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RESEARCH ARTICLE

REFLECTIONS ON THE ASSESSMENT OF MATHEMATICS

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ABSTRACT

The present, makes an analysis of the process of the assessment of mathematics within the context where it is tried to apply neoliberal didactic strategies that have been supported by international organisms. In this work, problem solving is analyzed from the teaching point of view and given their experience; if it provides adequate information to ensure that the student has developed the mathematical skills that are sought, and if these, can allow the construction of knowledge. Many countries adapt themselves under this teaching perspective to pass the PISA exam. It is concluded that learning by solving problems is not a guarantee of meaningful learning and does not transparently reflect the acquisition of knowledge and mathematical skills that are supported in an assessment.

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INTRODUCTION

The process of assessment of the subject of mathematics is one of the most complex. Although it can be defined, as the mechanism which the teacher is provided with the necessary and adequate evidence so that the student can reliably demonstrate that he has assimilated adequately and has the ability to develop and apply mathematics, perhaps a much more advanced way, or that at least, for its application in its professional area can develop and develop its work satisfactorily. For this assessment process, the mechanism is through exams, projects, tasks, participations, evidence portfolios, etc. whose objective is the exchange of information between the teacher and the student. Where the teacher, manages to find out the level of competence at the end of the training and control the quality of the teaching and learning processes. Processes which must be constantly regulated to obtain the desired objectives within the curriculum. But much of what is evaluated, is not according to the programs, contents, approaches and purpose of the educational model which is being implemented in the educational institution. But many times it depends a lot on the professional training which the teachers had and that they keep dragging when they were students.

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We are students of teachers who were trained in the twentieth century by teachers of the nineteenth century and now we train professionals for the XXI century, which, the objectives of the national education system are no longer the same.

DISCUSSION

The assessment process must be continuous and must simply be a consequence of learning. While the assessment process can bring stress to the student as Barraza (2017) comments in one of his studies. It is convenient a mechanism which the student does not feel the pressure of it and have the appropriate arguments to ponder that determination at the end of the semester if the student has the ability and skill to assimilate the subjects after the one that is being taught at the time. In the past, basic education was aimed at teaching the Mexican population literacy. Now, the quality has been tried to expand to the basic level. Trying to permeate the same strategies that were used at the top level. However, at the upper level has not been successful enough. And now, we have noticed that students begin their higher education with greater deficiencies than once did not have. This is demonstrated by multiple admission or diagnostic tests in the area of mathematics. But perhaps the problem lies in the fact that the learning was not carried out properly, and perhaps the teaching process either. So, why did the student approve? What went wrong? The way to evaluate the teacher? The entrance examination of the faculty (university) where the minimum standards are

indicated and perhaps, are not in accordance with what is taught in the academic program taught by the faculty?. The process of exchange of information, which we as teachers have at the time; It lies or throws us different parameters, which indicate that the mathematical activity carried out by the student is not thanks to meaningful learning. The assessment should show the clear goals of what quality education should be. And must show that the technique of the teacher, is consistent with the student's learning regarding that instruction but that is not limiting. Must show during the assessment, that the student is able to develop mathematics. During the assessment process, teachers do not allow problems to be solved differently. Which affects to annihilate the creativity of the student and the possibility of the student to do mathematics. That, while it is true, many students can do meaningless things. But that's where the role of the teacher comes in. Valda Rodríguez (2005) defines the assessment of Learning, also called Meaningful Assessment, as a permanent process of information and reflection that allows the teacher to know the level of achievement of the students according to the competences, to emit an evaluative judgment, to grant a qualification and make decisions about the course of pedagogical activities to improve it. Its purpose is to guide and improve the teaching-learning process to ensure the training of students. This must be permanent in such a way that it is interactive with the teaching. The information obtained must be used by the teacher to issue a reasoned qualification judgment (prosecute the results) and to identify the problems that arise in the learners' learning processes, and even to evaluate their own practice, with the purpose of take the measures that will help guide and improve it. The report issued by the OECD (2015), makes mention that the subject of mathematics was the main axis of the PISA 2012 test. In this test in particular the mathematical competence was evaluated whose learning was approached with the computer as a tool. And a comparison was made regarding the mathematical competence based on paper. However, the report shows that the use of the computer in students during learning is not significant.

