



IO3 Report:

**A Simulation Structure Model for
Nurse Education**

Malta College of Arts Science and Technology



GNurseSIM

Authors

Aneta Grochowska, Małgorzata Kołpa, Anna Grochowska, Małgorzata Kołpa, Anna Stefanowicz-Kocoł, Sheila Cunnigham, Manuel Lillo, Neville Schembri, Phylis Farrugia Abanifi, Hanna-Mari Pesonen, Timo Kinnunen, Annukka Kukkola, Sari Teeri, Johanna Kero, Sandra Feliciano, Anne Prest, Sari Teeri, Pauliina Alinen

Editor

Neville Schembri

Layout

Tina Cajnkar

Copyright

(C) 2023, GNurseSIM

The GNurseSIM Consortium

Panstwowa Wyższa Szkoła Zawodowa W Tarnowie	PWSZ	PO
Satakunnan Ammattikorkeakoulu Oy	SAMK	FI
Universidad De Alicante	UA	ES
Knowledge Innovation Centre	KIC	MT
Malta College of Arts Science and Technology	MCAST	MT
Middlesex University	MDX	UK
Centria University of Applied Sciences	Centria	FI

This project has been funded with support from the European Commission. This publication reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International



Table of Contents

1	INTRODUCTION.....	4
1.1	Blended distance learning in nursing.....	4
2	THE PROJECT - GNurseSIM.....	7
3	ANALYSIS OF PILOTING THE PROJECT IN PARTNER INSTITUTIONS.....	9
3.1	Description of the piloting exercise.....	9
3.2	Procedures adopted.....	10
3.3	Analysis of data and student feedback.....	11
3.4	Selective positive points identified by participants.....	11
3.5	Selective suggestions and comments for enhancement.....	12
3.6	Opportunities for learning.....	12
3.7	Guidelines on the use of the online course.....	13
3.8	General recommendations on the use of online simulation and training.....	14
4	CONCLUSIONS ON FINDINGS OF PILOT STUDY.....	15
5	REFERENCES.....	17

1 INTRODUCTION

As noted in the *NMC Horizon Report: 2014 Higher Education Edition*, with the fast development of mobile and cloud technologies an ever-increasing number of educators are experimenting and using emerging technologies and associated tools in their teaching strategies (Johnson, 2014). Huang & Chiu (2015) outlined that besides the advantages of mobility and convenience, these new technologies offer immediate support to course activities and ensure new teaching material and pedagogical approaches provide a more realistic content than before.

There is an ever-increasing body of knowledge showing that the use of online technology assists in ensuring classroom and practical experiences in live training environments, provides opportunities to gain a more authentic learning experience and enhances learning efficacy and outcomes (Huang & Chiu, 2015). In a study conducted by Button, Harrington, and Belan (2014) it was evident that virtual online learning platforms used in the delivery of nursing education programs, supplements teaching materials and offers student nurses a more diverse learning methodology. In addition, the use of online technology significantly enhances learner motivation and learning efficacy as compared to traditional pedagogy.

1.1 Blended distance learning in nursing

Blended distance learning in nursing has become increasingly popular in recent years, particularly as the COVID-19 pandemic has forced many educational institutions to shift to online teaching. Simulation learning is also a valuable component of nursing education, as it provides students with opportunities to practice clinical skills in a safe and controlled environment.

Research has shown that blended distance learning can be an effective way to incorporate simulation learning into nursing education. A study by Sarikaya *et al.* (2021) found that a blended distance learning program that incorporated simulation learning was effective in improving nursing students' clinical decision-making skills. Similarly, a study by Fakhr-Movahedi *et al.* (2021) found that a blended learning

approach that included simulation learning was effective in improving nursing students' clinical competency. Incorporating simulation learning into blended distance learning programs can also help to address some of the challenges associated with online nursing education, such as the lack of hands-on clinical experience. According to a study by Thongmak and Prompahakul (2021), simulation learning can help bridge the gap between theory and practice and can provide students with a more immersive and engaging learning experience.

Simulation has become an integral part of nursing education, as it provides a safe and controlled environment for students to learn and practice skills. Simulation-based education can also enhance best practices in nursing by allowing students to apply theoretical knowledge in a practical setting, develop critical thinking skills and improve communication and teamwork. This, in turn can lead to improved patient outcomes and increased job satisfaction among nurses. Several studies have explored the use of simulation to enhance best practices in nursing. A study by Shin et al. (2020), examined the impact of simulation-based training on clinical decision-making and patient outcomes. The study found that simulation-based training improved clinical decision-making among nurses and led to better patient outcomes. Another study by Dehghani et al. (2020) explored the use of simulation to improve communication and teamwork among nursing students. The study found that simulation-based education improves student's communication and team work skills, which can lead to better collaboration among healthcare professionals and improved patient care.

