

## Chapter 3

# How to Improve Media Literacy and Media Skills of Secondary School Teachers in Order to Prepare Them for the Next Generation of Learners: A New Type of In-Service Training for Teachers

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### **ABSTRACT**

*Students in schools should acquire media literacy, and the development of new media can promote self-directed learning and so enhance the quality of the learning process. It has been assumed that teachers lack sufficient media literacy. Therefore, we developed a new chemistry teacher in-service training based on blended-learning. These courses should familiarize teachers with the application of new media and acquaint them with their students' world, the world of the so-called "digital natives". Three studies were performed to explore its acceptability, suitability and effectiveness. Participants' ratings on self-report measures of self-rated skills and perceived competence improved significantly after the training. Participants had more favorable attitudes towards the use of electronic media than subjects from a control group. Among participants the attitudinal measure "perceived competence" predicted the use of blended-learning at 6-month follow up. It is concluded that attitudes play an important role for promoting teachers' media literacy and their intention to apply new media in teaching. In addition to training programs focusing on skills and knowledge, future interventions should target on teachers attitudes.*

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## INTRODUCTION

In the call for papers for this book there is an appeal to teach children how to cooperate world-wide. How can this be achieved in an ordinary secondary school if teachers do not even know what a bulletin board is or how to send an email? There is a difference between the demands and the reality.

This can be seen in the huge gap between the possibilities new media provide and the actual competences teachers have to use them in the classroom. It is often said in our school system that teachers (“digital immigrants”) and learners (“digital natives”) seem to speak different languages and they no longer understand each other. Teachers are characterized in their strategies to acquire knowledge that are nowadays possibly no longer valid because their students are differently structured in their learning behaviour. This study asks if it is possible to change this situation by teachers’ in-service training which acts like an interpreter, translating from one language into the other and explaining the different learning behaviours. A new course-model was therefore created. We will describe what theoretical background leads to the new structure and how this new method of further training of teachers was created and tested.

One goal of this study is to explore chemistry teachers’ attitudes towards blended-learning and the use of electronic media in chemistry lessons. The questions were: what kind of teachers participate, what is the acceptance of and what is the satisfaction with this new model? Also, there was the question: what are the predictors of teachers’ e-learning usage?

One part of the study focused on the measurement of three different aspects of attitudes: perceived competence, emotional valence and perceived necessity which are tested if they can explain teachers behavior. *Perceived competence* refers to the teachers’ self-rated competence in the use of electronic media. *emotional valence*

refers to the teacher’s feelings towards the use of electronic media. *Perceived necessity* refers to the teacher’s rating of the necessity of the use of electronic media. It is assumed that attitudes are related to e-learning usage and the acceptability, suitability and effectiveness of interventions focusing on e-learning (Wen & Shih, 2008).

Altogether three studies are presented here. An insight of the results will be given.

## BACKGROUND

### Digital Natives and the New Teaching Paradigm

It is often said, that nowadays teachers mostly belong to the so called “digital immigrants” while their students belong to the “net-generation” or the “digital natives”. Prensky formulated this concept:

*Our students today are all “native speakers” of the digital language of computers, video games and the internet. (Prensky 2008a, p.1)*

According to Prensky, the “digital native” receives information quickly, likes to network, is multitasking, prefers games to serious work, is motivated in learning but no longer willing to listen to lecturing teachers (Prensky 2008a).

In contrast, the “digital immigrant”, who grew up without the omnipresence of new media, is used to working linearly, is rarely networking etc. and principally has different strategies to learning.

This concept has been criticised due to lack of empirical support (Schulmeister 2008) and today’s students do not (yet) belong to this species (Ebner 2008). Nevertheless there is evidence that teachers and students differ in their use of electronic media. For example, 83% of young people believe that they could not live without the internet. Over 50% start the computer immediately they get home. Nearly 25% never switch off the internet. They

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