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How A Prosvektif Maths Teacher Builds Their Teacher Self-Efficacy

Nisraeni[1], Riyadi[2], Dinny Devi Triana[3]
[1]Postgraduate Program, State University of Jakarta, Jakarta, Indonesia
[2,3]Jakarta State University, Jakarta, Indonesia
E-mail. Nisraeni_7817167509@mhs.unj.ac.id

ABSTRACT
Self-efficacy is commonly conceptualised as being contingent upon a particular domain of endeavour. The appropriate understanding of self-efficacy relies heavily on the precise specification of its scope. When the scope of the domain is either excessively broad or excessively narrow, the accuracy of self-efficacy diminishes or it may lose its importance. Furthermore, the concept of a domain inherently requires the existence of sophisticated regulatory mechanisms, so rendering the mastery of rudimentary and repetitive tasks, such as the process of tying shoelaces, devoid of significance. Three interrelated domains were discovered, namely efficacy for classroom management, efficacy for student engagement, and efficacy for instructional methodologies.

Keywords:
Self Efficacy, Teacher Self Efficacy, Prosvektif Teacher

INTRODUCTION

The association between teacher self-efficacy and student accomplishment and motivation has been acknowledged as an important aspect of teachers' job and professional growth (Bruce et al., 2010; Thoonen et al., 2011). This recognition is evident in the scholarly literature, as demonstrated by the studies conducted by Klassen and Tze (2014) and Zed and Koomen (2016). Teacher self-efficacy, as identified by Tschannen-Moran and Hoy (2007), refers to the belief held by educators that they possess the ability to positively influence the development and self-assurance of their pupils. The aforementioned sources provide two instances of scholarly works that go into this subject matter. Furthermore, other research conducted by Aloe et al. (2014), Collie et al. (2012), Heng and Chu (2023), among others, have demonstrated that instructors with a high level of self-efficacy experience enhanced job satisfaction, reduced stress levels, a decreased likelihood of burnout, and greater proficiency in behaviour management. Moreover, it has been found that instructors who possess a high level of self-efficacy are inclined to adopt instructional approaches that prioritise student-centered or constructivist learning (Poulou et al., 2019). These teachers are also more willing to take risks and demonstrate greater ambition in their teaching practises, as well as incorporate innovative methods within the classroom (Thurlings et al., 2015). This article focuses on the insufficiently explored area of teacher self-efficacy, specifically the qualitative analysis of efficacy beliefs construction (Tschannen-Moran & Hoy, 2007; Goroshit & Hen, 2016).

METHOD

The categories of teacher self-efficacy are delineated according to the conceptual framework of teacher self-efficacy defined by Tschannen and Woolfolk (2001). The researchers employed factor analysis to discern three interrelated domains, namely efficacy for classroom management (EfCM), efficacy for student engagement (EfSE), and efficacy for instructional methods (EfIS). The term "EfCM" is an acronym that stands for "teacher's efficacy in Classroom Management." It pertains to a teacher's level of confidence in their ability to effectively manage student

behaviour and establish their authority within the classroom setting. The concept of EfSE represents a teacher's belief in their ability to motivate and captivate students. The construct of EfIS pertains to the level of confidence exhibited by educators in their ability to effectively utilise a variety of instructional approaches, assess and modify the optimal level of complexity, and adapt to unanticipated situations.

RESULTS AND DISCUSSION

The development of self-efficacy can be influenced by various aspects, such as professional feedback and encouragement, enactment experiences, physiological and affective states, and other elements (Tschannen-Moran et al., 1998). Nevertheless, after its establishment, self-efficacy tends to remain rather constant (Bandura, 1997). Hence, it is imperative to get a comprehensive understanding of the process by which self-efficacy is cultivated throughout pivotal early developmental phases, specifically within the context of initial teacher education (ITE) programmes (Tschannen-Moran & Hoy, 2007).

