FIT FOR E-LEARNING?
TRAININGS FOR E-LEARNING COMPETENCIES

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Abstract

In order to design and tutor online and blended learning courses, trainers and teachers need to obtain appropriate qualification. In this paper different competency models for online teaching which developed in Germany 2005 – 2008 will be addressed as well as different settings to qualify teachers and trainers appropriately. Finally the results of an evaluation of two different training settings will be presented in order to compare an in house versus a transorganisational training program.

Keywords: e-learning and blended learning qualification, competencies, trainers and teachers training

1   INTRODUCTION: COMPETENCE MODELS

Between 2002 and 2005 different competence models have been developed in Germany which were presented in articles and statements of organisations such as DINI (German Initiative for Network Information), AHD (German Association for University Didactic, today called DGHD) and GMW (Association for Media in Science) [1] [2] [3] [4] [5] [6]. They discussed and described the different competencies for teachers and trainers in order to plan, implement and tutor blended learning and e-learning settings.

Albrecht described four different fields of competencies [1]:

- didactical competencies

- technological competencies

- further competencies

- authoring competencies

Didactical competencies include an overview over different didactical methods and instructional design approaches as well as an understanding of different scenarios for e-learning such as enrichment model, integration model and virtualisation model [7]. Also they include an overview over different media and their appropriateness for specific e-learning and blended learning settings [e.g. 8], competencies for online tutoring, feedback and testing methods, and moderation of online communication and collaboration.

The technical competencies cover the usage of media and technical equipment, the capability for online information retrieval and usage. The competence to chose, apply and evaluate online course material and the cost for the implementation of online courses.

Further competencies include project management skills, the capacity to chose and implement technical infrastructure projects, legal aspects of media usage, the capability to understand the different roles involved in such projects such as content designer, author, administration, tutor, etc. Also the usage of new media for purposes of research and cooperation in their field of work is included in those considerations. Further competence models also describe authoring capabilities for e-learning material, the consideration of design aspects and programming skills as necessary. From the author's point of view those capabilities do not necessarily cover the skills university teachers must have in order to apply e-learning. As she states in one contribution, the concrete aspects vary in dependence of the organisational setting at place [8]. In universities where local e-learning centers are at place, teachers must have much less competencies in order to use new media in teaching since technical infrastructure is provided. At schools where a teacher acts as a pioneer in order to introduce e-learning at his or her institution much more technical skills might be necessary, unless technical support is outsourced or provided in another way.

An Australian study on 100 projects on the usage of new media in education showed that the results mainly depended on the didactical methods and capabilities of the teachers [10]. Teachers who could inspire their students and activated them through the implementation of new media had more success than others. This means e-learning rests upon the same principles as teaching in general: profound didactical methods, activating students, and inspiration for the subject. Based on a similar study Alexander and McKenzie recommend to invest more and more into the didactical training of teachers – an issue which has to be looked at in terms of e-learning training [11]! But the study of Alexander and McKenzie also show that a lack of technical skills could harm major projects. University teachers as well as school teachers lack the capacity to solve technical problems, project management skills and the capacity to overview the effort and cost of projects appropriately:

"Staff development opportunities must be provided in the area of project management, working effectively in teams, evaluation of IT projects, and legal issues related to IT development, for current and potential project leaders" [11]

2 COMPETENCE MODELS APPLIED

2.1 E-learning qualification programs at German universities

Meanwhile, many German universities have introduced e-learning centers, e-learning qualification programs, and appropriate support structures [12] [13] [14]. Qualification programs cover didactical methods, usage of learning management systems, legal aspects of content production, usage, and distribution of digital material, and so on (for an overview see [14]). Several universities have included such qualification programs into their general didactical training (e.g. University of Basel, Switzerland and University of Kassel, Germany), others offer special e-learning programs. Unfortunately especially small universities and universities of applied sciences often cannot afford to offer a broad program and focus only onto a few aspects. Here, often the technical support comes into focus instead of didactical methods. Those universities often offer only one or two courses per year on the usage of learning management systems and therefore aspects such as course design, didactical concepts, appropriateness of different media for certain didactical processes lack coverage. Fortunately, many universities of applied sciences offer a wide variety of didactical trainings – often in a network of institutions such as "Hochschuldidaktisches Netzwerk Mittelhessen" (didactical network Hessen) and a even state wide programs in Bavaria, Baden-Wuerttemberg and Nordrhein-Westfalen. Here, this might be a place for e-learning trainings to be provided as courses in the didactical training curriculum. But unfortunately often those trainings are not implemented on a regular basis or not sufficiently integrated into didactical programs and play only a minor role in the course syllabus. A typical example is an university in the Southern part of Germany where the didactical training program offers e-learning trainings only on an irregular basis and the accompanying computing centre offers courses covering the introduction to the learning management systems absolutely independently and in no way linked to the didactical e-learning courses.[1] Some universities are an exception: the universities in Berlin offer a nine-months lasting training for university teachers on e-learning[2]. The "Learning Online Learning" program (OLL) of the Technical University of Berlin covers aspects such as

