

RRI 2016
International Conference «Responsible Research and Innovation»

**CONDUCTING AN EXAMINATION IN THE ANALYTICAL FORM
AS A HEALTH-SAVING TECHNOLOGY**

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Abstract

The proposed paper describes the analytical productive form of examination conduction in the humanities, which was approved by the authors in the experience of training of prospective teachers and is aimed at saving the health of students and formation of their skills to operate the knowledge, performing the whole variety of possible actions. The authors dwell on the description of stress factors, which accompany the conduction of exams in the period of examinations for the overwhelming majority of students, in more detail. The paper places high emphasis on the problems of requirements for examination arrangement in the analytical productive form enabling saving students' health, testing the level of their ability to acquire, process and transform the information, and revealing the maturity of students' skill to structure learning material, to state out it coherently and logically, to reason, and to make conclusions. The described health saving technology of examination conduction allows transferring the relationship of an educator and a trainee to the level of a subject-subjectival interaction.

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Keywords: professional activity of an educator, ways of students' health saving, technology of the training exam, psycho-emotional balance, health saving technology

1. Introduction

In practical teaching at a higher school, final examinations refer to the forms of ongoing monitoring, and a state examination is a form of the final monitoring. According to regulatory requirements for conducting examinations at a higher school, an exam is traditionally conducted using question cards containing two-three questions. Students familiarise themselves with examination questions six months prior to the beginning of examinations, and with the content of the question cards – on the very day of the examination. In such mode of conducting examinations during an examination period, in practice the

overwhelming majority of students treat examinations as a stress factor owing to a number of both objective and subjective reasons. Let us name some of them.

Among subjective reasons, an examination is, first, overexertion of physical, mental, psychic forces of students; second, the source of their fears and increased anxiety; third, challenge of their vocational fitness, as well as their adaptive potential and resilience of their nervous system. As a rule, an examination becomes an extreme case even for careless students, who study for the sole purpose of “getting a diploma” and are willing to negotiate a “middle-level mark” by the examination results.

Objective reasons include, first, normatively established time limitations both for preparation of a student for the answer and for answering the question card; secondly, the situation of uncertainty about the arrangement of the questions in the card; third, the amount of the material intended for the exam, provided that a part of the amount specified by the syllabus is meant for independent study owing to limitations in normative quantity of academic hours allocated for mastery of the corresponding academic discipline; fourth, impossibility of checking the mastery level of the material that all students studied independently in a given subject during semestral classes; fifth, an examination is the peculiar case of “randomness” (as in throwing lots: one draws a card with questions to which one either knows the answer or does not...), etc.

2. Materials & Methods

Our tasks do not include revealing and describing all reasons of such condition. We state this situation as a fact and suggest such way of examination tests organisation that allows us to prevent the rise of “examination stress” in students. Besides, we think that erudition and the individual competence, inherent to it, depend rather on the ability to handle knowledge than on the amount of knowledge, retained in one’s memory, that is, the ability to dig it out, to process it, to transform it, to apply it, to accumulate it and to transmit it, in other words, to perform actions justifying the ability of the person to think in the very human understanding of this phenomenon.

We called the form of conducting an examination suggested by us as an analytical productive one, since in the course of preparation for such exam, a student is put in the position of necessity to operate with all mental acts enumerated above. This approach proved itself when conducting exams in so called “oral” subjects, where it is required to check the ability of students to think logically, to express his/her own opinions, to make conclusions, to emphasise his/her own personal attitude to the stated out information, and etc. In our experience, we implement this method when conducting examinations in such subjects as pedagogy, psychology, pedagogy of health, remedial pedagogy, pedagogical valueology, pedagogical health saving technologies. In addition, we have probed this form within the framework of the state examination in pedagogy and psychology.

Our experience shows that conducting examinations in such training analytical productive form can be considered as health saving (or more precisely, valueological) owing to the fact that the student’s fear of drawing a card he/she is not prepared for is removed; the fear of forgetting the material he/she has studied, that is in essence, peace of mind or, in other words, psycho-emotional balance is provided, which is one of the criteria of health that we refer to the indicators of individual personal culture and define it as an amount of vital forces of a person, which are inborn and which he/she uses sensibly in his/her cultural

life and activity (saving, sustaining, strengthening, and building up) or insensibly (exhausting and wasting).

