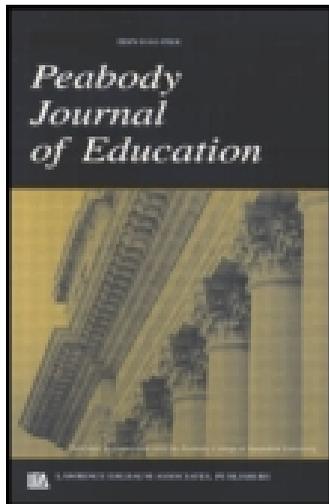


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Pedagogical Media Competencies of Preservice Teachers in Germany and the United States: A Comparative Analysis of Theory and Practice

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Teachers need knowledge and skills to make effective use of the growing variety of media and technology texts and tools available for use in elementary and secondary education. For this reason, pedagogical media competencies are highly relevant for teachers' professional development. The theory of media pedagogical competencies is first defined and then located in the context of the relevant scholarly literature from both Germany and the United States. We conducted a comparative analysis of German and U.S. pedagogical media competency models and report data on a survey of teacher education programs in Germany and the United States to identify the proportion of programs of study that include courses in media didactics, media and school reform, and media education. We consider the implications of the missing connections between the theoretical framework of pedagogical media competencies and the current practice of media pedagogical teacher training, revealing implications for further work needed to improve the integration of media in various school-related contexts.

INTRODUCTION

Years have passed since the so-called “new media” have found their way into the lives of children and youth. Information and communication technologies are now infused in daily life by the presence and influence of TV, computers, video games, the Internet, social media, and mobile phones (mpfs, 2014, p. 3). Media and technology are an integral part of all aspects of home, work, leisure, and school, and school leaders are becoming aware of the need to be responsive to changes in society. Thus, media and technology are increasingly being implemented in classrooms all over the world both as a tool to support teaching and learning processes and as a subject of inquiry themselves.

Naturally, this innovation has brought about new demands and challenges for teachers. In many communities, teachers are now required to include media and technology in their teaching

and must address the educational, social, and ethical dimensions of technology in the home and school lives of their students. Such work is understood as an important step toward ensuring that school encourages and supports students in acquiring the competencies needed to become full, responsible participants in a global knowledge economy.

The issue of teacher competencies is a key factor in advancing the future of education both in the United States and in Germany. In this article, we explore one comprehensive dimension of these required competencies, which will be referred to as *pedagogical media competencies*, to determine whether it may be an appropriate basis for integrating media pedagogy into preservice teachers' studies in Germany. Further, we review the relationship between concepts and approaches to media pedagogical competencies that are normative in Germany and the United States. Although a cross-national comparison inevitably holds a number of challenges (e.g., culture, history, focus, language, and background), it also has distinctive affordances, allowing for valuable insights by increasing the variety of viewpoints and providing a broadened, globally interconnected perspective (cf. Blömeke & Paine, 2008).

In some ways, Germany and the United States can be easily compared for a number of reasons, which can only briefly be addressed here. Both countries have rich and comprehensive traditions of pedagogical and media pedagogical discourse, which share a variety of aspects and provide a common background to build upon (Grafe, 2011). Both countries share generally similar approaches to educational policy and structure, as strong state and local control of education is paired with high levels of federal influence on educational issues. A comparative analysis promises significant insights concerning different interpretations and applications of the concept of media pedagogical competencies, and this may be beneficial for a deepened understanding among scholars and practitioners (Blömeke & Paine, 2008), particularly in the context of increasing global interconnectedness among scholars who study the fields of communication, information, and education. As other European, Latin American, and Asian nations are also developing unique approaches to media pedagogy, comparative perspectives that examine multiple countries in cross-national contexts are vital in helping us learn from each other and will continue to be useful to scholars and practitioners alike (Frau-Meigs & Torrent, 2009).

Against this background, this article approaches the topic of pedagogical media competencies in Germany and the United States with two foci, namely a theoretical basis and an examination of current practice within initial teacher education. First, we provide an overview of common models of pedagogical media competencies in Germany and the United States, and examine similarities and differences, revealing a theoretical view on the pedagogical media competencies that teachers most need, according to research. Then we share preliminary results of an explorative study documenting media pedagogical teacher training at German and U.S. universities with regard to their main foci and thrust of emphasis. In a final step, we examine approaches to educational policy in both countries regarding media pedagogy, which enables us to advance key priorities for further research. This approach to pedagogical media competencies in Germany and the United States is based on Hilker's steps of comparison suggesting a description of the phenomenon to be compared, which are pedagogical media competencies, interpretation, juxtaposition, and comparison (1962, pp. 107–126; see also Bereday, 1964 in Bray, Adamson, & Mason, 2007; for more details on the comparative approach and for further analyses and results related to media literacy cf. Grafe, 2011).

