Original Article

The INSEPArable Research Project: A Transdiciplinary Caring Approach to the Design of a Portfolio for Reflexive Nursing Practices

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Abstract

Background: In a perspective of training nurses, use of a design approach would help guide the development of creative, relevant and adapted tools to be included in a professional portfolio which would altogether promote reflexive practice in nurses. Reflexive practice consists of learning from experience, how to make the most of one's learning and allowing a return of the awareness, promoting this inward look to understand one's own way of acting and reacting while in action. It supports a shift of paradigm for learners and experienced nurses who could better demonstrate fundamental patient safety competencies in a continuous professional development improvement.

Objectives: The main goal of this paper is to introduce to both conceptual models linking nursing approach to design approach in a fact to bring out a transdiciplinary research method supporting the elaboration of a nurses portfolio.

Methodology: An innovative reflexive practice along to caring nursing approach as well as design approach are discussed.

Results: The key concepts of the INSEPArable project prototype are revealed in a way to collect qualitative data highlighting the reality of nurse's contemporary context of work.

Key words: Professional portfolio prototype, Nursing practice, Design approach, Reflexive practice, Patient safety competencies

Urgency to adopt innovative educational methods for nurses

Nursing demographics are shifting, and in today's workplace graduate nurses are the most educated, the most affluent and the most ethnically diverse of the past four generations (Wieck, 2008). Nursing education provides them with theoretical approaches founded on evidence-based practice in order to improve patient safety and ensure continuous improvements in quality of care, but it is unclear how students operationalize this knowledge and reinvest it in their practice. There is a lack of concrete and contemporary tools to apply these new approaches, which is problematic for new graduates exerting leadership by bringing an evidence-based approach to their workplace. Moreover, when coupled with a sub-optimal integration in the workplace and a lack of knowledge transfer between novice and experienced nurses, it may explain why a great number of novice nurses leave their job in the first years of practice and the subsequent nurse shortage in Canada and the United States (Bowles & Candela, 2003). Therefore, it is important to look at factors which contribute to novice nurses leaving the profession altogether. Patient care issues, such as unsafe nurse-patient ratios, are often cited as the most frequent reason for leaving the profession, but current work conditions are unlikely to foster retention either (Bowles & Candela, 2003). Recent media coverage in the province of Quebec (Canada) of nurses denouncing their work conditions, unsafe ratios and mandatory overtime illustrates the current context of healthcare, where resources are scarce and strategies need to be deployed to improve work conditions, quality patient care, and nurse retention (Dodeler & Tremblay, 2016).

In light of this situation, nursing educators need to develop innovative strategies to help "Millennial" nurses showcase their leadership and invest in their profession. Professional development of individual nurses can alter their identities and, empower them to fully occupy their role in the healthcare team. This paradigm change could in turn help other healthcare providers and the public to recognize the nursing profession as they represent themselves. While some efforts to improve work conditions must be resolved at the organizational

level, nurses can demonstrate empowerment and, fostered by nurse managers, this can improve their quality of life at work, decrease burnout risk and help with job retention. Empowerment should be fostered from the very beginning of a nurse's education and nurtured throughout the academic journey and into the first work placement. Moreover, the increasing complexity and diversity of nursing practice requires the acquisition of skills to assure provision of patient safety and competent care practices, career development and fulfilment, and effective participation in health policy and direction through leadership, change management, and critical thinking about the future (Katsikitis, 2013). In order to achieve this, faculties should provide the tools for the nurse to empower herself and develop her skills to take place in the healthcare system and fully occupy her role. In other words, schools and healthcare settings should work together to better target the tools needed for Millennial nurses to optimally integrate the healthcare system by being more adequately prepared. In that respect, the aim of the present research project is to develop a professional portfolio that would support nurses' competencies for patient safety. The reflexive practice inherent to that kind of competency would then foster a better partnership with patients and ultimately, engage nurses increasingly in on-going training programs. In order to achieve these objectives, the design approach, as a methodology for innovation, can be very useful. This approach will allow the conception of the professional portfolio by the use of designers' tools (i.e. sketches and material prototypes) early in data analysis. This is done in order to better integrate and visualize nurses' practices through contextualized scenarios. This approach provides innovation through collaboration within multidisciplinary teams and an iterative process where ideas are prototyped and tested throughout several cycles (Altman, Huang & Breland, 2018: p.1). Thus, the portfolio will be progressively declined in a variety of material forms and products before the selection of the most suitable one for the fostering of nurses' reflexive practices in their professional life.

