mark - this is a norm, according to which the students get to know what is required from them and also for the objectivity of the pedagogue. For the process of didactical control to be effective, it is necessary to organize the controlling-marking activities in order to achieve not individual principles, but their conformity.

Common classification of the types of control could be made according to: the timing in terms of place norm in doing the education: provisional (ingoing), current, periodical (based on a theme), conclusive (final) and outgoing; the rhythm (the repetition); one-time, periodical and constant; quantity of the students: individual, as group, front and as masses; character of the sanctions: formal (regulated by legal norms) and informal, which most of the times leads to spontaneous reaction against the controlling subject, showing its position to the subject and the result from the control-check – approval; teasing; irony, decline to give a feedback etc.; the way of execution: oral, written, practical and as a combination; in terms of who does the control for the result of the work of the students: external, mutual and self-control. The external is done by the teacher over the work of the student. The mutual is done by a student over the work of another student. The
self-control is entirely based on independent work. The
provisional control is needed to receive information about the
outgoing level of knowledge of the student in a previous course
of education and before studying a new subject. The results
from such a control need to be used for adaptation of the
educational material according to the necessities of the
different students. Current control is performed in the everyday
educational work and it consists of systematic supervision over
the scientific-education knowledge. The information received
from such supervision helps to plan and organize rational
methods and means for consecutive educational purposes.
The control based on themes aims at assessing the knowledge
and skills of the students from several weeks of studying. The
goal is to determine to what level the students get to know the
system of knowledge and skills and to what extent they
manage to cover the common requirements of the system. The
periodical control as a rule is done after studying logical
conclusive parts of the educational process – themes, sub-
themes, unfinished themes or a full course of study. The
student learns to think logically, to synthesize and to analyze it.
In this kind of control, additional time is provided for
preparation and an opportunity becomes available to re-sit an
exam for a better mark. In giving the final marks, the teacher
takes into account not the average marks for the year, but the
final marks given to a certain topic, which null the previous
lower marks, with which the objectivity of the control increases.
An opportunity arises to get higher marks. To finalize the
marks and deepening the knowledge become a motivation for
the students, reflecting in their desires and interests towards
the studying process. It is necessary to note, that the control
based on themes is occasionally called a periodical. The
medial control is done through a control-check of the
educational achievements of each student before going into
the next part of its education, in which it is impossible to not
know the previous material. The final control, these are exams
over the whole course of education. This control is usually
done in the end of the studied discipline and it establishes the
ability of the student for a further education. The outgoing
control visualizes matriculation in school or thesis/ diploma
writing in university.