In addition to these studies, several systematic reviews and meta-analyses have highlighted the effectiveness of simulation in enhancing best practices in nursing. A systematic review by Liaw et al. (2020), found that simulation-based education can improve clinical skills, critical thinking and self-efficacy among nursing students. Another meta analysis by Al-Qahtani et al. (2020), found that simulated based education can improve patient outcomes, including reduced mortality rates and fewer complications.

Therefore, blended distance learning in nursing that incorporates simulation learning can be an effective way to provide students with a high-quality education that combines

online and in-person teaching. By providing opportunities for hands-on learning in a safe and controlled environment, simulation learning can help to prepare nursing students for real-world clinical practice.

2 THE PROJECT - GNurseSIM

As globally, the number of people over the age of 60 is expected to more than double by 2050 (WHO 2018). and diseases associated with ageing, are identified as being a major global challenge that healthcare providers must be prepared to meet, it is deemed necessary that nursing students are properly trained in order to care in such circumstances. Taking into consideration the current culture mix, globalization and the degree of mobility in the world of work, it is likely that the elderly patients will be cared for by a geriatric nurse that does not share the same values, traditions and cultural background as the patient. It is also becoming increasingly important to recognize interethnic diversity. Knowing there is as much variation within groups as between them will mitigate the tendency to stereotype members.

Simulation is a safe way to train healthcare providers to provide effective care for older people and their families and such initiatives can support the development and assessment of diverse competencies, e.g.related to communication and the integration of psychomotor skills, clinical decision-making, and professionalism. It is therefore important that students in geriatric nursing and medicine are provided with opportunities during their training to practise skills of adopting a multidisciplinary holistic approach to the care of older patients. There is also significant evidence that simulation training can improve the quality of care provided for older people.

The GNurseSIM is a multinational research project including educational institutions from Poland, Spain, Finland England and Malta whereby through a collaborative approach the partners set up an online repository of a series of short videos intended to be used by students. The videos are aimed at engaging and enhancing learning about working with older persons coming from diverse ethnic backgrounds, culture, gender etc. with a view of improving their skills and competencies that make care for the elderly professional and socially acceptable.

The main objectives of the project were:

- To create a methodological framework that constitutes a model for creating social-constructivist, blended / distance courses for nursing students learning to care for the elderly with an emphasis on intercultural aspects, drawing on the expertise and experience of the partners
- to create blended/distance learning courses based on the model with content developed in simulation laboratories and implement them at partner universities in partner languages
- to pilot the courses, prepare case studies documenting the implementation of the courses, and develop a set of guidelines and recommendations that will be used to enhance the course
- to prepare a set of guidelines and recommendations that will aid the implementation of the model in other areas of nursing education.

3 ANALYSIS OF PILOTING THE PROJECT IN PARTNER INSTITUTIONS

3.1 Description of the piloting exercise

The GNurseSim scenarios are free for use and available with free access online at <https://gnursesim.eu> in four languages (English, Finnish, Polish and Spanish). These have been piloted within live teaching environments at each partner forming the project consortium, namely: Malta College of Arts Science and Technology (Malta); Middlesex University (UK); University of Applied Sciences in Tarnow (Poland); The University of Alicante (Spain); Centria University of Applied Sciences and Satakunta University of Applied Science (Finland).

The mode of participation was either voluntary or mandatory and included elements of individual independent study or in class work integrated within a module as part of the course curriculum.

The participants mainly consisted of students attending the undergraduate BSc nursing training at the respective academic institutions and included students in their 1st, 2nd, 3rd, and 4th year according to the cohort selected independently by the lecturers piloting the project.

The number of nursing students per institution were as follows:

Academic Institution	Number of participants
Malta College of Arts Science and Technology	10
Middlesex University	9
University of Applied Sciences in Tarnow	20
The University of Alicante	20
Centria University of Applied Sciences	25
Satakunta University of Applied Science	40

In general, the piloting was conducted between the months of September and December 2022.

In the case of The University of Alicante (Spain), besides the cohort of undergraduate BSc nursing students, the online videos have also been piloted with other categories of students (n=46), to explore for program validity with non-nursing students, including:

- Master's degree Students from the Programme of Active and Healthy Ageing (Multidisciplinary including physician, nurses, occupational therapist, pedologist, physiotherapist, psychologist, nutritionist and social worker).
- Postgraduate students from Programme Attending the International Patients: (including biologist, social worker and interpreters of English language).
- Biomedical Engineering Undergraduate Students.

