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The NESTLED Project

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# The NESTLED Project

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# Objectives for this session

- Provide an overview of the NESTLED project
  - Initial discussions
  - Literature review
  - Funding
  - Methodology
  - Evaluations
  - Outcomes
  - The future

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It all started with  
a cup of coffee



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# The first step

A literature review with the purpose of defining competences needed for educators when using simulation-based learning.

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# What do we know about educator competences?

## Literature Review:

- Knowledge competencies
- Skills and behavioural competencies
- Comportment and qualities

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<b>Knowledge competencies</b>	
1.	Knowledge of learning theories and strategies
2.	Curriculum development and integration
3.	Practical/expert knowledge of subject (clinical realism)
4.	Repertoire of real-world examples
5.	Theory of group dynamics
<b>Skills and behavioral competencies</b>	
<b>Skills to deliver simulation</b>	
6.	Create and program realistic scenarios
7.	Mastery of equipment operation (simulators, computers, simulation equipment)
8.	Mastery of inter-professional co-operation
<b>Skills to support students</b>	
9.	Skills to prepare students for simulation (theory, roles)
10.	Team facilitation/small and large group dynamics
11.	Didactic skills (facilitate/guide students' learning)
<b>Skills to support debriefing and/or assessment</b>	
12.	To provide critical feedback
13.	Use video and critical reflection, deep dialogue
14.	Timing quality feedback, face to face
15.	Guide learning through debriefing
16.	Ability to assess learning outcomes
<b>Educator comportment or qualities (personal abilities of facilitator)</b>	
17.	Able to create positive, comfortable, trusting atmosphere and learning climate (emotional safety)
18.	Able to bring theory and practice together
19.	Able to pose as a real world role model
20.	Passion for teaching and learning
21.	Flexibility or adaptability to what the content/kit can offer
22.	Student-centered approach

Precursor  
Competencies for  
Delivering  
Simulated  
Learning in  
Nursing Programs.  
(Topping *et al.*,  
(2015))

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## Review

# Towards identifying nurse educator competencies required for simulation-based learning: A systemised rapid review and synthesis



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## SUMMARY

**Objectives:** This paper presents the results of a systemised rapid review and synthesis of the literature undertaken to identify competencies required by nurse educators to facilitate simulation-based learning (SBL).

**Design:** An international collaboration undertook a protocol-based search, retrieval and critical review.

**Data Sources:** Web of Science, PubMed, CINAHL Plus, PsycInfo, ERIIC, the Cochrane Library and Science Direct. The search was limited to articles published in English, 2002–2012.

**Review Methods:** The search terms used: nurse\*, learn\*, facilitator, simula\*, lecturer, competence, skill\*, qualificat\*, educator, health care, "patient simulation", "nursing education" and "faculty". The search yielded 2156 "hits", following a review of the abstracts, 72 full-text articles were extracted. These were screened against predetermined inclusion/exclusion criteria and nine articles were retained. Following critical appraisal, the articles were analyzed using an inductive approach to extract statements for categorization and synthesis as competency statements.

**Results:** This review confirmed that there was a modest amount of empirical evidence on which to base a competency framework. Those papers that provided descriptions of educator preparation identified simulation-based workshops, or experiential training, as the most common approaches for enhancing skills. SBL was not associated with any one theoretical perspective. Delivery of SBL appeared to demand competencies associated with planning and designing simulations, facilitating learning in "safe" environments, expert nursing knowledge based on credible clinical realism, reference to evidence-based knowledge and demonstration of professional values and identity.

**Conclusions:** This review derived a preliminary competency framework. This needs further development as a model for educators delivering SBL as part of nursing curricula.

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# What is NESTLED?

Nurse Educator Simulation-Based Learning Development

NESTLED project was a development and research project within the EU programme; Leonardo – Transfer of Innovation. The project started September 2013 and finished in February 2016.

The aim was to develop and transfer an existing program into other contexts.