- introduction to online teaching

- online communication and tutoring

- didactical planning of e-learning courses

- legal aspects

- technical tools

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[1] The author who has been teaching those more didactical oriented courses at several institutions often invited the computing centre into her workshops in order to present their technical infrastructure to the local participants. So they knew who to contact and where to receive further qualification and support at their home institution. Often this initiative was started by the author who taught the workshop instead of the local institutions who often stayed in competition due to scare resources and conflicts of responsibility and competence.

[2] http://www.zewk.tu-berlin.de/v-menue/wissenschaftliche_weiterbildung/e-learning/angebot/kurse/ online_lehre_lernen [15/05/2010]

The participants complete the certificate with a final concept for an e-learning course. Beside this program they offer a one-day introductionary course on e-learning and a technical introduction to the learning management system. Also the Freie University of Berlin offers with its e-learning center CEDIS a variety of courses starting with the learning management system, introduction to planning of e-learning courses, workshops on tools such as wikis and blogs, and digital audio and video production.[3]

2.2   E-learning qualification at the University of Frankfurt

The University of Frankfurt has one of the largest programs on e-learning: 24 single workshops are offered to teachers.[4] Meanwhile, not only participants from the University of Frankfurt take part but also employees from companies, self employed freelancers, school teachers, and so on. Since the program is structured in nine modules that lead to a certificate (out of which 4 are optional) and the program is offered on fixed days each term, many participants plan years in advance to complete the certificate. They can either collect modules or complete the certificate within one term. But most of the workshops can also be visited as single courses, independently from the certificate. The following list gives an overview of the different course modules:

Main modules on introduction to e-learning, e-learning didactics, planning:

- introduction to e-learning (overview over scenarios, examples, tools, outcomes)
- e-learning didactic and learning theories
- e-learning didactic and practical application
- legal aspects

The obligatory courses for the certificate include a coaching session for open questions, consultation on the final concept, and a final presentation of each participant's e-learning concept.

Technical modules (one out of three is obligatory for the certificate)

- introduction to a learning management system
- collaborative learning and group ware tools
- wikis and e-learning

Tools are always seen in a didactical context, so that pure technical trainings are avoided. The focus is always on how to use a tool, in which didactical setting, what is its potential, appropriate usage etc.

Modules on didactical concepts and methods include:

- blended learning
- mindmaps and conceptmaps
- online ressources of the library
- web 2.0 and teaching
- podcast production for teaching and learning
- eportfolios
- design of tests and quizzes
- online tutoring of learners
- webquests for teaching and learning

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[3] http://www.cedis.fu-berlin.de/service/schulungen/index.html [15/5/2010]
[4] http://www.studiumdigitale.uni-frankfurt.de/workshopreihe/index.html [15/5/2010]

Here, partners of the e-learning centre are integrated to extent the workshop program For example the library provides a workshop on online ressources and school teachers a workshop on the creation of webquests. The objective is that teachers who use webquests, mindmaps and concept maps at schoolsshow others how to use them and also share their practical experience. This approach is based on a concept by Tony Bates who states that peers learn best from peers [15]. This fosters acceptance and allows participants to learn by examples.

Also, we try to include online phases as often as possible. This has two advantages: first, if participants get input on the first day, they can reflect on it, refer to their own daily routines or apply it in their jobs in an online phase. On a second meeting they present their own concepts, ask further questions and deepen the acquired knowledge. In the online phase between the two workshop days they get a deeper understanding for the new ideas, since they can reflect upon them and can refer back to their own work routines. This is especially fostered when homework tasks are given that encourage this. Furthermore, the online phase allows us to train the participants in online communication. They also improve their online cooperation and collaboration skills and they can experience personally how difficult it is to hand in assignments in time and how many skills in the areas of time management and self organisation capacities online learners need. Last not least they experience "how an online phase feels like.".

