

# Social Software as a Tool for Informal Learning

Nina Kahnwald

## *Summary*

This paper offers an overview of empirical findings, concepts and definitions of informal learning. Initially, diverse dimensions and contested fields of informal learning will be interrogated. In the second section, the meaning of informal learning in the context of Web 2.0 and social software will be portrayed. Finally, the concept of personal learning environments will be examined in terms of contradictions and inaccuracies in relationship to the afore interrogated basic concepts of informal learning.

## Introduction

Informal learning is often referred to in connection to ICT, Web 2.0 and Social Software. However, rarely is the concept of informal learning deliberated within the context of use. The following contribution attempts to uncover essential dimensions and areas of conflict of informal learning, thereby offering an analysis of contemporary discussions surrounding Social Software and Personal Learning Environments.

## Informal Learning

Generally, informal learning is defined as unregulated learning within the context of daily life, beyond the formal context of a school, university or training courses. Experts estimate that these “basic forms of human learning” (Dohmen 2001) [translated by the author], account for 70 - 90% of all learning by adults, while structured studying in educational institutions accordingly accounts for 30% at most. These estimates are supported by many international studies: first empirical data was delivered by the U.S. National Survey on Voluntary Learning (Johnston & Rivera 1965). To the great surprise of the authors, who considered informal learning to be of a residual amount, the survey revealed that 40% of the respondents had learned at least once self-directed and outside of educational institutions. These findings attracted attention to informal learning as a relevant parameter and consecutive surveys routinely produced higher results for informal learning. In 1977, the OECD concluded that self-directed learning (the conscious part of informal learning) accounts for “approximately two thirds of the total learning efforts of adults” (OECD, 1977, p. 20). In the first Canadian study on (conscious) informal learning, Livingstone (2000) finds that 95% of all adult Canadians study informally and for an average of 15 hours per week. Moreover, the survey confirmed informal learning as relevant to many areas of life (e.g. work, volunteering, household, hobbies/areas of personal interest).

In job-related education, the “Berichtssystem Weiterbildung VII” (reporting system for advanced vocational training VII) (BMBF 1999, p. 56) [translated by the author] found that almost three of four employees study informally to increase professional knowledge. Allen Tough rounds up with a slightly higher percentage (Tough, 1978, pp. 250-263). Staudt and Kriegesmann conclude from a poll that only 20% of all educational processes are covered by advanced vocational training

(Staudt & Kriegesmann, 2002, p. 57). Analogically, Sam Campell discovered in the Honeywell-Studies that 80% of all learning by managers results from professional experience and personal exchange with colleagues and employees (Zemke 1985).

One of the most recent German studies about informal learning, conducted in small- and medium-size companies in the IT sector, was presented by Dehnbostel et al (1999). In its quantitative section 110 companies were polled, the qualitative section offers a detailed description of on-site informal learning processes within the companies. Considering all learning activities, the focal point were communication processes such as continuous exchange about work tasks or professional challenges among colleagues. Deliberation resulting from this exchange between co-workers is at the focus of these learning strategies. In this context, the internet bears great importance. Subordinate to face-to-face communication, knowledge sources such as online chats and message boards are consulted.

Most notable in the review and comparison of existing studies on informal learning reveals a plethora of considerably diverging definitions and terminologies. This diversity of perspectives is symptomatic for an examination of a multilayered phenomenon such as informal learning.

### **Definitions and Discussions**

The category of informal learning originated from the stock of terminology by John Dewey. Later, derived from "Informal Adult Education" by Knowles (1950), it was adopted by American adult education. While there exists neither a distinct nor a unifying definition of informal learning in international discourse, intersections and areas of conflict may be determined across disciplines and countries.

As mentioned before, informal learning is often defined by its form of organization and place of study, as learning outside of official educational institutions, lacking any certification (cf. Straka 2000). For its own discourse on education within the European Union, the European Commission has agreed on the following definition (European Commission 2001):

#### **Formal Learning**

Learning or studying, usually happening in an educational or vocational context, which is organized and structured (in regard to goals of learning, time slots assigned to learning or learning support) and leads to a degree or certificate. For the student, formal learning is goal oriented.

#### **Non-formal learning**

Learning or studying, occurring in an institutional context (e.g. an educational or vocational institution), which does not result in formally recognized grades, degrees or certificates. Nevertheless, non-formal learning is methodic (in regard to goals of learning, duration of learning and learning instruments). For the student, non-formal learning is goal oriented.

