Design, Implementation, and Evaluation of a Blended Learning Course in Interview Training for Career Counsellors in Switzerland

Thesis submitted in accordance with the requirements of the University of Liverpool for the degree of Doctor of Education by Roland von Euw

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Abstract

Roland von Euw: Design, Implementation, and Evaluation of a Blended Learning Course in Interview Training for Career Counsellors in Switzerland.

In 2017, I introduced a blended learning course to a training programme for career counsellors in Switzerland. The course concerned interview techniques in an aptitude diagnostic setting. My main research question was: *How does a blended learning course impact the training of three interview techniques in a programme for career counsellors in Switzerland?* The aim of the project described in this thesis was to design, implement, and evaluate this blended learning course.

My research makes three original contributions to the field. First, my research seeks to understand blended learning in the context of the training of career counsellors in Switzerland – a previously understudied area. Second, it bridges a gap in the literature by focusing on the three interview techniques that I taught on my course. Finally, my research makes use of a self-developed theoretical framework.

This framework was used to design, implement, and evaluate the blended learning course. On the level of course design, I differentiated between input, process, and output variables. Additionally, I included institutional and macro environmental variables. Institutional variables were drawn from the New St. Gallen Management Model (Rüegg-Stürm, 2005). For macro-environmental factors, I used the well-known Politics, Economy, Society, Technology, Law, and Environment (PESTLE) framework.

I collected data with six methods (a mix of both quantitative and qualitative methods): Tests taken by students both before and after the course, a learner characteristics questionnaire, a satisfaction survey, a group interview, individual interviews with experts, and a research diary. Statistical methods were used to analyse the quantitative data, and a thematic approach was applied to the qualitative data (Braun & Clarke, 2006).

My research had impact on four levels. First, I improved my knowledge and experience with blended learning. Second, students benefited from an approach that is more effective than traditional face-to-face learning (see U.S. Department of Education, 2010). Third, my research provided insights for programme leaders about whether blended learning can be a valuable approach in other parts of their programme. Finally, the research contributed to the wider disciplinary knowledge on blended learning and the teaching of the featured interview techniques.

Key words:
Instructional Design, Evaluation, Blended Learning, Career Counselling, Behaviour Description Interview, Decision Oriented Interview, Situational Interview

1 Introduction

I am a part-time external lecturer for a programme teaching career counsellors at the FHNW University of Applied Sciences and Arts Northwestern Switzerland. In 2017, I introduced a blended learning course on 'interviewing in an aptitude diagnostic setting'. This thesis is about the design, implementation, and evaluation of this course. In this chapter, I will start with an explanation of the context of my research. I then discuss the term *blended learning* and explain why I introduced the blended learning course and undertook research on this topic. I conclude with a consideration of the impact of the study.

1.1 Context

In Switzerland, career counsellors are required to hold a federal diploma to practice their profession. As of July 2018, three Swiss universities offer this diploma. One of these universities is the FHNW University of Applied Sciences and Arts Northwestern Switzerland. The blended learning course I designed, implemented, and evaluated took place at this university. The course and research methods were conducted in German and translated to English for this thesis. The requirements for programmes for the federal diploma are defined in Chapter 7 of the Swiss Ordinance on Vocational and Professional Education and Training (Federal Council, 2016). This Ordinance defines the principles, minimum requirements for specialised training, course content, and access to qualification procedures for the training of career counsellors in Switzerland. However, the law does not prescribe specific methods of teaching. Any teaching method may be used.

When teaching interviewing in an aptitude diagnostic setting, I focus on three different interview techniques: the situational interview (Latham, Saari, Pursell, & Campion, 1980), the behavioural description interview (Janz, Hellervik, & Gilmore, 1986), and the decision oriented interview (Westhoff, 2014). Until 2016, my teaching methods were more traditional (e.g., presentations or group work). In 2017, I changed my methods and introduced a blended learning course.

1.2 Blended learning

Before explaining my reasons for introducing a blended learning course, it will be valuable to discuss the term itself. Picciano (2009) states that blended learning is often used interchangeably with hybrid learning or mixed-mode learning. I will use the term 'blended learning' in this thesis. In the literature, there is no common agreement on the definition of blended learning. Some authors use a broad definition that refers to the integration of all possible teaching techniques (e.g., Singh, 2003; Cucciare, Weingardt, & Villafranca, 2008). Singh (2003) provides an overview of dimensions for blended learning:

- Offline and online learning
- Self-paced and collaborative learning
- Structured and unstructured learning
- Custom and off-the-shelf content
- Learning, practice, and performance support

He highlights that blended learning courses may combine one or more of these dimensions. However, other authors use a narrower definition of blended learning. Glazer (2012), for example, defines blended learning as a mix of activities that occur online and in person. In my study, blended learning will be used to refer to the latter, narrower definition.

1.3 Why a blended learning course?

The switch to a blended learning course can be justified in terms of both practice and theory. From a practical perspective, I wanted to improve my technological skills as a teacher. Kennedy, Latham, and Jacinto (2016) present important skills for 21st century teachers and students. One of these skills is digital literacy. Teaching a blended learning course gave me the opportunity to develop these skills. This had an impact on my professional development. My growth in knowledge and experience with blended learning and e-learning increased my authority of knowledge – one of three kinds of authority a leader may have (Adair, 2011, p. 23). The other two are authority of position and authority of personality.

From a theoretical standpoint, the change to a blended learning approach can be justified through existing research. Two meta-analyses demonstrated that blended instruction is more effective than conventional face-to-face classes (Bernard,

Borokhovski, Schmid, Tamim, & Abrami, 2014; U.S. Department of Education, 2010). Additionally, various authors have compared the effects of blended learning and face-to-face learning in a specific context or on a specific topic. For example, Bolsen, Evans, and Fleming (2016) undertook a quasi-experimental study in a large public university in the United States of America (specific context). They observed a higher gain in knowledge about US-American government (specific topic) in a blended learning environment than in a face-to-face setting.

1.4 Why conduct research on this blended learning course?

First, no research currently exists on the use of blended learning in the context of training career counsellors at Swiss universities. Therefore, to design, implement and evaluate a blended learning course is original and valuable at the level of the specific programme and for the training of career counsellors in Switzerland more generally.

Second, by undertaking research on blended learning for the three interview techniques, my study bridges a gap in the literature. A literature search using Google Scholar and the University of Liverpool Online Library for the three interview techniques and five additional search terms (education, training, blended learning, hybrid learning, and e-learning) revealed no research on this topic. The claim of Brierton, Wilson, Kistler, Flowers, and Jones (2016) that 'there are still significant gaps in the literature' (p. 19) concerning online learning highlights this. Other authors recommend performing scientific research on blended learning in various contexts. For instance, Smith (2015) suggests undertaking studies 'to explore how blended learning approaches can be implemented to effectively serve a diverse student population' (p. 229). One purpose of this research is to explore the implementation of a blended learning course with the students on the career counselling programme at the FHNW University of Applied Sciences and Arts Northwestern Switzerland.

