2.2 The Process of Designing the DigiCare Model

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In this chapter, we explore the captivating and exciting process of creating something innovative within a multicultural team. Our objective was to fulfil the expectations and requirements of health-care education concerning digitalized healthcare and coaching of patients, while integrating theoretical and empirical knowledge into a concise, practical, and applicable model designed specifically for the Asian context. The journey encompassed multiple stages, including workshops, extensive research, active listening, constructive discussions, brainstorming sessions, the utilization of post-it notes, online and in-person meetings and numerous cups of coffee. Within this chapter, we provide a brief overview of two preliminary versions of the model to illustrate the progression of the DigiCare Model.

In the digital era, information technology permeates all aspects of society. Asia, in particular, has witnessed a widespread adoption of mobile phones and other digital devices, even in rural areas (Yanes, 2019). This trend has created new opportunities in the field of healthcare. In many developing countries, including Bangladesh (WHO, 2022) and Vietnam (WHO, n.d.), there are extensive healthcare service networks. However, despite these networks, disparities in access to healthcare continue to exist (Hamiduzzaman et al., 2018; Tran et al., 2016). One potential solution to reduce these disparities is through digitization. By leveraging digital technologies, individuals can enhance their ability to manage their own self-care, and outpatients can conveniently follow online recommendations provided by their healthcare providers to adopt a lifestyle that helps prevent common chronic diseases (Sultana et al., 2019; Ventura et al., 2019.)

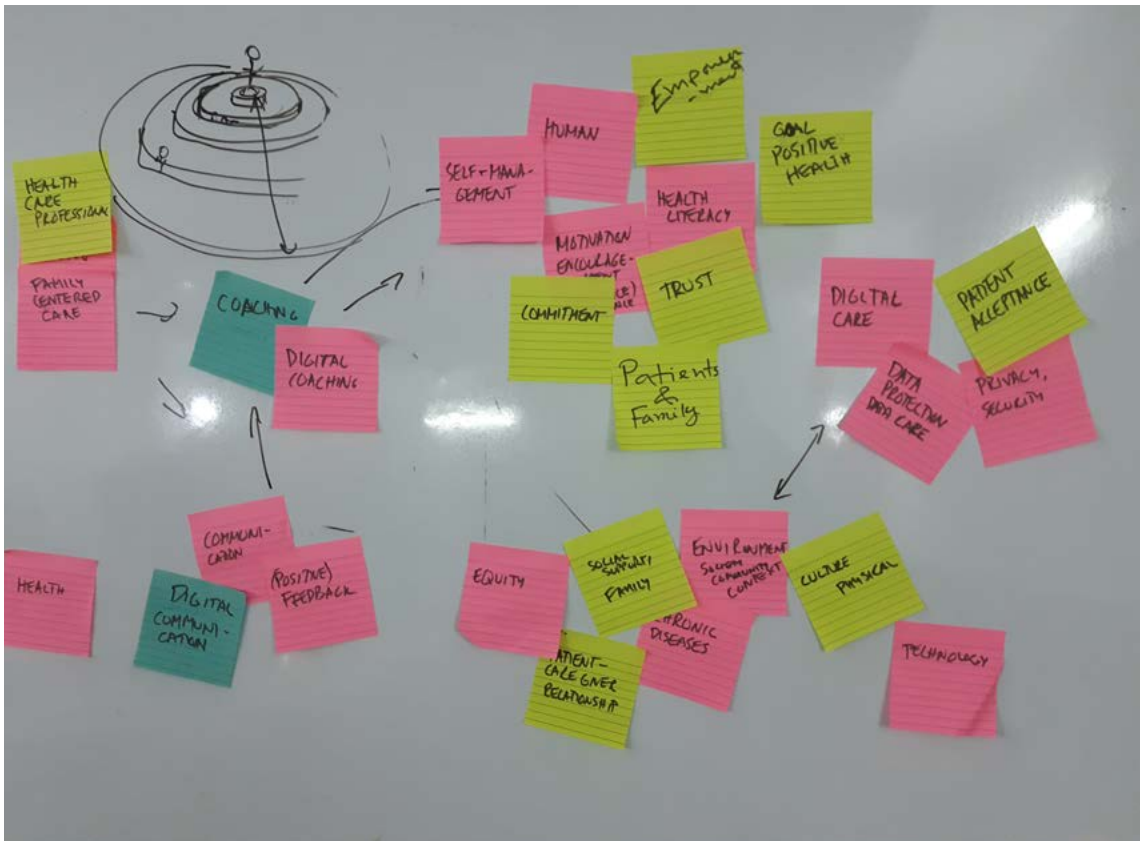
However, the healthcare sector often lacks digital skills (Brown et al.,2020; Isidori et al., 2022) and competencies to support self-management (Heggdal et al., 2021), both in the services provided (Donald et al., 2018; Howell et al., 2023) and in healthcare education programs (Danesh et al., 2019). Particularly in Asia, there is currently no formally designed concept for teaching healthcare students' digital skills to assist patients in self-management.

