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Featured Article

Preparing for Organizational Change in Home Health Care With Simulation-Based Training

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KEYWORDStraining design;
vocational training;
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training;
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implementation;
organizational change;
home health care
services**Abstract**

Background: Simulation has been suggested as a suitable approach to train home health care professionals for telecare practice. The potentials in using simulation to prepare organizations and staff for telecare implementation are however unexplored.

Methods: A collaborative action research approach involving key stakeholders from two home health care organizations was used to develop a simulation-based telecare training program for home health care professionals.

Results and Conclusion: The collaborative approach to simulation-based training design described here can facilitate genuine stakeholder participation in the development of training objectives, methods and content which will best respond to real staff needs, as well as local organizational conditions and concerns associated with telecare implementation.

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Telecare is the use of technology by health care professionals to remotely provide care and support for individuals living at home. An example is the use of real-time audio-visual communication devices to undertake virtual home health care visits. There is a growing recognition that health care professionals need specialized knowledge, skills, and attitudes to provide safe and effective telecare services. Training for health care professionals to develop necessary telecare competencies is increasingly regarded as a prerequisite for the adoption of telecare among home health care

staff and thus a fundamental part of successful telecare implementation in home health care organizations (Clark & McGee-Lennon, 2011; Cresswell, Bates, & Sheikh, 2013; Jennett, Yeo, Pauls, & Graham, 2003; Zanaboni & Wootton, 2012). Research has, however, noted that staff seldom receive formal training before the implementation of telecare in home health care services (Brewster, Mountain, Wessels, Kelly, & Hawley, 2014; Guise, Anderson, & Wiig, 2014). A literature review on telecare training initiatives by Basu et al. (2010) identified only ten such courses, where only two were aimed at home health care staff (Atack, Luke, & Sanderson, 2004; Kobb, Lane, & Stallings, 2008). This dearth of research on education and

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training for telecare practice means that there is a lack of knowledge on the type of training needed to best foster the skills and understanding necessary for sound telecare practice (Basu et al., 2010) and organizational preparation for changes to service provision.

Key Points

- The use of simulation to prepare home health care staff for telecare practice has been unexplored.
- Collaborative training design can promote successful implementation and outcomes of training.
- The processes involved in simulation-based training can prepare organizations for telecare use.

Simulation has been suggested as a suitable pedagogical approach in connection with the introduction of new technologies (Aggarwal et al., 2010) and changing work processes (Ruohomäki, 2003) in health care organizations. A small number of studies have indeed found simulation to be a useful approach for introducing preregistration nursing students to telecare and teaching them remote monitoring and care in various community care settings (Benhuri, 2010; Reiersen, Solli, & Bjørk, 2015; Tschetter, Lubeck, &

Fahrenwald, 2013). However, there has been no reported use of simulation in vocational telecare training for home health care staff (Basu et al., 2010), despite frequent use of simulation-based training to impart clinical skills of relevance to telecare practice, including advanced interpersonal and communication skills, enhanced assessment and decision-making abilities, and a person-centered approach to care. As far as we can ascertain, therefore, the potentials in using simulation to prepare home health care organizations and staff for telecare practice are unexplored. The aim of this article is to describe the design and development of a simulation-based telecare training program for qualified health care professionals working in home health care services, as part of an action research study. Insight into this particular collaborative process may be of use to others interested in using simulation to prepare home health care organizations and their staff for the implementation of telecare.

Designing and Developing Training Systematically

The systematic design and development of organizational training initiatives such as vocational telecare training for health care professionals is important to best ensure the utility and relevancy of training programs and to enhance the transfer of learning to practice (Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012). While research on design and development of telecare training is scarce, there is a

considerable body of research on best practice in methodical design and development of organizational training initiatives, including simulation-based training (Salas et al., 2008). The systematic design and development of training is largely about identifying specific training objectives, defining and developing necessary training content, and otherwise preparing the organization for the implementation of training (Salas & Cannon-Bowers, 2004).

