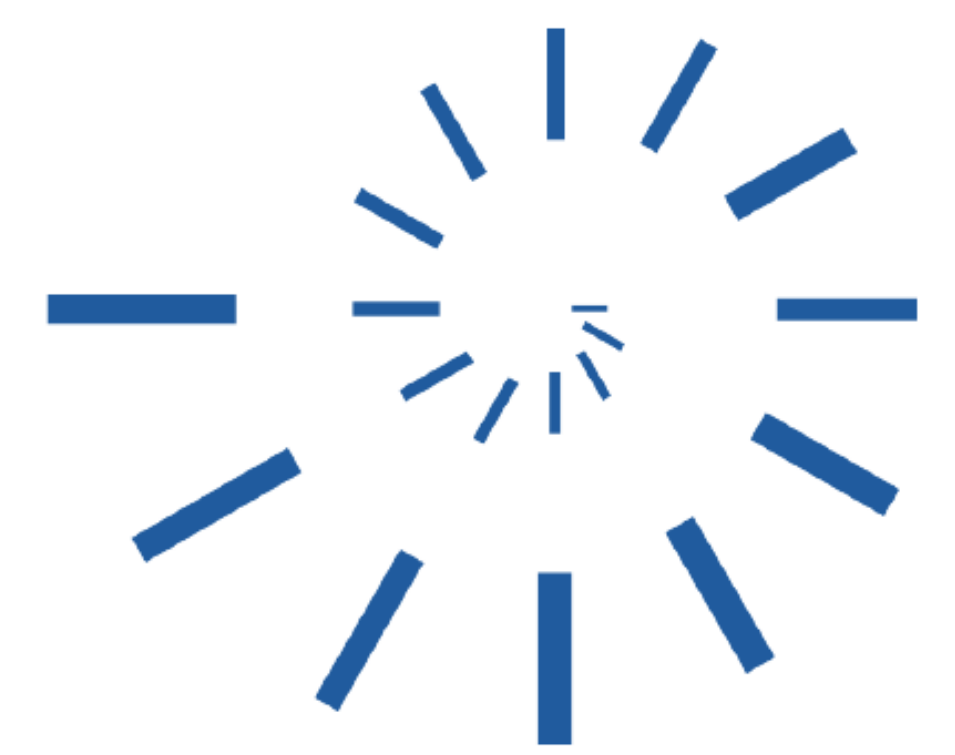


e-Learning in Tertiary-Level Nursing Education in Germany and the Role of the Nurse Educator



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Background

e-learning is becoming more commonplace in tertiary level nursing education. Its decentralized, asynchronous nature enables individualized and varied learning as well as the possibility of reaching many more learners than with conventional methods. However, it also precludes spontaneous, personal interaction between instructor and learner, which affects teaching and learning processes. In addition to this, learning objectives in nurse education also include clinical skills, a domain in which e-learning has its limitations. These circumstances lead to the assumption that the nurse educator's role is changing due to e-learning.

Research Questions & Objectives: How will e-learning affect and change tertiary-level nursing education in Germany? How will these changes affect the developing role of tertiary-level nursing educators? The results of this study show experts' expectations of future developments in tertiary-level nurse education and the nurse educator's role in light of the increasing prevalence and importance of e-learning in the form of virtual teaching and learning arrangements.

Study Design & Methodology

Methods: A three wave Delphi survey combining both qualitative and quantitative methods was performed, allowing us to determine not only the experts' subjective views on the effects of e-learning on nurse education and the nurse educator's role, but also to compare their expectations of future developments in nursing education and the nursing educator's role in light of increased use of e-learning.

The first wave questionnaire was comprised of 16 open-ended questions developed on the basis of an earlier literature review (Koch 2014) as well as a theoretical model of the nurse educator's role in e-learning (Koch & Landenberger 2014). It was administered to a group of experts (n = 8) selected from four subgroups: tertiary-level nurse educators, nursing students/alumni, ICT-application developers/designers, and representatives of professional organizations. Seven questionnaires were returned (one participant discontinued due to time constraints) and the data was evaluated utilizing Mayring's method of qualitative content analysis. The second and third wave questionnaires were comprised of statements extrapolated from the results of the first wave and an earlier literature review (14 items pertaining to e-learning, 13 items pertaining to the nurse educator's role). These were administered to the full expert panel (n = 15) who were asked to indicate the degree to which they agreed with each statement. One participant discontinued during R₂ due to prolonged illness. Otherwise there was no panel mortality. The second and third wave data was analyzed and compared using statistical methods. A direct comparison of the mean and median degree of agreement as well as the coefficient of variation (V) was performed, and an analysis of each individual expert's answers was performed to ascertain whether their responses could be classified as assimilating, contrasting, stable, or inexplicable when compared to the mean and median of R₁.