In most cases the blended learning setting of a single module is structured as follows:
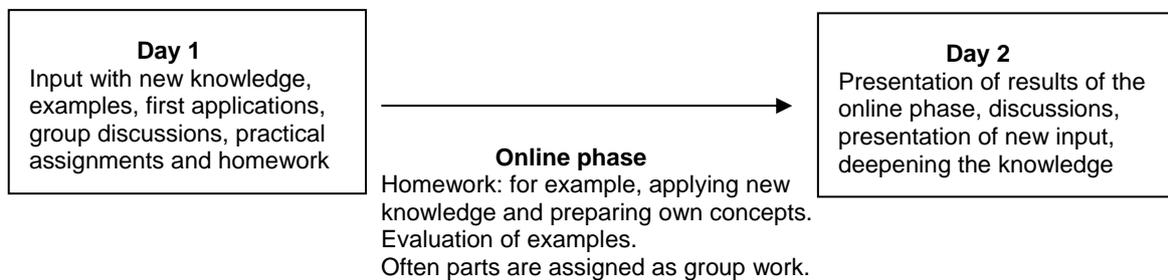
Fig. 1: Blended learning setting in the course modules

The final and third area of qualification covers technical workshops on media production:

- production of screencasts
- digital video production
- flash basics and flash advanced
- producing and creating web pages

Most of these workshops last two days and take place consecutively. So participants can dig deeper into the technical tools and work consequently on their own work piece. Therefore, we apply a longer duration for these workshops. Most of the trainers of the workshops are employed at the university and are part of the team of the e-learning centre so they can be contacted and asked questions even after the workshops have finished.

Meanwhile, more than 600 different participants have visited these workshops since 2005 and about 140 completed the certificate.[5] 85 participants were non-university members, mainly teachers at schools, teachers from other universities and free lancers or employees at companies, such as educational institutions or publishing houses.

Topics, tools, and developments that are not yet ready for a workshop theme or cover actual demands of the e-learning community of the University of Frankfurt are presented in half day workshops called "multimedia factory". Here, participation is open to everyone and workshop themes are announced one to three months in advance. Current topics are:

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[5] It is not our objective, that every participant should complete the certificate. It is the intention of our institution to offer courses which can be booked separately as well as a part of the certificate in order to offer the workshops to as many people as possible.

- tools for social networks

- personal data on the internet

- video formats, processing tools and procedures

- online tools for assessments and surveys

- presentation tools

- content sharing and open access

At the University of Frankfurt, the e-learning workshops and events such as the "multimedia factory" are embedded into a much larger organisational development model which consists of financial incentives, top-down and bottom-up procedures of strategic development for e-learning and substantial investments into the e-learning infrastructure. In order to understand the effects of each single intervention, the whole picture needs to be addressed. Unfortunately, this cannot be fully addressed in the scope of this article but is desbribed [16]. The effect we can look at within this article is the effect of the e-learning qualification on the quality of e-learning projects at the university. Many participants of the workshop modules feel enabled to apply for financial support for the implementation of new media into their teaching practice [17]. At the same time, the quality of applications for financial support and the quality of projects themselves improved and have positive effects on the e-learning outcomes [18]. Financial means are invested more effectively and efficiently and each department has at least one well qualified e-learning expert who represents the department in the monthly e-learning meetings of the University.

2.3   Statewide considerations for an e-learning certificate

Meanwhile, the state Hessen, where the University of Frankfurt is located, considers the introduction of a state wide e-learning certificate for university teachers. For this purpose representatives of the e-learning centers of all universities of the state founded a working group in order to develop the learning objectives and a competence standard. In 2008 this group published a concept which describes learning objectives in these areas [19]:

- e-learning settings and outcomes

- didactical aspects of e-learning and blended learning

- designing and planning an e-learning scenario

- online tools for information, communication, and collaboration

- aspects of online collaboration and cooperation

- online tutoring

- design of self study phases

- legal aspects of e-learning

- usage of a learning management systems for teaching

- online assessments

- evaluation and quality assurance

The current state of the certificate is pending. Plans are to set up a commission which evaluates and accredits e-learning qualification programs in order to decide whether they fulfill the requirements for the state's e-learning certificate or whether additional modules need to be added. The idea behind this commision is that teachers can combine programs from different institutions in order to obtain the certificate and also can include prior workshops they have visited or even competencies they acquired in informal learning processes such as project work.