To ensure that training objectives and associated training content are relevant to trainees' needs, a thorough training needs analysis should be conducted before the design and development stage. The aim of this analysis is to understand who the intended trainees are, the nature and organizational context of their work, and what learning needs they may have associated with intended new job tasks (Coultas, Grossmann, & Salas, 2006; Salas et al., 2012). Findings on trainee characteristics and relevant job tasks and any specific competencies required to accomplish these tasks are translated into clearly defined training objectives with detailed expectations of what skills and abilities trainees are anticipated to acquire from training; the conditions under which task performance is to take place; and the anticipated level of acceptable performance (Coultas et al., 2006).

Establishing targeted training objectives is moreover important to guide decisions on which instructional strategies and educational methods to use during training (Salas & Cannon-Bowers, 2004). Instructional strategies are a set of tools, methods, and content that together create an effective instructional approach and encourage learning (Salas & Cannon-Bowers, 2001). Instructional strategies should be chosen based on their ability to facilitate learning relevant to the concepts, tasks, and competencies described in the training objectives (Coultas et al., 2006). Furthermore, to ensure that training emphasizes learning, training design should be based on sound learning theories and be informed by relevant training frameworks where applicable (Salas & Cannon-Bowers, 2004). Learning through simulation is an active, experiential process that demands self-directed and self-motivated trainees able to critically reflect on their actions and experiences and make connections between and among concepts (Jeffries, 2005). A theoretical approach often applied to simulation-based training initiatives, therefore, is adult learning theory (Clapper, 2010; Kaakinen & Arwood, 2009).

The main assumptions of adult learning theory are that adults are active, independent, and highly motivated learners driven by a need to acquire specific knowledge and skills, often in the aid of solving a predefined practical problem or task (Knowles, Holton & Swanson, 2015). As self-directed participants in the learning process, adult learners are likely to take responsibility for their own learning by actively evaluating and reflecting on learning needs, training activities, and whether desired learning has been achieved. In this view, educators are facilitators of trainees' active construction of learning (Clapper,

2010). This approach also acknowledges that existing knowledge and experience can affect learning ability and motivation in both positive and negative ways (Knowles et al., 2015). Training should, therefore, be organized and facilitated according to trainees' prerequisites for learning and the experiences, resources, and limitations they bring to the learning situation (Clapper, 2010). Furthermore, prospective trainees should be involved in the development of training objectives and the translation of these into appropriate training content, as this can encourage subsequent participation in training activities and a sense of ownership of training outcomes (Atack et al., 2004; Jeffries, 2005; Salas et al., 2012).

The Safer@Home—Simulation and Training Action Research Study

The design and development of the training program described here were part of an action research study called *Safer@Home—Simulation and training* (Wiig et al., 2014). This study was concerned with the development, testing, and evaluation of a work-based training initiative for qualified health care professionals including registered nurses and auxiliary nurses to prepare them for partaking in virtual home health care visits. Virtual home health care visits involve real-time audio-visual communication between health care professionals and patients through a secure video communication system. The study setting was the home health care services in two Norwegian municipalities, where virtual home health care visits were to be piloted with the intention of enabling safe, high-quality health care services for service users living at home.

The design and development activities described here were undertaken as part of the action-planning phase of a five-phase action research process (diagnosis, action planning, implementation, evaluation, and refinement) adapted

from Susman and Evered (1978). Action research is a commonly used research method to facilitate active engagement and collaboration between researchers, clinicians, patients, and other stakeholders in research, development, and implementation activities in health care services settings (Reason & Bradbury, 2008; Winter & Munn-Giddings, 2001). The action-planning phase is concerned with planning and preparing a course of action in an attempt to resolve a problem or challenge identified during the initial diagnostic phase. The action-planning phase here was focused on creating a telecare training program by conceptualizing findings from a prior training needs analysis (Salas et al., 2012) conducted in both of the involved organizations as part of the diagnostic action research phase. Specifically, the aims of the action-planning phase were to determine relevant training objectives and a suitable instructional strategy, develop course materials including simulation scenarios, and initiate a plan for the implementation and evaluation of training in the two organizations.