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# Main Partners

- VIA College, Aarhus and Randers, Denmark
- University of Huddersfield, UK
- Metropolia University, Helsinki, Finland
- Laerdal Medical, Stavanger, Norway

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# Other key partners

- The project also included Tallinn Health Care College, Estonia

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# Members with different skills and competencies



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# How to make an International collaboration work?



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# Methodology: Design-based research

- The design-based research approach is well suited for research of learning environments
- It offers a systematic and flexible approach and is used to improve teaching practices by analyzing, designing, developing and evaluating them
- It aims to develop, test and implement innovative practices to improve teaching and learning

(Barab and Squire, 2004; Wang and Hannafin, 2005)

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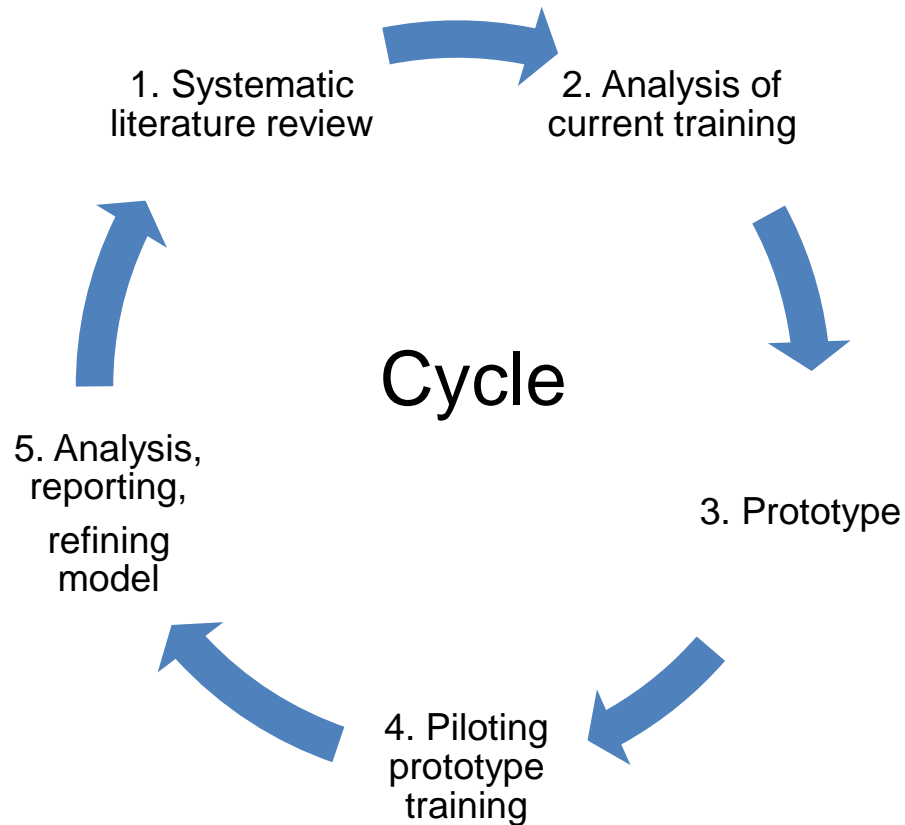


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# Phases of development



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# NESTLED Evaluation

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# Evaluation

- The Kirkpatrick model
- First created by Donald Kirkpatrick in 1954 as the subject of his PhD dissertation
- Published in 1959 in US Training and Development Journal
- Updated in 1975 and 1994
- Four levels

(Kirkpatrick & Kirkpatrick, 2006; Kirkpatrick Partners, 2014)

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# The Kirkpatrick model

Adapted from  
Kirkpatrick &  
Kirkpatrick, 2006)

## LEVEL 4 – RESULTS

To what degree targeted outcomes occur as a result of the training event and subsequent reinforcement

## LEVEL 3 – BEHAVIOUR

To what degree participants apply what they learned during training when they are back on the job

## LEVEL 2 - LEARNING

To what degree participants acquire the intended knowledge, skills, attitudes, confidence, and commitment based on their participation in a training event

