

USE OF ONLINE LEARNING FOR CONTINUING PROFESSIONAL EDUCATION AND DEVELOPMENT BY GERMAN AUDIT COMPANIES

This paper presents results of an empirical research project on the status of Online Learning from the Perspective of German Audit Companies (Big4 and Next10). The theoretical basis links elements of knowledge management and professional service firms (cf. Kühnel, 2002; Farkas – Kühnel, 2016). Results are based on interviews performed by the authors and representatives of the firms. Conclusions on the future structure of Continuing Professional Education or Development initiatives may be drawn from the study.

Keywords: professional service firms, auditing, knowledge management, continuing professional education, continuing professional development

The business environment for audit companies can be characterized by technological advancements, complex expectations and demands formulated by the public, the profession and by clients (cf. Abbott, 1988; Freidson, 1994, 2001; Westermann–Bedard–Earley, 2015). These conditions have an implication for the design and implementation of continuing professional education and development. Technological advancements (e.g. digital technologies) and methods of distributed knowledge sharing¹ offer new ways of addressing the needs of audit companies.² We have encountered a significant interest in virtual forms of communication in practice.

The objective of this paper is to identify the use of Online Learning³ in the context of continuing professional education and development initiatives as well as implications for future activities. Our focus is on audit companies operating in Germany. Typically, audit companies use a globally standardized audit methodology which is then adapted to local regulatory requirements.⁴

Methodology is based on semi-structured interviews with representatives of different audit companies (two Big4 and two Next10 firms). This article contributes to the existing literature by giving an empirically founded overview of this field of application to this very current topic.

Continuing Professional Education vs. Continuing Professional Development

We will use the two concepts of *Continuing Professional Education (CPE)* and *Continuing Professional Development (CPD)* with a specific meaning. As audit is a regulated industry that is governed by public oversight⁵ and a public authority⁶ that controls the profession, CPE will be used in the context of staff acquiring knowledge and skills prior to admission to the profession. The reason for this approach is that there is a defined body of knowledge and skills that staff should acquire, typically during the first three years of practice. Professionals on the other hand have a greater discretion⁷ in structuring their initiatives so that they may represent a different target audience. We will refer to Continuing Professional Development

(CPD) in this regard.⁸ Offers for professionals vary in scope and length.

Company-specific initiatives as the starting point

The audit companies covered in this study are two *Big4-Companies* and two firms that are members in *international networks* of audit companies. As both authors have been working in the industry for a couple of years, we assume that there are benefits to be gained from an international coordination of learning efforts. In the end, *experience in the field of expertise* is the basis for working in the profession.⁹ This line of thought leads us to consider company-specific approaches at the heart of the study.

Types of Online Learning

In this paper, Online Learning shall be distinguished in four alternative types: (i) *Virtual Classrooms* transfer the concept of traditional lectures into the virtual world, i.e. there is a lecturer or moderator taking charge of the event. Typically, a virtual classroom session is performed live (i.e. synchronous with participants' interaction) and recorded for later retrieval. (ii) *Web-Based Trainings* describe measures that are asynchronous, i.e. participants can choose the time and location of their trainings based on their needs. (iii) *Blended Learning* is a combination of traditional classroom lectures and online learning, the latter mostly in the form of Web-Based Trainings.¹⁰ (iv) *Micro Learning* is concerned with small pieces of information that is aligned with the respective company's audit approach. For example, when performing audit procedures on Revenues and Accounts Receivables, Micro Learning will show how to do that. Typically, a reference to professional standards and a short video that highlights important aspects are part of it. An alternative description of Micro Learning for our purposes is *Learning on Demand*.¹¹ The timing and the environment for the learning situation are selected by the learners themselves. While other approaches to learning may focus on today's knowledge and

skills that will be applied to a problem or specific situation in the future, Learning on Demand is about the acquisition of knowledge and skills when it is relevant for solving a specific task. (v) *Other forms* of Online Learning can be game-based approaches¹², simulations¹³ or similar tools.

Research Question

The four categories described in the previous section have been used to capture the *status quo* in the respective audit companies. We also asked for *expected changes* in the future. This serves to (i) to identify planned steps in this direction but also (ii) to discuss expectations independent of current plans for implementation.