The majority of activities undertaken during the action-planning phase were done in several stages of active collaboration with a number of stakeholder representatives from the included home health care organizations. This collaborative approach was used to facilitate meaningful and cooperative planning and design to ensure development of a training program that would best respond to real clinical needs and practical concerns in the organizations involved (Coulter et al., 2006; Salas et al., 2012). The organizations themselves were responsible for choosing staff to represent them during the collaborative process, based on internal assessments of which competencies and expertise were needed at the different stages. Participants included health care professionals (registered nurses and auxiliary nurses), professional development managers, and home health care service managers. A core group of individuals were involved in all stages of collaboration, meaning that

Table Overview of Stakeholder Participants in the Action-Planning Phase

Action-Planning Activity	Stakeholder Representatives			Total Participants
	Health Care Professional	Professional Development Manager	Home Health Care Service Manager	
Step 1: Action research meetings				
Municipality A	3	2	1	6
Municipality B	3	2	1	6
Total	6	4	2	12
Step 2: Workshop				
Municipality A	2	1	—	3
Municipality B	2	3	—	5
Total	4	4	—	8
Step 3: Feedback meetings				
Municipality A	3	1	1	5
Municipality B	2	1	1	4
Total	5	2	2	9

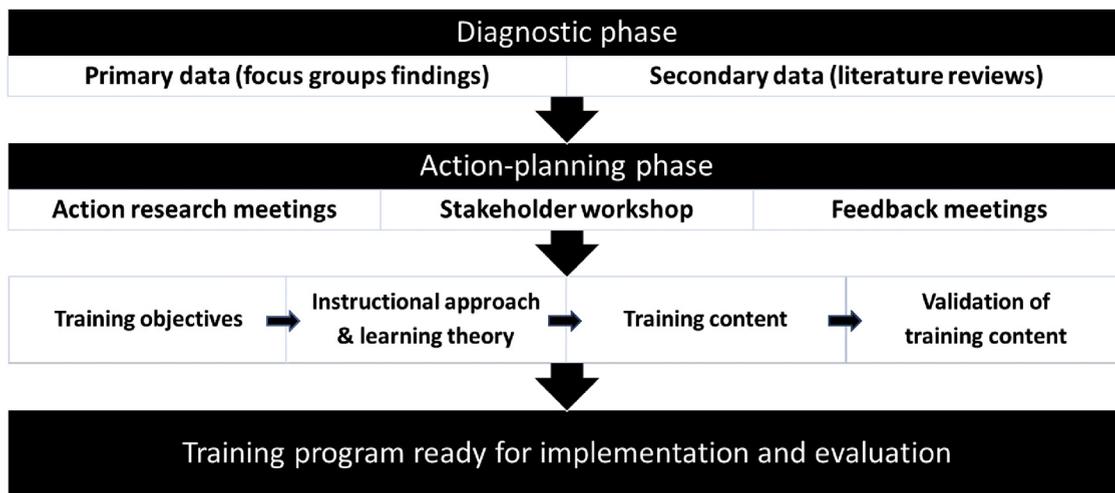


Figure Flowchart of training program development process.

the process benefited from a certain consistency across the various stages. See [Table](#) for details on participant numbers at different steps of the process.

The data collection during the action-planning phase consisted of several interrelated steps (see [Figure](#) for an overview of the full development process). First, *action research meetings* took place in each of the two municipalities between clinical and managerial stakeholder representatives and project researchers. The main purpose of these meetings was to share and discuss focus group findings from the earlier training needs analysis ([Guise, Husebø, Storm, Moltu, & Wiig, 2016](#); Guise & Wiig, unpublished results), in the aid of enabling initial decision-making on training objectives relevant to each organization. In addition, discussions on training objectives were informed by broad literature recommendations on the knowledge, skills, and competencies required for sound provision of telecare services such as virtual visits (e.g., [Basu et al., 2010](#); [Brewster et al., 2014](#); [Carter, Horrigan, & Hudyma, 2010](#); [Pellegrino & Kobb, 2005](#); [Sevean, Dampier, Spadoni, Strickland, & Pilatzke, 2008](#)). Furthermore, findings from systematic reviews on the safety and quality of telecare services ([Guise et al., 2014](#)) and common clinical uses for virtual visits ([Husebø & Storm, 2014](#)) also contributed knowledge to these discussions.

