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The Collaborative Design of a Health Informatics Fundamentals Curriculum for the South African Context

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Background and Purpose: Information and communication technology (ICT) has the potential to strengthen healthcare service provision, communication, information processing, and management. In developing contexts, great improvements were made towards utilising ICT in healthcare. However, the same factors influencing the provision of healthcare services also make the utilisation of ICT more problematic. In addition to the limited resources in designing, developing and maintaining appropriate healthcare innovations, there seems to be limited understanding of the 'situated design considerations' for ICT interventions. There is a need, ultimately, for professionals and practitioners who understand the nuanced aspects of healthcare services and informatics. In this regard, there is a further need to develop courses for scholars and innovators looking to incorporate ICT in the healthcare domain.

This paper describes the collaborative design of a health informatics fundamentals (HIF) curriculum. This endeavour formed part of an internationally funded project to develop capacity for relevant healthcare courses and teachers for African partner universities. The main research question for this paper is: "What are the collaborative design considerations for a health informatics fundamentals curriculum for African universities?"

Methods: A constructive alignment process was used to design a basic curriculum for a health informatics fundamentals course as a basis participating universities. A series of joint workshops were hosted by the participating partners. Asynchronous participation took place via an online platform. During the joint workshops, participants focused on situational analysis, statements of intent and programme building (content). One of the African partner universities then offered the fundamentals course based on the work done at the joint workshops, and by adding instructional strategies and assessments. The results of the course evaluation (curriculum design and implementation) were shared with the partner universities during a final joint workshop.

The analysis of the curriculum design process is done using the recommendation of Biggs for constructive alignment. The outcomes of the curriculated course are linked to the conceptual framework used in the project.

Results: The certificate course was offered as an elective 4th year subject in the degree of BTech: Information Technology during the second semester of 2012. The subject name was Health Informatics Fundamentals, and comprised 12 SAQA credits (South African Qualifications Authority), which translates into 3 ECTS credits. The course was implemented in 120 notional hours, which required 1.5 – 2 hours per week contact time over a period of 14 weeks. The course was attended by 35 students in total.

The course assessment was both formative and summative and aligned to the assessment criteria on the level of study with an emphasis on application. 77% of enrolled students passed the course with an average final mark of 56%. Content contained local and contextual examples and exposed students to real-life health scenarios. Students cited great interest in the field of health informatics and some of them opted to continue with their studies in this domain. The main criticism from the students and trainee teachers was that the topics were slightly fragmented. This was due to a high variety of topics and

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extensive input from multiple disciplines. The general consensus was that the offering was a success and that it provides a good foundation for further courses in health informatics.

In terms of creating staff member groups with appropriate capacities, the project employed a core project team responsible for coordinating the HIF efforts. This consisted of a project leader (or expert), a project officer, and two project administrators. These persons' administrative capacities were developed to the point of managing and coordinating a complex international venture.

Conclusions: The project can be regarded as a success with sufficient materials for designing health informatics qualifications for the African context. The involvement of experts from participating universities has provided a richer and more comprehensive view of the needs for ICT innovations in healthcare. There is now an increased capacity of persons equipped to teach health informatics fundamentals topics and there is a repository with relevant content and assessments. The collaboration with experts from both the domains of healthcare and ICT resulted in the incorporation of both views in an integrated manner. The designed curriculum therefore is sufficiently integrated in its outcomes, content, assessment and offering.

Keywords: Health informatics, Curriculum design, Healthcare services, Information and communication technology

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