Results

Results of the Null-Round (R₀): Statements were grouped under four main codes:

- e-learning in tertiary level education in general
- e-learning in tertiary level nurse education
- influence of e-learning on role of tertiary level educators in general
- influence of e-learning on role of tertiary level nurse educators

Of primary interest were the results pertaining to nurse education and the nurse educator's role. The experts state that, while e-learning is conducive to many learning outcomes in nurse education, there are certain outcomes, such as clinical skills, clinical decision making, or caring, for which e-learning is not suited. Furthermore, electronically mediated communication and interpersonal interaction, which are considered vital elements of nurse education, lead to a depersonalization of the relationship between instructor and student. The experts also conclude that e-learning hampers nurse educators in their function as a professional, clinical and academic role model.

Selected Results of R₁ & R₂:

Item 1: To what extent do you agree with the following statements pertaining to e-learning in tertiary-level nurse education? ■ = R ₁ ■ = R ₂	strongly agree	agree	disagree	strongly disagree	Total No. of Participants Mean & Median Standard deviation	Variance (s ²) Coefficient of variation (V)
e-learning leads to the depersonalization of the participants' relationships.	2 13% ■	4 27% ■	7 47% ■	2 13% ■	Total: 15 x: 2.6, \bar{x} : 3 std: 0.88	s ² : 0.7744 V: 0.3384
	3 21% ■	5 36% ■	6 43% ■		Total: 14 x: 2.21, \bar{x} : 2 std: 0.77	s ² : 0.5929 V: 0.3484
e-learning is well suited for teaching complex subject matter such as clinical presentations, concepts of care, etc.	2 13% ■	5 33% ■	8 53% ■		Total: 15 x: 2.4, \bar{x} : 3 std: 0.71	s ² : 0.5041 V: 0.2958
	1 7% ■	3 21% ■	9 64% ■	1 7% ■	Total: 14 x: 2.71, \bar{x} : 3 std: 0.7	s ² : 0.4900 V: 0.2583
e-learning is not suited for teaching concepts from the affective domain such as caring and compassion.	1 7% ■	7 47% ■	7 47% ■		Total: 15 x: 2.4, \bar{x} : 2 std: 0.61	s ² : 0.3721 V: 0.2541
	4 29% ■	7 50% ■	3 21% ■		Total: 14 x: 1.93, \bar{x} : 2 std: 0.7	s ² : 0.4900 V: 0.3627
e-learning facilitates cooperation between the clinical & classroom learning venues.	9 60% ■	4 27% ■	2 13% ■		Total: 15 x: 1.53, \bar{x} : 1 std: 0.72	s ² : 0.5184 V: 0.4705
	10 71% ■	2 14% ■		2 14% ■	Total: 14 x: 1.57, \bar{x} : 1 std: 1.05	s ² : 1.1025 V: 0.6688

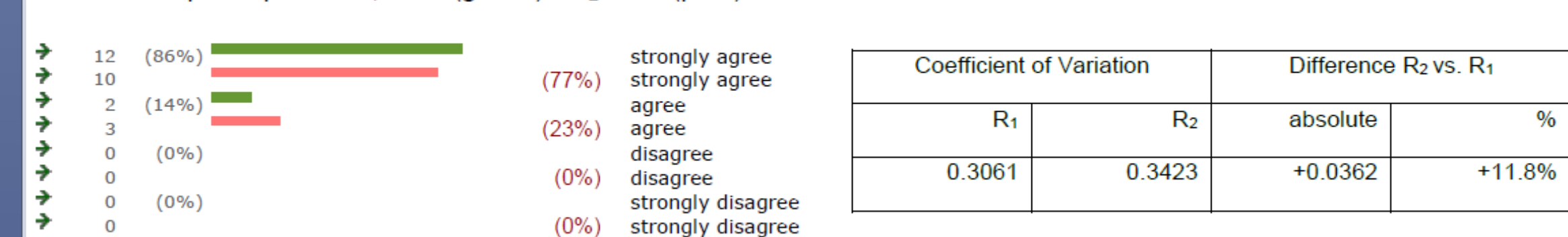
Selected Results of R1 & R2: (continued)