The second step involved a joint one-day *stakeholder workshop* with health care professionals (registered nurses and auxiliary nurses) and professional development managers from both municipalities ([Table](#)), facilitated by two project researchers alongside a simulation expert. The main purpose of the workshop was to collate and consolidate the training objectives, to develop a decisive overview of intended training content, and start initial brainstorming of suitable simulation scenarios. In addition, the simulation expert spent time imparting the fundamentals of simulation pedagogy, as some participants had little prior experience

with the use of simulation. The final step of the collaborative process was validation of the resulting training content during a *feedback meeting* with managers and clinical staff in each respective participating organization ([Table](#)). Data from the action-planning phase were collected by one of the authors as field notes recorded during participant observation of all collaborative encounters and as reflective notes recorded after these encounters ([Fangen, 2004](#)). The study has ethical approval from the Norwegian Social Science Data Services (Ref. 32934, 16 April, 2013). Participation was voluntary, and informed consent was obtained from all participants.

The Telecare Training Program

Outcomes from the collaborative design and development process are presented in the following section and are also outlined as part of the [Figure](#).

Training Objectives

The discussions to determine training objectives focused largely on the overall purpose for using virtual visits, its potential clinical applications, the most relevant work tasks concerned, and likely participants among patients and staff. Both organizations envisioned using virtual visits not as a replacement but as an add on to traditional physical home visits, mainly for undertaking clinical assessment, monitoring, and supervision tasks, such as the guidance and support of self-medication practices among patients. The two organizations were divided, however, over which groups of patients and staff to involve in virtual visits. For example, while one organization was open to including patients with cognitive impairments, the other felt this could add unwanted complications to an already

challenging implementation process. Furthermore, while one organization wished to involve only qualified nurses in the provision of virtual visits, the other organization was considering using auxiliary nurses and health care assistants as well. In addition, there was considerable discussion on the many practical issues implied by the organizational changes associated with virtual visits as a new means of service provision. Some of these concerns had implications for decisions on training objectives and subsequent design of authentic training content, such as how best to organize “video shifts” and integrate them with current rosters and routines, as well as concerns for the availability and management of suitable office space and necessary technical equipment.

Resulting training objectives focused on knowledge and practical experience of how to undertake clinical tasks and otherwise provide health care via virtual visits, including how to prepare, initiate, and end visits; knowledge and application of relevant communication principles and techniques to facilitate sound clinical assessments, promote self-care, and maintain good staff-patient relationships; and understanding of necessary technical competencies and practical experience of technical equipment. In addition, training objectives included acquiring knowledge of health professionals’ role and responsibilities when partaking in virtual visits; legal, ethical, and professional accountability aspects, including potential implications for safety and quality; proper documentation processes; and the use of relevant policies and procedural guidelines. Finalization of these training objectives gave an indication of appropriate instructional strategies to consider and were used to inform the development of training content such as simulation scenarios and course manuals (Coults et al., 2006; Salas & Cannon-Bowers, 2004).

Instructional Approach and Relevant Learning Theory

The instructional approach chosen for this training program is adapted from the model of simulation-based training developed by Dieckmann (2009a). It builds on key principles of adult learning theory (Knowles et al., 2015), as described previously. The approach emphasizes the human-technology-organization interplay of simulation pedagogy, where simulation is seen both as a tool for learning and as a means of analyzing work systems and processes (Dieckmann, 2009b). This was considered particularly relevant in light of a training program oriented toward preparing organizations and staff for telecare and new ways of providing health care services. Furthermore, this approach underscores development of training objectives and content based on organizational conditions and resources as much as on individual trainees’ needs, thereby emphasizing the importance of grounding simulation-based training within local organizational settings (Dieckmann, 2009b).