#### **Informal Learning**

Learning or studying, happening in daily life, at work, within family life or on leisure time, which is not structured or organized (in regard to goals of learning, time slots assigned to learning or learning support) and usually does not lead to any kind of

certificate. Informal learning may be goal oriented but in most cases happens unintentionally, coincidentally or at random.

In summary, the difference between formal/non-formal and informal learning may be specified accordingly: “On the one hand, informal learning means by-product learning, occurring along the way, considered neither the aim nor the effect of any action. On the other hand, the term encompasses all learning activities outside organized forms of education, undertaken with the deliberate goal of learning but facilitated in informal settings. These processes of learning – unlike formal or non-formal learning – are arranged not by any kind of institution but by the individual learner.” (BMBF, 2004, p.146).

Given the fluidity in the definition of these terms, other authors advocate for the intersection of informal and formal studying as a continuum. (Sommerlad & Stern 1999)

Frequently, informal learning is part of organizational, professional or occupational contexts and serves to cope with tasks, requirements or facilitates in problem solving. In other words: “Informal learning is instrumental learning, a means to an end. Unlike formal learning, its goal is not information itself, but improving one’s solution to an extracurricular task, a given requirement, or a problem of life by learning.” (Dohmen, 2001, p.19)

There exist different views as to what extent informal learning is categorically not focused on educational objectives and results. In contrast to the definition above, Dehnbostel and Uhe demarcate formal and informal learning distinctively – the latter focusing on practical objectives and purposes, not learning options. (Dehnbostel & Uhe, 1999, p.3).

Further, the question of informal learning including subconscious routes to knowledge and subsequently, whether and how it may be delineated from generic cycles of socialization yields substantially divergent answers. Livingstone, for example, bases his studies on informal learning in Canada on an interpretation of the term closely aligned with self-directed learning and delineates everyday perception and common socialization by relating informal learning to a deliberate act of acquiring important knowledge. (cf. Livingstone, 1999, p.68 et sqq.)

An early and influential study on the subject in the context of work by Marsick and Watkins (2001) includes the attempt to develop a “Theory of Informal and Incidental Learning in Organizations”. The authors understand informal learning as umbrella term, including any conscious, deliberate, as well as subconscious and random learning efforts outside academic settings. They outline their term consequently:

- “Reflection without action”, theory-based studying without action is a feature of formal study.
- Generally, informal learning means contemplated studying efforts outside academic settings (“action with reflection”)
- Unintended learning in a non-academic setting is a special kind of informal learning (“action without reflection”)
- When an “absence of action and reflection” may be attested, “non-learning” is the result. That is to say: a behavioural change without a personal effort of studying may be rather attributed to indirect effects of socialization than to learning (Watkins&Marsick, 1992, p. 290).

This fragile margin between informal learning and socialization remains at the core of much debate in American discourse (cf. Dohmen, 2001, p.20). Several characteristics for defining informal learning are the learners' willingness to change (Tough 1982), the learner mastering requirements beyond customary performance (Mezirow 1991) and accordingly, the learners gain in experience facing new conditions (Lindemann 1961). Dohmen argues for emerging mutual consent when delineating informal learning from conventional socialization,

“...experiencing surroundings (consciously or subconsciously) so that an increase in knowledge (secret or explicit) may change mannerisms. In bounds with an expanded definition of learning, this modification of knowledge or behaviour may happen pragmatic-oblivious and without following a conscious pattern of interpretation.” (Dohmen, 2001, p.21), [translated by the author].

Schulze (1993) argues for a phenomenologic definition of learning, expanding it from being the mere reaction to a curriculum to including informal processes of learning through everyday performance:

“Learning means a living creature, particularly a human being, is enabled to handle a situation that has been too difficult or non-existent in the past. In short: Learning means to handle a situation anew” (Schulze, 1993, p.252)

This broad definition of learning highlights the potential of tackling the subject of informal learning from a different perspective. Prior remarks beg the question to what extent the separation of formal and informal learning may be preserved when all knowledge is conveyed and mediated in a social context. Do classrooms really stage “reflection without action”, like Watkins and Marsick argue? Is the aim of formal learning really only learning itself? Do we need to take into account individual incentives and stimulation when trying to understand problem solving or situational coping when learning in institutional settings? Lave, a sociologist, argues in her ethnographic field studies conducted among West African tailors that regardless of their academic background, their everyday math (considered the prototype of formalized, decontextualized knowledge) is closely tied to their social environment. Deriving a reverse thesis from this, she argues for a de-contextualized academic knowledge as also being situated in a context and social environment:

„It was not just the informal side of life that was composed of intricately context-embedded and situated activity: there is nothing else. And further, if there is no other kind of activity except situated activity, then there is no kind of learning that can be distinguished theoretically by its “de-contextualization”, as rhetoric pertaining to schooling and school practices so often insists.” (Lave, 1996, p.126)

According to this rationale, the difference between formal and informal depends more on the given perspective than its organizational or situational structure. Discourse on institutional learning furthermore implicitly originates from the instructional point of view, effectively removing the question of learning itself, Lave continues:

„From the point of view of the dualist formal/informal model [...] culture becomes shared via cultural transmission. It is the transmitter's point of view that is implicitly privileged. By contrast, one central point of the apprenticeship research is that learning is the more basic concept, and that teaching (transmission) is something else. Teaching certainly is an object for analytical inquiry, but not an explanation for learning. Indeed whole

apparatuses of explanation for learning are cultural artefacts about teaching and they are in need of explanation.” (Lave, 1996, p.125f.)

Following Lave in considering the difference between formal and informal learning as a mere change in perspectives and supposing that each learning activity is embedded in social custom, the relationship between learning and action needs to be questioned anew. Lave emphasises that not all social practice may be defined as learning. She labels learning processes as „trajectories of participation“, devising and enabling personal transformation:

„It singles out certain kinds of participation: the notion of movement in a direction, of the possibilities for going deeper, becoming more of something, doing things differently in ways that gradually change the ways you are objectively, the way you are understood by others, and the terms in which you understand yourself to be a socially located social subject.” (Lave 1996, p.131)

Intersections to the discourse on experiential learning and situated learning now become apparent. Anthropological studies of “Situated Learning. Legitimate peripheral participation” by Lave and Wenger (1991), lead the authors to describe the latter as *legitimate peripheral participation* within a community of practice. They see learning as an integral and inseparable facet of social practice (Lave&Wenger, 1991, p.31). Initially, a newcomer partaking in legitimate peripheral participation remains at the margins of the community. Not carrying the responsibility of a member, he shares only some duties (periphery) while being granted access to shared practice (legitimacy). Gradually, the novice becomes an old timer with full member status – a gradual process of enculturation. Thus, legitimate peripheral participation describes the relationship of novices and experienced members of any group and the process of growing into a community. While this notion has been developed to depict off-line developments, it is oftentimes drawn upon when analyzing virtual communities and the utilization of social software.

The above portrayal exposes the current lack of a common definition of the term informal learning. Nonetheless, we may derive a few parameters of informal learning with which to depict and analyse various styles of learning activities. The following pair of concepts are not posed in opposition to one another, but serve to locate different forms of learning conduct within a continuum and, thereby, allow a detailed description void of conceptual confinement or exclusion.

#### **Dimensions of informal learning**

conscious – subconscious

structured – unstructured

directed – self-directed

intentional (towards learning objectives) – unintentional  
(towards pragmatic goals)

One more or less explicitly examined issue in discussions about informal learning is the question of how and whether to support, encourage and certify informal learning.

## Certification and Support

For the Bundesministerium für Bildung und Forschung (BMBF; the German federal ministry of education and research), Dohmen compiled an overview on international efforts to expound the subject of informal learning (Dohmen 2001). He explained the Swedish idea to create individual learners accounts to support competency development (65) or the Finnish program “Know-how and Competence in Liberal Adult Education” (KCLAE), supported by the Finnish federal ministry of education, geared towards further training through “community learning” in adult education (68). His findings led the BMBF in 2004 to publish a study on the feasibility of introducing further education documentation certifying informal learning activities, to raise the German public acceptance of informal learning (BMBF 2004).

Similarly, since the mid-90’s the European Commission has been supporting key competency training through informal learning and is working toward developing a certification scheme to certify expertise gained through informal learning (cf. Overwien, 2004, p. 51).

In the view of Marsick and Watkins, the success of informal learning is essentially tied to the motivation and support for the learner by his environment. The authors aim at fortifying the learner’s ability to reflect and encourage the creation of a learner’s environment conducive to creative problem solving (Marsick&Watkins, 1992, p.298).