## LEVEL 1 – REACTION

To what degree participants react favourably to the training

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- **Level 1 (Reaction)**
  - Post course questionnaire (Student)
- **Level 2 (Learning)**
  - Pre and post course questionnaire (Student)
  - Focus group (Student)
- **Level 3 (Behaviour)**
  - Post course questionnaire (Student)
  - Post course questionnaire (Organisation)
- **Level 4 (Results)**
  - Post course questionnaire (Student)
  - Post course questionnaire (Organisation)

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# Questionnaires

- Likert Scale with some free text responses
- Completed in English or native language (free text sections)
- Pre Course Questionnaire:
  - Emailed out to all participants along with PIS two to three days before the course. Opportunity was given at the start of the course for those who had not completed the questionnaire to do so
- Post Course Questionnaire:
  - Emailed out four weeks post course
  - May be 'aspirational' rather than 'actual'
- Pre and Post Questionnaires 'paired':
  - Unique ID
- Organisation Questionnaire
- Questionnaires returned to Evaluation lead

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# Focus Group

- Final session of the course
- Native language if required and translated locally
- Video recorded
- Sent to Evaluation Lead for transcription

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# Ethics and Consent

- Application for ethical approval for the evaluation was obtained in line with the institutional requirements of each partner
- The evaluation was led by the University of Huddersfield, and the detailed study protocol and data collection instruments were approved by the School of Human and Health Sciences 'School Research and Ethics Panel' at the University
- Study governance, data management and storage was (and continues) in line with partner institutional protocols related to data protection and integrity

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# Testing the prototype

- Denmark (August 2014)
  - Four day course (consecutive days)
  - Eleven participants, lecturers or senior lecturers
  - Three members of the NESTLED project team facilitated the program along with two technicians from Laerdal Medical

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# Evaluation

- Eight participants completed the pre-course and ten the post-course questionnaires
- Data on 'paired' eight considered
- No responses from organisational questionnaire
- To aid analysis, the questions on the questionnaire were divided into three categories:
  1. Preparing for the simulation-based learning event
  2. Delivering the simulation-based learning event
  3. Feedback and evaluation of the simulation-based learning event

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# Cronbach $\alpha$ scores

	Category	Cronbach $\alpha$ scores
Pre Course Questionnaire	1	0.795
	2	0.849
	3	0.712
Post Course Questionnaire	1	0.743
	2	0.907
	3	0.807

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# Data analysis

- Due to the aim and scope of the pilot study, and the limited data available, data analysis was confined to a comparison between the mean of all responses from participants in the pre and post course questionnaires using Wilcoxon Signed Range Test
- This analysis showed a significant increase in confidence demonstrated across all 21 questions and across all eight respondents ( $p = .025$ )

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Category	$\rho$ value
1	0.012
2	0.035
3	0.260

Wilcoxon Signed Range Test scores related to the 'increased confidence' amongst the participants in each category of questions.

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# Focus Group data

Generally a positive review of the course

“I really enjoyed that you combined theoretical knowledge and practical simulation in a very competent way. I didn't sleep at all prior to the simulation.”

“I enjoyed it very much and I had a large learning outcome from this that I can use. We have talked a lot about skills which is interesting, but I think I could use some more time to take it all in but that's how it is, but more days with this could have been nice.”

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# What did they learn?

“...I am much more aware of how scrupulous I need to be when designing the scenarios. We must help each other to get the time we need to undertake these things. Also in my mind you cannot do this on your own. You need to be in a dialogue with other people who have the same understanding.”

“I have always been thinking about simulation to perform as a patient is also high fidelity without all this technology. It makes me feel good that you can make good simulation without technology.”

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# Interestingly...

“I have learned a lot from the debriefing. You need to consider a lot of things I have been reading the text that the students should read. The way you put in, you formulate your questions is so important - you can do it this way, you can do it that way. I will be more aware of both the dynamics of the group. Also of who has been the responsible nurse and talk about that role. These are certain things that I will now be more aware of in the debrief.”

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# But...

“Could you build more tools into the course for the teachers so you get familiar using them to help me to understand, so it becomes a part of us when we do the debriefing, as we are a little bit insecure sometimes when I watched it on the video? How do we guide students through debriefing so we only do the 25% talking and they do the 75%, because I feel it is the other way round?”