Finally, research on this blended learning course makes use of a self-developed theoretical framework (see 2.1) as the base for the blended learning design. The meta-analysis by the U.S. Department of Education (2010) lead to the conclusion that the basis for blended and online learning is often ad hoc rather than theory-based. However, some authors have provided frameworks for blended and online learning.

One example is the model for online learning by Anderson (2003), which includes the interaction of learner, teacher, and content and other general concepts (e.g., collaborative learning). A second example is the framework produced by Erpenbeck, Sauter, and Sauter (2015), which focuses on the structure of blended learning. For instance, they suggest beginning with a kick-off, then moving to self-paced learning, and finishing with a workshop. Other frameworks one may use include ADDIE (Analysis, Design, Development, Implementation, Evaluation; e.g., Seel, Lehmann, Blumschein, & Podolskiy, 2017) or EDR (Educational Design Research; e.g., McKenney & Reeves, 2014). Although such frameworks provide useful knowledge, they do not include specific variables to consider when designing, implementing, or evaluating blended learning. Therefore, I decided it was important to develop my own theoretical framework. This framework will be evaluated in this study.

1.5 Impact of this study

The importance of my research is four-fold: First, it contributes to my professional development. Before doing this study, I did not have any teaching experience with either e-learning or blended learning in general. My research improved both my knowledge of and experience with these methods (see also 2.3). Second, my research provides insights useful for the programme leaders when deciding if blended learning may be a valuable approach in other parts of their programme. It was the first time this programme used blended learning. Third, the research contributes to the wider disciplinary knowledge on blended learning and the teaching of these interview techniques. Researchers and teachers can benefit from my research and insights. The final aspect is the added value for students, presented in 1.3.

I will now turn to the theoretical basis of this research and of the blended learning course I taught.

2 Theory

Blended learning is a well-researched topic. A Google Scholar search finds approximately 700,000 results with the term 'blended learning'. However, as discussed in 1.4, I did not find a suitable framework for my project. Therefore, I decided to develop my own theoretical framework for designing, implementing, and evaluating blended learning. In this chapter, I will first outline this theoretical framework and then present the blended learning design of my course and analyse my values and confidence in being a practitioner researcher. After explaining how the theory is linked to the methodology, I will conclude with a discussion of the findings.

2.1 Theorising process

Before I outline the theory and the theoretical framework, I provide information on my theorising process. The development of the theoretical framework was a mix of a systemic and analytical approach (Salomon, 1991). I looked for suitable concepts and variables to structure my framework (analytical) and integrated them in the theoretical framework (systemic). The main research for theory was done from July 2016 to March 2017. However, I included insights from the modules of my doctoral study at the University of Liverpool, which started in October 2013. For instance, one module addressed 'learners and learning'. These insights were useful to further develop variables and concepts based on learning theories. To decide on the specific variables and concepts was both concept-driven and data-driven (Gibbs, 2007). For instance, I researched variables and had to integrate these to a concept (data-driven). These concepts were useful to search for more variables (concept-driven).

This theorising process was helpful to design the blended learning course. It allowed me to reflect *in* action during the design process. This self-study-in-action as well as system-study-in-action is typical of action research (Coghlan & Brannik, 2014), which I will discuss in more detail in 3.2. After having completed this thesis, I conclude that this theory-based approach to blended learning is not only useful for the design, implementation, and evaluation of a blended course. It is valuable to reflect on one's own approach to teaching and learning as well.

2.2 Theoretical framework

The main function of the theoretical framework is the provision of a base for the design, implementation, and evaluation of my blended learning course. I developed it on the basis of literature research but did not validate it. To provide a rationale for my framework, I will present the structure and explain the variables within each part of the framework. I conclude with possible interactions within the framework.

2.2.1 Note on completeness of the theoretical framework

This theoretical framework does not claim completeness. Rather, I hope that others may use, develop, and scrutinise my theoretical framework. For instance, the reader may miss concepts that are important from his or her point of view. This incompleteness is justified on two counts. First, the main function of this framework was to provide a theoretical foundation for my own study and teaching – not to postulate an overview of all existing learning concepts. Second, I wanted to use this study as an opportunity to further develop the theoretical framework (see 3.2). I will present a revised theoretical framework and the rationale for the revisions in the discussion chapter (see 5.2). However, although I provide a revised version, the framework still needs further development and validation. For instance, I will not discuss interactions between the course and the institutional or macro level in detail. This is due to the limitations of the scope of this study, which focuses on my blended learning course. Further research may help to investigate such relations. Additionally, in section 6.2, I will outline ideas for concepts and theories that may be included in the framework in the future.

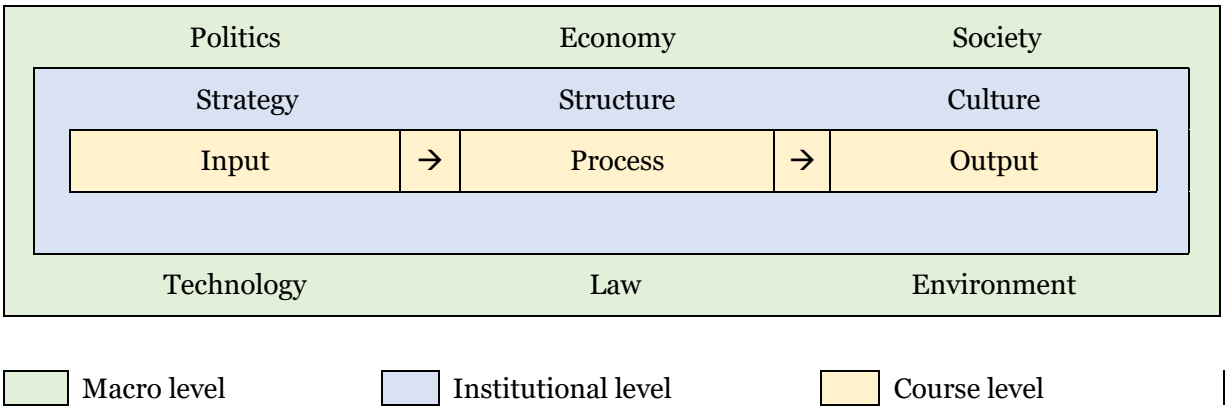
2.2.2 Structure

The theoretical framework consists of three levels: The course level, the institutional level, and the macro level (see Figure 1). The course level is the blended learning itself – with input, process, and output variables. I decided on this structure of course variables as it is the most valuable for my purposes and has been used in other similar models as well (e.g., Gupta & Bostrom, 2009; Bushnell, 1990). This structure is similar to the Biggs' (1993) 3P model. 3P stands for Presage, Process, and Product. However, this model has a different logic than the one I aim to use as it integrates the institutional and macro context as input variables (= presage). I differentiate institutional and macro levels from the course level. The institutional level is based

on the New St. Gallen Management Model (Rüegg-Stürm, 2005) and includes the variables strategy, structure, and culture. I chose this model as it is widely used in Switzerland. For the macro level, I refer to the PESTLE framework (Politics, Economy, Society, Technology, Law, and Environment). This framework is widely used to analyse factors impacting a system, for example in Human Resources Compliance (Jensen, 2016) or Waste Management in Higher Education Institutions (Zhang, Williams, Kemp, & Smith, 2011).