Dieckmann’s model outlines seven interrelated phases of a simulation-based course (Dieckmann, 2009a; Dieckmann, Friis, Lippert, & Østergaard, 2012). These were adapted into the following six phases for our training program:

1. *Setting Introduction*: The start of the course with introduction of participants, setting the learning environment, and establishing of group norms. Overview of course aims and objectives, alongside trainee experiences, and expectations of the course.
2. *Theory Input*: Practical simulation activities should be based on prior theoretical preparation. Background information and relevant concepts related to virtual visits are introduced, including relevant tasks, communication techniques, and technological tools. In addition, a short introduction to simulation-based learning and the steps involved in a simulation session are provided.
3. *Briefing*: A facilitator prepares participants by introducing the scenario case and its learning objectives, including the patient’s clinical presentation and work tasks required for the case. Participants are allocated to an active or observational role in the scenario and familiarize themselves with the room, equipment, and any clinical notes.
4. *Simulation Scenario*: The practical, hands-on part of a simulation session where trainees play out a scenario case with the support of a hands-off facilitator. In response to central training objectives, peer role play was the chosen simulation modality, with the main aim of giving trainees practical insights into virtual visits from both sides of the patient-professional interaction (Bosse et al., 2010; Joyner & Young, 2006).
5. *Debriefing*: The fundamental arena for learning, with group discussion of and reflection on the scenario as it played out and individuals’ experiences of participating. The facilitator takes an active role in facilitating the discussion and reflection with attention to intended learning objectives. Gibbs’ reflective cycle (Gibbs, 1988) is used to structure the debriefing process and guide the reflection, as described by Husebø, O’Regan and Nestel (2015).
6. *Course Ending*: Finalization of the course with a summary of participants’ experiences and learning outcomes, alongside a plan for practical application of learning points post training.

Training Content

To ensure the pedagogical effectiveness of simulation, scenarios should be integrated within a meaningful curricular context focused on specific training objectives (Cook & Triola, 2009). The training content that was developed thus consists of a brief course curriculum explicating the purpose and objectives of the training program, alongside

two short-course manuals and five simulation scenarios each covering different clinical uses of virtual visits. One manual is an introduction to simulation pedagogy, while the other is an introduction to core competencies and clinical practice relevant to virtual visits. Both manuals are intended as a theoretical basis for the practical training objectives, to be read before participation in the simulation exercises.

Each simulation scenario is designed to have a limited number of desired learning objectives (Mauro, 2009) focused on correct virtual visit procedure and effective communication at a distance. Each scenario also has an objective related to one or more specific clinical care tasks, such as guiding the patient in a certain self-management activity. Slight variation in scenario intricacy means that simulation complexity can be increased during a training session (Delpier, 2006), to match developments in trainees' knowledge and confidence as training progresses. Mock patient notes were written for each scenario case, providing a short overview of health status, medical history, and psychosocial circumstances. The notes can be consulted during the briefing before the simulation exercise, adding further authenticity to the simulation scenario (Joyner & Young, 2006).

Validation of Training Content

All course content, including the simulation scenarios, was subjected to content and construct validity testing by peer and clinical expert review (Waxman, 2010). The validation process involved *feedback meetings* with stakeholder participants (Table) from each of the involved home health care organizations. The main purpose of these meetings was to evaluate the consistency between the training content and current nursing practice and organizational procedures. Furthermore, the course curriculum, course manuals, and simulation scenarios were independently checked for authenticity and internal consistency, and otherwise proofed for clarity and mistakes by four nurses with experience from municipal home health care services. Only minor revisions were made to the training content based on this feedback. The training program has been tested with health care professionals in the two organizations concerned and the outcomes of this study will be published later.