MODELS OF PEDAGOGICAL MEDIA COMPETENCIES IN GERMANY

In Germany, approaches to defining and modeling pedagogical media competencies began with scientific discourse about media competencies in the 1970s. In the context of teacher training, the focus gradually shifted toward the term “pedagogical media competencies” in the 1990s when several well-respected pilot projects revealed the importance of additional teacher competencies that go beyond handling and using media successfully, such as preparing appropriate media-enriched learning environments for students. Tulodziecki and Blömeke (1997) modeled media education standards and pedagogical media competencies, identifying five target areas for teacher growth and development. Teachers are expected to: (a) use media in a competent way, which includes skills such as choosing resources to use and producing their own media messages, (b) understand and sensitively consider the meaning of media for children and youth socialization, (c) analyze and assess media content with regard to aspects of teaching and learning, (d) fulfill media-related educational and advisory tasks in lessons and projects, and (e) understand and influence personal, equipment-specific, organizational, and further school-related conditions for media education work at school (see also Blömeke, 2000, p. 377; Tulodziecki, 2012, p. 271ff). Along with this work, Siller (2007), Gysbers (2008), and Tulodziecki (2012) developed further specifications and thus helped shape a joint construct of pedagogical media competencies that is widely recognized among German-speaking educational scholars and practitioners.

The recent project “Modelling and Measuring of Media Competency” (M³K), funded by the German Federal Ministry of Research and Education, builds on the aforementioned studies and attempts to both model and measure pedagogical media competencies of preservice teachers, thus pioneering an integrative approach to a comprehensive, well-grounded and validated construct. This model of pedagogical media competencies relies on German scientific discourse to a large extent, but has also been validated by a number of international experts, and a variety of international models have been taken into view as well for its design. Based on Weinert’s definition (2001), *competencies* are generally understood as learnable dispositions that comprise cognitive as well as attitudinal aspects and are directed toward the accomplishment of specific demands (Blömeke, Gustafsson, & Shavelson, 2015). *Pedagogical media competencies* are defined as the interplay of media didactics, media education, and school reform. These three competencies are core: *media didactics* refers to any considerations about how media content can and should be designed and used to reach pedagogically justified goals, *media education* deals with the performance of media-related educational and teaching tasks with particular regard to the ethical and social impact media have on individuals and society, and *school reform* addresses the larger challenge of integrating media into and across curricular subject areas (Tulodziecki, Herzig, & Grafe, 2010, p. 41).

As Table 1 illustrates, these three areas form the first axis of a matrix, with five competency aspects on the second axis. Each cell can be defined and articulated with two standards, as shown. The overall design is intended to ensure that each competency is aligned with the general requirements of teacher education in Germany. These general requirements are understood to be fulfilled if future teachers, during their studies, are able to (a) acquire the scientific basis for teaching, education, and school reform tasks, (b) adopt a researching attitude and to make first practical experiences with the tasks in their future job, and (c) develop characteristics necessary for the teacher’s profession (Tulodziecki, 2012, p. 283).

TABLE 1
M³K Model of Pedagogical Media Competencies. Exemplary Excerpt

		Competencies		
		Teaching with media (MD)	Teaching about media (ME)	Media and school reform (SE)
Aspects of competencies	Understanding and assessing conditions			
	Describing and evaluating theoretical approaches		Standard ME2.1 ¹	
	Analyzing and evaluating examples		Standard ME2.2 ²	
	Developing one's own theory-based suggestions			
	Implementing and evaluating theory-based examples			

¹Standard ME2.1: Student teachers are able to describe concepts of media education and related empirical findings appropriately.

²Standard ME2.2: Student teachers are able to assess concepts from an empirical, normative, or practical perspective.

In addition, other aspects are assumed to be beneficial preconditions for advancing teachers' media pedagogical competencies. Teachers and learners both acquire knowledge and skills from formal as well as informal learning settings, as has been argued by Blömeke (2005) and others. Likewise, media-related beliefs and perceived self-efficiency as well as technical media knowledge influence a teacher's use of media in class and are therefore important independent variables for pedagogical media competencies, even though they are not understood as immediate constituents (Blömeke, 2005; Grafe & Breiter, 2014).