Even though expressions such as *design thinking approaches* and *design approaches* are often used and considered as equivalent, this paper favors the latter. As a matter of fact, design thinking

approaches are often linked to the use of 'design-like' methodology simplify for their use by non-designers.   Because the research team of the INSEPArable project consists of nursing and health services researchers but also of design researchers and designers, our approach is resolutely more 'designerly' than 'design-like' and use a larger spectrum of design expertise including graphic, product and service design.
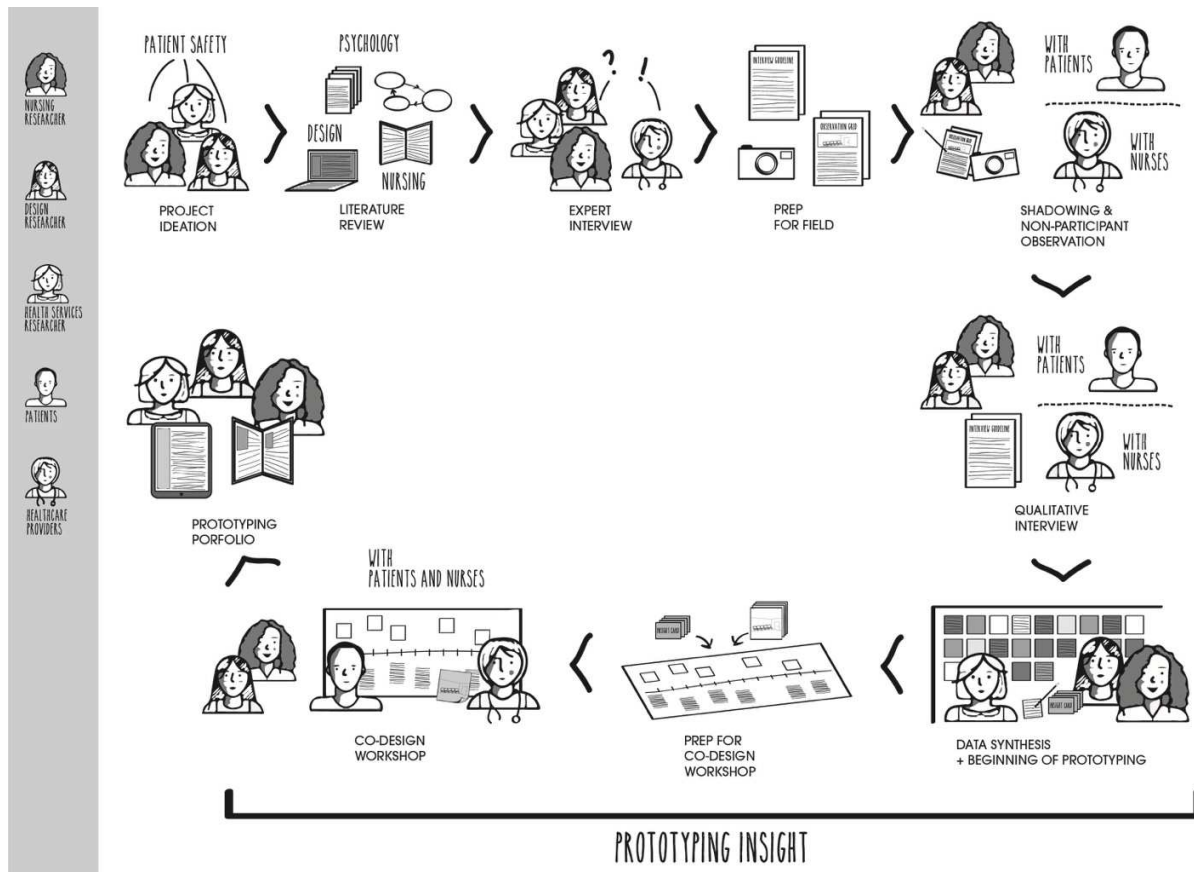

Figure 1: Methodological model of the INSEPArable project

Essential notions regarding reflexive practice

Due to the increasing complexity of healthcare and the need for effective collaboration, nursing curriculum is increasingly based on a competency-based approach (Laval University Nursing Faculty's framework "Référentiel de compétences", Quebec City, Canada), and in order to improve patient safety competencies, a reflexive approach is considered a useful method to foster a meaningful engagement from healthcare professionals (Kim, Myers, & Allen, 2017). Reflexive practice encourages self-reflection, which is needed to look back on oneself and to know oneself authentically enough to be aware of personal strengths and limitations in order to respond adequately to patient needs while respecting one's unicity. The more reflective the nurses' practices are, the more willing they are to acquire knowledge that they can then use to treat their patients.