Influences on contents and process of online learning programs

The *content* of Online Learning is determined by *professional standards*, needs of the *companies* as well as *individual preferences* of the participants. To identify how the content is shaped by the respective influences, we asked to rate the influences. Furthermore, we hypothesized whether professional standards play a specific role in this context and whether multiple professional standards – e.g. on a *multinational client engagement* that is subject to regulatory influences from different countries – pose a specific problem.

Measurement of learning outcomes and related influences

As international professional standards allow for *output-based* as well as *input-based measurement* of learning outcomes, we inquired the current practice in this regard. It should be mentioned, that German audit standards currently favor input-based measures.¹⁴

Factors of influence on the conceptualization of Online Learning initiatives are identified. This relates to the specific forms mentioned previously, but also to general aspects of the learning process of participants. In addition, there is a specific topic related to off-the-job trainings versus current client engagements. We asked for methods to allow junior staff (prior to the completion of the professional exam) to focus on the contents of the learning initiatives and while serving urgent client matters. We also used the opportunity to identify general aspects of learning behavior of participants. They shall be revisited in a different research project in the future.

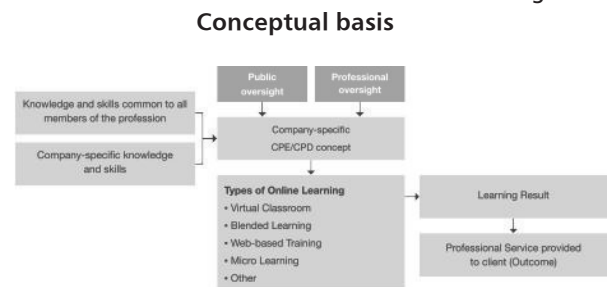
Overview of the conceptual basis

To summarize our thoughts presented in the previous section, we now present a *graphical representation* of the major conceptual building blocks that serve as the basis for this paper. (see *Figure 1*.)

A significant difference to other knowledge-intensive firms (*Alvesson, 1995*) is that the profession as well as public oversight represent *constraining influences* on the design and actual functioning of a CPE/CPD concept.¹⁵ Online Learning currently only represents one aspect of CPE/CPD initiatives, so it cannot be properly understood

without considering the elements. As audit is based on *expert-knowledge* – whether on the application of a specific methodology or industry specifics – the “acid test” for the effectiveness of the learning initiatives will be learning outcomes that are put to the test in the respective client engagements.¹⁶ We assume that clients are typically knowledgeable about accounting regulations and their business as well, i.e. they are able to at least partially evaluate the quality of the performance of an audit.

Figure 1.



Source: own construction

Methodology

This is an exploratory study that uses a qualitative design and focuses on German audit companies. Results of this study shall be used in future research projects.¹⁷ Data has been collected using semi-structured interviews.¹⁸ This allows to combine set questions with additional inquiries to make use of the interviewees' expertise and get a more comprehensive picture of their points of view. The choice of methodology was also guided by the need to enable an open discussion with participants. The interview guidelines were subject to a pretest that has been completed with audit company staff responsible for CPE/CPD. The focus of the pretest were understandability and duration of the interview. It also served to cover aspects of completeness from the audit companies' perspective. Formulation of items in the interview guidelines follows usual procedures.¹⁹

We have contacted representatives of selected audit companies. Participants in this study are two Big4-Companies and two smaller companies that are part of an international network. Interviews have been held in Germany in the period November 2017 – February 2018. With one exception, they were performed on site with the relevant contacts at their company's premises. We made sure that people in charge with the Company's CPE/CPD offerings took part.²⁰ Interviews lasted between 45 minutes and three hours. Guidelines have been presented to interviewees during the communication in writing. This allows participants to follow the structure and logic of the entire interview.

Where appropriate, we reviewed additional documents and gained access to materials and tools used by the audit companies. Typically, we arranged for a second meeting to follow up on certain topical aspects and to make sure that our understanding was correct. The exception mentioned

before relates to a Non-Big4-Company where the structured interview has been performed via telephone and an additional meeting was arranged afterwards.