Figure 1

Structure of the theoretical framework



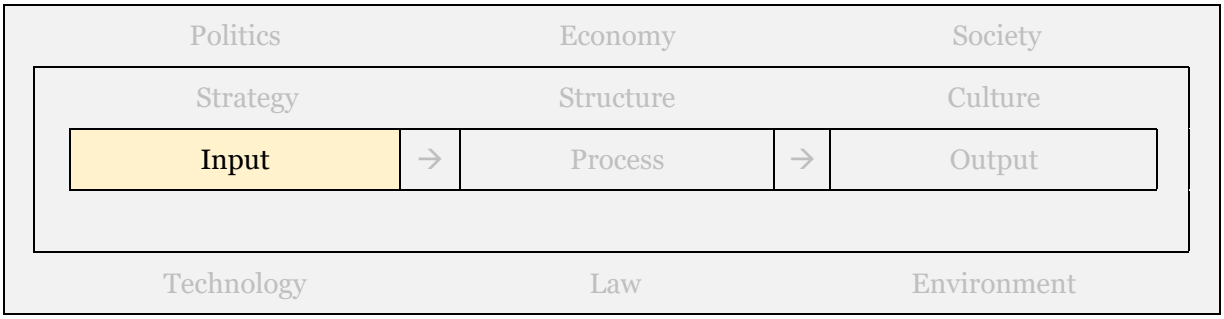
One may consider the structure of the theoretical framework from an open systems perspective (Katz & Kahn, 1978). While a closed system restricts exchanges with the environment, an open system easily interacts with the environment (Bess & Dee, 2012). My conceptual framework integrates the open systems perspective, which focuses on organisations and their interaction with the institutional environment. If one thinks beyond the organisational perspective, the course level is an open system that interacts with the institutional and macro environment. However, as outlined in 2.1.1, I will not discuss interactions between the course and the institutional or macro levels in detail.

2.2.3 Course level: input variables

In this section, I will outline the course input variables (see Figure 2).

Figure 2

The focus of this section within the structure of the theoretical framework



The input variables include variables associated with the learner, learning group, teacher, course design, information quality, and system quality. This structure is based on two sources. Bitzer and Janson (2014) differentiate between characteristics of the learner, teacher characteristics, information quality, and system quality. Learning group variables derive from Bitzer, Söllner, and Leimeister (2016). Finally, course design variables are included without a specific source since they are missing in the other five categories. Table 1 presents the six categories with the respective variables, which will be discussed subsequently.

Table 1

Input categories and variables

Learner characteristics ▪ Learning style ▪ Attitude towards classroom- and e-learning ▪ Computer experience ▪ Self-efficacy ▪ Learning motivation ▪ Prior knowledge
Learning group ▪ Homogeneity of knowledge ▪ Homogeneity of expectations ▪ Mutual support
Teacher characteristics ▪ Prior experience with LMS (learning management system) ▪ Time spent on preparation ▪ Knowledge ▪ Fairness ▪ Responsiveness ▪ Control over technology ▪ Effective facilitation ▪ Clear communication ▪ Model and teach good board etiquette ▪ Transparency of course design

Course design
▪ Curriculum ▪ Learning objectives
Information quality
▪ Correctness of information ▪ Structure of information ▪ Up-to-date information ▪ Information relevant to learning objectives
System quality
▪ E-learning and classroom technology ▪ Integration of mobile tools ▪ Ease of use ▪ Availability ▪ Good and stable internet connection ▪ Media variety ▪ Accessibility for people with disabilities

Learner characteristics

Learner characteristics include six variables: learning style, attitude towards classroom- and e-learning, computer experience, self-efficacy, learning motivation, and prior knowledge. The concept of *learning style* has a strong appeal for course designers and teachers (Coffield, Moseley, Hall, & Ecclestone, 2004). In their review, Coffield et al. (2004) identified 71 learning style models. However, Li, Medwell, Wray, Wang, and Liu (2016) concluded in their review on the validity and usefulness of learning styles that 'we should be careful and critical when drawing on learning styles for course design' (p. 92). *Attitude towards classroom- and e-learning* can relate to the performance of a student in a course. For instance, Kettanurak, Ramamurthy, and Haseman (2001) found that positive attitude enhances learning performance. The variable *computer experience* concerns the performance of a student in the e-learning part of the course. This effect derives from the behavioural concept of stimulus and response. Doing something repeatedly helps to form a habit (e.g., Lally, van Jaarsveld, Potts & Wardle, 2010). If someone is used to computers, e-learning becomes an ordinary task. *Self-efficacy* has a positive effect on academic performance (Lane & Lane, 2001). Moreover, Talsma, Schüz, Norris, and Schwarzer (2018) revealed in their meta-analysis that not only does self-efficacy have an effect on academic performance, but academic performance influences self-efficacy as well. The fifth variable, *learning motivation*, is included because the concept of motivation implies that it influences one's behaviour. John W. Atkinson, one of the pioneers of motivational research, defines the study of motivation as a task that 'has to do with

analysis of the various factors which incite and direct an individual's actions' (Atkinson, 1964, p. 1). Finally, *prior knowledge* concerns the starting point in learning for a student.

Learning group

The three variables homogeneity of knowledge, homogeneity of expectations, and mutual support are included as they are valuable antecedents of blended learning (Bitzer et al., 2016).

Teacher characteristics

This category contains ten variables: Prior experience with LMS, time spent on preparation, knowledge, fairness, responsiveness, control over technology, effective facilitation, clear communication, modelling and teaching good board etiquette, and transparency of course design. The variable *prior experience with LMS* (learning management system) is similar to the learner characteristics variable *computer experience*. If a teacher has experience with the LMS, they might have formed a habit (e.g., Lally et al., 2010) and find the use of the LMS easier. This argument is in line with Zolfaghari, Negarandeh, and Eybpoosh's (2013) recommendation to hold blended learning workshops for teachers before implementing blended learning courses. The *time spent on preparation* is important for all kinds of training, not only for blended learning courses. However, various authors argue that preparing the online part of blended learning takes more time than preparing a traditional face-to-face course. For instance, McCaslin and Brown (2015) conclude in their case study that the implementation of an online course takes more time during the design process than teaching in a face-to-face setting but that this might save time in the long run. Baldi (2014) came to the same conclusion in his reflections after introducing online learning at a diplomatic institute. *Knowledge* is a variable that is important for teachers in general. The same can be said of the variable *fairness*. However, fairness might include more aspects in a blended learning setting than in a traditional face-to-face course. For instance, Dickfos, Cameron, and Hodgson (2014) concluded that blended learning technologies facilitate fairness in assessments. *Responsiveness* is an aspect that is inherent to face-to-face courses. In blended learning courses, responsiveness needs to be ensured for the online part of the course. Smith (2014) recommends defining times when a teacher is available for the