Moreover, novice nurses will be able to better meet their patients' needs in order to ensure their well-being, to make better assessments of their health conditions and above all, react and intervene to the best of their knowledge. Inclusion of *patient experience* is one of the pillars of quality of care, which not only relates to the humane and empathic care at the heart of nursing, but is also justified on more utilitarian grounds as a means of improving patient safety and clinical effectiveness (Doyle, Lennox & Bell, 2012). This demonstrates the respect of values at the heart of the nursing profession, especially for human dignity. However, in dealing with issues related with more experiential aspects of care, nurses are often confronted with problems for which their education was inadequate, for which their knowledge is therefore insufficient. A reflective practice encourages nurses to look back at their reaction to certain situations and to adjust this learning experience in a more organized and conscious way (Garnier, 2012). Thus, the reflective approach is the essential element of the learning process for both trainee and more experienced nurses. The use of this approach makes it possible to consider the development of several skills (relational, ethical, personal, etc.) while ensuring optimal patient security. Nurses who use a reflexive approach are then more keenly aware of the patients' experience. They are interested in the interactions that take place in the work environment by ensuring true physical and mental presence. Reflexive practice promotes a sense of responsibility for the fast-paced and unpredictable health care environment, where nurses need to possess knowledge helping them make sound decisions to solve clinical problems (Eines & Vatne, 2017). This approach rests on several competencies: cognitive, functional, personal, relational and ethical as well as on an iterative process, where new experiences lead to the integration of knowledge which, in turn, helps its logical construction in order to finally develop competencies that can be directly applied in a professional setting (Fig. 1) (Doyle, Lennox, & Bell, 2013 ; Eines & Vatne, 2017).

In addition to ethical skills, nursing students must develop four types of skills: cognitive; functional; personal and relational. Cognitive skills refer to knowledge acquisition, functional skills relate to knowing what to do, while personal and relational skills refer to knowing how to act (reactions, attitudes to adopt) and "ethical" skills refer to professional ethics, bioethical values that guide actions and clinical judgment. Developing all of these skills is very important for the nursing profession and both nurses and patients benefit from it. This kind of reflexive practice involves four successive stages where competencies are developed. The first stage is linked to "new experiences" (learning) where nursing students are confronted with daily nursing practices or learnings. In other words, when nurses are taking care of their patients, they face different clinical situations allowing knowledge acquisition through new experiences.

The second stage is the "integration of knowledge" (application) where nursing students apply knowledge learned through standard cases where integration of new knowledge is brought into professional practice. The third stage is the "logical construction of knowledge" (appropriation). This can be defined as the appropriation of new knowledge into patient care. This step reflects the experience of nursing students, as they utilize their acquired skills and developing judgment to respond to unfamiliar situations. The fourth and final stage is "skills development" (dissemination), when a knowledge transfer occurs between the learner and others in their environment. Nurses transfer this new knowledge to patients and their family members, as well as to their peers to increase general standards of care, by demonstrating leadership and the ability to change the workplace in a positive manner.
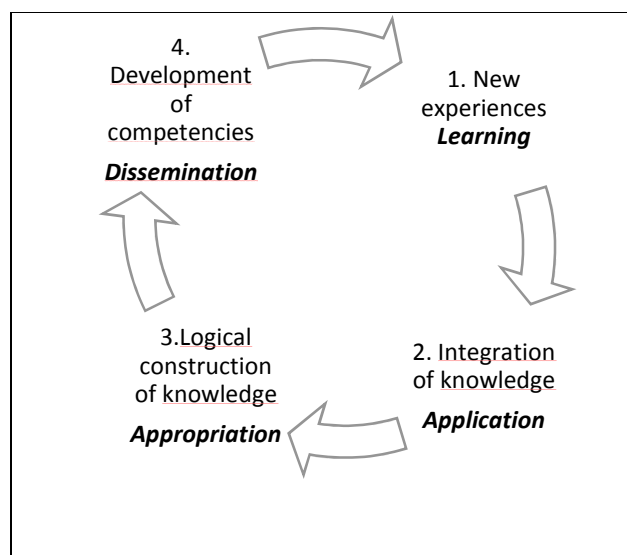
**Figure 2: Iterative construction of
knowledge through a reflexive practice**