Both authors have experience in the field, ranging from seven years online teaching in an academic field to related practical work in a Big4-Company.

Results

Types of online learning

The *typology of Online Learning* is used to structure results. It should be noted that we have received answers from *four companies*, the Table 1. lists their responses in absolute terms.

Table 1.
Types of online learning currently used

	Virtual Classroom	Web-Based-Trainings	Blended Learning	Micro Learning
<i>Target audience</i>				
CPE for future professionals	(1)	(4)	(2)	(2)
CPD for professionals	(3)	(4)	(1)	(1)
<i>Contents</i>				
Accountancy21	(1)	(4)	(2)	(1)
Audit methodology	(1)	(4)	(2)	(3)
Information technology	(2)	(4)	(1)	(2)
Soft skills	(1)	(1)	(2)	(0)

Source: own construction based on interview results

Table 2.
Types of online learning expected in the future

	Virtual Classroom	Web-Based-Trainings	Blended Learning	Micro Learning
<i>Target audience</i>				
CPE for future professionals	(1)	(4)	(4)	(3)
CPD for professionals	(4)	(4)	(3)	(3)
<i>Contents</i>				
Accountancy22	(3)	(4)	(4)	(1)
Audit methodology	(2)	(4)	(4)	(3)
Information technology	(3)	(4)	(2)	(2)
Soft skills	(1)	(1)	(2)	(0)

Source: own construction based on interview results

When analyzing the answers from the four companies, all types of online learning are currently used. A literal translation of the “classic” lecturing model in to the virtual world as in the virtual classroom approach doesn’t seem

to be very beneficial. Two companies expressed an explicit opinion that Online Learning will replace traditional classroom-based formats in the future. This suggests that Online Learning is only partially seen as a substitute and probably more as an additional approach that shall be incorporated into CPE/CPD initiatives.

Web-based Trainings, Blended Learning and Micro Learning have *arrived* and are *relevant* in practice. *Web-based Trainings* appear to be the most common approach for the audit companies included in this research. All of them use this type of Online Learning and intend to continue to do so in the future. *Micro Learning* is currently only partially used, with a focus on audit methodology. For the future, the use of Micro Learning can be expected to grow. There is one potentially surprising result: Micro Learning is not a favored tool for accountancy topics. It should be kept in mind that the rate of change of contents observed in practice may be a relevant factor for this decision.

Another point is that *soft skills* are not considered important for Online Learning. While there was expressed interest in this format, the application is seen as limited. All participants referred to *real-life interactions* with colleagues other but also with clients which currently can’t be adequately transferred into the virtual world.

Other types of Online Learning have been inquired, however there was no clear indication of a common basis. Two companies are experimenting with *gamification* approaches. Similarly, the option to provide learning opportunities for *mobile devices* (i.e. Apps) has been discussed, however there were no clear benefits from the perspective of the companies inquired. (see *Table 2.*)

Contextualizing online learning

Continuing Professional Education is based on an introductory offline teaching format that typically lasts for two weeks during the first years for all participating companies. Common elements are the theoretical building blocks Accountancy (German GAAP²³ and IAS/IFRS) as well as Audit Methodology. The entities combine *teachings* with *case studies* to apply the knowledge in a real-life setting. Typically, the cases are derived from actual client situations that have occurred in the past and are of general relevance to the learners. Online support may be in the form of *introductory material* for preparation. However, it should be noted that this was not common practice. *Follow-ups* to the offline classes was organized in all entities. Some used selected Web-Based Trainings for this purpose. All referred to their company’s Quality Management System²⁴ which mean that junior staff’s performance is reviewed on the job in a specific client engagement where the knowledge and skills are applied. Web-Based Trainings may also be used as a “reminder” to keep learned skills current. This description should not be interpreted to imply that there is no room for online learning without offline backing.

Micro Learning initiatives are typically built around a theoretical base that is presented and at least one application scenario or practice case. From a timing perspective,

opinions on Micro Learning differed: while some respondents favored short and focused contributions (approx. 5 minutes duration) others opted for more context-relevant information that requires approx. 20-30 minutes. Of course, several Micro Learnings maybe combined into a learning session by participants, as their work schedule suggests.

