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The didactical contract, its effects and clauses: A historical Study

Abstract

The notion of didactical contract was introduced by Guy Brousseau in the field of research in didactics of mathematics since 1978, as a resource to study the selective failure in mathematics. This idea was not only received by the research community with great acceptance, but also was quickly validated. The didactical contract, once theorized, allowed understanding many phenomena in the field of didactics of mathematics and in other disciplines, where it has been introduced successfully. The celebrity of the concept and the apparent simplicity of its definition, have generated the emergence of multiple and diverse interpretations during these last 40 years, which are now part of the literature. The multiplicity of uses and interpretations has led to a broad semantic slippage of the term. As a result, the concept of didactical contract has weakened and is at risk of losing its usefulness and concrete meaning, which is problematic given its character as a fundamental concept of the discipline. On the other hand, the low level of production of empirical data to validate hypotheses about the explanatory power that has this concept in real situations of the teaching-learning process, and the limited exploration on the heuristic value that the concept may have in improving the teachers' practices generate a problematic situation whose study is considered necessary.

To address this problem, we propose a qualitative study, which will be addressed via three questions: (i) What aspects characterize the original idea of the didactical contract, its conceptualization process and its subsequent interpretations? (ii) Which are the tools required to observe the didactical contract in the classroom and what kind of information do they contribute to the study of the didactic situations? (iii) What new examples of the effects and the clauses of the didactical contract can be reported through observation in different mathematics classrooms?

Methodologically, we propose to develop this research in two phases: 1) A historical-critical-analytical study about the original idea of the didactical contract and the reported studies around this concept. The findings in this phase will lead to the characterization of two tools: the effects and the clauses of the didactical contract. Such characterizations will contribute to the study of the manifestations of the didactical contract in authentic situations of classroom and will allow understanding the heuristic and explanatory power of this key concept of the fundamental didactics. 2) A qualitative study with an ethnographic approach based on the search of empirical data from Colombian classrooms of different educational levels. In these classrooms, we will examine examples of the occurrence of the effects and the manifestation of behaviors associated to clauses of the didactical contract by a non-participant observation. The findings will demonstrate the explanatory power of the notion of the contract on the sociology of the mathematics classroom.

Here we will show only results of the first phase, its historical phase, which are: the genesis of the didactical contract concept, its predecessor ideas, its conceptualization process, the connections with other concepts, as well as its subsequent interpretations. We will also present a bibliographical survey of the concept, in order to document several interpretations that have emerged in the literature and we present the great differences between the approaches associated with the same name. Mainly we will demonstrate that the didactical contract not only is a founding concept of the discipline, but also it is a source of current research problems and that the history of the research groups practices allows us to study the original

concepts of the didactics of mathematics and preserve its original and concrete meaning.

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