The more the nurse is at the level of appropriation (step 3) and at the level of skills development (step 4), the more she will be expected to work with atypical cases, which are more complicated health situations that require greater expertise. It is in these atypical situations that clinical judgment and intuition are the most needed because intuition will stimulate immediate knowledge that doesn't rely upon rational thinking, a form of thinking related to automatism, while clinical judgment will rely upon knowledge acquired and appropriated through the process of reflective practice. These last two steps are therefore essential to provide quality patient care based on a Caring approach (Kim, Myers & Allen, 2017).

This competency-based learning method involves patients in the decision-making process related to their care, and is essential for valuing life experiences and the co-construction of knowledge with the expertise of both the patient and the nurse. This approach could be useful to patients in health care settings, by placing their needs and their lived experience at the forefront of nurses' preoccupations. Regardless of organizational and time constraints, the use of this tool could help nurses foster an increased sensitivity to the patient's experience, in order to be more in tune with their daily living. Thus, the equal consideration of nurses and patients could help ensure healing and empowering environments for all of its stakeholders. However, the tools needed to accomplish this are not readily available and an approach based on a design approach may provide insights for the development of these innovative nursing tools. In fact, design approaches is increasingly integrated in healthcare research, but its applications in patient experience improvement are not as well-known (Kim, Myers & Allen, 2017). However, its emphasis on user involvement is particularly interesting for nursing practice (Yates, 2018) and thus, for nursing practice research (Eines & Vatne, 2018; Beaird, Geist & Lewis, 2018; Yates, 2018). In this perspective, a design approach could be useful for the development of creative, relevant and adapted tools for a professional portfolio driven by reflexive practice based on cognitive, functional, personal and relational as well as on what Balas-Chabel (2013) calls learners ethics competencies. In other words, this approach could allow the conception of a sensitive and coherent tool for nursing students and professionals.

A nursing portfolio fostering a reflexive practice

The strength of a portfolio is based on its contribution to the professional development of a person by giving them the right tools to help them find solutions to problems in any environment. More specifically, the professional portfolio should address consistency in training and skills

upgrading to insure a safe nursing practice (ACESI, 2015). However, existing nursing education portfolios seem to have restricted purposes often associated with academic use towards specific learnings or contexts, such as clinical placements or preparing for admission to higher education in nursing. In that respect, a recent literature review by Chamblee & al (2015) identified eight primary purposes of a professional portfolio: (a) establish career goals, (b) showcase professional practice and development, (c) illustrate specific areas of expertise, (d) enhance knowledge and skills, (e) demonstrate competence, (f) plan for additional career opportunities, (g) help gain admission to school, and (h) apply to participate in a hospital clinical ladder/advancement program (Anderson, Gardener, Ramsbotham, & Tones, 2009; Goodloe et al., 1996; Hespenheide, Cottingham, & Mueller, 2011; Riley, Rolband, James, & Norton, 2009; Williams & Jordan, 2007. In Chamblee & al., 2015). In that sense, a professional portfolio should be a tool which aims to enhance the leadership of nurses to allow continuous improvement of quality of care and nurses' job satisfaction in the workplace, which will in turn help others to recognize nursing contribution to the wellbeing of the population (St-Germain, Boivin & Fougeyrollas, 2011). However, "[…] portfolios are likely to record the knowledge embedded in practice, which is often hard to describe, yet represents nursing's expertise" (Jasper, 1995; Ryan, 2011, p.85). To improve this situation, the portfolio should be a transferable product that students will be able to rely on during their careers to demonstrate continuing professional development as well as personal and social responsibilities (Light et al., 2011).