When looking at *professionals*, the use of Blended Learning approaches and Web-based Trainings was not seen as a general issue. Participants have an adequate basis of knowledge and skills they can build on. They have also acquired methods to structure their work appropriately. From the contents side, participants emphasized the need for updated professional knowledge, i.e. all the companies inquired have provided corresponding formats – either in an offline format or using online learning tools (e.g. Web-based Trainings).

Advantages and disadvantages of online learning

Asynchronous learning mechanisms offer *flexibility*.²⁵ Virtual tools like Web-Based Trainings and Micro Learning are *independent of the place* where the staff is currently located.²⁶ Certain aspects may even be researched by participants when they are faced with an issue at their client's premises. Furthermore, participants can select the content as they feel is appropriate. Of course, there are limits to the amount of selection, as especially for CPE there is a defined curriculum that must be covered in a certain period of time.

Participants have a greater choice in *selecting the timing* for their CPE/CPD. There was a disagreement between interviewees whether participants must be able to “reserve” time for their learning in advance. This disagreement only relates to Web-Based Trainings and Micro Learnings. On the one hand, there were concerns that if participants cannot block time for their learning, there is a risk that this activity will not be performed at all or without the proper depth. This might be addressed by allowing participants to schedule certain web-based trainings and micro-learnings in their time planning system in advance. I.e., the time for these types of Online Learning are effectively blocked for other tasks. On the other hand, there was the assumption that there are times during a client engagement where there is less work, so this “slack” may be effectively used for Online Learning. Micro Learning has the potential to be *integrated* or at least *linked* to the audit methodology.²⁷ This allows staff to participate in learning initiatives when needed based on their respective workflow. An example would be the preparation for the next day's audit work.

Especially when looking at junior staff (i.e. CPE), there were some concerns that current online learning tools *reduce complexity too much*. This suggests that Online Learning may present *limits on the complexity of the subject matter* that can be addressed. We have been indicated that a “bit by bit” approach to addressing a complex problem may result in solutions that are not sufficient. I.e., the

full amount of implications of a decision may not be captured by participants. However, a potential solution to this issue has already been presented to us in the combination of virtual and non-virtual forms of interaction. While the first may present benefits in structure and detail, the latter should be used to map the knowledge and skills acquired. In other words, when the objective is a deeper understanding, non-virtual forms of learning are considered more favourable.

Areas where online learning is deemed not appropriate

While there are indications of an increased use of Online Learning in the future, the intention was to better understand the limitations for this development. Therefore, we inquired for what purposes or in what situations the audit companies would not use Online Learning.

In *Virtual Classrooms*, there may be a tendency that the initiative is taken by a subset of participants only. We have been communicated that in a meeting of 30 participants, it is not unusual that only two or three individuals are effectively taking action. This suggests that Virtual Classrooms are potentially less suited for an exchange of ideas or experiences. In other words, technical conditions of the classroom limit the type and format of communication.

Applications or contexts that require a significant amount of interaction may be better performed in a local office. Examples given by the respondents relate to *Soft Skills* as content, and to the development of *judgments* on topics that are not covered in the literature or by a similar known case. The same applies to *professional skepticism*.²⁸ The International Auditing and Assurance Standards Board (IAASB), the International Ethics Standards Board for Accountants (IESBA), and the International Accounting Education Standards Board (IAESB) have jointly published a report (*cf. IAASB, 2017b*) where they emphasize this skill as being central to the performance of an audit.²⁹

Leadership-related issues that relate to the interaction with clients and team members, e.g. in resolving a dispute, are also seen critically by the respondents. The same applies to processes of self-organization in a group of auditors, e.g. in the context of problem-solving. The application of the knowledge or skills from an online environment to the real world is seen as too far away in practice.

Taking an *investment perspective*, there needs to be a certain financial return on Online Learning initiatives. Respondents clearly favored the application of Online Learning to methodological questions of the audit in contrast to accountancy-related topics. The examples given indicate that companies wanted to focus on contents that is more or less stable over time. Frequent changes in regulations do not encourage the companies to invest in Online Learning as such. However, it must be kept in mind that Online Learning presents an opportunity for standardization. So that certain topics could be used by entities in other countries.