The assessment, independent and autonomous process of the teaching and learning process. It throws false that students who can solve everyday problems because they show many skills during an exam, which glimpse ingenuity on the part of students to solve problems, but many of them do not show that the development of mathematics is an acquired skill. Or, that their development of mathematics is very good, but they have difficulties in solving problems. The assessment has its stages. Initial assessment, partial assessment and final assessment. And in this last step is when the analysis comes from the teacher ponder or consider whether the student is able to receive more information the following school year or if it is convenient to repeat the subject. But does the student know how to do things? Do you know how to apply what you have learned? How to explain to the student that he/she knows how to solve the problem but that the steps are not adequate for him/her to learn the next semester and, therefore, he/she will not approve? How to explain what a resource person should be? Is it important and is it possible to apply the self-assessment? Assessing may be considered as an inquisitor executioner and perhaps, if there was empathy with the teacher during the classes, it can become an animosity. And it is much easier to identify the unfavorable characteristics of teachers than the favorable ones. And many times, unfavorable ones have a greater weight (Goodwin and Kausmeier, 1977).

The assessment is a process that depends entirely on the teacher but in spite of having an institutional evaluation regulation. They are not subject to it strictly. Students are always granted benefits to be able to increase in their portfolio of evidence and that often is not a democratic assessment with the rest of their classmates. Or, to mitigate the rate of failure and / or desertion and dependency does not decline in the educational parameters of educational quality assessment bodies. The emotional sphere is the apex of personal interactions. And it cannot be excluded in the educational field. Because the emotions are contagious between the students and the teacher. Creating an environment, if conditions permit, of pleasure; improving the work of the teacher and student learning. It is important to point out that it is a priority of the teacher, that emotional competences and their development must be part of their professionalization (Abarca, Marzo and Sala, 2004).

However, it must be considered that, during the assessment process, the teacher unquestionably perceives and it is difficult for him to separate himself from the feeling he has towards the student. That is, if the student struggled, struggles to learn and develop certain skills, the teacher "reconsiders" and decides to approve the student despite not having sufficient knowledge and doing a future damage to the student by not being able to interpret new concepts and that will end up for the teacher to spend time regulating that student in a subject that should not be done. According to PISA, mathematical literacy refers to the student's ability to solve problems of daily life through mathematics where fundamental concepts are developed and analyzed and reasoned mathematically. Teachers of higher education, we train professionals where many times the mathematics they are taught does not have a practical application in daily life, but it does allow to develop reflective and logical thinking which leads to a process of analysis and understanding so that later, with that same basic knowledge, overlaps later knowledge that do have application in routine life. So, how to evaluate that base knowledge, when only the result is evaluated?. With a basic level of competence, within the symbolic language, is to use algorithms and elementary formulas, and so PISA considers it. However, at a professional level; This deficiency continues, despite having already been evaluated and approved by the student (Rojas, 2016).

It is important to note that PISA does not evaluate teachers or students, they are only pointing of reference for comparing educational systems between the different countries that participate. However, the OECD promotes policies for economic development. Considering the 34 countries that make it up equally. Mathematics tests indicate less and less information to teachers about what the student learned during the semester and leads to show if the student is really prepared to get more information and, in less time, the following semester. In less time, we want to emphasize that, during a semester of basic mathematics, it is destined to the practice of algorithms, exercises, computer skills, etc. And that, during the following semester, it is considered that this competence already manages it, so it requires less time, in theory, to add new knowledge. However, it is never like that. The teacher always makes a reminder of previous knowledge that many times the students express that they forgot. Many authors have agreed that problem solving assessment is the best way to evaluate mathematics. However, it is important to note the theory of assessment. Who is the one who evaluates? What is the purpose of the assessment? Why do we do the assessment?

