

Adaptation of the interprofessional collaborative competency attainment scale for usage across professions

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Abstract

Health and nursing professionals, not only in clinical environments but also in nursing homes or in the home environment, are increasingly influenced by digital technology, specifically in the smart home. Technology professionals in IT are affected as well: clients, but also the professionals acting on their behalf, depend on technological support and consultation, because they themselves need to make responsible decisions concerning issues such as data security. More broadly, it is necessary to enhance multidisciplinary perspectives to collaborate across technological and non-technological professions. Meeting this challenge requires educational interventions to promote multi-professional collaboration competencies. Research on enhancing these competencies requires measurement instruments. For this purpose, this paper describes the adaptation of a measurement instrument originating from interprofessional collaboration in health care, the ICCAS, and its translation for application in a German language context via the TRAPD method. The results of a pretest evaluating the comprehensibility of the items are reported.

Keywords: *nursing education; technology education; digital transformation; multi-professional collaboration.*

1. Introduction

Florence Nightingale is reputed to be the founder of professional nursing education (Attewell, 1998, Egenes, 2009). Since then, nursing education and training underwent changes, developed (Scheckel, 2009) and the current and ongoing change in medicine and health through digital technologies will inevitably affect nursing as well (Barbosa et al., 2021). While the replacement of professional services in these social fields of action is unlikely (WHO, 2019, Dengler & Matthes, 2019), networked digital technology and infrastructures are increasingly being implemented in these fields, including in private homes (Brynjolfsson & McAfee, 2014).

Unsurprisingly, these changes not only require technological skills and competencies, but also competencies in areas like collaboration (van Laar et al. 2018). But while the debate in this regard has mostly focussed on industrial requirements, our interest is at the intersection of healthcare/nursing and IT/technological professions, including the most private space, the home. Two professional fields merge in people's homes, or in nursing homes, with the implementation of smart home technology (Bartsch & Stilz, 2021; Nettelstroth et al. 2022): Professionals providing care, healthcare and autonomy support,¹ and technological professionals providing the IT infrastructure, but also technological support and consultation, for example with regard to data security, data protection and privacy in these sensitive personal spheres (General Data Protection Regulation 2018).

With the purpose of creating a multi-professional training within higher education to support multi-professional collaboration at the intersection of healthcare and nursing professionals and technological professionals (specifically, IT), our goal is to be able to measure whether this training has the intended effect and, therefore, to provide for valid measurement. Because of the longstanding work on interprofessional collaboration in healthcare and nursing, instruments are already available in this field, but may not be valid for the intersection with technological professionals. For example, they often refer to 'teams', whereas work at the intersection we intend to describe may not be perceived as team work by the professionals. We chose the ICCAS instrument, which is currently only available in French and English (MacDonald, et al., 2010). Thus, we aim to adapt it to collaboration across professions while also translating it into German language following the TRAPD method (European Social Survey, 2020; Harkness, 2003).

¹ For example in Ambient Assistant Living.

2. Multi-professional collaboration between healthcare and nursing professionals and technological/IT professionals in the context of the digital transformation

Historically, professional work in nursing and related fields has rather been seen in opposition to technological professional work, due to two conditions: First, it has been rather unaffected by digitalisation beyond its use for personal communication. Consequently, health care professionals have long been rather unfamiliar with work-related technologies such as electronic health records (Pohley & Wittmann, 2021). This is the case, despite the fact that an electronic health record can serve as a means of providing personalized care in terms of care and case management through data extraction and data analysis (Snoddon, 2010; Wittmann & Weyland, 2020; Striković & Wittmann, 2022). Additionally, when it comes to nursing people in their own homes, professionals, not only nurses, are increasingly confronted with smart home technology implemented to maintain the resident's independent lifestyle. But secondly, professional work in the field has historically been a predominantly female profession, originating in religious orders with charity as a common ground (Gauci et al., 2022; Friese, 2018; 2021). In contrast, professional work in technological areas, especially IT, has historically been predominantly male, associated more with math and anti-social imagery and less associated with service in social fields (Ensmerger, 2015).