In this perspective, a professional portfolio could favor reflexive practice in nursing because knowing oneself helps in maintaining a true presence in one's practice, as well as having good knowledge of standard care and the capacity to logically construct knowledge (Fig.2). In order to respond to atypical cases, this reflexive approach allows nurses to prioritize care and to consider the person as a complex indivisible entity, all while ensuring patient safety.

Professionnal portfolio and caring nursing approach

The development of this professional portfolio is related to Watson's theory of caring (Watson, 2002; Alligood, 2014). This portfolio, which will be a valuable tool for nurses, will help them deliver better care by putting patient experience at the forefront of their practice. More specifically, the elements of Watson's caring theory will be the unifying concept in its development. According to this theory, nurses are interested in establishing a good and healthy relationship of care with their patients and consider the uniqueness of each person. They adopt a true and authentic presence to maintain a caring-care relationship based on reciprocity, to acquire long-term thinking before acting to anticipate and prevent potential risks to patients. When the nurse creates an environment conducive to care, it promotes the development of patient empowerment, so that the patient becomes an important partner in care. When empowerment flourishes in a patient's care, it is thanks to the nurse who has a caring approach. As a result, she has created a supportive healing environment that supports healing and recovery. Finally, caring can create healing environments, which highlights the importance of taking an interest in the creation of these healing environments. Using reflexive practice, which will be the basis for the development of the portfolio, nurses will be able to become more aware of different everyday aspects of caring theory in their work.

The relationship between design and healthcare

There is a growing interest for the contributions of design approaches in the healthcare field (27e Région, 2010, 2015; Altman, Huang & Breland, 2018; Design Council, 2011, 2012, 2013, 2014, 2015; Fuelfor, 2009, 2011, 2013, 2016, Hughes et Scupelli, 2013; Jones, 2013; Annemans, Karanastasi et Heylighen, 2014). However, very few scientific papers discuss the inputs and impacts of design in healthcare settings (Chamberlain & Craig, 2017; Wildervurr, 2017; Smith, 2017). Thus, the link between design and healthcare in the design literature is usually found in physical and material care environments regarding buildings (hospitals, clinics, etc.), medical instruments and assistive technologies

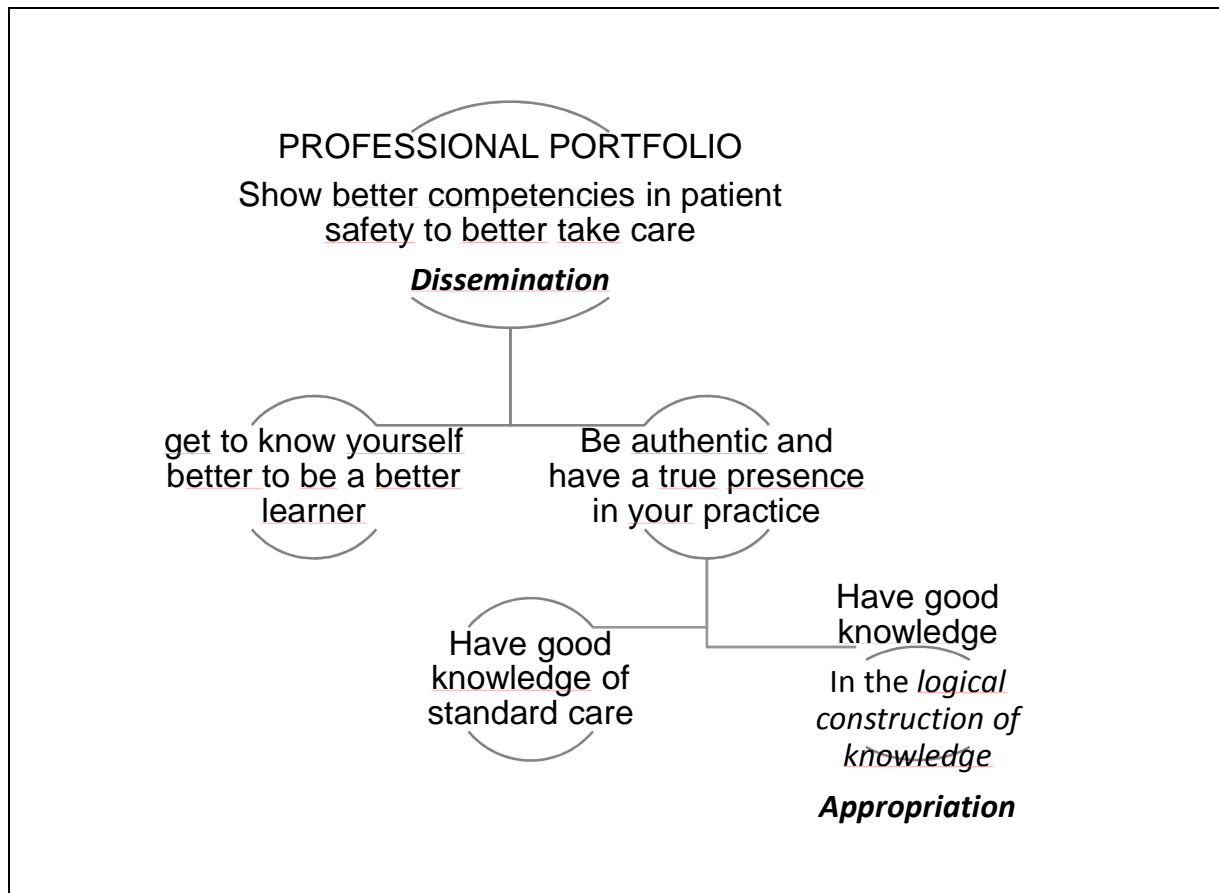(Chamberlain & Craig, 2017; Tsekleves & Cooper,   2017).