Discussion

A simulation-based training program was developed for health care professionals in preparation for the piloting of virtual home health care visits in two home health care organizations. Knowing the needs and concerns of the trainees, the nature of intended work tasks, and the local

organizational context are crucial to develop training objectives, methods, and content that will best respond to local needs, conditions, and practical concerns in the organizations involved (Dieckmann, 2009b). Training design was therefore undertaken in several interrelated stages of active collaboration with prospective trainees alongside other important organizational representatives, including managerial staff. This direct leadership involvement was regarded as an important prerequisite for successful change processes (Caldwell, Chatman, O'Reilly, Ormiston, & Lapiz, 2008). Fundamental to the approach was discussion and joint decision-making with attention to the needs of both patients and health care professionals as telecare users, as well as to the prerequisites and requirements of home health care organizations as telecare service providers.

Furthermore, the collaborative processes related to the design of simulation-based training described here can help facilitate organizational change and development, mainly by providing an arena for stakeholder representatives to come together to analyze and discuss new work processes and some of the wider system changes associated with the implementation of telecare in home health care services (Ruohomäki, 2003). In particular, the action research meetings and the workshop became important interorganizational meeting places for participants within and between the two stakeholder groups to discuss and clarify needs, expectations, desired outcomes, and various practical organizational issues related to the implementation of virtual home health care visits. This included discussion of potential problems and challenges associated with the use of a new form of service provision, which in turn enabled important reflections on possible solutions to such challenges, in the aid of ensuring safe, high-quality health care services in the respective organizations. Aiding the planning and preparation of change in this way, with broad attention to the benefits and limitations of telecare, can ultimately promote both staff (Browning, Tullai-McGuinness, Madigan, & Struk, 2009) and organizational (Jennett et al., 2003) readiness for implementation.

Variations in local organizational needs and conditions may also be indicative of how best to schedule and deliver staff training. While training needs were the same across the two municipalities in this study and the training program was created in response to shared training objectives, there were significant organizational differences in, for example, the size and structuring of services, as well as minor variations in the composition of teams and professionals. This meant that plans for the delivery of training needed to be flexible and able to be adapted according to slightly differing organizational needs. Giving attention to local organizational contexts in this way can thus facilitate more successful implementation of training interventions (Dieckmann, 2009b).

Conclusion

A collaborative action research approach to training design can facilitate genuine stakeholder input into the development and validation of simulation-based training for home health care professionals. By giving meaningful attention to staff needs as well as to the broader organizational contexts of telecare services, participatory design processes may enhance the implementation and use of telecare in the organizations concerned (Atack et al., 2004). The processes involved in the development of simulation-based training can furthermore be a valuable tool to prepare health care provider organizations for some of the organizational changes and new ways of working implied by the implementation of telecare in home health care services.

