Developing and testing transferability and feasibility of a model for educators using simulation-based learning — A European collaboration

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ABSTRACT

Background: There is a pragmatic and often inconsistent approach of embedding simulation-based learning into nursing programmes. This paper details a European collaboration that designed a model for educator facilitation for educators utilizing simulation-based education.
Objectives: The objectives of the study were to develop a model to educate the educators who deliver simulation-based learning and to test to which extent this model could be transferred to education providers in different national settings.
Methods: This model, its transferability and feasibility, was tested across three European countries. Educators from three Schools of Nursing participated in the study. Design-based Research was used as an overall methodology. Data were collected by the use of pre- and post-programme questionnaires and focus groups.
Results: The content of the NESTLED model is consistent with the needs of the participants. The testing also demonstrated that the model is transferable across-countries. Additionally, the participants' preferences regarding amount of time and pre-reading for the different sessions vary depending on the background and level of seniority of the individual participant.
Conclusion: The testing of the NESTLED model demonstrated that participants gained confidence and knowledge from undertaking the programme. Delivering the NESTLED model across-countries was found to be feasible, but flexibility is required in terms of logistical delivery of the programme.

1. Introduction

The aim of this paper is to detail a research project funded by the European Union (EU) focusing on developing a European Model for educating educators who utilize simulation-based learning (SBL) in nurse education. Discussions will include the development and testing of a prototype within three European Countries and associated universities. The paper will also illuminate a brief appraisal of how this international collaboration affected the process. The focus of the project was primarily concerned with educators in pre-registration nursing. However, the outcomes have relevance for other healthcare education programmes.

2. Background

The increasing implementation of SBL and investment in associated

technology has escalated in many organizations. SBL has become diverse and often technologically advanced. Many educators have not been afforded the time or exposure to acquire the knowledge and skills required to deliver SBL successfully (Hyland and Hawkins, 2009; van Soeren et al., 2011). In most European countries there is a pragmatic approach to embedding SBL into programmes, leading to individual and inconsistent modes of application. The advantages of SBL are well documented (Al-Ghareeb and Cooper, 2016; Sundler et al., 2015). However, as SBL has become incorporated into nursing curricula, deliberate consideration regarding relevant pedagogy and educational theories that support SBL has become secondary or detached. Capital expenditure on developing educational environments has not been matched with investment in the capability of educators to maximise the potential of SBL (Kaakinen and Arwood, 2009). With such investment, there is pressure on educators to use these resources (Kaakinen and Arwood, 2009; Miller and Bull, 2013). Without equal commitment to

investing in the educators, there is a realisation of not achieving the potential of SBL. This concern was shared by representatives from the University of Huddersfield, UK, Metropolia University of Applied Sciences, Finland and VIA University College, Denmark who initialized a collaboration to explore this realisation that developing SBL facilities in isolation of those who use it was not ideal. The collaboration was cemented following an initial review of the existing literature (Topping et al., 2015). The review revealed that a skilled educator is a prerequisite for effective SBL and a number of educator competencies that underpin the approach were identified. Prior to publication of this review, key data identified from the reviewed literature was submitted as supporting rationale in applying for funding to develop a research project that would investigate further the fundamental attributes educators who utilize SBL require. The bid was successful and from this NESTLED (Nurse Educator Simulation Based Learning Development) was established (www.nestled.eu).

Although the NESTLED research team (NRT) recognised existing programmes for educator development, the aim of this project was to develop a comprehensive model that would address the skills and competencies identified from the initial review and synthesis of the literature (Topping et al., 2015). A catalyst to the project's aim was the securing of an EU funding grant that purported its own requirement to transfer and develop an existing innovation. Therefore, the overall aim of NESTLED was to develop an existing educational innovation and from this, design the prototype of a model for educator facilitation for educators utilizing SBL. This prototype, and its transferability, would be tested and evaluated in Denmark, Finland and Estonia.