Further, critical perspectives exist in the Anglo-American discourse on occupational informal learning. Welton warns of a “Colonisation of the Lifeworld” as informal learning is applied to economy since informal learning is also vibrant outside the workplace (Welton 1995). Garrick criticizes that in human resource development, knowledge is primarily valued when producing economic outcome and is purely defined through people’s status as human capital, while other important education issues are ignored (Garrick, 1998, p.125). He perceives informal learning, based on situated ethics of human dignity and personal responsibility, as a self-determined, engaged and reflected activity, processing personal experience – in opposition for example to any corporate use of informal learning. On a marginal note: Garrick’s point is not new. Around 1800, the use and benefit approach to education, promoted by philanthropists of the Age of Enlightenment, was criticized by New Humanist Wilhelm von Humboldt who defied the notion of direct purpose and economic benefit and countered with the project of general human education, (cf. Krüger 1996).

As mentioned in the introduction to their study referred to above, Marsick and Watkins admit that they adhere to superior objectives of raising efficiency and conserving competitive capability. Dwarfed by these goals are education and employee development:

“Organizations today are seeking new ways to understand and deliver learning outside the classroom. [...] The reasons for this trend are many, but it is in large part fuelled by radical changes in the global market-place that have pushed many organizations to work, organize, think and learn in very different ways. [...] Businesses that cannot respond quickly to customer needs and often find their markets overtaken by 'foreign' companies. The threat to the bottom line has forced businesses into re-evaluating timehonoured ways of working. [...] Businesses have turned to their human resources to help them survive and flourish. A key component of a new way of working with employees is continuous learning for continuous improvement [...]” (Watkins&Marsick, 1992, p. 287)

This quote exemplifies the area of conflict of approaches to encourage informal learning. They oftentimes run the risk of formalizing and organizing such non-formal modes of studying, as Jensen contemplates:

“The most challenging question might be if it is possible or preferable at all to formalise the non-formal without losing the potential of the non-formal in itself. Non-formal learning does not necessarily contrast formal learning, but still non-formal learning has its main characteristics as something taken place alongside and opposing the formal, which gives it strength. If non-formal learning is put into schemes and curricula, then it is endangered of just becoming formal, with "no chance of escape". If the "non-formal" becomes "formal" it might turn into a new set of overwhelming demands socially and on the individual, feeling forced to comply.” (Jensen 2005)

## Informal Learning through Social Software

In the last few years, the use and perception of the World Wide Web changed dramatically. To define this technical, organizational and cultural transformation, somewhat vague terms like social software and Web 2.0 have been accepted. The developments described with these terms are increasingly discussed in the context of informal learning.

### Web2.0 and Social Software

The term Web 2.0, coined in the fall of 2004 following a series of conferences, defines technically speaking a combination of technologies developed at the end of the 90s. These have become readily available only in the last couple of years through broadband internet access and new applications. Typical technologies are:

- Subscription services like RSS, automatically syndicating the content of various web pages
- platforms, applications and services that enable all users to create, connect and separate content in the web (e.g. social networking sites, blogs, wikis)

Even though it is fairly easy to denounce the term Web 2.0 as vague buzzword and an empty cliché, “...the public’s strong acceptance (...) shows that the term stands for a change that web users really feel. There is motion that is only roughly outlined by the expression Web 2.0 but nevertheless reveals significant transformation.” (Kerres 2006a, translation by the author) While these web transformations are based on technological developments, internet users, the “digital natives” (Prensky 2006) make the real change happen as they develop new approaches to online learning, working and gaming. Kerres argues that the changes associated with Web 2.0 are the result from the displacement of three boundaries (Kerres 2006b):

1. user vs author: web users create content, for example with commentary or revision, thereby becoming authors themselves.
2. local vs remote: personal data is not only saved on personal hard drives but on the distant server side (e.g. flickr).
3. private vs public: saving personal data online exposes personal information to online forums or web communities