It is crucial for healthcare providers and students to receive training in using modern IT technologies in healthcare (Howell et al., 2023; Rani, 2022). Therefore, it was imperative to develop a model suitable for Asian contexts that integrates digitalization and patient coaching into healthcare curricula.

Initiation of the Designing Process

The design of the DigiCare Model was a dynamic and iterative process that involved several stages of development. It started with brainstorming workshop where the project team actively generated ideas and explored different possibilities. During this phase, the team extensively reviewed and drew upon existing theories and concepts from relevant literature (Appendices 1-6). They also incorporated valuable insights and lessons learned from the previous DigiNurse project (Kokko et al., 2021). Furthermore, the team actively sought out empirical knowledge and expertise provided by local specialists and researchers.

This approach enabled the DigiCare consortium to capitalise on existing knowledge and best practices in the field, drawing from the literature reviews conducted by each partner higher education institution (HEI).



Picture 1. Example of an online brainstorming result during the process of designing the DigiCare Model.

In addition to conducting literature reviews (Read more in Appendices 1-6), the DigiCare consortium organized a series of workshops to gather empirical experiences and cultural considerations that were crucial for shaping the model and including Asian context into the designing process. These workshops provided an opportunity for discussions, friendly debates and knowledge sharing among consortium members. Initially, some of these sessions were conducted through face-to-face meetings during Transnational Meetings, allowing for direct interaction and collaboration. However, as the Covid-19 pandemic unfolded, the consortium had to adapt to the changing circumstances.

To ensure the progress of the project, a significant portion of the design process was carried out through monthly online meetings and additional virtual workshops. Despite the challenges posed by remote collaboration, the consortium remained committed to fostering a collaborative

environment and leveraging the expertise of all participants. The online meetings and workshops facilitated open discussions, idea generation, and the exchange of insights and perspectives, ensuring that the model was informed by diverse perspectives and relevant expertise.

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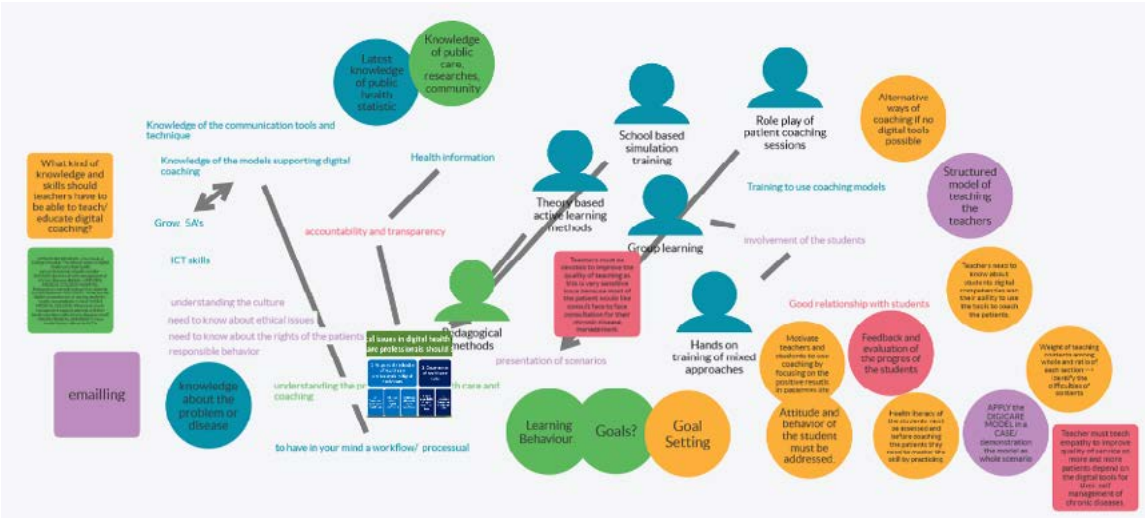
The Drafts of the DigiCare Model

During transnational meetings, the initial draft of the DigiCare Model was developed, encompassing most of the main concepts (based on the literature reviews (Appendices 1-6) and expert knowledge) and ideas that the partners wanted to integrate into the curriculum (Picture 2). These concepts were organized into three categories: input, intervention, and output.



