PROFESSIONALISING TEACHERS IN GUIDING REFLECTION (SHORT CONCEPT PAPER)

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ABSTRACT

The contemporary knowledge society of the 21st century requires students, among other things, to have the ability to think analytically and reflectively. Research into the disappearance of technical employees from the technical labor market also shows it is important to guide students in their professional identity development, in which reflection of students is crucial. Various studies show however that educational programs and teachers experience difficulty with the effective use of reflection in education. In the project ‘Strengthening reflection in technical higher education programs’, six technical higher professional education programs of two Dutch higher education institutes are working on the improvement of reflection in their programs. Teachers from these teams are also trained in guiding and assessing reflection activities of students. In this current research, the following research questions will be answered:

1. How do teachers guide students during reflection activities or conversations?

2. How do teachers assess students' reflection activities?

3. Does the offered training contribute to an increase in skills of teachers with regard to guiding reflection activities of students?

A selection of teachers of the participating teams will be interviewed before and after the training. To assess teachers pedagogical and didactical knowledge and skills, video vignette interviews are used. Vignettes were designed to provide teachers with multiple authentic situations that are prototypical in their teaching context and which are depicted in video captions. Interview protocols were used to elicit teaching interventions and teachers' rationales and thoughts behind these interventions in the depicted situations.

1 INTRODUCTION

1.1 Background

The labour market is transforming at such a fast speed, that education can hardly keep up with providing the actual knowledge that is needed for certain professions [1]. The present labour market is characterised by technological developments, complex challenges (or so called ‘wicked problems’), flexibility and globalization [2]. Institutes for higher education are challenged to educate students in becoming professionals that do not only have sufficient knowledge and skills within a certain specific domain, but are also equipped with broader generic, often called 21st century skills [3]. Parallel to this movement, within these institutes there is an increased focus on personal learning trajectories of students with the aim to provide guidance from a wider perspective, for example by incorporating subjects such as “Bildung” or personal development [4]. Especially within the engineering, science, and technical sector, one of the main problems is the increased number of technical alumni that is not going to work in the sector they were actually educated for [5]. The reasons why students eventually do not choose for a job in this specific sector is not fully clear, but there seems to be an opportunity for providing improved guidance, to help students discover their potentials within the workplace and develop their professional identity. This means that students learn what their own qualities are, who they are, what kind of professional they would like to be, and how they would like to contribute to the labour market or society [2]. To achieve this with students and help them to become self-aware and self-directing professionals, education should stimulate the development of a reflective attitude [6].

1.2 Reflection (skills) and its use in education

The developments described above show, in a wide range, the importance of the use of reflection and the need for development of reflection skills in education. In addition, many authors argue that being able to reflect is a basic and essential skill for (future) professionals and, therefore, for current students [2]. To reflect or to stimulate a reflective attitude is, however, no sinecure. It is a skill that students really need to develop [9]. This means that educational programs should place reflection on the agenda of their curriculum, but also that they need to think about how they can guide the development of reflective skills throughout the study program from year one to year four.

At the same time, research shows that educational programs experience great difficulty in creating an effective learning environment for reflection [8]. Educational programs acknowledge the importance of reflection and use, for example, ‘reflective practitioner’ in the final goals of their program. However, the concrete design and execution of the concept of reflection differs between programs or is not always clear. Also, current reflection activities often take the form of writing assignments with questions like: ‘describe what you learned from the assignment, what can you

do better?'. Students often feel these kind of exercises are not relevant and motivating [6;8].

Engineering, science and technology programs experience even more difficulties because they often feel reflection is not easily adopted and implemented in their specific context [8]. Reflection is often designed in such a way that it requires good language skills, which is not always considered appropriate for students from engineering, science and technology programs. Many teachers in engineering, science and technology programs express the need to embed reflection in a concrete way in their programs and make use of reflection activities that suit their specific target group.

The project 'Strengthening reflection in technical higher education programs' addresses these issues; six technical programs from two Dutch institutes for higher education are working together with a project team for the duration of two school years on an improved vision and curriculum regarding the incorporation of reflection in their programs. In addition, efforts are made to improve reflection activities for students and professionalize teachers regarding the necessary guidance skills in order to help their students develop essential reflection skills.

1.3 Current study

The participating teachers of the above mentioned project are also trained in guiding reflection activities of their students. Alongside these training, research is being conducted that focuses on answering the following research questions:

1. How do teachers guide students during reflection activities or conversations?

2. How do teachers assess students' reflection activities?

3. Does the offered training contribute to an increase in guidance or assessment skills of teachers concerning reflection activities of students?Interviews with teachers will provide input for answering these research questions. Data collection is still ongoing at this moment. Therefore, the remainer of this short concept paper focuses on the design of this research.

2 METHODOLOGY

2.1 Participants

Participants come from two universities of applied sciences in the Netherlands. A random selection of four teachers of 3 participating teacher teams (Building & infrastructure, Information technology/ Electrical engineering and Fashion textile & technology) will be interviewed both before and after the training. The teachers voluntarily participated in the training and had different backgrounds in terms of experience with teaching, guidance of students, or the theme 'reflection'.

2.2 Data collection method

To assess these teachers' pedagogical and didactical knowledge and skills in terms of guiding students' reflections, video vignette interviews are used. Four video vignettes were designed to provide teachers with multiple authentic situations that

are prototypical in their teaching context. Interview protocols were used to elicit teaching interventions and teachers' rationales and thoughts behind these interventions for the depicted situations. Video vignettes are considered a favourable method to capture the knowledge or beliefs that teachers employ, since they can cover multiple distinctive situations [7]. Moreover, direct and comparable assessments of teachers' knowledge and beliefs can be realised, since the interview protocol require each teacher to respond individually to each of the vignettes.

In developing the vignettes we focused on producing a set of hypothetical teaching situations that are prototypical and critical to teaching reflection skills in the context of science and engineering programs in a higher professional educational setting. In orderto cover multiple authentic situations in the particular teaching context at hand, the scripts for the vignettes were based on commonly occurring problems and prototypical topics with regard to students' reflections,. Each video vignette starts with a short description of the, containing information about a particular critical situation.During the interview, teachers were shown the video vignette one by one. After each vignette they were asked: 'How would you react to this situation?'; 'What would you do?' 'Why?'; 'What do you intend to promote in terms of student learning with your actions?'.

In order to gain insight into how teachers assess students' reflections, a selection of two excerpts from reflection reports was made. During the interview, teachers were asked: 'How would you characterize the quality of this reflection and why?; 'What feedback would you provide to this student and why?; Suppose this excerpt would be the starting point of a reflective dialogue with this student, what kind of in-depth reflection questions would you ask?'.

2.3 Procedure and intervention (training)

The first round of interviews is currently being conducted. After finalizing these interviews, the teacher teams will participate in three different workshops, focusing on guiding individual and group reflection and assessing reflection activities of students. After these training activities, the same teachers will be interviewed again, using the same interview protocol, video vignettes, and reflection report exerpts. Data will then be analysed to investigate whether teachers have extended their skillset in terms of guiding and assessing students' reflections.

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