The field of teacher self-efficacy has had substantial growth since the 1970s, as evidenced by the increased volume of research conducted on this topic (Klassen et al., 2011; Zed & Koomen, 2016). Nevertheless, a significant proportion of the scholarly investigations conducted in this field have adopted a quantitative approach, accounting for around 76.7% of the studies conducted between 1998 and 2009 (Klassen & Chiu, 2010). Conversely, there has been a notable scarcity of qualitative viewpoints in the existing literature. Nevertheless, in order to gain a more comprehensive understanding of the development of self-efficacy, esteemed scholars in the field of quantitative research have advocated for the utilisation of qualitative approaches (Tschannen-Moran & Hoy, 2007; Klassen et al., 2011). This study addresses a gap in the existing information by presenting a comprehensive analysis of the factors contributing to the enhancement of self-efficacy in a trainee secondary mathematics teacher. The analysis is based on a year-long diary maintained by the trainee, and focuses specifically on the impact of a curriculum developed and implemented by the university-led Initial Teacher Education (ITE) programme. By conducting a meticulous analysis of the instructor's personal data, this longitudinal study, focusing on a single case, presents a unique opportunity to qualitatively assess the development of self-efficacy. The utilisation of rich narratives allows for an examination that can yield both exploratory and explanatory findings, thereby addressing the issue of our limited comprehension regarding the mechanisms through which different sources of efficacy impact the development of teacher self-efficacy, as previously documented in quantitative research conducted by Tschannen-Moran and Hoy (2007). According to Towers et al. (2022), a significant proportion of educators in England, almost one-third, discontinue their teaching careers during the initial five years, primarily as a result of the notable attrition rate. This study aims to provide further insights into the relationship between teacher self-efficacy and stress and burnout, as there exists a robust association between these variables.

Teacher self-efficacy.

Self-efficacy refers to an individual's belief in their ability to successfully do a particular task (Bandura, 1997). The concept of self-efficacy explores the complicated and interdependent relationship between cognition and behaviour, specifically in the context of developing skill in a challenging endeavour like teaching (Bandura, 1997). The main driving force behind human behaviour is cognition, and the creation and

execution of "anticipatory scenarios" are influenced by an individual's belief of their own efficacy (Bandura 1993, 118). According to Bandura (1993), those with elevated levels of self-efficacy tend to establish ambitious objectives, whereas those with lower levels of self-efficacy are more prone to expecting failure or a lack of accomplishment. According to Bandura's (1997) theory of self-efficacy, individuals who are inexperienced in a particular task are advised to engage in thoughtful deliberation prior to taking action. Individuals create a cognitive depiction of their future activities by the evaluation of their own knowledge, skills, and surroundings. As an individual's self-efficacy in a particular activity develops, their activities tend to become more automatic and habitual. Furthermore, once self-efficacy is developed, it tends to remain relatively steady (Bandura, 1997).

Domains of teacher self-efficacy

Self-efficacy does not possess a universal quality that can be applied to all facets of an individual's capabilities. For example, possessing expertise in piano performance does not necessarily indicate expertise in acquiring a foreign language (Bandura, 1997). In essence, self-efficacy is delineated in relation to a certain domain of endeavour. The appropriate understanding of self-efficacy relies on the precise specification of its breadth (Pajares & Urdan, 2006). When the scope of the domain is either excessively broad or excessively narrow, the accuracy of self-efficacy diminishes or it may lose its importance. Furthermore, it is imperative to note that the concept of a domain inherently requires the existence of sophisticated regulatory mechanisms. Consequently, the mastery of rudimentary and repetitive tasks, such as the process of tying shoelaces, becomes devoid of significance (Bandura, 1997).

Having looked at the various facets of teacher self-efficacy, we will now concentrate on the broad processes that lead to the development of self-efficacy. Previous studies by Meister & Melnick (2003) and Tschannen-Moran & Hoy (2007) show that teachers' self-efficacy usually first appears in the domains of instructional strategies and classroom management, then it spreads to include student participation. However, Schoenfeld's (2011) development model, which we are also looking at, suggests a different course of action. There are three separate 'planes' of professional activity in the model. Like EfCM, the first plane concentrates on classroom management. The second plane involves engaging in engaging activities, similar to EfSE. The last level has the diagnostic instruction exercise. According to Schoenfeld, diagnostic teaching is the process of watching and evaluating how each student or group uses their brains, after which they provide them with tasks and feedback tailored to their particular comprehension (Schoenfeld, 2011).

