



# Changing learning behaviour: Self-efficacy and goal orientation in PBL groups in higher education



Gerry Geitz<sup>a,\*</sup>, Desirée Joosten-ten Brinke<sup>b</sup>, Paul A. Kirschner<sup>b</sup>

<sup>a</sup> Stenden University of Applied Sciences/Open University of the Netherlands, Welten Institute, P.O. Box 2080, 7801 CB Emmen, The Netherlands

<sup>b</sup> Open University of the Netherlands, Welten Institute, P.O. Box 2960, 6401 DL Heerlen, The Netherlands

## ARTICLE INFO

### Article history:

Received 24 April 2015

Received in revised form 1 November 2015

Accepted 5 November 2015

Available online 4 January 2016

### Keywords:

Higher education

Self-efficacy

Goal orientation

Learning behaviour

## ABSTRACT

Self-efficacy and goal orientation are important variables which affect student learning behaviour. To investigate the relationship between these variables and their effect on learning behaviour over time, a pretest–posttest non-equivalent group design with three repeated measures was used. During an 8-week period, student self-efficacy, goal orientation, and learning behaviour were measured using validated questionnaires among first-year higher education, mixed-nationality (Dutch and German) students in a problem-based learning context. Goal orientations were significantly related to deep learning, and self-efficacy was significantly related to a specific goal orientation, namely the mastery-approach. Mastery goal orientations decreased over time, while the surface learning behaviour increased. Significant differences were found between nationalities with respect to learning behaviour and goal orientation.

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## 1. Introduction

Rapid technological changes and globalisation of markets place great demands on the attitudes, skills, and learning behaviours of students in the field of Marketing. To better prepare these marketing students in higher education for their future working environment colleges and universities confront them with various real-life tasks during their studies. In carrying out these tasks, students may encounter difficulties, not necessarily because they lack the knowledge and/or skills to carry out the task but rather because they may lack the personal belief that they are able to execute the behaviours required to achieve the desired outcomes (Bandura, 1997). When students lack knowledge and/or skills, teachers can use their repertoire of teaching techniques helping to fill this gap. However, when students have knowledge and skills but do not believe that they can utilise them to execute the necessary behaviour, it is not always clear how their specific mind-set can be influenced to increase their so called self-efficacy (Chan & Lam, 2008).

Moreover, in working on a task, students can approach it or relate to it in different ways. They can invest much or little effort, feel confident or insecure, be convinced that they will or will not master the skills needed, be anxious that they will make mistakes or be overconfident that they can do it easily, think that their intelligence is fixed or changeable, etcetera. This state of mind is called goal orientation and is expressed in terms of which goals can be achieved and how to achieve them. In previous research, both self-efficacy and goal orientation have been found to be associated with students' learning behaviour (Bandura, 1997; Bandura & Schunk, 1981; Elliot, 1999; Elliot & McGregor, 2001; Zimmerman, 2000), which can be

\* Corresponding author.

E-mail addresses: [gerry.geitz@stenden.com](mailto:gerry.geitz@stenden.com) (G. Geitz), [desiree.joosten-tenbrinke@ou.nl](mailto:desiree.joosten-tenbrinke@ou.nl) (D.J.-t. Brinke), [paul.kirschner@ou.nl](mailto:paul.kirschner@ou.nl) (P.A. Kirschner).

conceptualised in terms of deep and surface learning behaviour. Deep learning behaviour is associated with the willingness to understand and engage in meaningful learning and use strategies appropriate for gaining knowledge. A surface approach is directed toward an adequate or superficial way of learning, with motives extrinsic to the real purpose of the task (Vanhournout, Coertjens, Gijbels, Donche, & Van Petegem, 2013). Like self-efficacy, learning behaviour affects performance outcomes (Chan & Lam, 2008).

In general, for optimal performance, learners should (1) be given learning tasks aligned with their knowledge and abilities (i.e., neither too simple nor too difficult), (2) feel confident that they can carry out the task (i.e., experience positive self-efficacy) under the condition that they have the necessary knowledge and abilities, and (3) have a goal orientation that guides them to acquire the necessary knowledge and skills.