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References

- Aggarwal, R., Mytton, O. T., Derbrew, M., Hananel, D., Heydenburg, M., Issenberg, B., ..., & Ziv, A. (2010). Training and simulation for patient safety. *Quality and Safety in Health Care, 19*(Suppl 2), i34-i43.
- Atack, L., Luke, R., & Sanderson, D. (2004). Development of an online, team-based programme in telecare. *Journal of Telemedicine and Telecare, 10*(6), 355-360.
- Basu, A., Seaton, P., Kirk, R., Hanley, E., Sheehan, D., O'Steen, B., & Allan, M. (2010). *Review of the effectiveness of educational tools for teaching telehealth care*. Christchurch: University of Canterbury.
- Benhuri, G. (2010). Teaching community telenursing with simulation. *Clinical Simulation in Nursing, 6*(4), e161-e163.
- Bosse, H. M., Nickel, M., Huwendiek, S., Jünger, J., Schultz, J. H., & Nikendei, C. (2010). Peer role-play and standardised patients in communication training: A comparative study on the student perspective on acceptability, realism, and perceived effect. *BMC Medical Education, 10*(1), 1.
- Brewster, L., Mountain, G., Wessels, B., Kelly, C., & Hawley, M. (2014). Factors affecting front line staff acceptance of telehealth technologies: A mixed-method systematic review. *Journal of Advanced Nursing, 70*, 21-33.
- Browning, S. V., Tullai-McGuinness, S., Madigan, E., & Struk, C. (2009). Telehealth: Is your staff ready to implement? A descriptive exploratory study of readiness for this technology in home health care. *Home Healthcare Nurse, 27*(4), 242-248.
- Caldwell, D. F., Chatman, J., O'Reilly, C. A., III, Ormiston, M., & Lapiz, M. (2008). Implementing strategic change in a health care system: The importance of leadership and change readiness. *Health Care Management Review, 33*(2), 124-133.
- Carter, L., Horrigan, J., & Hudyma, S. (2010). Investigating the educational needs of nurses in telepractice: A descriptive exploratory study. *Canadian Journal of University Continuing Education, 36*, 1-20.
- Clapper, T. C. (2010). Beyond Knowles: What those conducting simulation need to know about adult learning theory. *Clinical Simulation in Nursing, 6*(1), e7-e14.
- Clark, J., & McGee-Lennon, M. (2011). A stakeholder-centred exploration of the current barriers to the uptake of home care technology in the UK. *Journal of Assistive Technologies, 5*(1), 12-25.
- Cook, D. A., & Triola, M. M. (2009). Virtual patients: A critical literature review and proposed next steps. *Medical Education, 43*, 303-311.
- Coultas, C. W., Grossmann, R., & Salas, E. (2006). Design, delivery, and evaluation of training systems. In Salvendy, G. (Ed.), *Handbook of human factors and ergonomics* (4th ed.). Hoboken: John Wiley & Sons. (pp. 472-512).
- Cresswell, K. M., Bates, D. W., & Sheikh, A. (2013). Ten key considerations for the successful implementation and adoption of large-scale health information technology. *Journal of the American Medical Informatics Association, 20*(e1), e9-e13.
- Delpier, T. (2006). Cases 101: Learning to teach with cases. *Nursing Education Perspectives, 27*(4), 204-209.
- Dieckmann, P. (2009a). Simulation settings for learning in acute medical care. In Dieckmann, P. (Ed.), *Using Simulations for education, training and research*. Lengerich: Pabst Science Publishers. (pp. 40-138).
- Dieckmann, P. (2009b). *Using simulations for education, training and research*. Lengerich: Pabst Science Publishers.
- Dieckmann, P., Friis, S. M., Lippert, A., & Østergaard, D. (2012). Goals, success factors, and barriers for simulation-based learning: A qualitative interview study in health care. *Simulation & Gaming, 43*(5), 627-647.
- Fangen, K. (2004). *Deltakende observasjon. [Participant observation]*. Bergen: Fagbokforlaget.
- Gibbs, G. (1988). *Learning by doing. A guide to teaching and learning methods*. London: Further Education Unit at Oxford Polytechnic.
- Guise, V., Anderson, J., & Wiig, S. (2014). Patient safety risks associated with telecare: A systematic review and narrative synthesis of the literature. *BMC Health Services Research, 14*(1), 1.
- Guise, V., Husebø, A. M. L., Storm, M., Moltu, K. L., & Wiig, S. (2016). Telecare in home healthcare services: Implications for quality and safety. In Aase, K. (Ed.), *Researching patient safety and quality in health care: A Nordic perspective*. Oxford: Taylor & Francis. (pp. 179-194).
- Husebø, S. E., O'Regan, S., & Nestel, D. (2015). Reflective practice and its role in simulation. *Clinical Simulation in Nursing, 11*(8), 368-375.
- Husebø, A. M. L., & Storm, M. (2014). Virtual visits in home health care for older adults. *The Scientific World Journal, 2014*, 11. <http://dx.doi.org/10.1155/2014/689873>.
- Jeffries, P. R. (2005). A framework for designing, implementing, and evaluating simulations used as teaching strategies in nursing. *Nursing Education Perspectives, 26*, 96-103.
- Jennett, P., Yeo, M., Pauls, M., & Graham, J. (2003). Organizational readiness for telemedicine: Implications for success and failure. *Journal of Telemedicine and Telecare, 9*(Suppl 2), 27-30.
- Joyner, B., & Young, L. (2006). Teaching medical students using role play: Twelve tips for successful role plays. *Medical Teacher, 28*(3), 225-229.
- Kaakinen, J., & Arwood, E. (2009). Systematic review of nursing simulation literature for use of learning theory. *International Journal of Nursing Education Scholarship, 6*(1), 1-20.
- Knowles, M. S., Holton, E. F., III, & Swanson, R. A. (8th ed., 2015). *The adult learner: The definitive classic in adult education and human resource development*. Routledge; New York.
- Kobb, R., Lane, R., & Stallings, D. (2008). E-learning and telehealth: Measuring your success. *Telemedicine and E-Health, 14*(6), 576-579.
- Mauro, A. M. P. (2009). Jumping on the simulation bandwagon: Getting started. *Teaching and Learning in Nursing, 4*, 30-33.