Besides, a trainee gets rid of the necessity to cram and memorise a large amount of teaching material in this or that subject. Such form of an examination, in our opinion, is, to a certain extent, close to a professional activity of an educator of any profile and level (starting from a school teacher up to a higher school lecturer), who does not have to keep in memory the whole teaching material as, while preparing for every public speech (lesson, lecture, practical lesson), he/she has an opportunity to recall all necessary knowledge, to refresh the information using additional reference sources, to think through the plan and logic of presentation of the teaching material to trainees and etc.

3. Results & Discussion

The experience of our long-term work on the professional training of teachers of primary schools (nowadays, bachelors training in the discipline “Pedagogical education” specializing in “Primary Education”) shows that such form of conducting final examinations is one of the most effective ways of forming students’ motivation and improving the quality of one’s own professional training. Let us provide a methodical description of the technology of conducting such type of a training examination.

According to the requirements specified in the system of professional education, we present a list of examination questions to students for familiarization before the beginning of examination tests (a month prior to the beginning of the final examinations and half a year prior to the state ones). Two – three days prior to final examinations, a student is given the right to choose one or two examination questions (the number of questions is set by an educator at his/her own discretion, but not more than two) and during several days (from 2-3 up to 6-7) the student is preparing answers to these questions, using all opportunities (lectures from his/her own exercise book, course books, supplementary literature, articles from periodicals and others). In addition, each student has the right to get a tutorial of an educator. By the results of their preparation, students, if they consider it necessary, can write an exhaustive answer with citations from the primary sources, definitions concepts taken from the reference literature. The mandatory requirement is making the list of the cited literature or bibliography used when preparing for examination, the literature with complete and grammatically correct bibliographic entry of each source. In order to answer at an examination according to the answer prepared in such way, the student writes an outline plan consisting of 5-7 points, and, guided by it, he/she presents his/her answer to the question to the educator.

The educator listens to the student attentively up to the end, that is, until the student says, “That is all” or “I have answered the question”. After it, the educator has the right to ask the student questions concerning only the content of student’s answer. The aim of such conversation is, first, to specify student’s attitude to the stated material; secondly, to have the student clarify separate moments of his/her answer; third, to reveal the degree of student’s understanding of the essence of the material he/she was talking about and so on. The answer is assessed according to the criteria which are stated in the “Regulation on the final examination”, developed by the educator for every classroom discipline and with which students can familiarise themselves before the beginning of the examination. These are: 1) completeness of the answer (according to the criteria of completeness specified and laid down by an educator in every topic); 2) the logic of its presentation; 3) knowledge of the conceptual apparatus within

the framework of the content of the examination question; 4) mastery of the material (the ability to discourse extensively on the topic of the discussion, to prove and to justify one's attitude, to make conclusions); 5) understanding of the material (that is, student's understanding of the meaning of what he/she is talking about); 6) the volume of the supplementary material used by the student when preparing the answer to the examination question; 7) grammatical correctness of the bibliographic entry of the used literature.

Conducting an examination in such training mode has a number of positive moments. First of all, this is a way of saving students' health as the students get rid of the fear of not knowing something or becoming confused and not to answer. Secondly, this is an effective form of checking whether the student has an ability to gain, to process and to convert the information. Thirdly, such form allows revealing to what extent the student is able to structure the material, to lay out it coherently and logically, to reason, to make conclusions; and his/her answers to the questions of the examiner allow understanding to what extent the student is aware of the given question.

However, such innovation form of conducting an examination is possible on condition that the number of essential requirements is followed. The first requirement concerns the wording of the examination question: it should not repeat the wording of the topic of lectures, practical lessons, seminars, home tasks, themes of the paragraphs and sections of manuals and training aids. The question should be worded in a way that makes the student address many kinds of sources including periodicals from the field of the given science; it is expedient that each question should require from the student evidences based on examples from practice.

The second requirement concerns methodical support of the examination. This means that every student must have an opportunity to find the material for preparation of the answer to the chosen question (in the library of the educational establishment, in public libraries, on the internet). For this purpose, the syllabus must include the list of recommended supplementary literature and periodicals concerned with the academic subject under study.