2.4   Teletutor qualification of the University of Frankfurt

A special program is offered to people who want to spend less time in workshops and are nevertheless interested in acquiring e-learning expertise for their institution: In cooperation with three other institutions[6] studiumdigitale, the e-learning centre of the University of Frankfurt, offers a training program for e-learning experts. The program is conducted in five modules: three face-to-face trainings and two online phases. The five modules are consecutively and are integrated into one blended learning course which has a duration of three months in total.

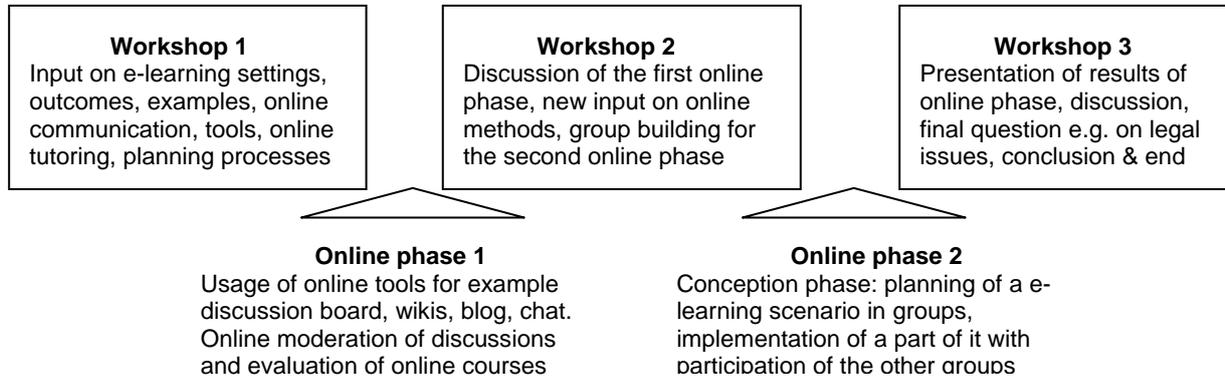Figure 2 describes the different phases and workshops:

Workshop 1 Input on e-learning settings, outcomes, examples, online communication, tools, online tutoring, planning processes	**Workshop 2** Discussion of the first online phase, new input on online methods, group building for the second online phase	**Workshop 3** Presentation of results of online phase, discussion, final question e.g. on legal issues, conclusion & end

Online phase 1
Usage of online tools for example discussion board, wikis, blog, chat. Online moderation of discussions and evaluation of online courses

Online phase 2
Conception phase: planning of a e-learning scenario in groups, implementation of a part of it with participation of the other groups

Fig. 2: Blended learning setting for the teletutor training program

Workshop 1 serves the knowledge acquisition: the participants get an overview over different e-learning settings and the potential outcomes of online learning. They get to know examples, learn about online communication, tools, processes of online tutoring, and online cooperation and collaboration. They get to know methods how to plan and design e-learning settings and get some insights into the calculating of cost and effort for media production processes. In the first online phase the participants learn how to moderate online discussions in bulletin boards and chats. They create texts in wikis, discuss papers, conduct an online journal and fill out online quizzes and tests. They evaluate online courses based on a set of criteria and sometimes interview an expert via videoconferencing or chat. Workshop 2 serves the conclusion of the first online phase and also provides new input: the participants discuss the role of online tutors, learn more about the planning process of e-learning settings and form group for the conception process which takes place in online phase 2. Here, the participants design their own e-learning settings and implement part of it. The other participants take part in this extract and finally give feedback in workshop 3. This workshop concludes the whole course: the participants present their e-learning concepts and the implemented parts of it and discuss the difference between the planned process and actual realisation. They finally define their own teletutor profile according to their strengths and weaknesses and personal preferences and close the workshop with half a day for open and final questions and an evaluation.