- Pellegrino, L., & Kobb, R. (2005). Skill sets for the home telehealth practitioner: A recipe for success. *Journal of Telemedicine & E-Health, 11*, 151-156.
- Reason, P., & Bradbury, H. (2008). *Handbook of action research: Participative inquiry and practice*. SAGE; London.
- Reiersen, I.Å., Solli, H., & Bjørk, I. T. (2015). Nursing students' perspectives on telenursing in patient care after simulation. *Clinical Simulation in Nursing, 11*(4), 244-250.
- Ruohomäki, V. (2003). Simulation gaming for organizational development. *Simulation & Gaming, 34*(4), 531-549.
- Salas, E., & Cannon-Bowers, J. A. (2004). Design training systematically. In Locke, E. A. (Ed.), *The Blackwell handbook of principles of organizational behavior*. Malden: Blackwell Publishing. (pp. 43-59).
- Salas, E., & Cannon-Bowers, J. A. (2001). The science of training: A decade of progress. *Annual Review of Psychology, 52*, 471-499.
- Salas, E., Tannenbaum, S. I., Kraiger, K., & Smith-Jentsch, K. A. (2012). The science of training and development in organizations: What matters in practice. *Psychological Science in the Public Interest, 13*(2), 74-101.
- Salas, E., Wilson, K. A., Lazzara, E. H., King, H. B., Augenstein, J. S., Robinson, D. W., & Birnbach, D. J. (2008). Simulation-based training for patient safety: 10 principles that matter. *Journal of Patient Safety, 4*(1), 3-8.
- Sevean, P., Dampier, S., Spadoni, M., Strickland, S., & Pilatzke, S. (2008). Bridging the distance: Educating nurses for telehealth practice. *Journal of Continuing Education in Nursing, 39*, 413-418.
- Susman, G. I., & Evered, R. D. (1978). An assessment of the scientific merits of action research. *Administrative Science Quarterly, 23*, 582-603.
- Tschetter, L., Lubeck, P., & Fahrenwald, N. (2013). Integrating QSEN and technology to address rural health care: Initial outcomes. *Clinical Simulation in Nursing, 9*(10), e469-e475.
- Waxman, K. T. (2010). The development of evidence-based clinical simulation scenarios: Guidelines for nurse educators. *The Journal of Nursing Education, 49*(1), 29-35.
- Wiig, S., Guise, V., Anderson, J., Storm, M., Husebø, A. M. L., Testad, I., & Moltu, K. L. (2014). Safer@Home—Simulation and training: The study protocol of a qualitative action research design. *BMJ Open, 4*(7), e004995.
- Winter, R., & Munn-Giddings, C. (2001). *A handbook for action research in health and social care*. London: Routledge.
- Zanaboni, P., & Wootton, R. (2012). Adoption of telemedicine: From pilot stage to routine delivery. *BMC Medical Informatics and Decision Making, 12*(1), 1.