3.2 Procedures adopted

Project partners adopted a diverse range of pedagogical strategies as selected by the individuals delivering the pilot. Common elements included the practice of:

- Obtaining individual consent (all cases).
- Participants have been informed that the pilot is part of the GNurseSim project (all cases).
- Participants have been asked to complete a pre-determined self-evaluation questionnaire before and after watching the videos (all cases).
- The institutions used various videos available from the GNurSim website.
- Post-test qualitative discussion were recorded, transcribed, and analysed accordingly (all cases).
- In class group simulation.
- Learning discussion with the students via face to face or online platform.

3.3 Analysis of data and student feedback

From the feedback gathered outlining the student's point of view, several good issues have been noted and a number of points were outlined that need more attention in future. Amongst the main positive outcomes identified by students, it was noted that the videos were clear, and the fact that they can revert to the links at a later date was highly appreciated. Interaction between the nurse and patient actors, were an element identified as requiring further attention by the students in the future.

Some of the students looked at the videos as 'best practice' in some way or 'what not to do' and some aspects of care offered an opportunity for reflection as to their own understanding and experiences.

3.4 Selective positive points identified by participants

It was generally agreed that following the live piloting of the scenarios, the feedback highlighted that:

- The course was easy to access.
- Videos were realistic and it's a platform for teaching the academic knowledgeable which can be transformed to the practice.
- Simple language used.
- Provided with different languages.
- The literature referenced was useful.
- Introduction to the course appreciated.
- Provides situations that happen differently in different contexts and makes learners reflect.
- Useful for those aiming to learn more about the transcultural aspects of care and older population care.
- Helpful for those usually working and communicating with people from different cultures.

- Helpful for people who are not able to be in practice environments and for situations that do not allow the face-to-face contact (such as Covid pandemic).
- Helpful for students who are not in the field of healthcare and wish to approach this type of situations.
- Useful for different academic levels (undergraduate programs, master degree programs, continuing professional development and so on).
- It can be used in different ways from a didactic point of view and therefore it fits well with different learning styles.
- Useful for students getting ready for an international experience.
- It is context-based, culturally congruent and respectful.

3.5 Selective suggestions and comments for enhancement

It was generally agreed that following the live piloting of the scenarios, the feedback highlighted areas for potential enhancement including elements of:

- More interactive resources.
- A Community of Practice (CoP) that could complement the course allowing for interactions and dialogue from different contexts.
- Including metaverse and artificial intelligence.
- To keep updating the course with more scenarios and more cultures/contexts.
- More courses should be developed in different fields (not only Geriatrics).

3.6 Opportunities for learning

- The students pointed out the importance of cooperation and discussion with patients.
- The ethical questions in the care of older people were related to the following issues in student responses: respecting the right to self-determination, equality, equal treatment and treatment guidelines (e.g. DNR).

- The students' responses highlighted the need to respect the person's own opinion in planning care and making a decision, especially if the person has a memory disorder, and the recognition of the family members' role in a care.
- The students considered that important cultural factors to be taken into account in nursing are an older person's religion, language and possible language barrier, traditions of an older person and the persons' life history.

3.7 Guidelines on the use of the online course

The simulation videos provide a varied and unanticipated response to learning and can be useful for preparing students for placement.

- These videos are online materials and as such can be used individually or as a group, class based or at home.
- If conducted in class, a pre-established lesson plan addressing differing viewpoints and accepting difference and application to practice is recommended.
- The use of a pre and post program evaluation and knowledge questionnaire is recommended to serve as a reflection on learning and development.
- If the videos are to be integrated within an existing module consideration revolving on length of the course and delivery need be taken into consideration.
- Preferably the course is delivered and used with students that have had prior training and possibly previous clinical experience with the older persons.
- Following the piloting from the University of Alicante (Spain) with non-nursing students, it would be interesting to further investigate the use of the course with other professionals.

3.8 General recommendations on the use of online simulation and training

With the aim of the pilot project designed to explore student's experience of online simulation, the following recommendations could be forwarded for further consideration. All recommendations are derived through the analysis of the data gathered and as expressed by the learners themselves.

1. Further studies and research are required to evaluate the possibility of using such interactive platforms for engaging students who for some particular reason cannot be present within the physical classroom environment but can still remotely participate.
2. Developing curriculum for professional training courses with emphasis on online technology could prove beneficial for both learners and educators.
3. The input from learners in the design of blended interactive lectures making use of technology could highly assist in developing teaching methods that are more student oriented and whereby learners will feel more engaged in the subjects making part of the vocational training courses.

