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## Project management tuition or training, can we assess the added value of them?

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### Abstract

Various programs in higher education feel a need to teach project management skills to students. Measuring the effect of education is a challenge especially when focused on behavioral skills. Research on learning gains usually turns to the method of Students Assessment of Learning Gains (SALG), which can be questioned on reliability. This article constructs five design criteria for an improved Students Assessment of Learning Gains (SALG): measure satisfaction, use pre- and posttests, use perceived ability, account for learning stage one and account for attrition. A first test on a semester of a professional master in project management yields ambiguous results. The second test with a 360 degrees measurement is performed on the same semester with different students. The post test is scheduled for June 2014, results will be reported at the World Congress.

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### 1. Introduction: project management competences and assessment

Higher education for several professions, such as Information and Communication Technology (ICT), Engineering, and Construction teach their students project management for various reasons (Car, Pripuzic, & Belani, 2010; Divjak & Kukec, 2008; Fernández, Cabal, Balsera, & Huerta, 2010; Lebcir, Wells, & Bond, 2008; McDonald, 2001; Mengel, 2008; Nooriafsha & Todhunter, 2004; Reif & Mitri, 2005; Rennie & White, 2002; Rooij, 2009;

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Stoyan, 2008). Crawford, Morris, Thomas, and Winter (2006) state: 'Project management is offered as a significant component in a range of undergraduate and postgraduate academic qualifications, including construction, engineering and IT,' which is in line with the desire to make the higher education studies more relevant to daily work practice (Pant & Baroudi, 2008). Martin (2000) claims that project management is an important element of both management and engineering education. But incorporating project management is not easy, as Ellis, Thorpe and Wood (2003) note: 'Project management is a challenging subject to deliver, not least because of the wide variety of skills and knowledge it embraces.' Michel and Prévôt (2009) note that more emphasis should be placed on soft skills such as social, emotional and organizational.

There is a great variety of suggested ways to convey project management competences: simulation training, service learning, PBL, PBL with a project manager from a different study, case study, or other (see Nijhuis (2012a) for an extensive list of literature). Most of these alternatives are not evaluated on the success of the pedagogical approach, but by means of student enthusiasm ('I learned a lot') and/or 'ticking off' products (planning, report).

It can be argued that assessing competences of project managers is already available, but those assessments are targeted at project managers with experience and not at student level (CAPM, PMP, IPMA-x, APM, GAPPS) or are aimed at the knowledge component only (Prince2, IPMA-D). And a link between these certification systems and achieving project success is almost nonexistent (Morris, Crawford, Hodgson, Shepherd, & Thomas, 2006; Turner, Müller, & Dulewicz, 2009).

Measuring and evaluating the success of a pedagogical approach /.../ is crucial as it allows one to determine if the given approach is indeed effective, with objective measures to accompany the claim (Lim, Hosack, & Vogt, 2012). Although assessment has been implemented for a long time in project management (Beaubier & Thayer, 1973), it is found to be a difficult task to perform correctly in higher education (chapters 8-11 in Edwards & Knight, 1995). The required behavioural skills ... are difficult to assess and innovative approaches are required (Youker, 2012).

It is important to measure the added value instead of learning outcome, as the incoming ability is the largest predictor of the outcome ability (Ewell, 2002).

Kirkpatrick (1959; 1996; 2006) gives a four level model of evaluation. The first level is how the students value the direct experience - also known as the smile sheet -, the second level measures the direct learning effect, the third level tests if a permanent learning effect has occurred and the fourth level looks for the added value in the workplace. Kirkpatrick argues that measuring the second level can only be done if the first level is measured, and that the second level needs a pre- and posttest. He adds 'Increase knowledge is relatively easy to measure /.../ we can measure attitudes with a paper-and-pencil test /... / [for skills] a performance test is necessary' (D. L. Kirkpatrick & Kirkpatrick, 2006 p50-51) (design criteria 1 & 2).

A relative simple form of a performance test is a 360 degrees feedback system where the student is evaluated by a group of peers. The 360 degrees feedback system has the disadvantage of lacking previous experience with the student in the peer group, which would make the pre-test useless and therefore unable to measure learning gains. More elaborate performance tests (like role play or expert assessment) have the disadvantage of being labor (and money) intensive (Axelrod, 1976; Kuntze, 2009).

## **2. Students assessment of learning gains**

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