MODELS OF PEDAGOGICAL MEDIA COMPETENCIES IN THE UNITED STATES

A key issue in American scholarship and practice in this field makes a distinction between "teaching *about* media and technology" and "teaching *with* media and technology." Teaching about media has often been associated with the terms *media literacy* or *media education*, defined as the competencies of being able to both critically analyze media messages and create messages using media and technology and the instructional practices associated with acquiring these competencies. These terms directly build on the work of Paulo Freire (1970) in the process of *conscientization*, which is a cyclic process of action and reflection that includes the ability to access, analyze, compose, reflect, and take action, using the power of communication and information to make a difference in the world (Thoman & Jolls, 2003). Organizations such as the National Association for Media Literacy Education have developed the Core Principles of Media Literacy Education, which emphasize the values of critical thinking for citizens in a democracy and the role of media in culture and as an agent of socialization. These core principles offer specific instructional guidelines about how to (and how not to) use media and technology to advance

critical thinking skills about media, technology, and culture (NAMLE, 2008). In general, schools of education have focused attention on teaching *with* media and schools of communication and information have focused on teaching *about* media. A considerable amount of conceptual and empirical research has been done on the construct of media literacy by American communication researchers (cf. for example Arke & Primack, 2009; Hobbs, 2011; Hobbs & Frost, 2003; Potter, 2008) around the dimension that German scholars would consider as *media education*.

Best practice principles for *media didactics* or teaching *with* media and technology and *media-related school reform* have been developed by the International Society for Technology in Education (ISTE), which has established standards and performance indicators for this field. Four of these standards, which are known as the National Educational Technology Standards (NETS), address media didactical aspects such as stimulating learning processes and students' creativity or designing digital learning environments. Some of these standards also take into account aspects such as legal and ethical dimensions of media use. Other standards refer to on-the-job training and leadership competencies (ISTE, 2008). Researchers have used the ISTE NETS standards to develop measurement instruments. For example, in their study for the U.S. Department of Education, Mathematica Policy Research (2000) analyzed 26 of these instruments and concluded that the majority consist of portfolio instruments and self-assessment instruments.

Technology integration theory in the United States has been advanced considerably by the use of a framework titled Technological Pedagogical Content Knowledge (TPACK), developed from work by Shulman (1986). It is perhaps the most common and established framework used in teacher education programs in the United States and internationally. It describes seven components that are assumed "to facilitate teachers' successful integration of technology into the classroom" (Mishra & Koehler, 2006, p. 1017). Building on components that were originally introduced by Shulman (1986), including pedagogical content knowledge, content knowledge, and pedagogical knowledge, Mishra and Koehler (2006) added the aspects of technological knowledge, technological content knowledge, technological pedagogical knowledge and technological pedagogical content knowledge to create a comprehensive model. Building upon this model, several instruments were developed to measure the extent to which teachers possess these aspects of knowledge and skills. Most of these instruments use teacher self-assessment, as do the tests for the NETS (for an overview, cf. Schmidt et al., 2009). Like the NETS, this TPACK model focuses on skills in teaching with media.

Because both NAMLE and ISTE have addressed the issues of media and technology integration in the context of school reform, in this way, all three areas of pedagogical media competencies as defined in the aforementioned German model are present in the American context. However, media didactics is vastly more dominant in the scholarly literature in education; the number of references emphasizes the importance of this field compared to considerably fewer scholarly sources that explore the domains of media education and media-related school reform.

Although media educational competencies also have repeatedly been recognized as important in the context of elementary and secondary education (Kellner & Share, 2005), these are not conceptualized as part of the TPACK model, which focuses on teaching with media. We could find no U.S. studies that model and empirically measure pedagogical media competencies with regard to all three areas of pedagogical media competencies as suggested by the German model, although all of these competencies have been acknowledged to be relevant by the U.S. scientific community. Therefore, bringing together media didactical and media educational competencies

with school reform in one comprehensive model can be considered an important task that may be valued within the context of the U.S. perspective (Hobbs, 2010; Jenkins, 2006).

MEDIA PEDAGOGICAL STUDY PROGRAMS: AN EXPLORATIVE STUDY

As the literature suggests, the conceptualizations of pedagogical media competencies in Germany and the United States differ in important ways. And yet, significant congruencies can be noted as the three fields of media didactics, media education, and school reform are relevant in both German and American contexts, albeit to different degrees. A further connection both countries share is the lack of binding standards for the inclusion of media pedagogy into initial teacher education. Therefore, it is helpful to examine the current practice at American and German universities in order to evaluate how the three dimensions of competencies are put into practice in both countries. For this purpose, an exploratory overview was compiled listing all relevant study programs in Germany and the United States, the results of which are introduced below.