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# Other suggested areas for improvement

“I would suggest that team dynamics should be addressed on this course. It’s not a criticism but a constructive way.”

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# Testing the Module

- Finland (January – April 2015)
  - Five day course spread over several weeks
    - Two assignments in between:
      - Planning, delivering and evaluating SBL in participants' own organization
      - Embedding SBL into the curriculum in participants' own organization
  - Fifteen participants: Twelve lecturers or senior lecturers, two nurses, one emergency service manager
  - Three members of the NESTLED project team facilitated the program

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# Testing the Module

- Tallinn (April – September 2015)
  - Five day course spread over several weeks
    - Two assignments in between:
      - Planning, delivering and evaluating SBL in participants' own organization
      - Embedding SBL into the curriculum in participants' own organization
  - Eight participants: lecturers or senior lecturers
  - Two members of the NESTLED project team facilitated the program

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# Data analysis

- Very low response rates for questionnaires
  - Finland 1 candidate; Estonia 3 candidates completed both pre- and post-course questionnaires
- No responses from organisational questionnaires
- Not possible to extract any valid/reliable conclusions from the limited data
- Focus groups – undergoing thematic analysis

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# Early emerging themes

- An appreciation for the learning theories as applied to SBL
- An appreciation of the 'scope' of simulation
- Preparing the SBL Event
  - Time
  - Link with learning outcomes
  - Preparation of the students
- Debriefing
  - New techniques learnt and practiced
- Barriers
  - Technology
  - Time available in simulation suite
  - Group sizes
  - Time to develop simulation and scenarios
- Networking

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Session title	Overview
Session 1 – Background to Simulation Based Learning	The purpose of this session is to provide the student with an understanding of the theories of learning through simulation, a definition of simulation-based learning (SBL), the simulation-based cycle of plan, brief, simulation and debrief, and the identified evidence based competencies that form the basis of the course.
Session 2 – Pre-Planning	The purpose of this session is to provide the students with an understanding of curriculum design and the embedding of SBL into existing or new curricula.
Session 3 – Hypothetical Case Development	The purpose of this session is to provide the students with a ‘toolbox’ for planning and developing a SBL event including information on planning delivery, case (scenario) design, and operational planning including equipment, staffing and other resources.
Session 4 – Briefing	The purpose of this session is to provide the students with an understanding of how to create an appropriate learning climate for SBL. This will include information on some of the barriers to learning using SBL such as participants failing to engage with or relate to the manikins, standardised patients or other equipment.
Session 5 – Delivery (‘Running the Sim’)	The purpose of this session is to provide the students with an understanding of how to facilitate the actual SBL event. This will include information on group dynamics, cooperative learning and time management, including managing disruption. The session will also include some general information on using and trouble-shooting relevant equipment.
Session 6 – Debriefing	The purpose of this session is to provide the students with an understanding of how to facilitate the post-scenario debrief.
Session 7 – Evaluation of Student Learning	The purpose of this session is to provide the students with an understanding of how to use SBL to formatively or summatively assess student learning.
Session 8 – Evaluation of the Simulation Based Learning Event	The purpose of this session is to provide the students with an understanding of how to evaluate the SBL event.

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# Adopted definition of simulation

“A dynamic process involving the creation of a hypothetical opportunity that incorporates an authentic representation of reality, facilitates active student engagement and integrates the complexities of practical and theoretical learning with opportunity for repetition, feedback, evaluation and reflection.”

(Bland, Topping and Wood, 2011, p.668)

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# Please check out our website ([www.nestled.eu](http://www.nestled.eu))

NESTLED - Nurse Educator Simulation based learning  
EU-funded research project

**NESTLED: A European model for simulation-based learning**

Result of the project - The NESTLED programme >

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## Nurse Educator Simulation Based Learning:

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The NESTLED model for  
educating simulation facilitators

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# The future...

- Laerdal Medical
  - The NESTLED program
  - Accreditation
- Publications
- Future collaboration

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# Thank you for listening



Who has got the first question?

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