The third requirement is related to setting the timing for examining one student. The time factor is a pedagogically essential moment as the ability to sense it and to keep to it is to some extent an indicator of such personal quality of a professional expert as readiness to self-organisation. In our experimental work, we have defined the following standard time allocated for the answer according to the specified requirements: 10 minutes for a student to answer an examination question; 10 minutes for a student to answer examiner's questions; 5 minutes for a student to self-assess his/her answer according to the set criteria; 5 minutes for an educator-examiner to analyse student's answer and to fill in examination documents (student's record book, examination sheets of the group). This standard time is also stated in the regulations on the innovation form of conducting final examinations in the analytical-productive form, with which any student can familiarise.

The fourth requirement concerns the originality of the questions for each student group and for each student individually: that means that the number of questions must be the same as the number of students in all examinees' groups. This regulation allows preventing the repeatability of the questions and an opportunity of plagiarizing each other's answers by the students. To choose the question, the table is compiled, where each student fills in his/her surname opposite the chosen question. Such table can be compiled for each separate learning group or one table for all groups in case of a small number of students

in a group. The process of choosing an examination question is controlled by an educator him/herself or his/her assistant from among the educational-support personnel of the corresponding organisational department. In case a student must choose two questions, two tables are compiled, or in one table the first and the second questions are indicated. In such case, before the table, there should be a verbal explanation.

In our work experience, we approved the practice of conducting the state examination in pedagogy and psychology in the analytical productive form in the field of primary school teachers training. The difference of the mode of its conduction from the final examination consists in the fact a student familiarise him/herself with questions for the examination half a year prior to the examinations, and the choice of the question is realised directly at the exam.

For preparation for the answer, a student is given the time within three astronomical hours. At this, an examination lecture hall is equipped with all necessary materials: the set of basic and supplementary literature determined by an educator, periodicals corresponding to the examined academic subjects, academic textbooks and normative documents regulating the activity of a comprehensive school, syllabi of the state examination in pedagogy and psychology. Each student has the right to use any literature and by the results of the his/her preparation - to write the whole text of the answer if needed. Then he/she draws an outline plan of his/her answer and following this plan, he/she answers the question. Since at the examination in pedagogy and the psychology, a student takes two disciplines, he/she consequently chooses two questions: one in pedagogy and one in psychology. In connection with this, the standard time changes: 15 minutes are allotted for student's answer to two questions; 10 minutes – for student's answer to the question of the examination board and 5 minutes – for the analysis of the process and examination results by the student according to the specified criteria.

Such organisation of the state examination allows checking the level of the development of a number of students' skills required for the specialist with higher education. First of all, this is a skill to gain the material necessary for the answer to the question within the definite interval of time. The extent to which a student is familiar with the textbooks in the given subject is also simultaneously checked. If during the academic year or during preparation for the exam a student has not dealt with the educational material, it will be challenging for him/her to find necessary information within two hours, and frequently it becomes unrealizable.

Secondly, the ability to process the accumulated material and to structure it in the logic of the question is checked, therefore the wordings of the examination questions differ substantially from the wordings of the topics of the corresponding training course. For instance, the theme in the academic course in pedagogy is worded as "Categories of Pedagogy", and examination questions related to this theme can be worded as follows: "Education as a category of pedagogy and as a process".

Third, student's memory is checked as during the answer, he/she should give definitions to all concepts which he/she mentions. Fourth, student's ability to draw a plan of the answer is monitored. Fifth, the student demonstrates the extent to which he/she can state out the material logically, sequentially and coherently, that is, the extent to which he/she is able to think. Sixth, the extent of student's understanding of the things he/she is saying is checked. Besides, the completeness of the answer to the question and the level of mastery of the material, when answering examiner's questions in the course of the conversation within the content of the answer, are also assessed.

To assess the answers of students, we have developed the three-level criteria and a scale where a high level corresponds to the mark “excellent”, a medium level – to the mark “good”, and a low level – to the mark “satisfactory”. It is significant to note that students have an opportunity to familiarise themselves with the criteria of the mark before the examinations and to take them into account when preparing their answer.

As an example, let us demonstrate the criteria of the mark of the students’ answers to the examination questions developed by us, which we use at the examinations in the disciplines of the psychological pedagogical series (pedagogy, psychology, pedagogy of health, remedial pedagogy, pedagogical valueology and other disciplines of humanitarian orientation).