Picture 2. Brainstorming concepts for the DigiCare Model during the transnational meeting in Dhaka, Bangladesh. (Picture by Annukka Huuskonen, 2022.)

Under the input category, the focus was on providing lecturers with a pedagogical approach for patients with chronic diseases (Gagné et al., 2021) and preparing students to effectively use digital devices in patient care (Brown Wilson et al., 2020) and as resources in patient coaching (George et al., 2021). The Interventions named at this stage were various content topics and theories that were seen necessary for teaching the digital coaching (Barr & Tsai, 2021; Nevelsteen, 2021). The output category represented the desired outcomes, including the development of competencies in digital care (Nes et al., 2021) and coaching (Singh et al., 2022), increased satisfaction among students and patients (Heggdal et al., 2021; Rise et al., 2013), and the utilization of digital devices in the care of chronic disease patients and their families (Brown Wilson et al., 2020). The goals for the model were described at this stage.

Although subsequent versions of the model introduced structural changes, many of the terms and concepts from the initial draft remained visible in the final DigiCare Model (Read more in Chapter 3) and the accompanying learning packages (Read more in Chapter 4.1). The success of the model was measured by the increased knowledge, skills, and confidence of students and healthcare professionals in digital coaching, the alignment of nursing care plans for chronic disease patients with the DigiCare Model, the increased utilization of digital devices by patients and their families, and the adoption of the DigiCare Model by higher education institutions in their educational programs.

Second draft of the DigiCare Model used a metaphor of a bicycle (Figure 3). The idea was inspired by the DigiNurse Model (Vandenhoudt, 2021) formed in European context and presented in a shape of a bus or a coach. The DigiCare project consortium recognized that the bicycle metaphor was a fitting representation of the project's journey towards its goals. The bicycle symbolized the movement towards a destination and was found to be particularly suitable for capturing the adaptation to the local cultures of Bangladesh and Vietnam, where bicycles, rickshaws, and scooters are very popular. Additionally, the consortium saw

the opportunity to connect the bicycle metaphor with the values of sustainable development.

As a result, the version of the DigiCare model that incorporated these aspects was named the “Green Model.” This designation reflected the consortium’s intention to align the model with sustainable development principles while embracing the local context and cultural practices associated with bicycles in Bangladesh and Vietnam.

