

LEARNING PHYSICS WITH CONTESTS METHOD

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Abstract

Our society desperately needs to not only not invited to the young man with natural sciences, but rather to bring it to the warm. Multiple tasks that will go on our way towards modernization of life in general, the path to becoming a developed country, should our young people to befriended natural sciences and knowledge of physics in particular.

Coordination the method of advertisements with the method of learning objectives, finding suitable acquisition of science by pupils and students.

Results of this method to date in high school and college have been effective. The results achieved in our established belief that increasing the scientific level, the head of this subject must increase the level of training and update its methodology. After that young people not only will not stay away from the physics, by contrast, will increase interest and perhaps even love it. The teaching is not an end in itself, and therefore in the center of the classroom should be student or the student, who must not only be active during the class, but they have to adopt in a creative way that, create habits needed to coordinate scientific concepts learned in school, achieve through abstraction derive independently solving problems and phenomena encountered in daily life and at the end, but that is the final intent of education human through learning, to create a worthy citizen for themselves and for society.

The article contents some result, diagrams and tables with some data that we had accumulated during the experimentation phases of the methods that we had suggested. We are sure that this methods, excepting that are contemporary also are with a good efficiency. The article brings aid to pedagogy.

Keywords: *natural sciences, competition, learning objectives, subject, object*

Introduction

The title of this article causing curiosity but if you follow it with another question, why now, this problem arises, we see that time has become paramount necessity and physics learning problem, and not just of this science, but also the natural sciences in general.

If we cast a look at the forms of graduates for admission to university, notes that in the branches of the natural sciences there is very little not to say that almost no demand of quality students. Students with high scores in mathematics, physics and chemistry prefer such branches where natural sciences developed very briefly, or not developed at all.

Reasons for a cooling until such abandonment natural sciences in general and physics in particular are numerous, but one of them, which have the object in this article is to develop it into an incredibly dry, traditionalist, does not be attractive to the student and the student, happened to those she called his secret abandonment of the teachers of this subject. Observed even up and a lack of professionalism in the classroom at school.

We think it should be experimenting with new methods (Fisher, 2005) viable, that activate student or the student's judgment and make physics not only accessible, but also more attractive from them. But how can we achieve this? Key to success in this regard is the use of those qualities innate to humans, which make it possible to mobilize all his mental abilities (Pettijohn 1996), in order to not only enter the beautiful world of the science of physics, but also try to solve those problems still outstanding.

Teaching and learning or self-learning are two sides of a coin; human intention to move forward, to adapt more and more nature in accordance with the needs of his life. This shows that teaching is not an end in itself, and therefore in the center of the classroom should be student or the student, who must not only be active during the class, but they have to adopt in a creative way that, create habits needed to coordinate scientific concepts learned in school, achieve through abstraction derive (Korthagen 2010) independently solving problems and phenomena encountered in daily life and at the end, but that is the final intent of education human through learning, to create a worthy citizen for themselves and for society.

Achieving this ambitious goal undoubtedly requires the design of new teaching strategies, always competitive edge, contemporary building methods in accordance with the emotional, psychomotor and intellectual development of the student and the ongoing development of the whole society.

Selection and updating (construction) of a modern teaching method (Korthagen 2010), to be as close to reality demands study and evaluate better the final intent requirements of society, requires no doubt fulfill the three criteria of being a true scientific method by which realization assigned tasks:

a) To be theoretically based. This means that no scientific arguments to prove in practice (Mejdani R.-Vevecka A. Etc., 1983), (Fisher 2005), which can serve as a theoretical basis to support the hypothesis origins of this approach.

b) The experiment in advance. The experiment should be carried out in real conditions in accordance with the proposed method (Mejdani R.-Vevecka A. Etc., 1983), (Fisher 2005), (Korthagen 2010).

c) On the basis of experimental data are given guidelines and recommendations for the most effective implementation of the method (Mejdani R.-Vevecka A. Etc., 1983), (Fisher 2005), (Korthagen 2010).

The method we propose is that of coordination methods of teaching with the objectives of the competition method, which include small group discussion method together with the method of learning in collaboration (Moses 2003).

1. Theoretical support

It is known that by nature man inherits three qualities, which have made possible the development of human society at this stage where we have achieved.

1- Man owns a natural potential to recognize the world that surrounds us.

2 - Man has not only the potential to know the world, but also wish to change it at its best. Thanks to the intelligence he aims to recognize the laws that control over the nature, use those laws to continually improve his living conditions.

3 - A man has been constantly in competition with nature. He has always challenged the competition, winning step-by-step on the surrounding world. In this way he has conducted himself and the society in which he lives.

Can you ask someone: Yes, what entering these three qualities exactly a new method of learning physics? The answer is very simple. Everyone is eager to explain the simplest physical phenomena that observes every day and in addition would be "happy" if I was able to explain the phenomenon of "complicated" occur in makrocism (great world) and microcosm. We all have experienced the pride front and teenage classmates when they could solve any problem whatever in front of others, and he praised the teacher.