The first criterion – the ability to gain the material necessary for answering the questions within a definite time interval. A high level indicator is the ability of a student to find the material necessary for answering to the fullest extent. The completeness, in this case, we trace by three features: firstly, according to the number of references processed by the student, presented in the list applied to the answer; secondly, according to the correspondence of the content of these references to the content of the examination question; thirdly, according to the availability of the references containing the information on all questions, which are represented in the syllabus support of each examination question. Let us give examples of several examination questions related to the academic course “Pedagogy of health”.

- a) *a question* – **“The concept of “health creating education” as a pedagogical category”**; *syllabus support*: “What is health-creating education? What is its essence? How does health-creating education correlate with the integrated pedagogical process? What are methodological bases of the health-creating education?”;
- b) *a question* – **“Methodological approaches to the understanding of the human being as a carrier of health”**, *syllabus support*: “What does a human being represent him/herself as a carrier of health? Concepts of “individual”, “subject”, “personality”, “individuality”. What aspects of the human being essence do these concepts reflect? What aspects of the human being do these concepts reflect? What constitutes the content of the interaction of a human being with environment? What does cultural giftedness mean (Ilyenkov, 1991)?”;
- c) *a question* – **“Health of a human being as a system-forming factor of health-creating education”**, *syllabus support*: “What is the essence of health as a culture phenomenon? What is the essence of human being health as a pedagogical concept? What are attributive features of human being health? What are the present-day approaches to the explanation of the reasons of ill health of the human being? What are the reasons of ill health of a human being according to Amosov (1987) and why? What are the reasons of ill health according to Garbuzov (2001) and why? What are the reasons of ill health according to Hay (1998) as well as Izard (1992), Efroimson (2003) and why? What are the criteria of human being health as a natural-cultural phenomenon? What is vitality of the human being organism? In what and how does it manifest itself? What is inner peace or psycho-emotional balance of a human being? In what and how does it manifest itself? What is constructive positive thinking of a human being? In what and how does it manifest itself?”;
- d) *a question* – **“Health-creating pedagogical (valueological) technologies as a means of organising health creating education in a modern comprehensive school”**, *syllabus support*:

“What do pedagogical health-creating (valueological) technologies mean, what is their essence? What is the pedagogical and health-creating sense of pedagogical health-creating (valueological) technologies? What is the idea of the technology of the developing cooperation? How to conduct a technological game in the technology of the developing cooperation?”

If the search of the material, necessary to prepare the answer, caused some difficulties for the student, this is an indicator of an average level. The feature of not quite sufficient completeness of the answer is representation of 60 %-70 % titles in the bibliography compared to the content specified in the syllabus support of the examination question. Students who display a low level in this criterion are unable to find all material necessary for answering to the fullest extent. In the quantitative equivalent, it is the presence in the bibliography of less than 50 % of sources of references corresponding to the content of the syllabus support of the examination question.

The second criterion is student's ability to process the accumulated material and structure it according to the logic of the answer to the question. A high level of it is displayed by the students who have mastered adequately the ability to process the accumulated material and structure it according to the logic of the answer to the question. The indicator of this ability is presentation by a student of the most essential theses of the characterised pedagogical phenomenon in his/her answer and a meaningful connection of these theses between each other. Students possessing an average level of this ability demonstrate the capability to process the accumulated material, but structuring it in the logic of the answer causes difficulties for them. Students displaying a low level in this criterion are able to process the accumulated material, but they do not succeed in its structuring according to the logic of the answer. The answers of such students differ by confusion, skipping from one thesis to the other, then returning to the theses mentioned earlier, which resembles a peculiar “farrago” rendition.

The third criterion is the ability to give definitions to all concepts mentioned in the answer. Student's ability to give definitions to all concepts mentioned in the answer corresponds to a high level of development of this ability, and the features of qualitative mastery of this ability is accuracy, grammatical correctness of the definitions and their completeness. The average level of the development of this ability is characterised by representation of the definitions of more than half of the mentioned concepts in the student's answer; and a low level – less than half.

The fourth criterion is the ability of a student to draw a plan of the answer. The students having achieved a high level of this ability are able to draw a plan of the answer in the entire accordance with the requirements, namely: the plan should be complete, the wording of items of the plan should be concise and reflect the logic of rendering the material in the answer. For students, displaying an average level in this criterion, the drawing of the answer plan causes insignificant difficulties, which affects both the completeness of the plan and the wording of its items. If the ability to draw a plan causes significant difficulties for students, we consider it as a low level of development of this ability. As a rule, such kind of students have a very brief plan (consisting of 3-4 items), wordings are not connected with the content of the examination question and do not display its completeness.