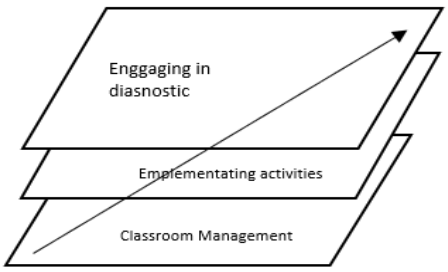

Figure1 Schoenfeld's (2011) teacher learning trajectory – three planes of professional activity

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When defining the domains of teacher self-efficacy, we rely on the conceptualization of teacher self-efficacy developed by Tschannen-Moran and Woolfolk Hoy (2001). Through factor analysis, they identified three interconnected domains: efficacy for classroom management (EfCM), efficacy for student engagement (EfSE), and efficacy for instructional strategies (EfIS). EfCM refers to a teacher's confidence in their capacity to effectively handle student behavior and maintain their authority in the classroom. EfSE embodies a teacher's confidence in their capacity to inspire and engage students. EfIS encompasses teachers' confidence in their capacity to employ alternative instructional methods, evaluate and tailor the appropriate level of difficulty, and adapt to unforeseen circumstances. Table 1 presents a comprehensive analysis of the three dimensions, utilizing the 24-item OSTES (Ohio State Teaching Efficacy Scale) instrument created by Tschannen-Moran and Hoy (2001).

Table 1. Descriptors of domains of teacher by tschannen moran and hoy (2001)

Teacher self efficacy domains		
Efficacy for classroom management (EfCM)	**Efficacy for Student Engagement (EfSE)**	**Efficacy for Instructional Stategies (EfIS)**
• Manage disruptive behavior • Ensure compliance with classroom rules • Soothe a problematic student • Implement an effective classroom management system • Prevent a small group of disruptive students from disrupting a lesson To address a stubborn learner, it is important to clearly communicate expectations and establish consistent procedures.	• Instill in students a sense of self-efficacy • Cultivate a strong appreciation for the process of learning in students • Inspire and engage students with low levels of interest • Enhance the comprehension of students who are struggling academically • Aid families in supporting their children's academic success • Encourage students to think analytically and critically • Nurture students' creativity and innovation • Establish effective communication and connection with the most challenging students	• Employ a diverse range of assessment strategies • Utilize alternate explanations or examples • • Formulate well-crafted questions • Implement alternative strategies • Address complex inquiries • Assess comprehension of students • Adapt instruction to suit each student's level • Offer suitable opportunities for growth and development

This could explain Schoenfeld (2011), and Tschannen-Moran and Woolfolk Hoy's (2007) apparently contradictory conclusion about the order in which distinct characteristics of teaching capability are developed.

Bandura (1997) says that when an individual gets self-efficacious in an activity, their acts become virtually automatic or 'routinised' – they do not have to think about all their actions. Although classroom management at this stage may not exhibit the nearly instinctive reactions witnessed in a seasoned instructor.

CONCLUSION

This exhibits similarities to EfIS with regards to its adaptive characteristics and incorporation of various approaches. The concept being discussed exhibits similarities to the notion of contingency as outlined in the Knowledge Quartet (Thwaites, Jared, and Rowland 2011). This framework elucidates the manner in which educators adapt and respond to diverse classroom situations and the individual needs of their students. This region is additionally linked to ambitious pedagogy, as delineated by Stylianides and Stylianides (2014). The approach encompasses the incorporation of more rigorous student-centered problem-solving techniques, with interactive and investigative activities. According to Schoenfeld (2011), it is suggested that novice instructors should place emphasis on classroom management as their first focus, followed by student involvement. On the other hand, diagnostic teaching is a talent that is typically acquired by experienced and accomplished teachers. In contrast to the findings of Tschannen-Moran and Woolfolk Hoy (2007) as well as Meister and Melnick (2003), which suggested that the development of teacher self-efficacy for student involvement is the ultimate feature. The integration of EfIS with diagnostic teaching, contingency, and ambitious teaching allows for the preservation of EfIS's inherent qualities while simultaneously adapting it to accommodate a teacher's professional development across diverse instructional domains. This may provide clarification for the apparent inconsistencies in the research findings of Schoenfeld (2011) and Tschannen-Moran and Woolfolk Hoy (2007) about the developmental order of different aspects of teaching competence. Our study offers supplementary perspectives on this issue.

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