Prior research has not been clear about whether self-efficacy, goal orientation, and learning behaviour should be seen as stable traits that remain constant over time or whether they change / can be changed during the course of carrying out a substantial task (Fan, Meng, Billings, Litchfield, & Kaplan, 2008). In other words, do self-efficacy, goal orientation, and learning behaviour change during a teaching period in which students work on meaningful, real-life assignments, such as problem-based marketing cases? If they can be changed, then this has important implications for educational practice. In the present study, the relationship between self-efficacy, goal orientation, and learning behaviour is investigated to determine how they relate to each other and whether they change over time. If they can be affected, then the learning environment has to be organised in a way that stimulates learners to adaptive patterns of cognitive strategy use (i.e., deep learning) and high achievement.

The next sections discuss the concepts of self-efficacy, goal orientation, and learning behaviour in more detail and discusses the assumed relations between them.

### 1.1. Self-efficacy and learning behaviour

Learning is an ongoing process in which behaviour is motivated and regulated by one's cognitions (Stevens & Gist, 1997). One set of cognitions is self-efficacy, defined by Bandura (1977, 1997) as an individual's belief in one's own capabilities to execute behaviours required to achieve prospective outcomes. Self-efficacy is "people's beliefs about their capabilities to exercise control over events that affect their lives" (Bandura, 1989, p. 1175). He maintained that even if individuals believe that outcomes can be influenced by behaviours or responses, they will not attempt to exert control unless they also believe that they themselves are capable of producing the requisite responses or behaviours. The degree to which a person believes that a required behaviour can be produced in a certain situation (i.e., self-efficacy) is contextual, for example, the belief that one will learn what needs to be learnt can depend upon the domain that needs to be studied. A person can feel very self-efficacious about learning in one domain but have feelings of low self-efficacy in another. In higher education, students are educated within a specific domain (in this study the domains of business and marketing) which they have chosen as their future working environment. To better prepare them for their future working environment, one approach is to offer/present them with real-life cases within a problem-based learning environment.

A strong sense of self-efficacy has been found to enhance personal accomplishment (Bandura, 1997; Usher & Pajares, 2008; Zimmerman, 2000). In general, people with high self-efficacy approach difficult tasks as challenges, become interested and deeply engrossed in their activities, set challenging goals and maintain a strong commitment to those goals. They have been found to maintain a task-diagnostic focus that guides effective task performance which heightens and sustains their efforts in the face of failure. They attribute eventual failure to insufficient effort on their part, which can be remedied by increasing their effort, or to a lack of knowledge or skills which they feel they can acquire. They quickly recover their sense of self-efficacy after failures or setbacks and approach threatening situations with the assurance that they can exercise control over them. Students who doubt their own capabilities (i.e., have low self-efficacy) show an opposite reaction (Bandura, 1997). While self-efficacy has been found to be contextually determined (e.g., high in math, low in language), it has not been investigated whether it is a stable trait. Does self-efficacy change over time in a specific context in a negative (i.e., decreasing self-efficacy) or positive (i.e., increasing self-efficacy) direction? Support for seeing self-efficacy as a dynamic trait can be found in Usher and Pajares' research (2008) which distinguished four factors that affect self-efficacy:

- Mastery experience: after completing a task, students interpret and evaluate their results and judge or revise their competence. Successful mastery (i.e., effort leading to the desired outcomes) enhances self-efficacy beliefs.
- Vicarious experience: one's abilities are judged in comparison to the abilities of other students. If a student is as successful as or more successful than other students, then value can be added to the student's own performance.
- Verbal and social persuasion: feelings of self-efficacy can be enhanced by encouragement from parents, teachers, and/or trusted peers though they may be limited in their ability to create sustainable increases in self-efficacy.
- Emotional and physiological state: for students, physiological arousal during activities is an indicator of competence. Bandura (1997) suggested that people function optimally when their physiological arousal is neither too high nor too low.

Of these factors, mastery experience seems to be the most effective factor.

The learning behaviour that students display is characterised by Biggs (1987) as either deep or surface learning. Deep learning is characterised by strategies such as elaborating on ideas, thinking critically, and linking/integrating one concept with another while surface learning is characterised by strategies such as memorisation and reproduction. Self-efficacy has

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