Thus we can say that the competition is too strong feelings in humans. But to enter into competition with the only aim to win it must constantly prepare before her and sharpens all the senses thus strengthening the will and perseverance to reach his goal. It aims to achieve methods are proposing in this paper.

Known to turn this hypothesis is correct in theory, should it base to prove experimentally and theoretically the end to give recommendations on its implementation in practice. As one of the most effective methods of learning in the subject of physics, but perhaps also in other cases, it is the method of teaching and learning objectives associated with the method of contests.

Using the method of competition, the race, in the case of physics at school or college, as a viable method in the teaching of this subject, is based precisely on three qualities mentioned above. The principle of the method is simple. Students, students of the same level are included in competition with each other, awakening in them the desire to win. It is this desire to win makes them more aware, because no study can not be strong competitors during the formation of so tomorrow be.

Contests method is a method designed to be used in all categories of students, or students, but its successful implementation in terms of development as harmonious, despite the emotional

load of a contest, as well as in terms of maximum benefit from their scientific knowledge, requires first and foremost a teacher a teacher with high level scientific and professional training.

This means that the teacher must have a satisfactory increase scientific and possess very good organizational skills and leadership class or group.

To reach up to the moment of the competition crossed at some stage. First, the leader prepares students and students with the idea of competition that they will develop at the end of the chapter, they have just begun. And he makes it clear how the development of the competition and how their grading.

It should be well understood by all that competition is the final point of a broader approach, more complex, methods of teaching and learning targets necessary. New methods of teaching based on the explanation of the learning or acquisition of speech by means of objectives, which included objectives necessary minimum, average and maximum objectives objectives. Minimum necessary objectives to be achieved by 95% - 100% of participants.

Obviously this requires a large enough preparatory work by the directors, who must plan his day or parapërgatitjen seminar to mark all new concepts encountered in the teaching of the day. In addition to the necessary explanations for each concept, he must find possibly simple examples to interpret these explanations.

At the beginning of the explanation of learning new teaching topic makes clear leader, which should significantly write on the blackboard or Smart Board. Then he writes the new concepts of learning and then notifies the student or students which are the three types of objectives, which will be explained in the same hour. Pupils or students have to write them in their notebook recording.

After that the director explains on providing concepts for each of their respective definition and illustrative example (Breithaupt, 2000), (Tipler 2007). He consistently makes logical connection between concepts using mathematical apparatus. This kind of teaching or development of the workshop should be seen as a phenomenon which refers to the content of teaching and learning. During this process, the students and the teacher or professor and student are co-authors of the class or workshop. In this type of teaching the teacher or instructor plays the role of leaders and organizers, and students actively participate in the classroom through questions, answers, repetition of words and formulations teachers to scientific laws or concepts back to the real actors hour learning.

So here we are following the leadership role as a teacher, but this method puts his position in a leading role and character of students makers. This method has not only meant the acquisition of learning by the students, but it is intended to teach them how to study, how to capture the essence of the problem, how to treat it and how to solve similar situations in the future. The aim of this approach is to guide the student towards the creation of knowledge, intellectual values, skills, and attitudes of its individual and group orientation. It should be noted that the orientation in the right way for each pupil or student during group work gives him the perfect opportunity to continually ways of communication and interaction with the group in particular and the wider community in general, which will need throughout life. Teaching methods with the minimum objectives is a method by methodical meets the criteria necessary to require the development of a class or seminar attractive, full of curiosities and overactive. Design maximum objectives necessitates a more professional job by the leaders, because it must not only possess very good case, but should know very well the demands and opportunities of student learning or his students.

This method, being too focused on learning, gives up the subject participates in a very effective tool for learning. She tells him how to reveal text or lecture unfamiliar scientific concepts, how to analyze them through examples in order to then pass on the final stage of knowledge, the understanding and form in to their even aligned with examples from the book to a higher stage illustrated by examples that are not in the book.

That such interpretation of this method makes it possible for it to align along the method of student-centered learning, the student, the method published today as a modern and highly productive method. Learning objectives makes learning more meaningful, more accessible by students, by dragging them in a natural way in discussing various issues of learning, thus making them active and associates all development learning process. In this case, the manager becomes a conductor class or seminar, harmonized reports generated within it, because orienting them with examples, exercises or simple laws of physics definitions, thus making the pupils or students fail to understand new concepts and furthermore formulate scientifically correct them.

Method of learning objectives is not an end in itself, because it aims not only in the acquisition of the object of the students (Riley F. W-Sturges DL 1993). It is actually a very powerful method that teaches young high school students how to study, let alone students how to work with text and choose the path to follow for solving problems and exercises. Seen in a broader perspective, this method provides today's students, tomorrow's students and future employees together with researchers in the field of science, with the ability to distinguish from the myriad of problems of the day, of whatever nature, whether them, the essence of the problem, correct to interpret it and to make decisions as fair.

Method consistently predicts that after two or three classes the teacher or instructor must hold for 3-5 minutes a control task with questions about two or three minimum objectives which are addressed in past lessons or workshops. Good is average and maximum targets, which should reach students, to be checked in this way then and then.