In the course of this research, all relevant educational institutions in the respective countries were taken into view. Educational institutions were regarded as relevant in this context if they were *public* and offered both *teacher training* and *graduate studies*. In Germany, 64 universities or colleges of teacher education met these criteria, while 316 universities met the requirements in the United States.¹ The universities and colleges in question were then checked for specifically media pedagogy study programs and certificates, which were identified according to (a) course titles that indicate a direct reference to teaching with and/or about media, as well as (b) brief descriptions on the university home pages that suggest the relevance of media pedagogy training. In a next step, the identified programs were grouped first into their degree levels and types (M.A., M.Sc., or M.Ed.). Second, using a deductive approach, they were categorized according to their main focus in content, that is, media didactics, media education, or school reform. Table 2 shows samples of course listings in Germany and the United States, grouped by theme.

Germany

In the Federal Republic of Germany, there have been extensive activities to implement media pedagogy into teacher education programs in the last two decades (cf. Bentlage & Hamm, 2001). For this reason, we believe that every university teacher education program within Germany offers lectures and courses dealing with media issues that can be elected voluntarily, because teacher training curricula and teacher training examination regulations even demand dealing with media issues (cf., e.g., Kammerl & Ostermann, 2010). However, this wide range of voluntary options within teacher training is disproportionate to the range of specific degree programs and certificate programs that focus on pedagogical media competency issues explicitly. Out of 64 universities and colleges of teacher education examined in the course of the exploratory study, only 11 offer

¹The institutions were identified and classified by means of broad Internet research where several databases and the home pages of all universities and colleges in question were analyzed. Hence, it is possible that some information might be out of date. Furthermore, a small number of home pages were not accessible due to technical reasons, which is why single institutions might be omitted although relevant.

TABLE 2
Sample Teacher Education Course Listings in Pedagogical Media Competencies by Country

	Germany	United States
Teaching with media (media didactics)	<p>Educational Media</p> <p>An M.A. program that comprises three compulsory modules (learning with media, didactical design, a multimedia project) and various choices of further modules such as digital tools, virtual coaching or e-moderation).³</p>	<p>Teaching and Learning With Technologies</p> <p>An M.A. program with the following foci: “the effective integration of technologies within teaching in K–12 schools, designing instruction with technologies, the application of technologies in subject matter areas such as math and science, as well as the design and development of educational technologies in relation to learning.”⁴</p>
Teaching about media (media education)	<p>Kinder- und Jugendmedien (Children’s and Youth Media)</p> <p>An M.A. program with foci on the analysis of traditional and modern youth media, the design and reflection of media-infused communication processes, observation of and research on the meaning of media for youth, the conditions for and relationship to society and development of youths’ media competencies.⁵</p>	<p>Media Literacy</p> <p>An M.A. program where “particular emphasis is placed upon the impact and influence of media content and format on school and society, students, and citizens. Attention is also given to issues of media ownership and media audiences. Graduates of the program will be prepared to foster media literacy initiatives, projects, and curriculum development in a variety of educational settings.”⁶</p>
Media and school reform	<p>Medien- und Bildungsmanagement (Management of Media and Education)</p> <p>An M.A. program that comprises the following areas: development and consultation of organization and staff, interactive media, digital teaching and learning concepts, organizational communication via media, psychology of communication, and scientific methods.⁷</p>	<p>Educational Technology</p> <p>“The M.S. degree in Educational Technology is designed to provide appropriate professional skills to plan, operate, evaluate, and integrate specific types of instructional media and technology programs in educational institutions. Graduates are anticipated to accept leadership positions in schools or other training programs.”⁸</p>

³University of Duisburg-Essen. <http://mediendidaktik.uni-due.de/buchseite/3039>

⁴University of Nebraska–Lincoln. <http://cehs.unl.edu/tlte/programs/masters-programs/>

⁵University of Erfurt. <https://www.uni-erfurt.de/studium/studienangebot/master/kjmedien/>

⁶Appalachian State University. <http://mediastudies.appstate.edu/graduate/media-literacy>

⁷Pädagogische Hochschule Weingarten. <http://www.md-phw.de/site/117.html>

⁸Indiana State University <http://coe.indstate.edu/cimt/mscimt.htm>

such programs as “Educational Media”² or “E-Learning and Media Education.”³ In total, 12 respective study programs were identified, all of which lead to an M.A. degree. These programs cover all aspects of pedagogical media competencies, namely media didactics (92% of all study

²M.A. degree program at the Universität Duisburg-Essen. Cf. <http://mediendidaktik.uni-due.de/buchseite/3069>

³M.A. degree program at the Pädagogische Hochschule Heidelberg. Cf. <http://www.ph-heidelberg.de/elmeb21/>

programs), media-related school reform (33% of all study programs) and media education (25% of all study programs). They mainly address teachers, educational leaders, out-of-school educators, employees who produce and work with educational media, and other interested students. These are specialist programs: if in-service teachers select one of these master's programs, it will usually be their second master's degree because an M.Ed. degree is the regular first educational achievement for teachers in Germany.