For the pedagogue, this question is important: How to
control? The means for pedagogical control can be reviewed
under different viewing points: methods (traditional and non-
traditional); character (subjective, objective); using of technical
means (through machines or automatic); forms (oral or
written); periodical (provisional, starting, finishing, current, final,
regulated, therefore the formulation of the questions needs to
be precise and requiring unequivocal answers. Exactly the
need for short answers is what it distinguish it from the other
forms of control. With its help a restrictive area of knowledge
can be checked and not the skills which the students should
have been acquired. In this way, the quickness of performance
can be seen both as an advantage and disadvantage, as it
restricts the area of control. Even though, this area of control
could be applicable together with other forms of control. Short
independence work 2 is a form of written control under which
students receive a quantity of questions aiming at getting a
fully-explained answers. In terms of questions, there could be
both theoretical and other types of questions (qualitative,
quantitative, graphical, and experimental). This independent
work is quite more time-consuming than the previous one, and
the quantity of questions can be no more than three. It is
possible that the written work consists of only one task. The
form of written controlled work is the most common practice in
teaching. The number of variations of the controlled work is a
discussed topic. At school, one can come across from two to
eight types, as the teacher is trying to ensure as much
independence as possible for each student. Increasing the
number of variations leads to increasing the time needed for
the teacher to mark the works, also difficulties arise as to
create variations with the same level of difficulties. It is
appropriate the efforts to be directed towards improving the
students’ preparations and decreasing the number of
variations. As to the tasks, included in the written controlled
work, they need the following rules: the tasks, included in the
written works can be with different level of difficulty, this allows
the teacher to determine how well the student has learned the
taught material, and if not, whether the student has the
minimum knowledge for the same content; tasks can also
involve issues of increased complexity, not necessarily for
implementation, but also for solving them, students receive an
additional good grade and the teacher - the opportunity to
reveal the knowledge and skills of the students that do not
meet the requirements of the program; In the composition of
the control work are included not only computational tasks but
also qualitative, requiring, for example, graphical description of
the processes or analysis of the event in a possible situation.
The laboratory control is a complex enough form of control that
requires learners not only to have knowledge but also to apply
this knowledge to new situations, wits, and awareness.
Laboratory work provokes the cognitive activity of learners,
because from working with a pen and a notebook it goes to
working with real objects. Then the tasks are carried out with
greater desire and enthusiasm. Laboratory work should be
combined with other forms of control, such as a short self-test or a
test. Such a combination can sufficiently fully clarify the
learners’ knowledge and skills with minimal waste of time and also
take away the difficulty of long written speeches. The
traditional oral examination before the blackboard is organized differently depending on its purpose and the content of the material to be checked. Among the targeted verification mechanisms can be listed: to verify the fulfillment of the home assignment, to clarify the students’ readiness to study new material, to check the level of understanding and learning of new knowledge. Depending on the content, it is based on pre-scientific study material. The methodology of the oral examination includes two main parts: the compilation of verification questions and their assignment; the learner’s answer to the questions asked. The compilation of verification questions and tasks is an important element of the oral test. The quality of the questions is determined by their content, the nature of the learner’s mental actions in answering the questions, and the verbal formulation. When composing the questions, it is always a matter of checking that knowledge that is fundamental in a given course or is being learned relatively hard by the learner or which is necessary for the successful use of further sections and course themes. Oral verification is considered effective if it is aimed at clarifying the meaningfulness and perceptions of the knowledge and awareness of their uses if it stimulates the autonomy and creativity of learners. The quality of the questions is determined by the nature of the mental actions that learners perform in answering the question. That is why, questions of memory, thought (comparison, proof, summary) and speech are given among the assignments. The quality of the oral examination depends on the selection, the sequence and the formulation of the question. The second component of the oral examination is the answer to the questions. The literature provides two conditions for qualitative clarification of the knowledge of the tests: lack of stressors of any nature (the teacher and others comment on the answers at the end); Creating an environment that provides the best work of his intellectual powers. An interruption is only allowed if it does not matter, but deviates from the subject. When evaluating the response, attention is paid to the correctness and completeness, the sequence of the presentation, the quality of the speech. According to J. Babanski (Babanski, 1983) the forms of control are: frontal, group, individual, combined, mutual control and self-control. The frontal form of organization of control consists of asking different questions from the teacher on a relatively small volume of material. Very often it takes a lively talk. The drawback of this form of control lies in the fact that it is difficult to ensure the circumstance and versatility of the verification of each individual. The purpose of the group form of organization of control is the verification of completed training or part of the course of its performance by learners. A separate group participates in solving the questions asked, but at the same time other students are also being asked to discuss. The individual form of control is used to detail the knowledge, skills and habits of an individual learner. The individual control draws attention to the factual and conscious nature of the answer, the logic of the judgments, the evidence, the ability to use learned knowledge. The combined form of control combines individual, frontal and group control. This form makes it possible to basically check several learners for a comparatively small amount of time. Its disadvantage lies in the fact that it restricts the training function of the check, since those who perform tasks independently do not take part in the frontal work with everyone and their results are checked by the teacher after the hour. When all forms of control (except self-control) take place, it is necessary to observe two basic principles of formation of the groups, namely the principle of free formation (at the request of learners) and the principle of formation of groups organized by the lecturer.

Modern trends in pedagogical control are eclectic in nature and are characterized by reconciliation of traditional media with new multimedia and internet technologies without adequate analysis of didactic, technological and psychological problems. Some of the so-called new means of control and evaluation are: the different types of tests; Portfolio; Design and protection of a project; Developing and presenting a presentation; Exam with posters, charts, charts and patterns; Exam with open book, idea analysis, proof of thesis, rejection of thesis; Exam with interactive board; Mutual evaluation; Self-assessment, etc. The intensive development of new computing technologies enables automation of the process of current and final control based on various software tools used. Frequently, control programs are combined with training programs, using dialogue between the teacher and learners to check and adjust the learning activities with the help of additional information that provides for identified learning gaps in learners’ knowledge. Modern knowledge control and assessment systems typically have an easy-to-use interface, support various forms of verifying tasks, and allow scenario control, text, static and animated images, sound, video, and so on. By giving preference to innovation, it is always necessary to seek out different grades of learning outcomes and to understand the applicability of novelties. For example, information obtained through automated control means must necessarily be backed up by additional data on memory, imagination, thinking, and speech. Computer skills, communicative abilities, etc. should be taken into account.

Conclusion

The retrospection and analysis of the current state of pedagogical control indicate that it is of particular importance for the management of education. As a primary tool for providing immediate, purposeful, timely, objective feedback, control helps to make sound and successful management decisions at all levels. Improving its quality and effectiveness is linked to the precise definition of its objectives, strategies, priorities and technologies. At this stage, they should aim at raising the level of learning activity and its outcomes in order to overcome formalism and support pedagogical activities. Education control should give a true assessment of its outcomes, highlight good practices and stimulate them, sanction poor work, because effective control is synonymous with successful governance.

References

The article is reviewed by Assoc. Prof. Dr. P. Savov and Assist. Prof. A. Kisiov.