When the chapter ends, participants are informed to prepare for the development of a short competition within the class or group, which takes place in this way: Teacher or lecturer divides into 2 or 3 groups of pupils or students with lower scores in physical and choosing a jury pupils have the best students, who will make and evaluate competitors. Further leader gives groups the relevant questions, whose answers are scored by the jury. Teacher or instructor plays the role of scientific leaders and intercedes for clarifications and additional. A culminating moment of the competition is one of a series of lightning questions, through which encouraged students and students habits of skill, concentration and sharpening intelligence (Korthager 2010). Then run groups each other questions, which have been prepared in advance. The nature of the questions and the manner of their formulation shows not only on the degree of mastery of subject matter, but also on the level of intelligence of the participants. It is this stage of the competition has the opportunity to show how skilled organizers are participants to abstract and interpret own examples, problems and implications of different laws of nature. Recognizing good skills of its associates, the leader must make individual questions each competitor. The response of each group meets humor result.

At the end of the competition, the jury in collaboration with the teacher or instructor, evaluating and possibly groups of each competitor. At the end of the class or workshop conducted thus makes brief summary on the development of the educational and scientific activity and can also assess student grade or special students.

This type of competition may also take place between parallel classes. In this case you have to compete not only with students or student groups "weak", but also groups of students or

students with good results. This type of contest encourages not only the desire to achieve good results in physics, but also evokes the love for it. Physics turns so a dry subject, abstract and more difficult, in an attractive subject, to quench their curiosity about the world around us, it made us very dear.

2. Experimentation

Experimentation as the method was carried out with students gymnasium "Themistokli Gërmenji", but was carried out with students of math-physics course (master) in May 2009. In this course, students worked two chapters on basic physical concepts topics properties of condensed matter (Breithaupt, 2000), (Mejdani R. - Vevecka A. Etc., 1983), (Tipler 2007). Students were explained in detail everything that had to do with this topic. They were divided into three groups and were explained about the procedure of the competition and the fact that the answers given in the competition will assess for each point, the point that would be available for Exam, which in this case will take place in the form of this competition.

Each group was given two questions, which were evaluated with the relevant points. The result was satisfactory. Responses were complete, in most cases, and some of them were more extensive in content. This shows that the students were further deepened in the material that had to be prepared.

Bolt questions constitute the second group of control of student learning outcomes. This group is intended to highlight the skills and ability to quickly understand the question and the level of expression of the response in accordance with the scientific aspect of physical concept. The result was astounding. For all inquiries received prompt feedback from the three groups and the answers were correct.

Third stage of the competition had to do with questions of groups related to each other. This stage allows to judge about how deepened students to learn the material provided for the study. It was observed that the students not only had studied in detail the material, but correctly understood the basic concepts discussed in these chapters were dug into the specific aspects of it and found very interesting question, which really require a qualitative explanation specialized. Of the 12 questions of this kind that he addressed each other groups, only two of them did not answer.

Group individual questions showed that students as a whole had made a serious job. Only one student did not answer.

3. Analysis of the results. Recommendations

The result was astounding, but also to be expected, given the aforementioned qualities assessment of pupils or students and to complement this approach with all the elements it needs a new way of teaching and learning.

It is to be noted that 100% of students reached the minimum objectives necessary, which is expressed by the answers given by them.

Another thing that was noticed was the feeling of competition with each other, regardless of was student "weak" or "good". Spirit of competition highlighted the desire of group work students' intention not to become a burden and even group to represent the group as worthy. Analysis of the results obtained shows that the content provided in this way was adopted at a satisfactory level students. Their responses showed a very good preparation, which should be evaluated with grade point average, and for some students on average.

Itself naturally arises: Is it possible to develop in such competitions school during school hours? How should their distribution? These opportunities exist because physics program, as well as all other materials, provides a certain amount of hours free. Often showy, many physics teachers use these free hours for sports and artistic activities, but physics does not help. So programmed excursions and talking to prominent physicists. Why are these activities just to gain knowledge or skills of physics do not apply? They serve only to supplement curriculum hours, without increase teaching quality, both in terms of teaching and learning it.

We think that the method of explaining the objectives and followed by competitions among students, fosters a desire to learn the subject matter of physics and even to be in love with her.

This is precisely our goal. Do physics subjects attractive to students, preferred branch university, the basis for the development of our country's economy.

This combined approach may also yield other subjects, and not only in the natural sciences, but also wider.

Results

As more and more young people of our country are feeling the need of their formation, not only theoretical but also practical skills and habits on the science of physics, which enables them not only to know, but to befriend and later to turn in order to improve life. Play a major role here and the methods used by teachers and professors.

Coordinate contests method with the method of learning objectives, we prove an appropriate findings and contemporary methodology for the acquisition of the science of physics and students. Results not delayed come and more to be strongly positive.

May be required, and after studying other methods and it will happen big step not only feel cold with this science of our young people, but quite the contrary. Should not grow weary in this regard.

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