students. *Control over technology* facilitates both classroom and online learning. In the online environment, deNoyelles and Raider-Roth (2016) concluded that facilitating with a synchronous tool is more challenging than in an asynchronous setting. The variable *effective facilitation* mediates both the face-to-face and the online part of the course. In face-to-face lessons, effective facilitation may include aspects such as being student-centred, showing passion, exhibiting humour, being committed, being personal, or creating positive learning environments (McRee & Haber-Curran, 2016). In the online environment, educators need 'enhanced skills to engage learners in meaningful interaction and to overcome the transactional distance' (Sargeant, Curran, Allen, Jarvis-Selinger, & Ho, 2006, p. 128). Hauser (2010) states that *clear communication* is a central aspect in blended learning since informal communication is reduced. This leads to fewer opportunities for detecting misunderstandings and fewer possibilities for correction. To *model and teach good board etiquette* is an aspect Dell, Dell, and Blackwell (2015) highlight as important for instructors. *Transparent course design* may lead to improved student responsibility, as the the instructor's expectations may be clearer (Bovill, Cook-Sather, & Felten, 2011).

Course design

This category includes two variables: Curriculum and learning objectives. The Oxford Dictionary defines the term *curriculum* as the subjects comprising a course of study (Stevenson, 2010). In addition to the official curriculum, a course generally has an unofficial or hidden curriculum as well (Jackson, 1966). I included the variable curriculum since the subjects of a course may influence how the blended learning course is taught. Likewise, *learning objectives* impact the methods used in a course. Bloom, Engelhart, Furst, Hill, and Krathwohl (1956) provide a taxonomy of educational objectives and state that 'curriculum builders should find the taxonomy helps them to specify objectives so that it becomes easier to plan learning experiences and prepare evaluation devices' (p. 2). In this taxonomy, the lowest level – memorising facts – may be served by reading, while the highest level – creating new work – needs other learning methods such as the production of video or text.

Information quality

The category information quality includes the variables correctness of information, structure of information, up-to-date information, and information related to learning objectives. *Up-to-date information* and good *structure of information* have a positive effect on the satisfaction of students (Bitzer & Janson, 2014). Additionally, I included the *correctness of information* and *information related to learning objectives* as variables in this category because these seem important for my purposes. For instance, if the topic of a course was astronomy, and the learning objective was to memorise facts about astronomy, it would be illogical to provide wrong information about stars (correctness of information) or information on animals (information related to learning objectives*)*.

System quality

System quality includes seven variables: E-learning and classroom technology, integration of mobile tools, ease of use, availability, good and stable internet connection, media variety, and accessibility for people with disabilities. Dell et al. (2015) recommend carefully choosing content management tools as a practical step in the design process. I extended this recommendation to the classroom setting as well and named the variable *E-learning and classroom technology*, since technological tools matter in both online and classroom learning environments. The *integration of mobile tools* may enhance learner motivation. For instance, Chaiprasurt and Esichaikul (2013) revealed that integration had a significant effect on learner motivation if online learning was extended with mobile tools. *Ease of use* refers to the online learning solution and may be ensured with simplicity and consistency. Baldi (2015) recommends using simple systems, as complicated ones may be discouraging for people who are not used to these technologies. He highlights that simplicity is more important than having a highly sophisticated tool. Additionally, navigation in the system should be both simple and consistent (Dell et al., 2015). Kumlander (2015) lists various requirements of software services for online learning. *Availability* of software systems is most crucial, as students and teachers may only participate in online learning if the software system is available. Additionally, students and teachers need a *good and stable internet connection*. This enhances the value of virtual training (Hauser, 2010). McCaslin and Brown (2015) suggest using multiple methods of presentation, which is a justification for the input

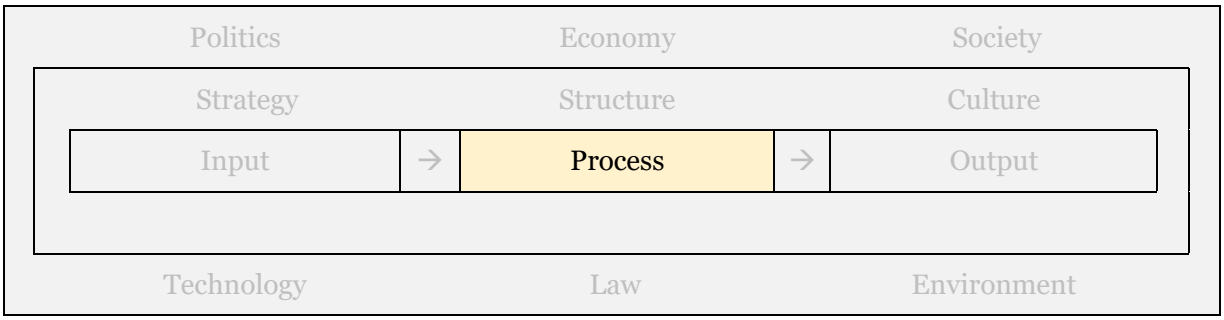
variable *media variety*. Finally, ensuring accessibility for people with disabilities is a recommendation made by Dell et al. (2015).

2.2.4 Course level: process variables

This section focuses on the course process variables (see Figure 3).

Figure 3

Focus of this section within the structure of the theoretical framework



Process variables include elements that are exclusively related to the process of teaching and learning on the course. Four categories relate to learning theories, while one concerns application. Table 2 presents an overview of the process categories and variables.

Table 2

Process categories and variables

Behaviourism ▪ Social presence ▪ Provide rewards ▪ Participant reminders ▪ Learn from experience
(Social) cognitivism ▪ Goal-setting
Humanism ▪ Support ▪ Intellectual development
Constructivism ▪ Interaction and interactivity
Application ▪ Face-to-face ▪ Online ▪ M-learning ▪ Synchronous ▪ Asynchronous

First, I will explain the learning theories. Merriam, Caffarella and Baumgartner (2007) distinguish five major orientations of learning theories: Behaviourism, cognitivism, social cognitivism, humanism, and constructivism.

Behaviourism

Behaviourism deals with stimulus-response learning. The main focus in this perspective is changing behaviour. Prominent theorists in behaviourism include Skinner, Pavlov, Thorndike, and Hull, to name a few. I included four variables in this category: social presence, provision of rewards, participant reminders, and learning from experience. *Social presence* derives from Hauser's (2010) work. He concluded that it is important to hold regular conferences and to enact clear rules during the virtual phases of training. Baldi (2014) states that *providing rewards* needs to be a part of adult education. He concludes that continuous learning should be complemented by recognition or reward – new career opportunities, certificates, or anything else that is positive for a learner. This extrinsic motivation is a typical aspect of behaviourism, while intrinsic motivation is a concept important within humanism. Fontaine et al. (2016) highlight that *participant reminders* are crucial to the e-learning part of blended learning, although this aspect is often overlooked. *Learning from experience* is inherent to behaviourism. Two examples illustrate this claim. Dreyfus and Dreyfus (2005) developed a well-known model of expertise that includes five levels. The lowest level is novice and the highest level is expert. This model has an interesting implication for educators and learners. Dreyfus and Dreyfus (2005) argue that 'one only learns by making mistakes' (p. 782). Therefore, teachers should encourage students to try new things and allow themselves to make mistakes. Ericsson, Krampe, and Tesch-Römer (1993) add to this perspective the aspect of deliberate practice. They argue 'that the differences between expert performers and normal adults reflect a lifelong period of deliberate effort to improve performance in a specific domain' (p. 400). Another example is the formation of habits and routine. Lally et al. (2010) linked daily situational cues and responses and found that the average time to form a habit is 66 days (see explanations in 2.1.3, 'learner characteristics').