Some teachers choose to obtain certificates or extended studies as another less complex way to study media pedagogy. These may be achieved during or after the regular preservice teacher education at 11 German universities or colleges of teacher education, which comprise approximately 17% of all eligible institutions. The costs of these certificates and extended studies in terms of money and time vary, but they all share the declared aim of providing teachers with the pedagogical media competencies they need in order to integrate media into their lessons successfully.

United States

While German teachers end their studies with a master of education degree (formerly: *Staatsexamen*), teachers in the United States need to earn a bachelor's degree and a teaching certificate. Most American teachers enter the profession after the completion of an undergraduate degree in education and few states require teachers to possess an M.A. degree. During their teacher preparation programs, preservice teachers often have very few elective courses, because states control the curriculum of teacher training programs. However, courses that emphasize teaching with and about media are available in teacher training programs and at universities in the United States because the necessity of integrating media and technology education into the curriculum has been realized and is met by an increasing number of course offerings (Stobaugh & Tassell, 2011).

We found that pedagogical media competencies can be acquired in more than 180 master's programs that offer specializations in all areas of media education at 163 universities, which account for 52% of all American universities in the study. Coursework may lead to an M.Ed. (45%), M.Sc. (30%), or M.A. (25%) degree, and topics cover a wide range of media and technology issues, themes, concepts, and practices. The most common program of study focuses on educational or instructional technology (58% of all study programs). The term *educational technology* is used quite widely to refer to a variety of different themes related to media didactics or media-related school reform with an emphasis on teaching *with* media, because these study programs may concentrate on topics such as learning to select, evaluate, and use media texts and technology tools in the classroom; learning to program or produce educational media; or designing online learning environments to support face-to-face or blended online learning. Other programs of study comprise programs focusing on the design and production of educational media explicitly (12% of all study programs) and programs preparing specialists for the integration of media into schools with focus on school reform, management, and administration (12%) or services provided in school library media programs (11%). Although all aspects of pedagogical media competencies as defined above are covered, the focus on teaching with media clearly dominates. The pedagogical uses of media seem to be the predominant aspects (76% of all study programs), followed by media-related school reform (23% of all study programs). Courses in media

education, with emphasis on the instructional practices associated with the critical evaluation of media, culture, and society, were scarce, representing only 2% of all study programs in teacher training programs.

Some U.S. master's programs include an initial teacher certification. Hence, it is possible to become a teacher and study media pedagogy at the same time in the United States. Besides these programs, many universities also offer certificate programs that extend preservice and in-service teachers' knowledge of additional media-related aspects.

THE STATUS OF MEDIA PEDAGOGY IN GERMANY AND THE UNITED STATES

As we have described, the educational systems in Germany and the United States have significant differences in terms of their content structure and focus (cf. Blömeke & Paine, 2008). Both countries also use different approaches to provide teachers with practical experience in the field; for example, the second post-university phase of teacher education in Germany only roughly corresponds to the extended internships during studies in the United States. Yet, as we have shown, when media pedagogical training in Germany and the United States are compared, it becomes evident that the differences are not as striking as one might expect. For teachers in Germany and the United States, there are basically three ways to acquire media pedagogical competencies: (a) optional and elective courses during basic teacher training, (b) additional certificates and extended studies for preservice and in-service teachers, and (c) graduate studies focusing on one or more aspects of media pedagogy.

