



Ivana M. Jeremić¹

University of Belgrade, Faculty of Philosophy, Belgrade, Serbia

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Phases of Construction and Difficulties of Developing Knowledge Tests in Educational Practice²

Extended summary

Previous research in the field of application of knowledge tests in educational practice mainly related to standardized knowledge tests, while the nature and quality of tests that teachers design independently was less investigated. At the same time, foreign research that focused on the experience of teachers in the process of independent construction and application of tests indicated similar shortcomings of teacher-made tests almost everywhere in the world. Getting insights into teachers' experience and practices in the domain of the knowledge tests design is relevant primarily in terms of determining the quality of the tests themselves, but also assessing whether there is a need to help teachers in the process of test construction. The paper presents the results of an empirical research which determined the stages of construction of knowledge tests in educational practice, the difficulties faced by teachers in this process, as well as the ways of overcoming the difficulties. The descriptive-analytical method was used in the research, while content analysis and survey were the chosen techniques. For the purposes of the research, 20 schools were visited in 4 statistical regions of our country - Belgrade, Vojvodina, Šumadija with Western Serbia, and Southern and Eastern Serbia. The research sample included 362 subject teachers employed in primary schools in Serbia. All respondents included in the research pointed to the difficulties they face in the process of making tests, as well as

1 ivanaebooks@gmail.com

2 The content of the paper is partly taken from an unpublished doctoral thesis of Ivana Jeremić [maiden name Luković], defended at the Faculty of Philosophy in Belgrade and entitled *Knowledge Tests in Educational Practice*.

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the ways of solving these difficulties. A sub-sample of a total of 80 teachers consisted of Serbian language and mathematics teachers who reported on the stages of knowledge test construction in their practice. The model of theoretically defined stages of test construction was derived primarily from the model developed by Bogavac et al. For the purposes of our research, the model was modified in such a way that certain stages were harmonized in line with the requirements of the current educational practice. As the results of the research show, teachers perceive only a small number of theoretically defined phases of the construction of knowledge tests. It is primarily about the phases of determining the content of the test, the level of knowledge tested by each individual task, the method of assessing the test, and the key for test assessment. It was also determined that mathematics teachers, more often than Serbian language teachers, explain the phase of determining the length of the test, creating a key for test assessment, and the phases that are not covered by the theoretical model. In addition, mathematics teachers identify a higher total number of stages of knowledge test construction. In this paper, we tried to relate the differences in determining the stages of test construction between teachers of the Serbian language and teachers of mathematics to the difference in the nature of the teaching content taught in the given subjects, as well as the difference in the tradition and frequency of application of tests in teaching Serbian language and mathematics. The results also show that two-thirds of the surveyed teachers face difficulties when they prepare knowledge tests independently. Most often, the difficulties are related to determining the difficulty of the tasks, the number of points that the task carries, the level of knowledge that the task measures, the length of the test, the choice of the type of tasks, and turning the points on the test into grades. The difficulties are usually solved by teachers by consulting more experienced colleagues or by searching for a solution on their own. Teachers with fewer years of service more often reported consulting with colleagues in order to solve difficulties compared to teachers with more years of service. The results suggest that teachers often lack methodological knowledge regarding test construction. The author's recommendation is to enable teachers, by means of appropriate training, to acquire appropriate knowledge and skills that would help them create knowledge tests with satisfactory methodological characteristics. The strengthening of cooperation with school pedagogues, whose competencies in the given domain are not sufficiently recognized, would also contribute to strengthening the competencies of teachers.

Keywords: knowledge tests, construction of knowledge tests, difficulties in creating knowledge tests, educational practice

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