The whole workshop does very much included Gilly Salmon's model for e-moderation and online socialisation [20]: access and motivation in an online prologue and the first workshop, online socialisation as well as information exchange in workshop 1 and applied in the first online phase, and knowledge construction and development mainly in the second online phase until the end of the course.

This concept is offered since 2003 once or twice each year. In comparison to the above described workshop program the longer online phases allow for more experiences in online communication. Also by the realisation of parts of their projects the participants become prepared for a practical implementation. On the other hand, the participants who complete the e-learning certificate with 9 modules at the University of Frankfurt receive a deeper understanding of different tools and methods since they spend more time in face-to-face workshops where those topics are discussed. Here, the lack of practical implementation in the course is balanced out through real projects the participants work on at university and at schools while they complete the certificate.

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[6] Landesverband der Volkshochschulen Nordrhein-Westfalen, Arbeit und Leben Nordrhein-Westfalen und Bildungswerk der Erzdiözese Köln.

3   A SPECIAL COMPETENCE MODEL FOR SCHOOL TEACHERS

3.1   Introduction and background

In 2005 the state ministry for education and the state ministry for science developed together with delegates from each university a recommendation for a standard of media competence for future school teachers that they should receive until the end of their study program [21]. This recommendation was based upon concepts of Tulodziecki and others who differentiate the necessary competencies into three broad areas [22] [23]:

- theoretical aspects of the media society
- practical technical skills
- instructional design and integration of new media in teaching

In the area of theoretical aspects, students should develop an understanding on how the media society influences children and young adults, which effects media usage might have on their socialisation, and they also get to know legal, economic, social, and political effects of the so called 'media society'.

In the field of practical skills, they learn how to use computers and media, how to produce webpages, and how to use wikis, learning management systems, and other technical platforms. They should experience online communication tools and manage their own media use of for their studies and for their professional and personal communication and cooperation.

The third area, aspects of instructional design and integration of new media into teaching are focussed. This covers all the competencies school teachers need in order to use media in classroom teaching as well as in project work. This area is the main difference to concepts of media competence for citizen [24]: Here the last area plays no or only a minor role, while teachers have the task to apply those competencies in classroom teaching as well as to prepare their students to deal with all the effects of the media society.

The state wide standard for media competence in teaching profession study planned 40 credit points to be completed until graduation. Since its status was a recommendation, it was left to the universities how to implement it. Shortly after publication it became obvious that this amount of credits was unlikely to be integrated into the study program for teachers since the state universities had just completed the modularisation of the curriculum for the teaching profession study program. At that point of time it was unlikely to allocate 40 credits purely to media competencies (during the modularisation process of the study programs for teachers the faculties had discussed where to allocate each single credit. At that time, when the recommendation was published, this process was just completed). Therefore it was open to all universities how to implement the recommended standard at each single institution.

3.2   Competencies in phase 1 of teacher training at the University of Frankfurt

In 2006 the University of Frankfurt implemented this recommendation in an adopted form. Therefore the university introduced a 'media competence certificate for future teachers' by the centre for teachers training. The certificate is designed for students who become teachers and can be completed during their studies. The design of the certificate uses the three areas described above: theoretical aspects of media in our society, practical technical skills, and instructional design and integration of new media in teaching. In order to complete the certificate students, need to collect 11 credit points, at least 2 in each area [25].

The first competence area, theoretical aspects of the media society, are guaranteed through a obligatory lecture which the students can visit during each winter term. It consists of a series of lectures with different speakers each week. The lecture covers legal aspects, aspects of protection of children and young people in the internet, economic and technical issues of the 'media society', web 2.0 technologies, media pedagogy, didactical aspects, and further issues. In order to ensure the technical handling (the second competence area) the students produce digital teaching and learning material such as webquests, wikis, webpages and comparable media productions in tutor groups. The objective is that they learn how to produce media and learn about the costs and amount of time they needed. Also the coordination of a project team is an important learning objective as well as aspects of target group specific design and so on. Together with this digital piece of work they hand in a

description of their digital teaching material with information on intended learning objectives, target group, appropriate learning settings etc..

