Chapter 2

Grid Technology: E-Learning in Telemedicine and Organizational Collaboration

I. H. Monrad Aas
Vestfold Mental Health Care Trust, Norway

ABSTRACT

The present chapter is about telemedicine, but not about software and hardware. It is about humanware. Telemedicine’s greatest problem is not to make the technology work. It is organizations and humans in organizations who will decide the future of telemedicine. Telemedicine is not just a simple success story and the diffusion of telemedicine has been slower than many expected. For the future of telemedicine, a shift in the way we think may be necessary. Few authors have focused on learning in telemedicine (with what is here considered as associated aspects: team organization; learning organizations; network organization). The learning potential connected to telemedicine is significant. Learning may constitute an important argument for telemedicine. In the present chapter, focus is on the role learning and collaboration may have for the future of telemedicine. To take the full advantage of the learning potential a higher volume of telemedicine is necessary, but this requires more organizational collaboration. Improved collaboration is obtainable by implementing collaboration measures. The chapter shows that focus on learning and collaboration may well be important for the future of telemedicine. It is recommended that managers lead change processes in their organizations, where the different aspects of importance for realization of learning benefits of telemedicine are treated. For telemedicine, it is important that future research includes: investigations on how to obtain learning benefits and which collaboration measures are relevant for the different telemedicine applications. Objectives of the present chapter are to propose: 1) more international research on learning in telemedicine (with mentioned associated aspects) and telemedicine collaboration problems and 2) to show the background for this proposal.

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INTRODUCTION
In a historical perspective, technology has played a fundamental role for society and organizations. For many years, it has been clear that also IT and telecommunications will bring great changes. In many countries, the information society is gradually replacing the industrial society (Castell 2000). The health sector, however, is at an early stage of potential future changes. A number of technological solutions for health care are classifiable as ICT (information and communication technology). When it comes to consequences for the health sector, telemedicine is important. Telemedicine is an enabler to transcend distance barriers for collaboration. The term telemedicine has been given a number of definitions (Aas 2007), such as ‘medicine at a distance’ and ‘the use of telecommunication technology to assist in the delivery of health care’. Early in our century it became clear that many found the term telemedicine difficult and the collective term ‘e-Health’ was made. E-Health encompasses all applications of ICT in health care.

The physical infrastructure of modern telecommunications consists of computers connected together. We are dealing with an electronic network. In the later years, the term grid technology has become important. Internationally, we find several definitions of grid technology. A grid system can be defined to consist of: 1) resources that are not subject to centralized control, 2) use standard, open, general-purpose protocols and interfaces, and 3) non-trivial quality of services is delivered (Foster, 2002; Plaszczak & Wellner, 2006). Obviously, telemedicine may well mean application of grid technology.

During the 1990ies a considerable enthusiasm for telemedicine was seen. The belief developed that telehealthcare might revolutionize the practice of medicine (Finch et al., 2003), but the diffusion of telemedicine has been slower than many expected. Telemedicine is not just a simple success story (Finch et al., 2003; May et al., 2003) and a telemedicine system implementation that only considers the technology will fail (Buxton, 1999). Since telemedicine has not been spreading like wildfire, the question comes up: why so?

Today we know that organizational issues are important for diffusion and daily use of telemedicine. This knowledge comes from empirical research. The question of telemedicine having organizational consequences, or not, is completely outdated (Aas 2007).

A new way of thinking could be advantageous for the future of telemedicine. Few authors have focused on learning (with what is here considered as associated aspects: team organization; learning organizations; network organization) and collaboration in telemedicine. In the present chapter, focus is limited to the role learning and collaboration may have for the future of telemedicine. To take the full advantage of learning in telemedicine, a higher volume of telemedicine is necessary, but this requires more organizational collaboration. A look at organizational collaboration is necessary to obtain benefits from telemedicine, learning included. Learning and collaboration are connected and they may be connected to the future of telemedicine.

Objectives: The objectives of the present chapter are to propose: 1) more international research on learning in telemedicine (with mentioned associated aspects) and telemedicine collaboration problems and 2) to show the background for this proposal.

LEARNING IN TELEMEDICINE
Telemedicine can be an important source of learning (Aas, 2002; 2007; Abrahamian et al., 2002; Nilsen & Moen, 2008) and learning in telemedicine is classifiable as eLearning. E-Learning is essentially the network-enabled transfer of skills and knowledge and includes digital collaboration (http://www.webopedia.com/TERM/E/e_learning.html). Few health care organizations have
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