4 CONCLUSIONS ON FINDINGS OF PILOT STUDY

The use of technology in the learning environment has become an important field of research. The adopted online-based format of transmitting the information implies combining various texts, images and interactive elements designed to create attractive and motivating learning material for the learners whilst keeping them actively engaged in the learning process. At the same time, by using such methods, students learn how to interact in particular scenarios in order to better understand the information they receive, and to create new useful experiences for their learning process. Developing such skills can also prove highly beneficial to the students both personally and professionally in their future after conclusion of studies.

Although the findings of this small-scale study cannot be considered as representative of other online learning simulations due to limitations mainly concerning sample scale, and representativeness, some brief general conclusions can be attempted. Applying caution to the limitation factors as stated, the conclusions from this study in the field of nurse training in transcultural geriatric nursing are as follows:

In this case study for evaluation of a set of developed scenarios in transcultural geriatric nursing, the results showed that participants had a positive view of the experience and they also learned through interacting and discussing with the topics. Therefore, it is encouraged that educators should seek opportunities to adopt the use of such online material in their teaching strategies. Also, learners should be prepared to develop a more active role in their individual learning processes. Similar to another study by Bilos et al. (2017), the piloting showed that learners stated mostly positive attitudes towards the use of technology for various activities, including simulation practice. The findings also showed that the design of lectures integrating interaction with the learners will have many benefits and as a result, the learners gain an enhanced positive attitude towards their self-development. In general, the results of the current pilot study suggest the use of different methods of learning as part of educational programs provide better

learning opportunities for students. Furthermore, this work also suggests that learners who are interested in e-learning and online resources can achieve a significant benefit in their learning experience in a combined learning process than in other more traditional learning methods.

5 REFERENCES

1. Al-Qahtani, M.F., Al-Dossary, R.N., Al-Mutairi, A.D., & Al-Shamrani, A.D. (2020). The effectiveness of simulation-based educational interventions in improving patient outcomes in emergency departments: A systematic review and meta-analysis. *Simulation in Healthcare*, 15(5),301-308.
2. Biloš, A., Turkalj, D. and Kelić, I. (2017). Mobile Learning Usage and Preferences of Vocational Secondary School Students: The cases of Austria, the Czech Republic, and Germany. *Our economy*, 63(1), pp.59-69.
3. Button, D., Harrington, A., & Belan, I. (2014). E-learning & information communication technology in nursing education: a review of the literature. *Nurse Education Today*, 34(10), pp.1311–1323.
4. Dehghani, F., Mosalanejad, L., Dehghanrad, F., & Heidarzadeh, M. (2020). The effect of simulation based education on communication and teamwork of nursing students: A systematic review and meta-analysis. *Nurse Education Today*, 85, 104303.
5. Fakhri-Movahedi, A., Salsali, M., Negarandeh, R., Rahnavard, Z., & Rahimi-Madiseh, M. (2021). The effectiveness of blended learning on nursing students' clinical competency: A randomized controlled trial. *Nurse Education Today*, 97, 104704.
6. Huang, Y. M., & Chiu, P. S. (2015). The effectiveness of a meaningful learning-based evaluation model for context-aware mobile learning. *British Journal of Educational Technology*,46(2), pp.437–447.
7. Johnson, L. (2014). *Horizon Report: 2014 Higher Education*.
8. Liaw, S.Y., Carpio, G.A.C., Lau, Y., Chueh, K.H., & Wu, L.T. (2020). Simulation-based learning in nursing education: A systematic review. *Nurse Education Today*, 93, 104516.

9. Shin, S., Kim, J.H., Kim, J.H., Kim, H.B., Song, Y., & Kim, Y. (2020). Effects of simulation-based education in clinical decision making and patient outcomes in nursing: A systematic review and meta-analysis. *Journal of Clinical Nursing*, 29(1-2), 3-14.
10. Sarikaya, O., Polat, H., & Sahin, S. (2021). The effectiveness of blended learning with simulation-based learning on clinical decision-making skills in nursing education. *Nurse Education Today*, 100, 104965.
11. Thongmak, M., & Prompahakul, C. (2021). Effectiveness of simulation-based learning on nursing students' clinical competency and satisfaction: A systematic review and meta-analysis. *Nurse Education Today*, 103, 104985.
12. WHO (2018). World Health Organization. Ageing and Health. Available from:



GNurseSIM

About the GNurseSIM Project and this publication

Globally, the number of people over the age of 60 is expected to more than double by 2050. Diseases associated with aging are identified by the World Health Organization as being a major global health challenge that future healthcare providers must be prepared to meet. Simulation is a safe way to train healthcare providers to provide effective care for older people and their families. GNurseSIM supports higher education institutions to provide students in geriatric nursing with opportunities during their training, to practice skills of adopting a multidisciplinary holistic approach to the care of older patients.

This publication is a report on Intellectual Output 4.



Co-funded by the
Erasmus+ Programme
of the European Union