



# Ownership and Attitudes towards Technology Use in Physiotherapy Students from Seven Countries

Dirk Vissers<sup>a,\*</sup>, Michael Rowe<sup>b</sup>, Md. Shofiquel Islam<sup>c</sup>, Jan Taeymans<sup>d</sup>

<sup>a</sup>Dept. of Rehabilitation Sciences and Physiotherapy, Fac. of Medicine and Health Sciences, University of Antwerp, Antwerp, Belgium

<sup>b</sup>Dept. of Physiotherapy, Fac. of Community and Health, University of the Western Cape, Bellville, South Africa

<sup>c</sup>Dept. of Physiotherapy, Bangladesh Health Professions Institute, The Academic Institute of the Centre for the Rehabilitation of the Paralysed, Savar Dhaka, Bangladesh

<sup>d</sup>Dept. of Physiotherapy, Health, Bern University of Applied Sciences, Bern, Switzerland

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## Abstract

**Purpose:** To assess differences in prerequisites to blended learning such as technology use and Internet access in an international sample of physiotherapy students from Bangladesh, Belgium, Brazil, Luxembourg, Sudan, Switzerland and South Africa.

**Results:** Students' digital technology experiences were generally low. They primarily used a smartphone and a laptop to connect to the Internet. However, there was a significant difference between institutions in owning a laptop and access to Internet. Most students preferred learning in environments that included some online components but had never used Twitter or written a blog post and wanted less social media in their learning environments.

**Conclusion:** Physiotherapy students would prefer an increase in the use of digital tools in their learning. However, differences in technology use and access highlight the challenges inherent to offering international online courses. Therefore decisions around online and blended course design in health professions education must be made with caution.

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**Keywords:** Higher education; Physiotherapy; E-learning; Blended learning; Social media

## 1. Introduction

There are concerns that current approaches to clinical education do not adequately prepare health professional students to meet the needs of the population, in that

they do not graduate students who are prepared for independent practice in increasingly complex health systems.<sup>1</sup> These complex systems are characterized by rich, non-linear interactions that make them ambiguous and uncertain, lacking predictable outcomes or clear boundaries.<sup>2</sup> The knowledge and skills required to work and thrive within a modern health system are so diverse that it is impossible for a single individual or profession to affect meaningful change.<sup>1-3</sup> Partly in response to these concerns the World Health Organisation (WHO) has called for the transformation and scaling up of

\*Correspondence to: University of Antwerp, Dept. of Rehabilitation Sciences and Physiotherapy, Campus Drie Eiken, Universiteitsplein 1, 2610 Wilrijk, Belgium.

E-mail address: [dirk.vissers@uantwerpen.be](mailto:dirk.vissers@uantwerpen.be) (D. Vissers).

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health professions education in order to improve the quality and relevance of health professionals in their respective countries.<sup>3</sup>

The result has been a call for educational reform to break down professional silos while at the same time enhancing collaborative and non-hierarchical relationships in teams.<sup>1</sup> A physiotherapy curriculum that aims to achieve these outcomes should use the knowledge and expertise of international colleagues. These networks and partnerships between educational and health care institutions would enable educators and students to bypass local resource constraints (in terms of knowledge and experience) and establish regional and global partnerships that enhance health professional education.<sup>1</sup>

In addition to these specific challenges in health professions education, there also exist broad drivers of change in the higher education sector. These include the massification of education, the impact of information and communications technology, and the rise of the global knowledge economy.<sup>4</sup> Internationalization in higher education has been highlighted as having increasing importance as it provides intellectual and cultural benefits that help students develop as professionals.<sup>5–7</sup> The term 'internationalization at home' has been used in Europe to indicate the importance of having an international experience, even for students who have not travelled abroad.<sup>7</sup>

Blended learning has been suggested as an option for educators to address these challenges in health professions education, where face-to-face engagement is integrated with online interaction so that the strengths of each environment are leveraged to enhance students' learning.<sup>8</sup> This approach to technology integration seems to have a positive effect on knowledge acquisition and on developing clinical competencies in health professions students.<sup>9–11</sup> There is also evidence to suggest that the appropriate use of technology can facilitate the development of skills and attributes like critical thinking and self-directed learning, as well as changing power relationships between teachers and students. This shift of emphasis from teachers to students makes the relationships between knowledge, authority and power visible and explicit, which enables student to develop a sense of agency as they take ownership and control of their learning.<sup>12</sup> In addition, blended learning can promote collaboration and enhanced communication as part of an inquiry-based curriculum.<sup>13</sup> Blended learning therefore creates new possibilities for the development of transformative learning environments that can facilitate the development of critical thinking skills and communities of inquiry,<sup>8</sup> all of which may have important implications for health professions education.

These kinds of technology-enhanced courses may provide an integrated online and face-to-face learning environment in which health professional students are able to develop the relevant 21st century skills that will enable them to thrive in increasingly complex health systems. However, educators often make assumptions about students' use of technology, thinking that frequent use of social media is associated with a proficiency in the use of emerging technology for enhanced learning. One implication of the challenges inherent in a curriculum transformation aimed at increased international collaboration and more effective uses of information, is that students will need the knowledge and skills to use emerging technologies as part of their learning practice. This digital literacy should be conceived as more than simply developing a set of operational skills aimed at enhanced information retrieval, but rather an approach to learning that incorporates an understanding of the social and cultural influences of emerging technologies on higher education. In other words, it is not enough that students use technology more efficiently, but that their use is informed by information evaluation, analysis and synthesis. To be digitally literate is therefore an extension of knowledge and skills beyond simple operational ability, and into a domain of conceptual ability where students are able to match the digital medium to their relevant learning objectives.<sup>14</sup>

As higher education institutions increasingly move parts of their curricula into online and blended courses, care must be taken to ensure that students will be able to use technology as part of their learning objectives. In order to inform the design of an international blended learning course in physiotherapy ethics, the authors aimed to determine the level of technology use and access among students from physiotherapy departments at universities in seven countries (Bangladesh, Belgium, Brazil, Luxembourg, South Africa, Sudan, and Switzerland). These students would all be engaging in the blended course in professional ethics. This paper therefore presents the findings from an international survey of technology use and access among physiotherapy students at seven institutions, and discusses the relevance of those findings for educators interested in developing blended or online courses in health professions education.

## 2. Methods

This paper reports the findings from a descriptive survey conducted among physiotherapy students in a variety of countries. This descriptive design was

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