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# Economic Competencies at the End of Secondary Education in Switzerland

## *Extended Summary*

*Introduction*

Given the growing complexity of economic processes in a modern and internationalised world, handling problems in the realm of education, in the workplace and in private life requires certain economic competencies. Unlike for other countries, we know only a little about such competencies in Switzerland. In this study, we aim to assess the economic competencies of students at the end of secondary education (grades 12 and 13). The representative sample is comprised students from grammar schools (Gymnasien) and professional maturity schools (PMS; Berufsmaturitaetsschulen) in the German-speaking part of Switzerland (N = 3.000). The PMS combines a vocational apprenticeship with a general education requirement, and their certificate entitles one to free entrance to the Universities of Applied Sciences. In addition to measuring students' economic competencies, we will formulate several hypotheses predicting them. A matter of particular interest is the effect of instructional variables on the competencies.

Because our study is situated in the beginning stages we cannot present any empirical results at this time. Therefore, this summary is comprised of a short literature review and an introduction to the concepts and the theoretical framework underpinning the study. Furthermore, we pay particular attention to the process of test construction.

*Literature and selected findings*

The greatest number of studies on economic competencies and the effects of economic education on learning outcomes have been conducted in the United States of America (USA). A preliminary milestone was the report entitled "Economic Education in Schools" published in 1961 (Committee for Economic Development, 1961). The report specified contents and benchmarks for economic knowledge and skills in upper secondary education. Subsequently, the Test of Economic Understanding (TEU) was developed by the National Council of Economic Education (NCEE, 1964). Using the TEU, a few studies identified a substantial lack of knowledge among students. One result of the comprehensive discussions that followed was the twice-revised conceptualisation of the „Framework for Teaching Basic Economic Concepts" (Hansen et al., 1977; Saunders et al., 1984; Saunders & Gilliard, 1995). Based on the first framework, the TEU was re-worked to create the Test of Economic Literacy (TEL) (Soper, 1979). The TEL (2nd edition by Soper & Walstad, 1987; 3rd edition by Walstad & Rebeck, 2001) is the most frequently used instrument for assessing economic competencies. However, two related points must be mentioned. First, the TEL focuses on

economics only. The topics of business administration and financial accounting play no role. Second, the test is based on the national US framework (see above) and, in the case of the third edition, also on the „National Content Standards in Economics“. If fit is to be applied to other countries, these conceptual roots of the instrument should be kept in mind.
International studies have used the TEL or a translation of it (e.g., the German translation from Beck & Krumm 1990, 1998). An overview of the results shows considerable differences between the countries (Walstad, 1994). Students from Australia, the UK and South Korea performed better, whereas the mean scores for the US, Germany, Austria, Switzerland and Greece in particular were lower.
Subsequent to the frequently discussed results of the PISA-2000 study, there was an increase in research on student competencies in German-speaking countries. An assessment of economic competencies was partially captured in studies of vocational competencies (e.g., the pre-studies of a VET-LSA or the ULME study; Winther & Achtenhagen, 2009 resp. Lehmann & Seeber, 2007). However, there is no current study whose main focus is students' economic competencies in upper secondary education in German-speaking countries.

*Definition and theoretical framework*

Using a functional approach, we define students' economic competencies as the ability to successfully tackle „everyday-life“ demands related to the domains of economics and business administration. In accordance with Weinert`s conceptual clarification, we adopt a broad understanding of competencies (Weinert, 1999). Therefore, competencies are not be reduced to their cognitive components (knowledge and skills). These abilities incorporate an interest in economic problems and the motivational-volitional orientations necessary to handle them. Furthermore, we consider the attitudes and values that facilitate responsible problem-solving.
Moreover, in our study, we will identify predictors of economic competencies. To select them, we have used a framework for the development of economic competencies among students inside and outside school. The framework contains different and interrelated components: student prerequisites (e.g., achievement in mathematics and reading comprehension), teaching and learning components (e.g., the pedagogical content knowledge of the teacher), and extracurricular issues (e.g., reading newspapers). Based on from this framework and findings from other studies, we formulated several hypotheses or research questions for the purpose of predicting the competencies.

*Methods*

We will draw a representative sample of students from grammar schools (Gymnasien) and professional maturity schools (PMS; Berufsmaturitaetsschulen) in the German-speaking part of Switzerland (N approx. = 3.000). Therefore, a one-stage stratified cluster sample design

will be used (units are intact classes; subsequent weighting).

Student data will gathered using a cross-sectional design at the end of 2010/11 school year via achievement tests and questionnaires. Achievement tests will be used to measure economic knowledge and skills, knowledge of mathematics, reading comprehension and basic cognitive abilities. The format of the test items will allow Item Response Theory (IRT) scaling (except for in the case of the cognitive capability test).

A portion of the instrument is available from our own previous studies (Eberle et al., 2008; Eberle et al., 2009; Schumann, Oepke & Eberle, under review) and from other studies. Another portion must be newly developed: in particular, a test of economic knowledge and skills (for more details, see below). The new instrument will be tested in a pilot study in Autumn 2010. To ensure the objectivity of the assessment procedure, we will deploy trained extern test administrators.

*Process of test construction*

In the first part of our study, a main focus is on the development of a test of economic knowledge and skills. In our opinion a comprehensive test of economic competencies should include topics related to economics and business administration (including accounting) as well. To identify the relevant sub-themes within these two main topics, we combine two parallel processes. First, we have conceptualised a broad thematical system of categories for each main topic. The fundamentals and data sources of this conceptualisation were the all-encompassing lecture papers from the first academic year at the two leading Swiss universities in economics and business administration. Moreover, we analysed the contents of several textbooks for upper secondary education. Second, in accordance with our functional approach to economic competencies, we have run an analysis of two important Swiss newspapers. We analysed approximately 1.400 articles. This procedure was intended to identify terms related to economics and business administration, and we found more than 35,000 terms. In the next step, we will assign these terms to the appropriate categories. How we conducted this procedure and the further steps that we will use to measure economic competencies are issues that we will address in the symposia.

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