Figure 3: The professional portfolio for a reflexive practice in nursing

Nevertheless, a systemic review shows a limited understanding of design approaches that are conceptualized as *design thinking* methods and has been used as such in healthcare settings (Altman, Huang & Breland, 2018). In the light of this review, the authors concluded that its overall effectiveness emphasizes that more research is needed to better understand the critical components of *design* as well as its relevance when compared to interventions developed more traditionally (Altman, Huang & Breland, 2018). Furthermore, this review concluded that « […] *Design Thinking is a promising approach to intervention development, implementation, and dissemination that may increase the acceptability and effectiveness of health care interventions by actively engaging patients and providers in the design process and rapidly iterating innovation*

prototypes to maximize success. » (Altman, Huang & Breland, 2018: 7) Thus, *design thinking* could be seen as a problem-solving technique that is more focused on an innovative process than on a transformative result such as formalized products and services integrated in complex healthcare contexts. Therefore, it could be seen as a problem setting method where designers (should) contribute to incremental advances in health care services as well as to the redefinition of models of care (Chamberlain & Craig, 2017: 5).

In that respect, the relationship between design approaches and healthcare is now stronger because researchers and practitioners are now attempting to join forces to create quality healthcare products, services and interventions. However, despite the growing interest for design thinking methods, very few designers seem to be active participants in the

development of healthcare services through complex design approaches that include designers, practicioners, researchers and skateholders such as patient and their families (Bowen & al., 2013). Thus, some researchers are starting to take serious interest in stakeholders' role in the establishment of quality healthcare products, services and interventions as well as to the interdisciplinary work needed to do so (Robert & Macdonald, 2017; Macdonald, 2017; Côté, Bélanger & Gagnon, 2017; Eines & Vatne, 2018). The greatest difficulty to this multidisciplinary collaboration seems to be inscribed in diverging epistemological views, where the healthcare field is led by a research paradigm based on evidence-based practices while the emerging field of design research is more associated with the qualitative production of knowledge on design, in the design practice and for the design practice (Findeli & Bousbaci, 2005). However, Carr, & al. (2011) highlight that even though evidence-based design exists in the form of a programmatic approach often used in large-scale hospital building projects to standardize processes and to predict outcomes for patients, the experiences of all stakeholders as well as patient engagement is rarely taken into account. In fact, the experienced-based (co)design approach (Bate & Robert, 2006) is usually small scaled and focused on a particular care pathway and thus issues arise, namely regarding transfer of knowledge to other contexts of care in order to foster radical transformations in public services (Carr & al., 2011). Therefore, it is within this innovative research perspective that we plan to involve as many stakeholders as possible (nurses and patients as well as nursing, design, and health services researchers) from several hospital care departments to allow the codesign of a reflexive portfolio suitable for the education of most nurses in Quebec's healthcare system.