3. Design

The overall methodology used was Design Based Research (DBR) (Barab and Squire, 2004). DBR progresses in iterative cycles consisting of five phases; development needs analysis, solution construction, solution testing, refining, reflection and reporting. In each cycle, data are collected and analyzed before the next planning phase (Barab and Squire, 2004). The NESTLED project covered two cycles over a two-year period. Functionalities, contents and pedagogical methods were designed, tested, analyzed and redesigned in order to develop the NESTLED model.

3.1. Methods

To meet the demands of the EU funding, the NRT decided to test the feasibility of the NESTLED model by focusing on the concepts of acceptability and expansion. Acceptability refers to what extent a new idea, programme, process or measure is judged as suitable to the recipients. Expansion refers to potential success of an already-successful intervention with a different population or in a different setting (Bowen et al., 2009).

The Kirkpatrick Model (Kirkpatrick and Kirkpatrick, 2006) was utilized in the design of evaluation tools, focusing on level 1–3:

1. To what degree participants react favourably to the training
2. To what degree participants acquire the intended knowledge, skills, attitudes, confidence and commitment
3. To what degree participants apply what they learned when they are back on the job

Pre- and post-programme questionnaires and focus groups were used for data-collection.

3.2. Questionnaires

Collecting data using questionnaires was considered appropriate because they offer objective means of assessing participants' perspectives (Boynton and Greenhalgh, 2004). A questionnaire would be

Table 1
Cronbach's alpha scores for pre- and post-program questionnaires for participants.

	Category	Cronbach's α scores
Pre-program questionnaire	1	0.795
	2	0.849
	3	0.712
Post-program questionnaire	1	0.743
	2	0.907
	3	0.807

efficient to distribute across project sites, and could return information in a short time period. The majority of questions employed a five-point Likert Scale, ranging from 'Very Confident' to 'Not Confident at All'. The language chosen was English. To aid analysis for both the pre- and post-programme questionnaires, questions 1–21 were divided into three categories: 'preparation for the SBL event', 'delivering the SBL event' and 'feedback and evaluation of the SBL event'. Table 1 identifies the Cronbach's alpha scores for each of these three categories.

3.3. Focus Groups

At the conclusion of each course, a focus group was held with the participants. Ethical approval was obtained in line with the institutional requirements. The NRT anticipated that involving small groups of five to ten people would provide opportunity for opinions and experiences to be solicited simultaneously (Polit and Beck, 2013). All focus groups were video-recorded and transcribed verbatim. Each focus group followed the same format to aid reliability and validity with questions closely linked to the eight sessions of the NESTLED model. This could suggest a "theoretical approach" but a more inductive approach was used to allow themes beyond the sessions themselves to emerge. Braun and Clarke's (2006) six stage approach to thematic analysis was utilized to guide the analysis process. A semantic level of analysis where themes are identified explicitly from what the participants have said was considered most appropriate to the qualitative self-report technique of focus groups (Braun and Clarke, 2006). Each focus group was analyzed separately by one member of the NRT.

4. Developing a Prototype

The foundation for this prototype was an existing Master's level programme focusing on teaching using SBL delivered at the University of Huddersfield. Secondly, the competencies identified from the review and synthesis of the literature (Topping et al., 2015) were included.

The prototype consisted of eight sessions that together produced the NESTLED model, Table 2:

5. Testing Feasibility of the Prototype

Three feasibility tests were conducted. The programme was structured to provide 30 h of lectures, presentations, group work and discussion. Members of the NRT facilitated the course. The participants were lecturers or senior lecturers identified by the Heads of Schools. Experience amongst the participants of using SBL ranged from experienced to novice. The participants held between one to 24 years of teaching experience, and their educational level ranged from bachelor to PhD. The first feasibility test that took place in Denmark was conducted over four consecutive days and had eleven participants. The second feasibility test was conducted in Finland where the programme was held over five days spread across several weeks. Fourteen participants were recruited from the School of Nursing. In Estonia the programme was delivered in the same manner as in Finland with eight participants recruited by the Head of School.