The fifth criterion is the ability of the student to think and the capability to state out the material logically, sequentially, coherently. The student's ability to state out the material logically and sequentially corresponds to a high level, which is displayed in the eloquent, grammatically correct, prosodically expressive speech without stumbling and prolonged pauses. It is immediately obvious that the student

understands what he/she is saying. The answer, in which the material is stated out by a student coherently, logically and sequentially enough, that is, rare repetitions of one and the same thought, negligible pauses and hesitations are observed, corresponds to the average level, which allows implying insufficient preparation of a student for the answer. The answer of a low level is characterised by the absence of logic, which destroys the coherency of the rendition of the material and is an indicator of poor understanding of the stated out question by the student owing to his/her insufficient preparation for the examination.

The sixth criterion is the ability of the student to understand the sense of what he/she is saying. The students having a high level of development of this ability display complete understanding of what they are saying: they answer examiner's question with ease, can substantiate, clarify the things they say. Students of an average level cannot always explain intelligibly the sense of the uttered information and find it difficult to express their thought in other words. Students displaying a low level are unable to explain the sense of the thing they say, and they just keep silence when an examiner asks qualifying questions about the theses which the student has already mentioned in his/her answer.

The seventh criterion is the completeness of the answer to the examination question. A high level is characterised by the ability of a student to cover all the items of the syllabus support of the examination question; the students who have mentioned about 70 % of the content of the syllabus support of the examination question in their answer display the average level; the students whose completeness of answers is insufficient as they have covered not more than 50 % of the theses specified in the content of the syllabus support of the examination question find themselves at a low level.

The eighth criterion is the mastery of the material displayed by a student in the process of answering examiner's questions. Students who have achieved a high level of development of this ability have a working knowledge of the material, which is displayed in the ability to maintain a conversation with the examiner, to express one's own judgments, and, probably, criticism relatively theses stated out in the answer, to ask examiner questions about unclear theses taken from studied reference sources. Insignificant difficulties that a student experiences, caused by some examiner's questions, are evidence of an average level of the material mastery; and a low level is characterised by a complete inability of a student to answer examiner's questions.

When a student is answering an examination question, each of the eight criteria is assessed by points corresponding to one of three levels: a high level – 2 points, an average one – 1 point, and a low one – 0 point. Thus, a student, being at a high level, can score a maximum of 16 points in all criteria. Hence, we define the scale of transformation of points into numerical scores using the method of Kyveryalg (1980), according to which the interval between 13 and 16 corresponds to a high level (an “excellent” mark), between 5 and 12 – to an average one (a “good” mark), and between 0 and 4 – to a low level (a “satisfactory” mark).

4. Conclusion

Finally, it is possible to make a conclusion about the possibility of spreading the spectrum of subjects, according to which the monitoring of students' knowledge can be conducted in the analytical productive form or, otherwise, according to the technology of the training exam. These are basically the subjects, the mastery of which implies the development of the students' ability to reflect, to express one's own attitude, to analyse, to compare the viewpoints of different authors, to argue one's own viewpoint, to give

one's own evaluation of opinions and inferences of other authors and so on. Besides, such technology of conducting an examination allows, in our opinion, transferring the relationships of an educator and a trainee to the level of a subject-subjectival interaction.

References

- Amosov, N.M. (1987). *Thoughts about health*. Moscow: Physical culture and sport, 64 p.
- Efroimson, V.P. (2003). *Pedagogical genetics. Altruism family tree*. Moscow: Taydeks Co, 240 p.
- Garbuzov, V.I. (2001). *Neuroses and psychotherapy*. St. Petersburg: Sotis, 242 p.
- Hay, L.L. (1998). *101 Ways To Health And Healing*. Hay House Inc., 392 p.
- Ilyenkov, E.V. (1991). *Philosophy and culture*. Moscow: Politizdat, 464 p.
- Izard, C.E. (1992) Basic Emotions, Relations Among Emotions, and Emotion-Cognition Relations. *Psychological Review*. 99(3), 561-565
- Kyveryalg, A.A. (1980). *Methods of research in professional pedagogy*. Tallin: Valgus, 334 p.