Naturally, systemic differences between the educational systems in Germany and the United States also bring about differences in media pedagogy. One of these is the important role of school libraries, which are a common feature of American elementary and secondary schools but not part of the German educational system; hence, the specialist training provided to school library media specialists is specific to the United States context. Graduates from this field of study are usually prepared to become library media specialists, and their scope of responsibilities is specifically designed to support teachers and advance the effective organization of the media texts, tools, and technologies within their schools. The same is true for graduates in the field of media-related educational leadership because they, too, become specialists for school reform processes. In total, 23% of all U.S. study programs focus on school reform. In Germany, this is true for 33% of all study programs. Both countries have in common that most of the respective study programs deal with issues of media didactics or teaching with media and technology (92% in Germany and 76% in the United States), although it should be noted that the study programs at state universities in the United States clearly offer a broader range of specializations. In both cases, media education is addressed least, that is, by 25% of all German programs and by 2% of the U.S. study programs⁴. Hence, with regard to the aforementioned model of pedagogical media competencies, the conclusion seems likely that in both countries the aforementioned study programs do not equally represent the three areas of pedagogical media competencies. As we

⁴When comparing these figures, it should be considered that the total of German study programs in the study is significantly smaller than its U.S. equivalent (12 vs. 208).

have shown, media didactics tends to be emphasized to the disadvantage of media education in both countries.

Despite these shared characteristics, a striking difference between the two countries can be observed when considering the integration of media pedagogy into the educational system. In the United States, although media pedagogy study programs are not uniformly available to all future teachers, these courses are available at a majority of universities that offer teacher training. These courses are available as part of initial teacher training and as specialist postgraduate courses. All in all, the widespread variety of programs hints at the perceived importance and advancing integration of media pedagogy in the United States.

In Germany, however, the corresponding programs of study are available at only one in five of the eligible universities and colleges. Master's programs in media pedagogy are often completed alongside work and as a second degree, although it is possible to become a teacher directly without coursework in media pedagogy. Efforts to study media pedagogy and earn certificates or graduate in this field must always be made in addition to the regular teacher training. All in all, these observations lead to the conclusion that media pedagogy in Germany is less available to future teachers as compared with the United States.

However, German programs offer more systematic focus on media education than U.S. programs, which primarily emphasize media didactics and media-related school reform. The comparison of media pedagogical studies in Germany and in the United States reveals that both countries are facing similar problems and challenges. In both countries, a full and nationwide inclusion of media pedagogical content into teacher training has not taken place in either of these countries. The U.S. education community recognizes that teacher training still does not provide preservice teachers with all the competencies they will need in order to integrate technology into their classes effectively (Schieble, 2010; Tondeur et al., 2012). In Germany, the lack of binding obligations to integrate media pedagogy into regular teacher education interferes with ensuring that all future teachers acquire the necessary competencies for teaching with and about media (BMBF, 2010, pp. 13–14). Specific media pedagogical studies, which have to be completed as a second master's degree, are only offered at about 17% of all eligible institutions. These observations lead to the conclusion that learning opportunities for media pedagogy are not offered extensively.

POLICY AND RESEARCH IMPLICATIONS

Educational leaders in Germany and the United States have acknowledged the importance of pedagogical media competencies, albeit with differing emphases. In Germany, for example, the Kultusministerkonferenz (Conference of the Ministers of Education and Cultural Affairs) is responsible for national educational issues. In their 2012 paper on "Media Education in School," they elaborate on the relevance of media pedagogy, consider it a core responsibility of schools (pp. 3–4), and conclude that it has to become an obligatory part of preservice and in-service teacher education (p. 7). In the United States, the U.S. Department of Education's 2010 technology plan likewise emphasizes the challenge of leveraging technology to create relevant learning experiences that are responsive to students' lives and the realities of their futures (Hobbs, 2010). A consequent step toward the fulfillment of these claims might be the implementation of policies and regulations for teacher education to ensure basic media education for every future teacher; however, such regulations do not exist. Hence, a lot of work will be necessary for policymakers responsible in

this field. As a first step in achieving this, the field of modeling and measuring pedagogical media competencies deserves further research and development. We believe that comparative studies in an international context may support curricular innovation in teacher education by supplying additional perspectives to enhance the work of scholars and practitioners who are building a global movement in the area of media pedagogy. As the analysis of theoretical and practical situations has revealed, there is no clear consensus on the precise shape and content of pedagogical media competencies yet, even though both theory and practice share tendencies toward understanding pedagogical media competencies as an interplay of teaching with media, media education, and school reform. Formulating a universal model of pedagogical media competencies may help support the comprehensive inclusion of media pedagogical training in initial teacher education, and thus eventually help to improve media pedagogical work in schools.

AUTHOR BIOS

Jennifer Tiede is a research assistant and Ph.D. student in the Department of Educational Sciences at the University of Wuerzburg, Germany. She is currently working on a project that develops and validates measures of pedagogical media competencies of students in initial teacher education. Her research interests focus on media education from an international perspective, game-based learning, and gamification.