How do we do the assessment? And at what time is it assessment? (Dubovská, 2014). The resolution of problems takes place in a series of phases: (a) Identification and definition of the problem, (b) Planning of the solution, (c) Execution of the plan and (d) Verification; where each one of them can present difficulties on the part of the student. Translating and mathematically expressing the utterance is the problem that regularly makes resolution difficult. The student is accustomed to solving exercises already posed where he only applies formulas or algorithms to find results, in addition to the errors that could arise when writing a problem or interpretation. During the planning of the solution usually the student responds impulsively or develops what can be placed in formulas despite not requiring them. In addition, to plan and execute the solution, it is deduced that the student already manages the theoretical knowledge, although many times it is not so. In the execution phase, teachers regularly point out the little algebraic management of higher-level students, since they skip steps or obtain unexpected results or with little sustained development. In the verification phase, the scarcity of metacognition is glimpsed. They are not regularly corrected and only seek to have a result, regardless of whether it is the right one or not. In addition, problems that do not respond, making the teacher difficult to identify which of the phases was difficult. here are mathematics that do not yet have application in daily life. We hope that your application will be reflected immediately, and this is not always the case. In basic training levels, you have to start with meaningless things in real life. Starting with axioms and then theorems, which the student must manage satisfactorily to later adjust their ability in a daily purpose. The teaching of mathematics is always given from an early age and since its inception, has caused a big problem or obstacle in its management. Confusing x plus x is x squared. It is a symptom of poor algebraic management and a weak assessment that did not have the rigor in algebraic management. In addition, the problematizations that appear in some books, are outside the context of reality.

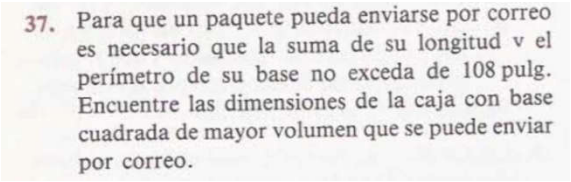
37. Para que un paquete pueda enviarse por correo es necesario que la suma de su longitud v el perímetro de su base no exceda de 108 pulg. Encuentre las dimensiones de la caja con base cuadrada de mayor volumen que se puede enviar por correo.

Figure1. Problematization of a problem of extreme and antiderivative values. Source (Swokowski, 1989)

Problems that are ill-founded and / or that do not respond to real contexts have been topics to be discussed. Evidence has been found that basic education books distributed by the Ministry of Public Education present errors (Slisko *et al.,* 2016). The teacher and the school are inertia in terms of assessment. Today in many places an assessment is carried out equal to the one that was done decades ago, the instruments that are used to collect information from the students, are from most of the sites of the same, that is, the assessment it remains one of the most traditional parts of the teaching process (Basso and Hein, 2011).

Conclusion

It is necessary that the assessments continue contemplating with greater weight to the algebraic handling because the applications in the daily life will occur as a natural and not tax effect. A primary purpose of the assessment is to improve the educational process, since the assessment that is practiced in the schools, rather serves to accredit the course and not to achieve changes of attitude in the subject. Teachers use the grade to stimulate the effort made by students with greater difficulties, regardless of the achievements. Without questioning the pedagogical legitimacy of such a procedure, what is interesting to note is that the assessment made by the teacher through the grade does not necessarily reflect the learning levels achieved by the students. The procedures used for the assessment are not always systematic. In general, the assessment of the type "expert judgment" predominates, carried out by artisanal procedures. It is clear that countries seek to change their education system to meet the requirements of the PISA exam. However, PISA is a general exam. In the teaching of mathematics, the student is not involved in the formulation of problems. The problems are already given and have to be resolved in the period that the class is taught and the assessment is concerned with the resolution of these. It is necessary to establish a method of teaching mathematics that glimpses assessment with simplicity and frees the teacher from the responsibility to evaluate and makes more effort in teaching that affects learning. The assessment by Pairs. An assessment system of yesteryear and considered within the regulations of the Universidad Michoacana de San Nicolás de Hidalgobut used in the United States, Canada, Ibero-America and Europe, which could well make the effort to resume in Mexico. And / or the creation of Internal Assessment Units, within the dependencies of Educational Institutions, especially Higher Level, that guarantee the knowledge of the student. Similar to CENEVAL, but in each of the institutions. These are measures that could be incorporated and create efforts by teachers to meet demands of the knowledge and skills that a graduate or professional must possess.

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