(Social) Cognitivism

As 'there is little consensus on how many learning theories there are or how they should be grouped' (Merriam et al, 2007, p. 277), I decided to combine cognitivism and social cognitivism into a single category since they both include cognitivism.

Cognitivism highlights the importance of mental processes. Learning, from this perspective, is the processing of information. Social cognitivism emphasises the importance of the social setting. According to this orientation, people learn by observing and interacting with others. Prominent theorists in cognitivism include Ausubel, Bruner, Piaget, and Lewin – and Rotter and Bandura in social cognitivism – to name a few.

One variable is included in this category: *Goal-setting*. Wood and Neal (2007) emphasise the importance of goals. A valuable aspect of goal-setting is that students and teachers may set goals to form, change, or exhibit a behaviour.

Humanism

Humanism focuses on potential, emotions, and affect. In the humanistic orientation, learning supports personal development. Prominent theorists in this field include Maslow and Rogers. I included the variables *support* and *intellectual development* in this category. *Support* includes the general aspect of 'being there' for the students, but also the provision of materials for unprepared students (McCaslin & Brown, 2015). Additionally, teachers may help the students progress through the stages of *intellectual development* as proposed by Perry (1970). In the first stage (dualism), knowledge is seen as certain. If an educator does not give a certain answer, a student in this stage may be unsettled. The students' uncertainty will contribute to their intellectual development. As a teacher, a strategy intended to foster the raising of questions instead of giving answers is beneficial for students' developing from the dualistic to multiplicity stage. An educator should also be aware of the value they attribute to knowledge. Knowledge that is presented as non-problematic or as self-evident can strengthen dualistic thinking (Chan, Ho, & Ku, 2011).

Constructivism

Constructivism emphasises cognitive processes of meaning-making. Learning is achieved by constructing meaning from experience. Prominent theorists in constructivism are Lave, Candy, or Vygotsky, to name a few. I included one main variable in this category: *Interaction and interactivity*. Group learning activities are a central aspect of interaction and interactivity (de Hei, Strijbos, Sjoer, & Admiraal, 2016). These activities can be found in the face-to-face or online part of a blended learning course. Thurmond (2003) differentiates between four types of interaction: learner-content, learner-learner, learner-instructor, and learner-interface. For group learning activities, the learner-learner interaction is essential. She argues that course discussions may enhance learner-learner interactions, which in turn influence student learning.

Application

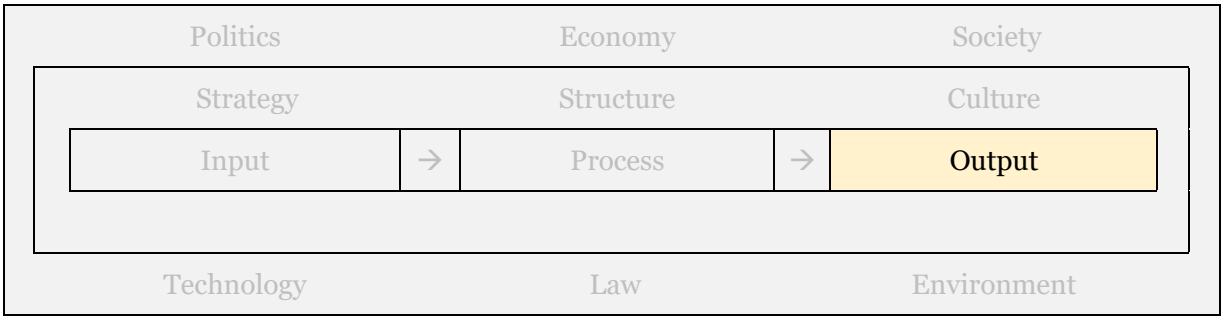
The application variables refer to mode and synchrony of learning. I included three modes: face-to-face, online, and m-learning. This differentiation is derived from Hu (2015) who names face-to-face, online, and mobile learning as modes of blended learning. Synchrony relates to whether learning takes place in a synchronous (e.g., web conference) or asynchronous (e.g., forum) format.

2.2.5 Course level: output variables

In this section, I will explain the course output variables (see Figure 4).

Figure 4

Focus of this section within the structure of the theoretical framework



The output variables describe what the output of blended learning is. These variables are valuable for summative evaluations, which focus on a judgement about the effectiveness and value of an intervention (Eseryel, 2002). Bortz and Döring (2006)

differentiate between five functions of evaluation research: to gain insights, to optimise, to control, to decide, and to legitimate. In my setting, I want to gain insights into the design and implementation of my blended learning course. These insights may be useful for optimising the course and deciding whether the blended learning approach should be kept. This is a goal-based evaluation (Zinovieff, 2008). Zinovieff (2008) discusses various such models and points to the Kirkpatrick's (Catalanello & Kirkpatrick, 1968) model as being the most popular. This model focuses on four levels in evaluation: reaction (did students like the course?), learning (did their knowledge increase?), behaviour (do students apply the knowledge in real-life contexts?), and results (did the training have effects on organisational measures?). Interestingly, although the last two levels are the most meaningful for organisations, they are measured only 25% (behaviour) and 15% (results) of the time (Biech, 2014). I decided to extend the reaction level with two variables (confidence and motivation) and summarise this category as 'learner characteristics'. This decision was based on Bovill (n.d.) who observed improved levels of motivation and confidence of students in a collaborative virtual learning environment. The knowledge category was divided into two variables: Declarative knowledge and procedural knowledge. This distinction derives from Stone (2006), who differentiates between four kinds of knowledge: declarative, procedural, culture-specific, and culture-general. As the culture-related kinds of knowledge were not important for my purposes, I did not include them. In the behaviour category, I included the *skills improvement* for the topic of the course and *computer experience* for the improvement in computer-related skills. For the organisation, I differentiated between hard facts and soft facts. Hard facts include key figures such as cost and time, while soft facts refer to aspects such as image or culture (Lies, n.d.). Table 3 presents the output categories and variables.

