# Validation of an instrument to measure the digital competence for nurse educators

Juha Pajari<sup>1</sup> // Marjorita Sormunen<sup>2</sup> // Leena Salminen<sup>3,4</sup> // Imane Elonen<sup>3</sup> // Miko Pasanen<sup>3</sup> // Terhi Saaranen<sup>1</sup>

Department of Nursing Science, Faculty of Health Sciences, University of Eastern Finland, Kuopio, Finland
 Institute of Public Health and Clinical Nutrition, Faculty of Health Sciences, University of Eastern Finland, Kuopio, Finland
 Department of Nursing Science, University of Turku, Turku, Finland
 Turku University Hospital, Turku, Finland

## Background

The digitalization of the health care environment has revealed new competence requirements. To develop modern health care education, teaching and training activities must support continuous professional development for educators. A validated instrument is needed to assess the digital competence of nurse educators for the development of educator's competence. For this, the Educators and Educator Candidates' Competence in Digital Pedagogy (OODI) scale was developed in Finland in 2019.

### Aim

The aim of the study was to describe the validation process of OODI instrument to assess nurse educators' digital competence.

## **Methods**

A quantitative cross-sectional study design was used. The study was a part of Erasmus+ funded international research project the New Agenda for Nurse Educator Education, called New Nurse Educator project, taking place from 2020 to 2023.

The validation process of the OODI instrument was reported, as applicable, according to seven steps from the MEASURE Approach to increase the reliability of the instrument and its validation process. The data were collected in Finland from August 2021 to April 2022. Psychometric testing was conducted with a sample of 111 Finnish nurse educators from nine purposely selected universities of applied sciences.

# Results

The exploratory factor analysis results explained 56% of the variance with three factors and 20 items. The factors were named to describe their content and the nurse educator's digital competence: implementing appropriate independent and community learning, acting safely and responsibly, and guiding learning based on the evidence. Cronbach's alpha and McDonald's Omega coefficients showed good reliability for a validated OODI instrument.

Step 1: Make the purpose and rationale clear

Steps 2 - 3: Establish empirical framework and articulate theoretical blueprint

Step 4: Synthesize content and scale development

Step 5: Use expert reviewers

Step 6: Recruit participants and pilot testing

Step 7 (main study): Evaluate validity and reliability Review of the existing instruments and the theoretical background. There was a gap in the assessment instruments for nurse educators' digital competence.

Items were generated (*n* = 32) describing digital competence and divided into 6 competence areas: professional engagement, digital resources, teaching and learning, assessment, empowering learners, and facilitating learners' digital competence.

A Likert scale was chosen and VAS questions (n = 2) were added as a collaboration of the research group.

An expert panel (n = 8) was used to ensure face and content validity of the instrument, and comprehensibility of the instrument was pretested by educator candidates (n = 13).

A pilot study in 2019. Testing the instrument measuring educators' digital competence before and after an educational intervention. Participants were Finnish health care educators (n = 7) and educator candidates (n = 4). Cronbach  $\alpha$  values varied from 0.783 to 0.935.

In 2021, the international research group (n = 23) considered the structure and suitability of the instrument. Study participants were Finnish nurse educators (n = 111). Thereafter an instrument containing 20 items and 2 VAS questions.

Figure 1. The MEASURE Approach and OODI instrument development process:.

## **Conclusions**

Based on the study, the OODI instrument proved to be valid to assess digital competence and identify the development needs of nurse educators' continuous professional development. However, in the future it is important to validate the instrument internationally.

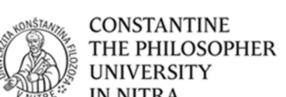
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Further information:
Juha Pajari, university teacher,
MHSc, doctoral student
juha.pajari@uef.fi
https://new-nurse-educator.utu.fi/







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