Item 8: e-learning is well suited for the following learning objectives: ■ = R ₁ ■ = R ₂	strongly agree	agree	disagree	strongly disagree	Total No. of Participants Mean & Median Standard deviation	Variance (s ²) Coefficient of variation (V)
8.9. clinical decision making: competency in managing highly complex nursing situations based upon both internal & external evidence		7 47% ■	6 40% ■	2 13% ■	Total: 15 x: 2.67, \bar{x} : 3 std: 0.7	s ² : 0.4900 V: 0.2621
	1 7% ■	4 29% ■	7 50% ■	2 14% ■	Total: 14 x: 2.71, \bar{x} : 3 std: 0.8	s ² : 0.6400 V: 0.2952
8.10. thorough knowledge & understanding of the fundamentals of nursing science	6 40% ■	8 53% ■	1 7% ■		Total: 15 x: 1.67, \bar{x} : 2 std: 0.6	s ² : 0.3600 V: 0.3592
	4 29% ■	9 64% ■	1 7% ■		Total: 14 x: 1.79, \bar{x} : 2 std: 0.56	s ² : 0.3136 V: 0.3128
8.11. ability to transfer the findings of professional nursing research to clinical practice	3 20% ■	6 40% ■	6 40% ■		Total: 15 x: 2.2, \bar{x} : 2 std: 0.75	s ² : 0.5625 V: 0.3409
		6 43% ■	8 57% ■		Total: 14 x: 2.57, \bar{x} : 3 std: 0.49	s ² : 0.2401 V: 0.1907
8.13. ability to develop & implement innovative solutions which lead to improvements in the field of nursing	2 14% ■	8 57% ■	4 29% ■		Total: 14 x: 2.14, \bar{x} : 2 std: 0.64	s ² : 0.4096 V: 0.2990
		9 69% ■	4 31% ■		Total: 13 x: 2.31, \bar{x} : 2 std: 0.46	s ² : 0.2116 V: 0.1991
8.14. competency for collaboration on the development of quality-management concepts, guidelines & clinical pathways in health care	5 33% ■	8 53% ■	2 13% ■		Total: 15 x: 1.8, \bar{x} : 2 std: 0.65	s ² : 0.4225 V: 0.3611
	3 21% ■	9 64% ■	2 14% ■		Total: 14 x: 1.93, \bar{x} : 2 std: 0.59	s ² : 0.3481 V: 0.3057

Item 22: Please indicate how important each of the following aspects is to the role of the nurse educator in e-learning. ■ = R ₁ ■ = R ₂	very important	important	of little importance	not important at all	Total No. of Participants Mean & Median Standard deviation	Variance (s ²) Coefficient of variation (V)
Counselor	9 60% ■	4 27% ■	2 13% ■		Total: 15 x: 1.53, \bar{x} : 1 std: 0.72	s ² : 0.5184 V: 0.4705
	6 46% ■	7 54% ■			Total: 13 x: 1.54, \bar{x} : 2 std: 0.5	s ² : 0.2500 V: 0.3247
Coach	9 60% ■	6 40% ■			Total: 15 x: 1.4, \bar{x} : 1 std: 0.49	s ² : 0.2401 V: 0.3500
	6 46% ■	5 38% ■	2 15% ■		Total: 13 x: 1.69, \bar{x} : 2 std: 0.72	s ² : 0.5184 V: 0.4260
Subject Expert	8 53% ■	5 33% ■	2 13% ■		Total: 15 x: 1.6, \bar{x} : 1 std: 0.71	s ² : 0.5041 V: 0.4437
	7 54% ■	4 31% ■	2 15% ■		Total: 13 x: 1.62, \bar{x} : 1 std: 0.74	s ² : 0.5476 V: 0.4568
Assessor of Quality of students' participation & achievements	7 50% ■	6 43% ■	1 7% ■		Total: 14 x: 1.57, \bar{x} : 1.5 std: 0.62	s ² : 0.3844 V: 0.3949
	5 38% ■	6 46% ■	2 15% ■		Total: 13 x: 1.77, \bar{x} : 2 std: 0.7	s ² : 0.4900 V: 0.3955
Learning facilitator	10 71% ■	3 21% ■	1 7% ■		Total: 14 x: 1.36, \bar{x} : 1 std: 0.61	s ² : 0.3721 V: 0.4485
	6 46% ■	4 31% ■	3 23% ■		Total: 13 x: 1.77, \bar{x} : 2 std: 0.8	s ² : 0.6400 V: 0.4520
Moderator of participants' communication & interaction	3 21% ■	7 50% ■	3 21% ■	1 7% ■	Total: 14 x: 2.14, \bar{x} : 2 std: 0.83	s ² : 0.6889 V: 0.3878
	6 46% ■	4 31% ■	3 23% ■		Total: 13 x: 1.77, \bar{x} : 2 std: 0.8	s ² : 0.6400 V: 0.4520

Item 23: Nurse educators will need to acquire new skills, abilities and competencies in order to adapt to their changing role.

Total no. of participants: R₁ = 14 (green) / R₂ = 13 (pink)



R₁: Mean: 1.14 - Median: 1 - Standard deviation: 0.349 - Variance: 0.1218 - Coefficient of variation: 0.3061
R₂: Mean: 1.23 - Median: 1 - Standard deviation: 0.421 - Variance: 0.1772 - Coefficient of Variation: 0.3423

Conclusions

Difficulties in recruiting experts made it clear, that the use of e-learning in tertiary-level nurse education is not yet as widespread as originally expected. E-learning's effectiveness is not seen as delineated along the lines of learning domains (i.e. cognitive vs. affective, theory vs. practice), but rather as dependent upon the complexity of the expected outcomes. The nurse educator will need a new skills set to teach effectively in virtual learning environments, and their role must change from that of traditional lecturer to that of learning facilitator, coach and mentor.

References

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