Table 3

Output categories and variables

Learner characteristics ▪ Satisfaction ▪ Confidence ▪ Motivation
Knowledge ▪ Declarative knowledge ▪ Procedural knowledge

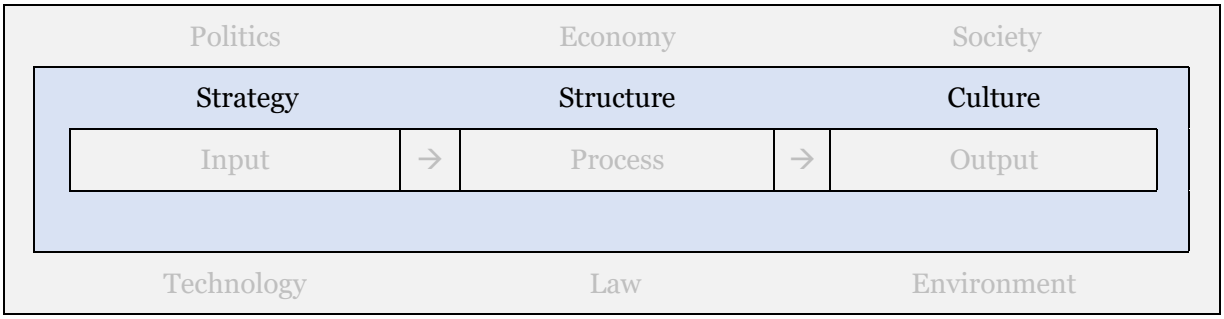
Behaviour ▪ Skills improvement ▪ Computer experience
Organisation: Hard facts ▪ Costs ▪ Time
Organisation: Soft facts ▪ Image/reputation ▪ Culture

2.2.6 Institutional level

After the illustration of the course level in the previous sections, I turn to the explanation of the institutional level (see Figure 5).

Figure 5

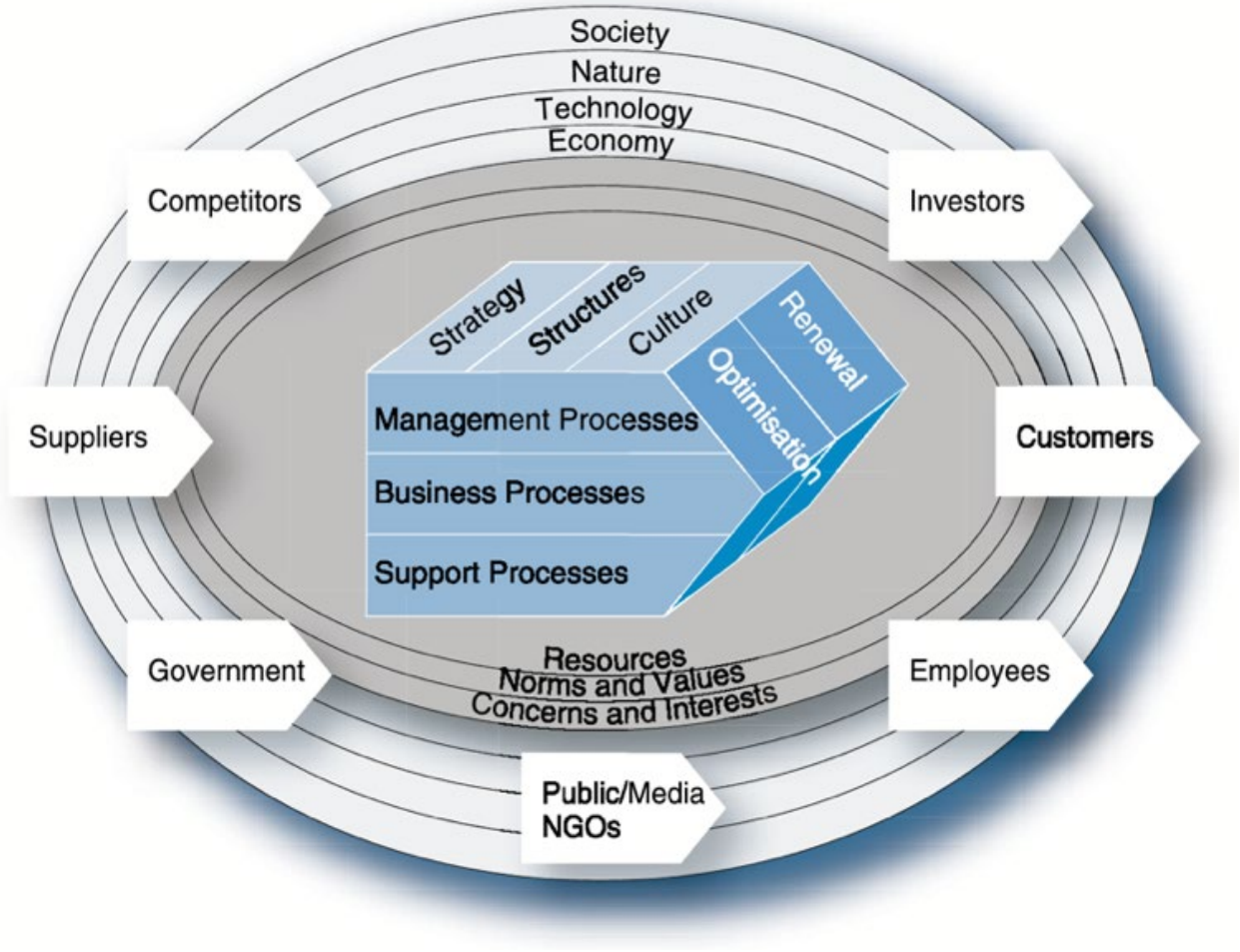
Focus of this section within the structure of the theoretical framework



For the variables of the institutional level, I referred to the structuring forces in the New St. Gallen Management Model (Rüegg-Stürm, 2005; see Figure 6). My decision to make use of this model was based on three factors. First, I know this model well – various employers I have worked for have used it in their organisation. Second, it is a common model in Switzerland. Third, the model is used by other authors as well and therefore may be considered more relevant (e.g., Siau, Chiang, & Hardgrave, 2011). The following six categories form this model:

- Environmental spheres: society, nature, technology, and economy
- Stakeholders: competitors, suppliers, government, investors, customers, employees, and public/media/NGOs
- Interaction issues: resources, norms and values, and concerns and interests
- Structuring forces: strategy, structures, and culture
- Processes: management processes, business processes, and support processes
- Modes of development: optimisation and renewal

Figure 6
The New St. Gallen Management Model (Rüegg-Stürm, 2005, p. 73)