A design approach for the codesign of a professional tool in nurses' education

The design approach would allow the development of tools that are creative, relevant and adapted, while aiming at developing a professional portfolio which targets the competencies associated with a reflexive attitude. Moving beyond inaccurate perceptions associated with one discipline or another (i.e. health problems only take place in hospital settings; design problems only concern aesthetic questions) design research could act as a mediator between realities and possibilities, in both academic and professional practice (Jullier & Kimbell, 2016). Thus, it becomes possible to translate the revealed preoccupations found in the research into new spaces, products, services and systems but also into future uses, organizations and contexts of use (Côté, Bélanger & Gagnon, 2017). This inductive methodological approach would then make it possible to develop a tool that is as sensitive and coherent to the needs of learners as it is of those of patients in healthcare settings. By introducing empathy into the learning process, the design approach would open up fertile avenues for training aimed at improving patient-centered care. The goal of the design approach is to help identify elements likely to inform the actions to be taken to improve the experience of the people concerned by the studied problem (Gagnon, 2015). Specifically, from this design approach, our research project seeks to identify how to provide a training aid for nurses helping them transition from theory to practice while retaining notions related to reflexive approach as well as to patient safety.

The INSEPArable project

The project hopes to eliminate the boundaries of disciplinary approaches and to favor a transdisciplinary collaboration with the codesign of a tool for tomorrow's nurses allowing a smoother transition from theory to practice. Therefore, this project involves researchers and students from the nursing and the design fields, working closely together in the development of research tools, in the field work and the subsequent data analysis. In fact, during the iterative process, all stakeholders work in close collaboration, in emergent co-design and co-construction processes. In the later result analysis phase, designers will work with all stakeholders to interpret and mediate solutions. The meaning of the project "INSEPArable" lies in the first six letters of the acronym: "IN" relating to nurse (in French is "**in**firmière"); "SE" for security; and "PA" for patients. The complete word INSEPArable aims to reflect that nurses, security and patients are closely connected to each other in the care relationship and these three are truly inseparable.

Concretely, our field work intends to capture nurses and patients' experiences in care contexts through a transdisciplinary approach to collect qualitative data relative to work and care environments (i.e. feelings, perceptions and human interactions analysis). In that respect, we will conduct 2 to 3 hour observations of nurse-patient interactions in a general acute-care environment, a long-term healthcare setting and in a physical rehabilitation center. Observations will be followed by semi-structured interviews with nurses and patient/family, in an effort to understand both perspectives. This data collection will provide us with representations of the nurse's work with patients and their family; how they coordinate and organize care, collaborate with the healthcare team and communicate. Moreover, the data will be analyzed and synthesized with the use of visualizing tools (personas, empathic maps, patient/family journeys, etc.) in order to have a better understanding of this learning approach. Finally, codesign workshops will be held with nurses, nursing and design students, patients as well as with design, nursing and psychology researchers to validate field data translated into a portfolio prototype in terms of emotional dimensions (expectations, concerns, etc.) and functional dimensions (efficiency, satisfaction, etc.) towards the material environment (spaces, objects, equipment, etc.) and the human environment (heath care teams, collaborations, interactions, etc.) Similarly, the potential efficacy of this portfolio, namely to favor a reflexive approach in nursing skills development towards patient security and the resulting changes in practice, will be validated. The analysis of this data should allow us to conceptualize the prototype for a portfolio founded on a reflexive approach to improve competencies associated with patient safety.

Discussion

Continuous improvement in the quality of care is closely linked to the safety of patients in a global and long-term perspective. This concept, named "sustainable security", is the principal center of interest for the nursing profession. The combination of humanist and empathic values, with a design approach towards care, could have an enormous impact on the health of the population.

The development of an adapted portfolio could smooth transitions from theory to practice, by transcending disciplinary boundaries to create a tool for tomorrow's nurses that exemplify their generational values. Ultimately, this tool could encourage a change in culture, by placing value in continuing education and the implementation of best practices, allowing nurses to display and share their skills development, and more importantly to share that knowledge with a new generation of nurses. The design approach, as an innovative methodology, can be useful to formalize this learning model that takes into account the co-construction of the patients' and the caregivers' knowledge with the citizen-patient at the center of their own health decisions to favor empowerment and to values their life experience.

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