Web 2.0 applications are based on participation, content creation by users and content personalisation. Therefore, web 2.0 applications supporting networking are commonly referred to as social software. The term was established in 2002 in connection to wikis and weblogs but is also used for much older services like listservs and internet forums. These applications all assist in creating and managing social networks and so-called virtual communities and are self-organized, “bottom up” tools. Weblogs, wikis, social networking sites (e.g. [www.xing.com](http://www.xing.com)), file-sharing sites (e.g. [www.youtube.com](http://www.youtube.com)), social bookmarking sites (e.g. <http://del.icio.us>), tools to aggregate information (feedreader, e.g. [www.bloglines.com](http://www.bloglines.com)), internet forums, chats and mailing lists are the most prominent examples of social software. Baumgartner limits the scope when arguing for “locating and establishing social contact based on similar interests” as “core – and defining - feature of social software” (Baumgartner 2006). Baumgartner attests a social software cycle: “First, people meet while doing something (e.g. file internet addresses, uploading pictures to a server) and then get to know – in action – people with similar interests” (Baumgartner 2006, translation by author). This social software definition omits mailing programs, wikis, weblogs or online forums as these tools are used for cooperation and communication and not primarily for finding like-minded peers. Engaging these tools, users research specific issues and through this method meet people sharing similar concerns.

Baumgartner correctly attests an exceedingly broad framework of the term social software when used for computer applications remotely assisting interaction, networking and collaboration. He legitimately questions the prevailing novelty of social software. For the following considerations, rather than using Baumgartner’s restrictive use of the expression, it will be applied in analogy to Web 2.0, compliant to the popular sense of social software as an umbrella term for applications that enable and foster self-directed networking, interaction and cooperation.

### **Fostering Informal Learning with Social Software**

Increasingly, wikis and blogs are integrated in learning management systems and IT infrastructures of universities, schools and businesses. They are used for education and learning processes aiming to initiate self-directed collaborative learning experiences (Bremer 2006; Wageneder&Jadin 2006).

As a model, a text by Bartlett-Bragg will be examined highlighting practices of fostering informal learning with social software. In the introduction, the author states the goal of her work as the “attempt to stimulate the capture of tacit knowledge [...] by the integration of emerging social software technologies into our teaching practices” (Bartlett-Bragg, 2006, p.2). This focus immediately calls into question the purpose of her work exposed in its title, “Reframing practice to foster informal learning with social software.” The author deals with structuring and fostering leaning experiences in order to document (and simultaneously raise awareness) about implicit knowledge being embedded in formal learning environments. Mindful of the dimensions of informal learning and their integration in formal settings as extracted above, the work appears to deal more with formal than informal learning, even though certification is not yet mentioned.

With this table, the author attempts to structure technological developments and applications according to their potential for informal learning:

<b>Informal learning activity</b>	<b>Associated technologies</b>
Networking	Collaborative spaces –
Communities of Practice	typically asynchronous discussion forums,
Mentoring	synchronous chat or instant messaging, email
Coaching	
Learning from experts or advisors	
Searching for solutions to problems	Internet (Google); Intranet; email an expert
Information distribution	Syndication software/RSS; Intranet; email / listservs
Self-analysis or reflection	Online journals, weblogs

According to Bartlett-Bragg, 2006, p.3

A closer look at this table exposes an area of operation tailored to creating web content. Accessing web content and information by others tends to be viewed as less of a learning activity. Others consider practices of so-called „lurking,“ for instance, in blogs and internet forums as very important (cf. e.g. White 2007). In line with these observations and in light of the vast area of operation, the alignment of technological applications with learning activities seems to be conducted at random. Listservs are oftentimes used for learning from experts or for support by interest groups, while internet forums are popular grounds to look for solutions to a problem. These renditions are not to be mistaken for another attempt to categorize technological appliances and services according to their potential for informal learning. If invested in this effort, the dimensions of informal learning emphasised above could be helpful to account for and respect the variety of settings for learning.

To avoid any perspective distortion, it is crucial to the discussion on personal learning environments (PLEs) and social software not to solely focus on active online participation and web content creation. This restrictive perspective is exemplified by teacher’s frustrations, as they continue to view active participation in learning environments as the primary indicator of a student’s learning. Bartlett-Bragg observes that social software as fostering personal learning is assessed poorly by instructors that “struggled with learner participation, getting learners to engage in the social software environment” (Bartlett-Bragg, 2006, p.5). Akin to many discussions on informal learning in formal settings, at stake is no longer informal learning but using social software in formal education.

### **E-learning 2.0 and Personal Learning Environments**

Central to the contemporary discussions on informal learning with social software is the term E-Learning 2.0 by Stephen Downes and the concept of Personal Learning Environments (PLEs).