Determining the need for online learning

When considering the content dimension of Online Learning in auditing and accountancy, one should keep in mind that there is *Common Body of Knowledge* that staff preparing for the professional examination(s) must acquire. This results in a high number of mandatory courses or content in the CPE segment. On top, participants can select offers as needed or as coordinated with their direct superiors. Here, practically all companies hinted that there is a *competition on available time* between chargeable hours on a client engagement and non-mandatory contents. As indicated in the previous section, there were disagreements on whether this competition needs to be formally managed by the company.

Mandatory content is followed up, typically by HR. The objective is to make sure staff participates in all mandatory formats in a certain period (in general, less than a year). One should also keep in mind that mandatory types of learning are part of the audit company's quality management system. This implies that a supervisory body can (and does) *inspect* a company's compliance with the respective regulations. As all companies subject to this study are part of an international network, we inquired whether demands formulated by *different regulators* resulted in a conflict for the respective company. This was not the case: Respondents pointed to a coordination between the supervisory bodies that resulted in similar checklists being used. However, there could be differences in timing, i.e. when changed requirements become effective. In the end, this was not seen as being problematic.

Mandatory content is typically developed based on the general field of knowledge relevant to the profession. More specifically, several organizational units within a company cooperate to select the mandatory content in practice. This includes human resource, *professional practice departments* (at least one related to audit methodology and one related to accountancy). Furthermore, a discussion of needs with *audit staff* and colleagues at the *leadership level* (partner/director) takes place.³⁰ Inputs are *business developments*³¹ that need to be reflected in the audit approach and *results of reviews*, i.e. areas where a lack of knowledge or skills applied to a specific case has been found in the past.

Non-mandatory content is typically developed along the same lines, however the benefit for participants is that they are free to choose the respective contents and – to a certain degree – also the amount on non-mandatory learning.

The *minimum time budget* available for both mandatory and non-mandatory learning is governed by demands of the profession, i.e. forty hours per year for German statutory auditors.³²

Evaluating online learning

The measurement of the output of Online Learning initiatives is a complicated by German legal requirements. International professional standards allow to choose between focusing on input factors to learning (time spent) and output factors (what has been learnt). German law

prohibits the evaluation of learning results at the individual level below management rank which complicates the matter. In most cases, this leads to a practical absence of output controls. We have been communicated what seems to be an acceptable alternative to the problem of a lack of direct output controls. The approach requires a third party to take control of the learning output (i.e. test results). Staff communicates when they start a learning initiative and when they have finished it. Typically, the latter is combined with a certificate that is used as evidence. The audit company doesn't have current knowledge on the individuals' learning output and can only identify the successful completion of tests or tasks.

An evaluation of the output from Online Learning, i.e. acquired knowledge and/or skills can be performed by *answering questions* or performing related tests of knowledge or by *solving problems* that require the application of certain skills. It may be desirable to change the context of the examples presented in the test format from the learning situation. This allows to verify whether a transfer of the output to another situation is effectively performed. While Blended Learning and Web-Based Trainings generally have a wider scope, performance evaluations discussed with respondents suggested that Micro Learning is mostly used for communication of factual knowledge. It has a defined field of application, limited time and also reduced amount of contextual information.

In the audit profession, it is customary to differentiate between the learned knowledge or skills and their application in day-to-day work that is subject to a *quality management regime*. In other words, in addition to the measurement of output, companies can evaluate the application of knowledge or skills in practice. When reviewing working papers managers, partners or others can verify whether knowledge and skills have been appropriately applied. This represents the outcome dimension from knowledge acquisition, i.e. the delivery of a professional service.

Factors of influence that trigger the effectiveness of the transfer from Online Learning initiatives have been identified by respondents as absence of *time pressure* or stress, *acceptance* of the need for learning and the availability of *support* from colleagues and superiors.³³ Of course, related *materials* like a database with regulations and example cases from the past is a further requirement for a successful transfer.

Discussion

This study is based on *semi-structured interviews* with representatives from four audit companies. This approach encompasses inherent limitations towards reliability. However, we chose the approach to get a better understanding from the respective company's point of view on Online Learning.

