

Using a rubric for the performance-based assessment of student teachers

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Abstract

Different rubrics have become valuable pedagogical tools of carrying advantages for students and their instructors in the process of teaching and learning. The aim of this study is to demonstrate the reliability of an assessment rubric for the performance-based assessment of student teachers' activities during their internship. The assessment rubric was developed by Estonian and Dutch teacher educators, the process included focus group meetings and a validation study. The final assessment rubric in Estonia consisted of 12 crucial professional activities that students carry out during their internship. In this study, only the first five activities were assessed. Thirteen student teachers of class teacher curriculum gave 18 lessons each during their internship of six weeks. Altogether 236 assessment forms were filled in by the school supervisors and university supervisors based on the lesson observations and the assessment rubric. The preliminary results of the research indicate that there are no differences between the scores of school and university supervisors. The supervisors gave the highest scores to the activities about choosing the learning materials and methods and planning the execution of the learning activities; the lowest scores were given to the activity of the evaluation of the students. The observed and scored five professional activities yielded positively and moderately strong relationship between each of the activity. The results show that these five activities are interrelated to each other and each of them represents an important dimension in the teachers' classroom activities. The contribution of this study is a reliable assessment rubric which will be implemented in an electronic portfolio system including the application of learning analytics with the aim to provide easily accessible, dynamic and visual overview of the student teachers' professional development to themselves and their supervisors.

Keywords: assessment rubric, performance-based assessment, initial teacher education.

Extended summary

Introduction

The quality of education highly depends on what teaching tasks teachers perform and on their competences to adequately fulfil these tasks (Van der Schaaf & Stokking, 2011). Therefore, performance-based educational models have gained considerable attention in teacher education in the recent decades. In order to improve the quality of teaching, reliable assessment tools must be used. The idea of rubrics, i.e. descriptions of aspects of work with associated performance level descriptions (Dekker-Groen, Van der Schaaf & Stokking, 2012) is now emerging as a valuable pedagogical tool (Hafner & Hafner, 2003) for supporting student teachers assessment and feedback.

The assessment rubric of the student teachers' performance-based competency requirements was developed in collaboration between the teacher educators of the Utrecht University and the

University of Tartu and on the basis of Dutch and Estonian teacher competence requirements. Two innovative concepts were applied to develop the framework for the rubric. Firstly, the concept of core practice (Ball & Forzani, 2009; Grossman, Hammerness, & McDonald, 2009; Zeichner, 2012; Windschitl, Thompson, Braaten, & Stroupe, 2012) that directs teacher educators to identify and organise initial teacher education around the most crucial professional activities a teacher has to carry out. Secondly, entrusted professional activity, a concept that also emphasises identification of crucial professional activities in practice, but also points out that these activities need to be practiced under supervision until the student is entrusted to carry them out independently (Ten Cate, 2005; Ten Cate, 2013; Ten Cate & Scheele, 2007).

In order to increase the validity of the developed rubric for the Estonian teacher education context, a three-round Delphi method was implemented. The validation process resulted in a high degree of consensus for the assessment rubric, involving 5 professional roles, 12 professional activities, and 5 performance levels for each activity. The aim of this study was to analyse the possibility for performance-based assessment of student teachers' classroom activities in their internship by using a rubric. We have set a general research question for the study: can the assessment rubric be used reliably to assess student teachers in their classroom activities during their internship?

Methods

To assess the professional activities and provide feedback to the student teachers, an assessment form based on the assessment rubric was developed. Five out of twelve professional activities of the rubric were added to the assessment form. These five activities (1. Sets learning goals for the lessons and knows the learning goals of the curriculum; 2. Chooses or designs appropriate learning materials and methods according to the learning goals; 3. Plans the execution of learning activities; 4. Carries out the learning activities; 5. Evaluates the pupils' accomplishment of the learning goals and gives them feedback) were seen as the most crucial ones since they directly relate to the teaching responsibilities of the student teachers.

Thirteen student teachers of class teacher curriculum participated in our study. They gave 18 lessons in their internship in March and April 2015. The assessors (36 school and 4 university supervisors) were asked to provide a performance level score for the five professional activities for each lesson. Paired observations were conducted on 19 lessons; all the other lessons were observed by one assessor. Altogether 236 assessment forms were submitted. The reliability analysis (Cronbach alpha correlation coefficients and Pearson correlation coefficients) was carried out to assess the applicability of the performance-based rubric for student teachers' activities.

Results

The preliminary results show that there are no differences between the scores given by the school and university supervisors: they both gave the highest scores to the activities about choosing the learning materials and methods and planning the execution of the learning activities; the lowest was scored the activity about evaluation.

The Pearson correlation coefficients of the five professional activities yielded positively and moderately strong relationship between each of the activity. The results show that these five

activities are interrelated to each other and thus each of them represents an important dimension in the teacher's classroom activities.

The practice-driven aim of the performance-based assessment of student teachers is to improve their teaching practices. Designing a valid and reliable assessment instrument is only one step in achieving this goal. Next, the assessment rubric will be implemented in an electronic portfolio system which includes the application of learning analytics with the aim to provide easily accessible, dynamic and visual overview of the student teachers' professional development to themselves and their supervisors.

References

Ball, D., & Forzani, F. M. (2009). The Work of Teaching and the Challenge for Teacher Education. *Journal of Teacher Education*, 60(5), 497–511.

Chen, W., Mason, S., Hammond-Bennett, A., & Zalmout, S. (2014). Development and Validation of Assessing Quality Teaching Rubrics. *Journal of Education and Training Studies*, 2(3), 1-10.

Dekker-Groen, A. M., Van der Schaaf, M. F. & Stokking, K. M. (2012). Performance standards for teachers supporting nursing students' reflection skills development. *Journal of Nursing Education and Practice*, 2(1), 9–19.

Grossman, P., Hammerness, K., & McDonald, M. (2009). Redefining teaching, re-imagining teacher education. *Teachers and Teaching: Theory and Practice*, 15(2), 273–289.

J.C. Hafner, J. C. & Hafner P.M. (2003). Quantitative analysis of the rubric as an assessment tool: An empirical study of student peer-group rating. *International journal of science education*, 25 (12), 1509–1528. DOI: 10.1080/0950069022000038268.

Ten Cate, O, & Scheele, F. (2007). Competency-Based Postgraduate Training: Can We Bridge the Gap between Theory and Clinical Practice? *Academic Medicine*, 82(6), 542–547.

Ten Cate, O. (2005). Entrustability of professional activities and competency-based training. *Medical education*, 39(12), 1176–1177.

Ten Cate, O. (2013). Nuts and Bolt of Entrustable professional activities. *Journal of Graduate Medical Education*, 5(1), 157–158.

Van der Schaaf, M.F., & Stokking, K.M. (2011). Construct Validation of Content Standards for Teaching. *Scandinavian Journal of Educational Research*, 55(3), 273-289.

Windschitl, M., Thompson, J., Braaten, M., & Stroupe, D. (2012). Proposing a core set of instructional practices and tools for teachers of science. *Science Education*, 96(5), 878–903.

Zeichner, K. (2012). The Turn Once Again Toward Practice-Based Teacher Education. *Journal of Teacher Education*, 63(5), 376–382.