In his essay, "E-learning 2.0," Stephen Downes, senior researcher with the National Research Council of Canada, appears convinced that online learning is evolving with the World Wide Web. Concurrently, new analytical concepts and models are required (Downes 2005). Downes chooses the name "E-learning 2.0" to accommodate equivalent developments and approaches in this area.

While „E-Learning 1.0“ took place within learning management system (LMS) delivered through structured, linear online courses, Downes envisions the e-learning application of the future as an open learning environment with a collection of interoperating social software applications (e.g. blogs, RSS readers, email) representing nodes in a web of content and users. In this environment, students are "supported by contextual collaboration with people and systems" (Downes 2005) unlike within a learning management system with its standard courses.

The notion of personal learning environments (PLEs), including the role of social software and other internet applications in creating a learning environment as described by Downes, has in recent years been at the core of much debate, also by human resource managers and media educators. This approach was first developed in an unpublished conference paper by staff of the Center for Educational Technology and Interoperability Standards (CETIS). Following the "Personal Learning Environments Reference Model Project" (2005-2006), CETIS was commissioned by the Joint Information Systems Committee (JISC) to investigate the concept of PLE by creating a reference model and prototypical software.

First, patterns of behaviour were identified, linking user behaviour with the (Web 2.0) technologies they used, to determine the essential features that then helped to construct the prototypes (CETIS 2007). In this context, PLEs are viewed as an "environment of interoperable services which may be accessed and organised through a variety of toolkits, where both tools and services may be selected by the learner without prejudice" (CETIS 2007).

The approach to the investigation reveals PLEs as a concept based on the one hand on an existing personal information environment and informal practices of media-savvy web users and eager online students and on the other hand envisions the development of interoperable platforms to integrate and foster such practices. Thus, Attwell's notion of PLEs as a concept rather than a toolkit or a platform finds only limited consent when understanding the development of technological infrastructure as a significant facet of the concept.

The question of whether and how to integrate PLEs in formal settings, specifically in existing learning platforms and learning environments, remains controversially debated. Downes suggests a replacement of conventional learning platforms by PLEs, while Attwell feels that PLEs offer the possibility and supply of learning technologies outside formal settings that help informal learning to be individually organized (Attwell 2007). Kerres argues for integrating tools into existing learning environments by aggregating and importing content (e.g. with RSS readers) in such environments: "A Personal Learning Environment should not be mistaken for an alternative or an addition to conventional learning platforms. The portal for learning, already mentioned, may contain these functions for individual students and student groups." (Kerres 2006a, translation by the author). Fiedler emphasizes that the integration of social software tools in existing infrastructure depends on supplying open gateways, not by copying applications in terms of innate and integrated functions that would not allow for the flexible integration of informal and externally used tools. The latter attempts to enable students to choose between formal and informal environments without being forced to continuously adapt to new instruments and services (Fiedler 2006).

## Conclusion and Outlook

The area of conflict exemplified by Garrick's comments, characterized on the one hand by issues surrounding the activation, support and certification of informal learning and on the other hand the preservation of its informal, self-directed and self-determined qualities are manifestations of a basic conflict easily conferrable on learning with social software.

Similar to discussions about informal learning, in the context of social software a trend of unreflected, pedagogical restrictions on the topic prevails (cf. Schulz 1993). The focus on scenarios of support and the integration in formal educational structures distracts from random and unstructured qualities of the subconscious as features of many informal learning activities.

Of great help in this context would be a critical examination of the perspectives and goals through which the conscious and subconscious expectations, as well as the central areas of debate around informal learning are articulated and expounded by the prominent theorists in the field.

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**About the Author:**

Nina Kahnwald completed her master studies in German Studies, Theater Science and Educational Sciences at the Freie University in Berlin. From 2002 until 2004, she was active as project leader and online editor for the e-learning service provider Digital Spirit GmbH in Berlin. From 2003 until 2004 she worked as an academic assistant at the University of Potsdam and since 2004 at the Technical University in Dresden (Professur für Bildungstechnologie und Media Center) where she is concentrating her work and research on virtual communities, e-learning, and online research.

Published books: *Netzkunst als Medienkritik* (kopaed, 2006) and *Mediennutzung im digitalen Leben*. (mit L.Seidenfaden and C. Kaspar, Businessvillage, 2005).

Contact: [nina.kahnwald@tu-dresden.de](mailto:nina.kahnwald@tu-dresden.de)