Probably specific to the industry is a clear-cut distinction between the contents of knowledge acquisition before and after completing the *professional exam*. CPE initiatives had a much higher proportion of mandatory content than later CPD initiatives for professional. For both

groups there is a minimum of time to be used for CPE/CPD. Online Learning promises to bring an enhanced flexibility to the audit companies' programs. Especially, Web-Based Trainings and Micro Learning can be performed whenever there is sufficient time available from the user's perspective.

Online Learning has arrived in practice. There were clear indications for intentions to *broaden the use* of Online Learning tools when looking at responses to the typology presented in this paper.

Quality concerns regarding different types of Online Learning have been identified in this study. While there are clear *advantages and disadvantages* per type, Online Learning in general seems to require the use of multiple approaches in combination. It remains to be seen whether this is due to an experimentation phase or whether is going to be a permanent development.

Probably surprising to the reader are *legal problems* related to the evaluation of Learning Initiatives in Germany. We have tried to sketch the issue in brief terms and described an approach that may be used to comply with the requirements. This situation is certainly not beneficial from the researcher's point of view attempting to identify influences on learning result. It should be noted that voluntary participation of individuals in the evaluation of Online Learning Initiatives is not restricted by the German legislation.

It is our understanding that Online Learning offers a significant amount of research opportunities with use case for practitioners in audit companies.

Conclusion

This paper has presented Online Learning as currently practiced in the selected audit companies. The *four types* of Online Learning (Virtual Classroom, Blended Learning, Web-Based Training and Micro Learning) proved useful in characterising the approaches in the respective companies. We have identified *influences* on the design and implementation of Online Learning in the audit profession from the perspective of Big4 Companies and other players. *Advantages and disadvantages* of methods of Online Learning have been characterized, including the identification of areas where the use of Online Learning is considered not appropriate. To capture the "contents dimension", we have identified important elements of *mandatory programs* that include an Online Learning component. Furthermore, we have generally described the process that leads to the determination of contents for mandatory or voluntary Online Learning Initiatives. The approach has proved to be quite similar for all participating companies. Finally, we highlighted a pending practical problem for the evaluation of Online Learning in Germany.

Jegyzet

¹ The Theoretical background is Takeuchi – Nonaka (2004) and Takeuchi – Nonaka (2004). It should be noted that the relativism endorsed by the authors mentioned poses challenges when researching audit companies. Cf. Kühnel (2004) for details. A special focus on Professional Service Firms has been adopted in Kühnel (2002) and Farkas – Kühnel (2016).

² For an overview of typical steps in an audit from a knowledge perspective cf. Abdolmohammadi – Usoff (2001).

³ For a discussion of the basic terminology cf. Moore et al. (2011).

⁴ An example related to a Big4 company is discussed in Kühnel (2004).

⁵ Abschlussprüferaufsichtsstelle (APAS), which is part of the Federal Office for Economic Affairs and Export Control (BMWi).

⁶ Wirtschaftsprüferkammer (WPK). The superior authority to this body is the Federal Office for Economic Affairs and Export Control (BMWi).

⁷ Cf. IFAC's International Education Standards.

⁸ An alternative description is Initial Professional Development.

⁹ This relates to skills required to perform audit tasks. Cf. Kühnel (2002).

¹⁰ Cf. Bürg – Mandl (2005, p. 76).

¹¹ This wording puts the emphasis on the asynchronous method of communication.

¹² Cf. Carenys – Moya (2016) on digital game-based learning.

¹³ Cf. Buckless – Krawczyk – Showalter (2014) for the simulation of audit procedures.

¹⁴ See later for a short discussion of the reasons.

¹⁵ Cf. Kühnel (2004) for an example of a professional project that has been put into practice.

¹⁶ Cf. Sonntag – Schaper (2016, p. 372.) for workplace-related knowledge acquisition and Hochholdinger/Sonntag (2016) for knowledge transfer.

¹⁷ Cf. Schnell – Hill – Esser (2018, p. 201, p. 208.); Leedy – Omrod (2016, p. 29., p. 217.).