Silke Grafe is Professor in the Department of Educational Sciences at the University of Wuerzburg, Germany. Her research interests include media education from an international perspective, educational technology, teacher professionalization, and classroom research. She is currently developing and validating measures of pedagogical media competencies of students in initial teacher education.

Renee Hobbs is Professor in the Harrington School of Communication and Media at the University of Rhode Island, where she directs the Media Education Lab. Her current research examines teacher motivations for integrating digital tools and media literacy concepts into the school curriculum. She has developed and validated measures of media literacy competencies for adolescents.

REFERENCES

- Arke, E. T., & Primack, B. A. (2009). Quantifying media literacy: Development, reliability, and validity of a new measure. *Educational Media International*, 46(1), 53–65.
- Bentlage, U., & Hamm, I. (Eds.) (2001). *Lehrerausbildung und neue Medien. Erfahrungen und Ergebnisse eines Hochschulnetzwerks*. Gütersloh, Germany: Verlag Bertelsmann Stiftung.
- Blömeke, S. (2000). *Medienpädagogische Kompetenz. Theoretische und empirische Fundierung eines zentralen Elements der Lehrerausbildung*. München, Germany: Kopaed.
- Blömeke, S. (2005). Medienpädagogische Kompetenz. Theoretische Grundlagen und erste empirische Befunde. In A. Frey, R. S. Jäger, & U. Renold (Eds.), *Kompetenzdiagnostik—Theorien und Methoden zur Erfassung und Bewertung von beruflichen Kompetenzen* (pp. 76–97). Landau, Germany: Empirische Pädagogik (= Berufspädagogik; 5).

- Blömeke, S., Gustafsson, J.-E., & Shavelson, R. (2015). Beyond dichotomies: Competence viewed as a continuum. *Zeitschrift für Psychologie*, 223(1), 3–13.
- Blömeke, S., & Paine, L. (2008). Getting the fish out of the water: Considering benefits and problems of doing research on teacher education at an international level. *Teaching and Teacher Education*, 24(4), 2027–2037.
- BMBF (Bundesministerium für Bildung und Forschung). (Ed.). (2010). *Kompetenzen in einer digital geprägten Kultur. Medienbildung für die Persönlichkeitsentwicklung, für die gesellschaftliche Teilhabe und für die Entwicklung von Ausbildungs- und Erwerbsfähigkeit*. Bonn, Berlin, Germany.
- Bray, M., Adamson, B., & Mason, M. (2007). *Comparative education research—Approaches and methods*. Hong Kong, China: Springer.
- Frau-Meigs, D., & Torrent, J. (2009). *Mapping media education policies in the world: Visions, programmes and challenges*. New York, NY: Alliance of Civilizations, Grupo Comunicar.
- Freire, P. (1970). *Pedagogy of the oppressed*. New York, NY: Continuum.
- Grafe, S. (2011). “Media literacy” und “media (literacy) education” in den USA: Ein Brückenschlag über den Atlantik. In H. Moser, P. Grell, & H. Niesyto (Eds.), *Medienbildung und Medienkompetenz* (pp. 59–80). München, Germany: Kopaed.
- Grafe, S., & Breiter, A. (2014). Modeling and measuring pedagogical media competencies of pre-service teachers (M³K). In C. Kuhn, T. Miriam, & O. Zlatkin-Troitschanskaia (Eds.), *Current international state and future perspectives on competence assessment in higher education* (KoKoHs Working Papers 6, pp. 76–80). Mainz/Berlin, Germany: Humboldt University of Berlin, Johannes Gutenberg University Mainz.
- Gysbers, A. (2008). *Lehrer—Medien—Kompetenz. Eine empirische Untersuchung zur medienpädagogischer Kompetenz und Performanz niedersächsischer Lehrkräfte*. Berlin, Germany: Vistas.
- Hilker, F. (1962). *Vergleichende Pädagogik. Eine Einführung in ihre Geschichte, Theorie und Praxis*. München, Germany: Hueber.
- Hobbs, R. (2010). *Digital and media literacy: A plan of action (White paper on the digital and media literacy recommendations of the Knight Commission on the Information Needs of Communities in a Democracy)*. Washington, DC: The Aspen Institute.
- Hobbs, R. (2011). *Digital and media literacy. Connecting culture and classroom*. Thousand Oaks, CA: Corwin.
- Hobbs, R., & Frost, R. (2003). Measuring the acquisition of media-literacy skills. *Reading Research Quarterly*, 38(3), 330–355.
- ISTE (2008). *The ISTE NETS and Performance Indicators for Teachers (NETS•T)*. Retrieved from International Society for Technology in Education website: http://www.iste.org/docs/pdfs/20-14_ISTE_Standards-T_PDF.pdf
- Jenkins, H. (2006). *Confronting the challenges of participatory culture: Media education for the 21st century*. Cambridge, MA: MIT press.
- Kammerl, R., & Ostermann, S. (2010). *Medienbildung—(k)ein Unterrichtsfach? Eine Expertise zum Stellenwert der Medienkompetenzförderung in Schulen*. Hamburg, Germany: Medienanstalt Hamburg/Schleswig-Holstein.
- Kellner, D., & Share, J. (2005). Media literacy in the US. *Discourse: Studies in the cultural politics of education*, 26(3), 369–386.
- Kultusministerkonferenz (2012). *Medienbildung in der Schule. Beschluss der Kultusministerkonferenz vom 8.3.2012*. Kultusministerkonferenz. Retrieved from http://www.kmk.org/fileadmin/veroeffentlichungen_beschluesse/2012/2012_03_08_Medienbildung.pdf
- Mathematica Policy Research (2000). *Evaluating the technology proficiency of teacher preparation programs’ graduates: Assessment instruments and design issues. Preparing tomorrow’s teachers to use technology*. Washington, DC: U.S. Department of Education.
- Mishra, P., & Koehler, M. J. (2006). Technological pedagogical content knowledge: A framework for teacher knowledge. *Teachers College Record*, 108(6), 1017–1054.
- mpfs (Southwest Media Education Research Association). (Ed.). (2014). *JIM 2014. Jugend, Information, (Multi-) Media*. Stuttgart, Germany: mpfs.
- NAMLE (National Association for Media Literacy Education). (2008). The core principles of media literacy education. Retrieved from <http://namle.net/publications/core-principles/>
- Potter, W. J. (2008). *Media literacy* (4th ed.). Thousand Oaks, CA: Sage.
- Schieble, M. (2010). The not so digital divide: Bringing pre-service English teachers’ media literacies into practice. *Journal of Media Literacy Education*, 2(2), 102–112.