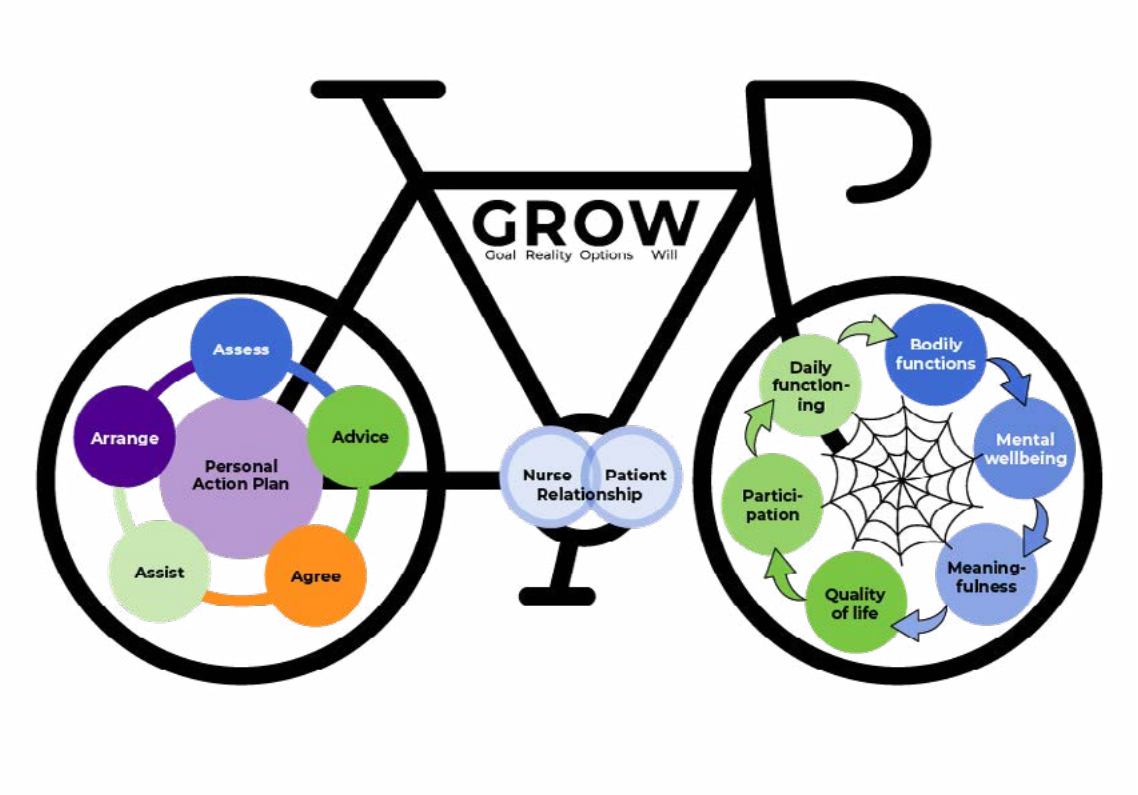


Figure 3. 2nd draft of the DigiCare Model. (Antonovsky, 1996; Hagerty et. al., 2017; Nevelsteen, 2021; WHO 2014, modified.)

This second draft model, known as the Green Model, incorporated several specific coaching models at this stage of development. These included the GROW and 5A’s coaching models (Read more in Chapter 5.1), as well as the Positive Health Model (Read More in Chapter 3.2) and Peplau’s theory of interpersonal relations in nursing (Read More in Chapter 4.1), which were depicted in the model illustration.

In this second draft of the model, the patient with chronic disease was assigned an active role, while students and healthcare professionals were responsible for training and supporting them to improve health literacy and quality of life. The focus during this phase of the model design process was on the concepts of self-management and coaching, which were prominently featured in the second draft (Figure 3). The theoretical and empirical basis of the DigiCare Model was enriched and further developed with the piloting experiences (Read more in Chapter 4.1 and Chapter 5).

The consortium recognized the importance of placing greater emphasis on the digital aspects of self-management support in the DigiCare Model. In developing countries such as Vietnam and Bangladesh, where digitalization is rapidly advancing, it has the potential to significantly impact healthcare, particularly for the growing elderly population (Sultana et al., 2019; Tran et al., 2016; Ventura et al., 2019). To fully harness the benefits of digitally enabled self-management of chronic conditions (Vassilev et al., 2015), there is a need to validate these technologies and address barriers by providing reliable and accurate information. This will enhance the cost-effectiveness and competency of digital health technologies.

It is crucial to implement multidimensional and multidisciplinary interventions to improve self-management among individuals with chronic diseases (Ahn et al., 2013). The value of online and virtual training to support nursing students and clinical nurses was acknowledged. In order to align with the developing environment of online, offline, and virtual training approaches, as well as future digital health services, it was deemed important for healthcare students to develop digital competences during their studies. This includes fostering knowledge, skills, and attitudes related to digital solutions.

The consortium acknowledged the importance of creating a versatile model that could accommodate various tools and models while

remaining adaptable within the framework of the DigiCare Model. Additionally, it was recognized that individuals within the model exist within a broader context, encompassing their relationships with family, community, and society. As a result, the socio-ecological model (Bronfenbrenner, 1977) was incorporated into the DigiCare Model. This integration allowed for a comprehensive approach that considers the multifaceted influences on individuals' well-being and health outcomes. Additionally, the concept of a bicycle with just one active rider was considered problematic. In the DigiCare Model, not only the patient but also the student and the healthcare professional should be actively engaged. Various ideas, such as a rickshaw, tandem bicycle, and cycling team, were explored, but they were unable to fully capture the desired illustration as a whole.

> **The consortium acknowledged the importance of creating a versatile model that could accommodate various tools and models while remaining adaptable within the framework of the DigiCare Model.**

It became clear that the DigiCare Model, within the Asian context, needed to consider a broader perspective beyond the individual patient and their care provider. A systemic concept of interconnected layers with several key concepts began to take shape.

Although the thorough discussing, brainstorming, and debating on the key concepts led the consortium to neglect the illustration of bicycle, the ideas behind the "green model" stayed alive and are utilized in implementation of the model to some extent.

The finalization of the DigiCare Model was the result of collaborative learning, creative thinking, critical analysis, and the utilization of new active working methods (e.g., World Café). The process challenged and expanded the perspectives of all those involved in various ways, pushing them to enhance their digital, pedagogical, evidence-based argumentation, and critical thinking skills. Each step along the way contributed valuable insights that shaped the ultimate version of the model.

The final version of the DigiCare Model was agreed upon during a transnational meeting held in Dhaka, Bangladesh, in 2022. In Chapter 3, the DigiCare Model and its key concepts will be elaborated upon and described in detail.

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