¹⁸ Cf. Döring – Bortz (2016, p. 184.) on the benefits and use of open questions.

¹⁹ Cf. Schnell – Hill – Esser (2018, p. 315-339.).

²⁰ Cf. Meuser – Nagel (2009) on expert interviews.

²¹ Typically, local GAAP and IAS/IFRS.

²² Typically, local GAAP and IAS/IFRS.

²³ Especially, Handelsgesetzbuch (HGB) and related laws.

²⁴ Cf. ISQC 1.35-44.

²⁵ Cf. Castle – McGuire (2010).

²⁶ There is another benefit: Leaners need not meet in one physical place, which might save costs. Cf. Moskaliuk et al. (2016, p. 163.).

²⁷ Audit methodology describes a system of steps that are to be performed during an audit in order to formulate a well-founded opinion on the financial statements of the client (and probably other material submitted).

²⁸ Cf. IAASB's website on professional scepticism, available at <http://www.iaasb.org/projects/professional-skepticism> (retrieved March, 4, 2018).

²⁹ Quoted from IAASB (2017b, p. 4.): „Education and training can raise awareness and develop the needed attitude. At both the firm and engagement level, it is critical to reinforce and monitor the application of professional skepticism, including through setting the right tone at the top.”

³⁰ The information is captured on different hierarchical levels.

³¹ This type of input is obtained from specific organizational forms that focus on selected industries, technologies etc. I.e., it is obtained from "outside" of the formal learning organization.

³² §5 V Berufssatzung für Wirtschaftsprüfer/vereidigte Buchprüfer.

³³ Cf. Sonntag – Stegmaier – Schaper (2016, p. 256-258.)

References

- Abbott, A. (1988): *The System of Professions: An Essay on the Division of Expert Labor*. Chicago: University of Chicago Press
- Abdolmohammadi, M. J. – Usoff, C. A. (2001): *The assessment of task structure, knowledge base, and decision aids for a comprehensive inventory of audit tasks*. Westport: Quorum
- Alvesson, M. (1995): *Management of knowledge-intensive companies*. Berlin: Walter de Gruyter
- Berufssatzung für Wirtschaftsprüfer/vereidigte Buchprüfer (Statute for the German Audit Profession). As of 21.6.2016
- Buckless, F. A. – Krawczyk, K. – Showalter, D. S. (2014): *Using Virtual Worlds to Simulate Real-World Audit Procedures*. in: *Issues in Accounting Education*, Vol. 29, pp. 389-417.
- Bürg, O. – Mandl, H. (2005): *Akzeptanz von E-Learning in Unternehmen*. *Zeitschrift für Personalpsychologie*, Vol. 4, No. 2, pp. 75-85.