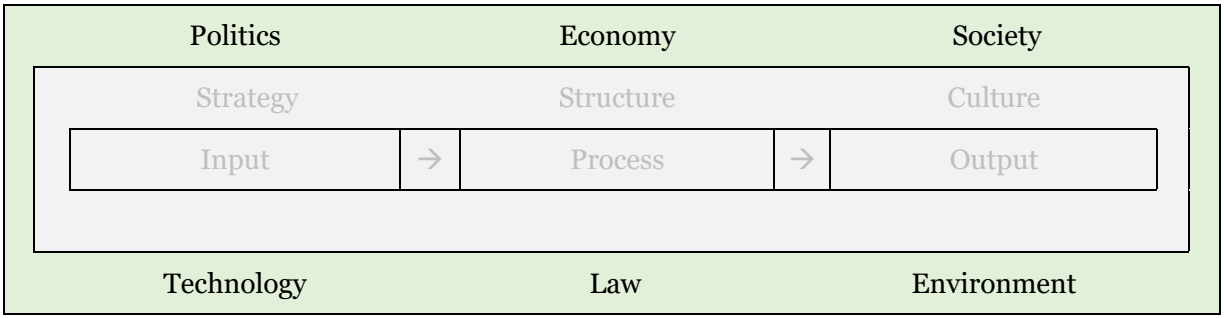
The structuring forces have three functions. Strategy has a directional function and ensures that an institution does the right thing. The main question of strategy is, 'What do we do?' Structure provides the coordination function, which ensures that things are done right. The question of structure is, 'How do we do things?' Finally, the third function of meaning refers to culture. It is about 'why' and 'what for'. I did not include the other categories since these are either included in the macro level (environmental spheres, stakeholders) or not part of the focus of my conceptual framework (interaction issues, processes, modes of development).

2.2.7 Macro Level

In this section, I focus on the macro level (see Figure 7).

Figure 7

Focus of this section within the structure of the theoretical framework



I included the macro level because it is valuable to analyse national and global contexts and their interaction with the other two levels. For instance, the Political, Economic, Social, Technological, Legal, and Environmental (PESTLE) analysis in the Swiss country analysis report (Marketline, 2016) highlights, amongst others, these points:

- Politics: Switzerland ranks highly on the World Bank's governance indicators.
- Economy: Switzerland is one of the most competitive economies in the world.
- Society: Switzerland performs well on multiple human development measures.
- Technology: Switzerland is a world leading innovator.
- Law: Switzerland has almost no corruption.
- Environment: Switzerland is active in environmental protection.

These macro level variables influence the institution and course design. I will illustrate this with different examples. As various examples refer to more than one of the PESTLE variables, I structure this section around the examples and not the PESTLE variables. For instance, Switzerland has very good internet availability. Therefore, one is able to include all variations of blended learning designs (e.g., synchronous video conferencing or the use of Internet for all students in face-to-face lessons). This specific macro level variable enables the application of all possible blended learning approaches in the context of the course I designed. Another possibility may be to relate the welfare or demand for higher education of a nation to the institutional resources and possibilities to implement blended learning. The example of Nigeria is an interesting illustration of this possibility. Adegbija (2013) argues that technology may help increase access to higher education in Nigeria (a country in which there is a high demand for higher education). The author identifies that in Nigeria, 'technologies for instruction are still experiences read about and not

adequately experimented' (p. 492). Although the author investigates technology, the example of Nigeria primarily relates to three other macro level variables within my framework: society (increased demand for higher education), economy (few offers of blended learning or e-learning within institutions of higher education), and politics (lack of funding). The societal aspect of increased demand for higher education is not limited to emerging or developing countries like Nigeria. Lai (2011) names 'the massification of higher education' (p. 1272) as one reason for changed learner needs in New Zealand in the 21st century. The author suggests that digital technologies may help in responding to this massification. However, the factors that apply for both Nigeria and New Zealand are not applicable to Switzerland. For instance, two-thirds of young people undertake vocational education and training in Switzerland (State Secretariat for Education, Research and Innovation, n.d.). As this is a common educational path, massification in higher education is less pronounced than in Nigeria or New Zealand.

Other examples for the value of macro level variables are cost reduction in India, expanding enrolment in the United States of America, or issues of distance in Australia:

- Nedungadi and Raman (2012) did research in India on a mobile learning solution aiming 'to provide m-learning in schools that could not afford e-learning' (p. 662). They focused on economic aspects in a context where few financial resources were available. In Switzerland, however, cost reduction is not a goal of the implementation of blended learning.
- Picciano (2015) names various trends that affect online education in the United States including expanding enrolment, which is similar to the examples of Nigeria and New Zealand in the previous section. Again, this aspect does not relate to my context as expanding enrolment is not an objective for my use of blended learning.
- In Switzerland, there is no need to offer solutions for students who live far away due to the small size of the country. This may be different in a country such as Australia. Switzerland has 12 traditional universities, 9 universities of applied sciences and 17 universities of teacher education (Swiss Universities, n.d.). Switzerland covers an area of 41,285 km^2. With this denseness of universities, there is no need to offer blended learning or e-learning to

mitigate distance – university buildings are close to students. This is different in a country such as Australia (7,692,000 km² with 39 universities (Universities Australia, n.d.)). Although Australia is approximately 186 times larger than Switzerland, the number of universities is not much higher. Universities are not as close to students as they are in Switzerland. This factor is likely to foster wider use of e-learning and blended learning.

To learn more about differences between countries on a more general level, I compared the highest-ranked universities of Switzerland, Australia, and the United States of America. I used the Times Higher Education Ranking (2018). The best-rated institution of Higher Education in Switzerland is ETH Zurich (worldwide ranking position 10). On the homepage of this university, Bergamin (2013) provides an interesting example of the status of online and blended learning: 'ETH Zurich also believes that online teaching has a future in education. However, in a pilot phase running through the end of 2014, it is not focussing on MOOCs but instead on online activities intended to complement traditional classroom instruction' (Bergamin, 2013). This quote is an illustration of the fact that electronic elements are not seen as an important need in university teaching, but as a 'nice to have' extra. This contrasts with the University of Melbourne, the best-rated university in Australia (worldwide ranking position 32). The University of Melbourne offers fully online courses on a separate homepage (online.unimelb.edu.au). They market their online degrees with slogans such as 'gain a highly regarded qualification from Australia's leading university' (University of Melbourne, n.d.). The California Institute of Technology (worldwide ranking position 3) is the best-rated university in the United States of America. This university promotes online courses but not online degrees (online.caltech.edu). Therefore, its commitment to electronic elements in teaching may be placed somewhere between the approaches of the ETH Zurich and the University of Melbourne.

On a broader level, a comparison between the United States of America (USA) and the European Union (EU) reveals differences in blended learning. For the USA, Bailey et al. (2015) argue that 'state policy can accelerate reforms that support blended learning models or it can inhibit the adoption of these models' (p. 8). This argument is similar to one provided in a report of the European Commission (2014).

One recommendation of this report is that 'national authorities should facilitate the development of a national competency framework for digital skills' (p. 32). While the report for the USA focuses more strongly on *changing* existing policies, the report for the EU highlights the *implementation* of new policies. This difference in focus – *change* vs. *implementation* – may be linked to the tradition of and experience with blended learning and e-learning. The following statement illustrates the state of online and blended learning in the EU: 'There is not yet a full understanding of the positive impact that new modes of learning and teaching can have, strategic and policy planning is notably absent, and a range of barriers are preventing more wide-spread integration of new modes into mainstream higher education' (European Commission, 2014, p. 16). Such a statement stands in contrast to the knowledge and practice of blended and online learning in the USA. For instance, the US Department of Education conducted a meta-analysis in 2010 on these two learning approaches. In summary, US policies are in the process of being implemented while in the EU, they still need to be developed. The US government was able to do a meta-analysis on the effect of online and blended learning in 2010 while a strong authority such as the European Commission stated four years later that teaching staff 'must be equipped with the skills and knowledge to allow them to fully utilise the range of new teaching tools available' (European Commission, 2014, p. 11).