The third competence area, instructional design and integration of new media in teaching, is mainly covered by courses in the departments, and here mainly in the institutes for teacher training, the so called didactical institutes. In order to assure quality and a proper qualification, the institutes apply for accreditation of their courses for the media competence certificate. Each term around 30 to 40 such courses are handed in. The courses are described in a form where the contribution of the course to the media competence certificate in each of the three competence area is outlined in detail. After accreditation, courses are listed on a website of the teachers training centre and marked in the list of lectures. Students who want to complete the certificate can look for accredited courses in their field of study (e.g. physics, biology and so on). The advantage of this approach is, that students can complete the certificate mainly within their normal curriculum through the appropriate selection of courses. Only the obligatory lecture is an additional course they need to attend.

Until now, over 300 student have completed the certificate and each term around 70 – 100 students start the program. It became an example for all other universities in the state which offer teaching profession study. Right now, the University of Kassel starts to implement a similar certificate. Meanwhile further activities started on the state level to offer a certificate for the phase 2 and 3 of teacher training: the 2 year training on the job (phase 2) and the advanced training in their final profession. This will be presented in that last chapter of this paper.

3.3 Perspectives: a statewide media competence model for teachers

Currently the state ministry for education conceives a concept for media competence of teachers which covers all three phases of teachers training (study, practical years, and continuous and advanced professional training). The concept is developed together with the main institution for teachers training of the state, the Amt fuer Lehrerbildung (AfL), and all universities which offer teaching profession study. The objective is a vertical integration of the three different competence standards along with transition profiles:
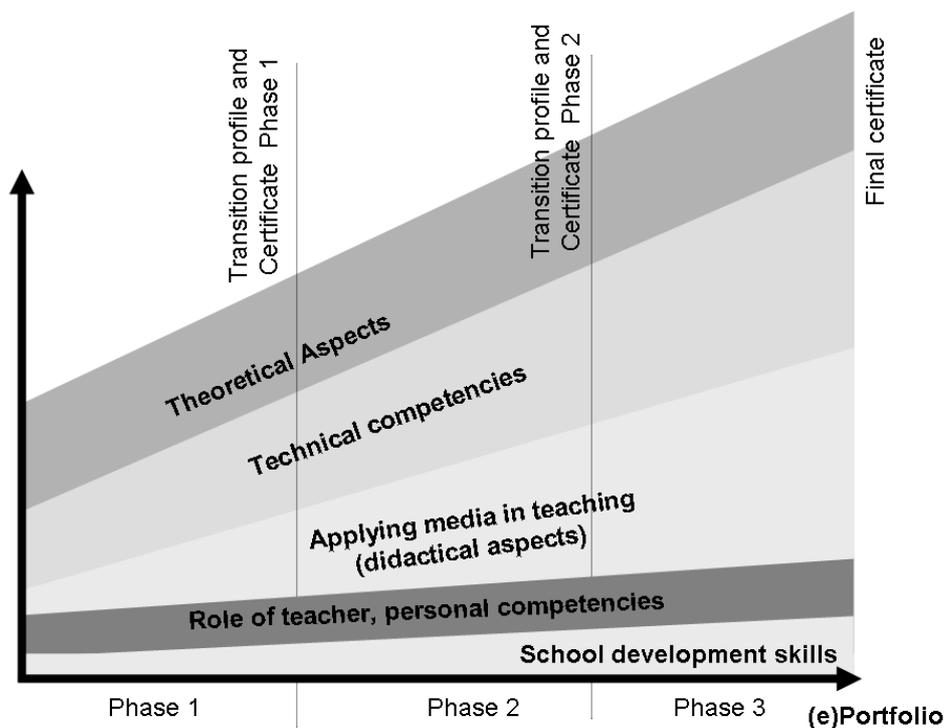

Fig. 3: Media Competencies over three phases of teachers training

In addition to the former described competence areas, the role of the teacher, his and her personal competencies, the ability for life long learning, a critical reflection on their own media use and according attitudes, the ability for self reflection and the changed role of teachers in the context of new teaching methods are addressed. Also aspects of school development are included since the use of media in schools can only be fostered through a profound concept for the usage of media which includes all aspects of infrastructure, didactical settings, and so on. The adressed standard also covers the usage of new media for information and cooperation processes among teachers for their own personal development and the usage of commercial digital media.

At this point, a first draft of the competence model is approved and will be communicated through the state ministry for education to all universities and teacher training institutions. In the next step, the competence standards for each phase will be defined and ways for their implementation in the three phases will be looked at.

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