- Schmidt, D. A., Baran, E., Thompson, A. D., Mishra, P., Koehler, M. J., & Shin, T. S. (2009). Technological Pedagogical Content Knowledge (TPACK): The development and validation of an assessment instrument for preservice teachers. *Journal of Research on Technology in Education*, 42(2), 123–149.
- Shulman, L. S. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, 15(2), 4–31.
- Siller, F. (2007). *Medienpädagogische Handlungskompetenzen. Problemorientierung und Kompetenzerwerb beim Lernen mit neuen Medien*. Mainz, Germany: Johannes Gutenberg-Universität.
- Stobaugh, R. R., & Tassell, J. L. (2011). Analyzing the degree of technology use occurring in pre-service teacher education. *Educational Assessment, Evaluation and Accountability*, 23, 143–157.
- Thoman, E., & Jolls, T. (2003). *Literacy for the 21st century: An overview and orientation to media literacy education*. Retrieved from http://www.medialit.org/sites/default/files/mlk/01_MLKorientation.pdf
- Tondeur, J., van Braak, J., Sang, G., Voogt, J., Fisser, P., & Ottenbreit-Leftwich, A. T. (2012). Preparing pre-service teachers to integrate technology in education: A synthesis of qualitative evidence. *Computers & Education*, 59, 134–144.
- Tulodziecki, G. (2012). Medienpädagogische Kompetenz und Standards in der Lehrerbildung. In R. Schulz-Zander, B. Eickelmann, H. Moser, H. Niesyto, & P. Grell (Eds.), *Jahrbuch Medienpädagogik 9* (pp. 271–297). Wiesbaden, Germany: Springer VS.
- Tulodziecki, G., & Blömeke, S. (1997). Zusammenfassung: Neue Medien—neue Aufgaben für die Lehrerausbildung. In G. Tulodziecki & S. Blömeke (Eds.), *Neue Medien—neue Aufgaben für die Lehrerausbildung* (pp. 155–160). Gütersloh, Germany: Verlag Bertelsmann Stiftung.
- Tulodziecki, G., Herzig, B., & Grafe, S. (2010). *Medienbildung in Schule und Unterricht. Grundlagen und Beispiele*. Bad Heilbrunn, Germany: Julius Klinkhardt.
- Weinert, F. E. (2001). Vergleichende Leistungsmessung in Schulen—Eine umstrittene Selbstverständlichkeit. In Franz E. Weinert (Ed.), *Leistungsmessungen in Schulen* (pp. 17–32). Weinheim, Germany: Beltz.