- Castle, S. R. – McGuire, C. J. (2010): An analysis of student self-assessment of online, blended, and face-to-face learning environments: Implications for sustainable education delivery. *International Education Studies*, Vol. 3, pp. 36-40.
- Carenys, J. – Moya, S. (2016): Digital game-based learning in accounting and business education. *Accounting Education*, Vol. 25, pp. 598-651.
- Döring, N. – Bortz, J. (2016): *Forschungsmethoden und Evaluation*. 5th ed., Berlin/Heidelberg: Springer
- Farkas, F. – Kühnel, S. (2016): An Investigation into Best Practices for a Dental Health Organization. *Egészség Akadémia*, Vol. 7, pp. 196–202.
- Freidson, E. (1994): *Professionalism reborn – Theory, prophecy and policy*. Cambridge: Polity
- Freidson, E. (2001): *Professionalism – The third logic*. Cambridge: Polity
- Handelsgesetzbuch* (German Commercial Code). As of 18.7.2017.
- Hochholdinger, S. – Sonntag, K. (2016): Transfer-Gelerntes im Arbeitsalltag kompetent nutzen. In: Sonntag, K. (2016): *Personalentwicklung in Organisationen*. 4th ed. Göttingen: Hofgreffe, pp. 629-661.
- International Accounting Education Standards Board (IAESB) (2017): *Handbook of International Education Pronouncements*. New York: IFAC. Source: <http://www.ifac.org/system/files/publications/files/2017-Handbook-of-International-Education-Pronouncements.PDF> 2018.02.28.
- International Auditing and Assurance Standards Board (IAASB) (2017a): *International Standard on Quality Control (ISQC) No. 1: Quality Control for Firms that Perform Audits and Reviews of Financial Statements and Other Assurance and Related Services Engagements*. Included in: *International Auditing and Assurance Standards Board (IAASB). 2017. Handbook of International Quality Control, Auditing, Review, Other Assurance, and Related Services Pronouncements 2016–2017 Edition, Volume I*. New York: IFAC. Source: <http://www.ifac.org/system/files/publications/files/2016-2017-IAASB-Handbook-Volume-1.pdf> 2018.02.28.
- International Auditing and Assurance Standards Board (IAASB) et al. (2017b): *Towards Enhanced Professional Scepticism – Observations of the IAASB-IAESB-IESBA Professional Scepticism Working Group*. New York: IFAC. Source: <https://www.ifac.org/system/files/publications/files/Toward-Enhanced-Professional-Skepticism-IAASB-IAESB-IESBA.pdf> 2018.02.28
- Kühnel, A. (ed.) (2002): *Wissensmanagement und wissensorientierte Führung in Professional Service Firms*. Rostock: University of Pécs and University of Rostock, pp. 53–59.
- Kühnel, S. (2004): *Wissensorganisation in Professional Service Firms*. St. Gallen: University of St. Gallen
- Kühnel, S. (2004): *Zu den konzeptionellen Grundlagen des Wissensmanagements*. Rostock: University of Rostock
- Leedy, P. D. – Omrod, J. E. (2016): *Practical Research – Planning and Design*, 11th ed. Essex: Pearson
- Meuser, M. – Nagel, U. (2008): *Das Experteninterview – Konzeptionelle Grundlagen und methodische Anlage*. In: Pickel, S. – Pickel, G. – Lauth, H.-J. – Jahn, D. (2008): *Methoden der vergleichenden Politik- und Sozialwissenschaft*. Wiesbaden: VS Verlag für Sozialwissenschaften, pp. 465-479.
- Moore, J. – Dickson-Deane, C. – Galyen, K. (2010): E-Learning, online learning, and distance learning environments: Are they the same? *Internet and Higher Education*, 14, pp. 129–135.
- Moskaliuk, J. – Moeller, K. – Sassenberg, K. – Hesse, F. W. (2016): *Gestaltung von (mediengestützten) Lernprozessen und -umgebungen in organisationalen Kontexten – Beiträge der Pädagogischen Psychologie*. In: Sonntag, K. (2016): *Personalentwicklung in Organisationen*. 4th ed. Göttingen: Hofgreffe, pp. 145-172.
- Nonaka, I. – Takeuchi, H. (1995): *The knowledge-creating company*. Oxford: Oxford University Press
- Scarborough, H. (ed.) (1996): *The Management of Expertise*. London: Macmillan
- Schnell, R. – Hill, P. B. – Esser, E. (2018): *Methoden der empirischen Sozialforschung*. 11th ed. München: Oldenbourg
- Sonntag, K. – Schaper, N. (2016): *Berufliche Handlungskompetenz fördern – Wissens- und verhaltensbasierte Verfahren*. In: Sonntag, K. (2016): *Personalentwicklung in Organisationen*. 4th ed. Göttingen: Hofgreffe, pp. 369-409.
- Sonntag, K. – Stegmaier, R. – Schaper, N. (2016): *Organisationsdiagnose – Strukturelle und kulturelle Merkmale*. In: Sonntag, K. (2016): *Personalentwicklung in Organisationen*. 4th ed. Göttingen: Hofgreffe, pp. 255-293.
- Takeuchi, H. – Nonaka, I. (2004): *Hitotsubashi on Knowledge Management*. Hoboken: Wiley
- Westermann, K. D. – Bedard, J. C. – Earley, C. E. (2015): *Learning the “Craft” of Auditing – A Dynamic View of Auditors’ On-the-Job Learning*. *Contemporary Accounting Research*, Vol. 32, pp. 864–896.
- Wirtschaftsprüferordnung* (German Act on the Professional Organization of Auditors).