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Science teaching self-efficacy of culturally foreign teachers: A baseline study in Abu Dhabi

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ABSTRACT

This study focuses on the self-efficacy of teachers working in a culturally foreign environment. The research presented describes an exploratory study examining the science teaching efficacy beliefs of culturally foreign teachers in Abu Dhabi's primary schools, private and public. A standardized teacher self-efficacy instrument (STEBI A) specific to science education was used to collect data on teachers' perceptions of their strengths and weaknesses in the area of science education. Results showed a much lower sense of self-efficacy in comparison to other studies elsewhere in the world, and indicate cultural adaptation – both personal and professional – may influence teaching efficacy of beginning and experienced teachers. Self-efficacy of teachers working within a culturally different environment is an underexplored field and is worthy of future research.

1. Introduction

Teaching is an increasingly global profession, as the international school movement grows in response to an ever expanding expatriate market world wide (McNamara, Lewis, & Howson, 2004). Shortages of teachers in countries such as the United Kingdom (UK), United States (US) and Australia have helped to drive the demand for foreign trained, or supply, teachers (Cruickshank, 2004) as has the demand for teachers of English worldwide (McNamara et al., 2004). The effectiveness of supply teachers may be influenced by a variety of factors.

Self-efficacy beliefs are strong predictors of behaviour as they can describe how individuals may take on challenges, overcome obstacles and respond to uncertainty (Bandura, 1997). The concept of self-efficacy has been widely explored in the literature, however few studies have examined how cultural factors influence motivational beliefs (Klassen, Bong, et al., 2009; Klassen, Foster, Rajani, & Bowman, 2009). For example, some scholars have expressed concerns about professional isolation between more permanent teachers and the supply teacher (McNamara et al., 2004; Shilling, 1991) which may have implications for teacher effectiveness. Despite the obvious relationship between beliefs and an individual's ability to adjust to new, potentially challenging circumstances (Tsang, 2001), there is a gap in the literature regarding the self-efficacy of individuals working in a culturally foreign environment. The construct of self-efficacy is context specific (Bandura, 1997), and although self-efficacy in one context could be related to self-efficacy in another, examinations of self-efficacy must be tailored to the specific area of interest in order to obtain meaningful results (Peterson, Milstein, Chen, & Nakazawa, 2011).

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Thus, these beliefs could be particularly revealing (see Ferguson, 2011) about how teachers adapt within their foreign teaching context.

Internationally, research is focussing on ways to improve science teaching in primary schools to enhance student engagement in the sciences (Osborne & Dillon, 2008; Palmer, 2007; Tytler, 2003; Varley, Murphy, & Veale, 2008). Science teaching self-efficacy beliefs have been explored in the science education literature for the last two decades (van Aalderen-Smeets, Walma van der Molen, & Asma, 2012). However, there is little research to date that examines the science teaching self-efficacy of supply teachers and teachers' beliefs about teaching students from different cultures (Settlage, Southerland, Smith, & Ceglie, 2009). An examination of how well these foreign teachers adapt to a novel culture and environment, particularly to their own school and classroom, is needed to help map the international teaching terrain (Ferguson, 2011). This paper will begin to address this gap using Abu Dhabi, the capital of the United Arab Emirates (UAE), as a case study.

The UAE has undergone rapid transformation since its Federation in 1971 and the discovery of petroleum resources. In twenty years it transformed from one of the least developed and poorest nations to one with some of the highest per capita incomes in the world (el Mallakh, 1981). Now, more than 40 years after federation, the UAE has a heavy reliance on imported labour, with expatriates (non-Emiratis) comprising 85% of its workforce, and about 80% of the total country population (Australian Government, 2013). This has had an impact on the education system of the UAE. The number of private educational institutions has risen tremendously over the years in order to meet the increasing demand caused by the increase of expatriates – and this necessitated hiring supply teachers from abroad (McKinnon, Barza, & Moussa-Inaty, 2013).

This paper will begin by examining the importance of science engagement internationally, particularly for developing countries. This is followed by a brief review of the literature on teacher efficacy and science education, which will further highlight the significance of the inquiry. It will then discuss the role of supply teachers in these developing countries, with particular focus on cultural effectiveness. A general overview of science education in Abu Dhabi is provided in order to contextualize the results of the study. The paper concludes with implications for recruiters of supply teachers and teacher trainers. Recommendations for practical steps to enhance teachers' adaptations to culturally foreign settings, ultimately enhancing teacher satisfaction and student outcomes, are also provided.

1.1. Aim and scope

The aim of this preliminary research is to examine the science teaching self-efficacy beliefs of supply teachers working in Abu Dhabi's primary schools. Both public and private schools are used to ensure the broadest possible representation of teachers in the different school contexts. The findings from this research will add to a paucity of literature about the self-efficacy beliefs of foreign teachers, despite the clearly established links between self-efficacy, cross cultural adjustment and subsequent job performance in other fields (see for example Tsang, 2001). Science has been chosen to provide a simple snapshot – based on a well established and validated measure – for this exploratory case study. These findings will inform both national (UAE) and international educational systems reliant on supply teachers about the additional support they require to facilitate their cultural adjustment and will identify areas for further research.

2. Research method

2.1. Participants

Seven public schools and nine private international schools, yielding a combined total of 114 teachers, consented to participate in this study. Respondents were teachers in the primary years (grades 1–5). The majority of teachers in both private and public schools were Westerners, predominantly from the UK, US, Canada, South Africa, Australia and New Zealand. To ensure anonymity a breakdown of the numbers of each group will not be provided.

2.2. Procedures

A complete list of primary schools was obtained from the Abu Dhabi Educational Zone (ADEZ). Any public or private school that taught grades one to five was eligible for inclusion in the study. Schools were contacted by telephone and invited to participate in the study. Of the schools that expressed an interest in participating, the school principal or the science coordinator was nominated as the liaison between the school and the researchers. The liaison in each school was sent a letter of invitation via email that outlined the purpose of the survey, requirements of participants, and contact details of the principal researchers and the head of the University Ethics Committee. Once permission to participate had been granted, the researchers then either emailed or gave hard copies of the surveys and consent forms to the liaison to distribute to all teachers of science in years one to five, which were collected one week later.

2.3. Instrumentation and data analyses

2.3.1. Science teaching self-efficacy belief instrument

The Science Teaching Self-Efficacy Belief Instrument (STEBI A – Riggs & Enochs, 1990) was used for this study as it is a validated instrument specific to science teaching. The context specificity of the instrument makes it a more appropriate measure for the purposes of this exploratory case study (Peterson et al., 2011).