Multi-professional collaboration, we contend, therefore requires substantial changes in perspective from both professional viewpoints, including active listening from the part of the technological professionals, and the readiness and ability to articulate one's concerns in relation to technological professions from the part of the healthcare and nursing professionals. To support multi-professional collaboration competencies by students from both professional areas, we developed a training based on role-play located in an innovative academic smart home simulation lab, using perspective taking on multiple instances, added by an introduction into the varying professional perspectives on the smart home, as well as reflection and discussion (Striković & Wittmann, 2022). Following the curriculum-instruction-assessment triad (Achtenhagen, 2012; Pellegrino, 2012), in order to assess the outcome of the training we require an instrument that can validly capture multi-professional collaboration across the healthcare and nursing as well as the technological professional fields – we are not aware of any such instrument.

3. Adaptation of the Interprofessional Collaborative Competency Attainment Scale

Because of the longstanding work on interprofessional collaboration in healthcare and nursing, instruments for assessing interprofessional collaboration competency are already available in this field, but may not be valid for the intersection with technological

professionals. One instrument identified through a systematic literature review conducted by Striković and Wittmann (2020) is the Interprofessional Collaborative Competency Attainment Scale (ICCAS). The ICCAS seems to be suitable for adapting it to collaboration across professions since MacDonald and colleagues (2010) propose that it “can be applied to a variety of interdisciplinary tasks and settings, such as social work and human services education” (p. 304) as well. Moreover, the ICCAS is also a validated questionnaire (Archibald et al., 2014) and has been replicated and revised (Schmitz et al., 2017). Unfortunately, the questionnaire is only available in English and French (MacDonald et al., 2010), which means that it not only has to be adapted but also translated into German before being used for assessment of multi-professional competency in a German context. For this, we chose the TRAPD method consisting of five steps: The first step is to translate the items independently. This also includes the deliberate modification of the ICCAS items’ content with regard to multi-professional contexts. Second, the two different translations are discussed under the supervision of a reviewer. If there are remaining points of discussion after the review phase, the third step is to settle them with an adjudicator. The fourth step is to conduct the pretest whereas the fifth step is to document the whole process thoroughly (European Social Survey, 2020; Harkness, 2003).

The authors speaking German as their first language consider themselves as suitable translators, reviewer and adjudicator, due to their individual backgrounds:

1. *Translation:* MP and SiS have a professional qualification in health care and computer science, respectively.
2. *Review:* AS’ research focuses on modelling and measuring multi-professional competencies – specifically in nursing education. Furthermore, he has a background in electrical engineering and IT.
3. *Adjudication:* EW has advanced experience in developing questionnaires.

Regarding the adaptation of the ICCAS, there were some challenging phrases and terms. For instance, the original questionnaire often refers to an interprofessional team or team members whereas work at the intersection we intend to describe may not be perceived as team work by the professionals. For example, on the one hand, technological professionals provide the IT infrastructure, but also technological support and consultation; on the other hand, nurses act on the behalf of the patients in order to support their autonomy. Hence, in such a multi-professional context, when fulfilling customers’ needs technological professionals have to consider clients’ autonomy, too. Thus, the goals of these two professional groups overlap whereas they do not coincide as it would be in a team situation. As a consequence, we determined ‘representative of another profession’ to be more appropriate than ‘interprofessional team (members)’. Moreover, some items included health specific terms expressing the patient-centered care. In order to adapt the instrument to the broader context

of collaboration across professions, we used the term ‚problems‘ instead (see Striković & Wittmann, 2022).

4. Conclusion

As we have argued, the digitalisation necessitates multi-professional collaboration. With the purpose of evaluating a multi-professional training within higher education, we chose the ICCAS in order to adapt it to collaboration across professions while also translating it into German language following the TRAPD method. The results of a pretest evaluating the comprehensibility of the items are reported.

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