2.2.8 Interactions between the three levels

The macro, institutional, and course level interact with each other. I explain this with a technological and societal example.

Concerning technology, Switzerland provides very good internet availability (macro level of technology). Therefore, teachers are able to include all variations of blended learning design (e.g., synchronous video conferencing). On the level of the institution at which I teach, the wireless internet connection is strong. This enables the use of the internet for all students during the face-to-face lessons, for example. On the course level, one must consider the computer experience of students and the teacher. This is just one example to illustrate how the framework may be used to analyse the institutional and macro context and to think about learner and teacher variables within blended learning.

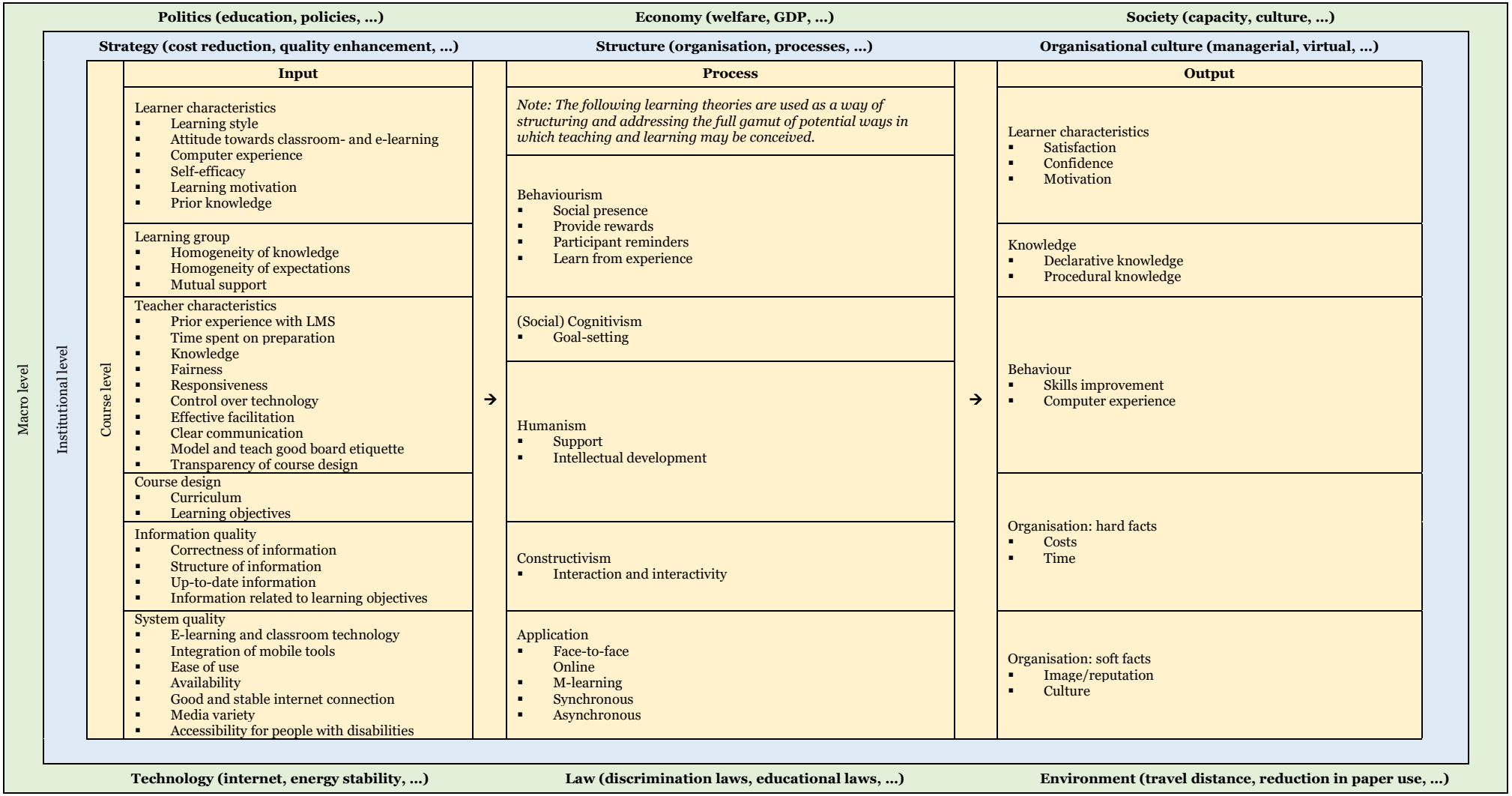
Culture is an aspect of society and a variable at both the macro level and the institutional level. On the macro level, a variable like power-distance (Hofstede, Hofstede, & Minkov, 2010) in a nation may influence the institutional culture, which again influences the process of blended learning. A small-power-distance indicates that 'there is limited dependence of subordinates on bosses, and there is a preference for consultation' (Hofstede et al., 2010, p. 61). One may think of group learning activities that might be more difficult in a nation with high power-distance compared to one with a low score on this variable. However, that is just an assumption that would require research. On the level of the institutional culture, Marshall (2010) investigates the relationship of technology and change in institutions of higher education and concludes that 'the change resulting from new technologies depends on the change culture and leadership decisions of the individual universities' (p. 30). This change culture, which is an aspect of culture, is influenced by the macro level culture and vice versa. Such examples show possible relationships among macro, institutional, and course level factors.

2.2.9 Theoretical framework at a glance

In the previous sections, I explained the individual parts of the theoretical framework. Table 4 presents the framework in its entirety.

Table 4

Theoretical framework for blended learning



2.3 Course design

The module coordinator at the University specifies the learning objective of my course: Students need to know the basics of interviewing in an aptitude diagnostic setting and be able to apply these in a counselling context. In the taxonomy of Bloom et al. (1956), this learning objective concerns the first three (remember, understand, apply) of the six levels. The students needed to know the three interview techniques I taught and to develop the ability to apply them in their real-life contexts. In my blended learning design, the students had face-to-face instruction and then learned collaboratively in an online classroom. During this collaborative learning, they were required to apply one of the interview techniques. After the application of the technique, they were asked to reflect on theory and their practical experience and construct a group summary. These tasks tested higher order thinking skills in Bloom et al.'s (1956) taxonomy. In a final face-to-face lesson, students presented their summaries and discussed them with the whole class. Chapter 4.3.2 includes a detailed illustration of the blended learning design and its connection with the theoretical framework. The course outline is available in Appendix A.

2.4 Practitioner researcher

In this section, I will outline my values as a researcher and then express why I feel confident in being a practitioner researcher.

I used two tools to explore my own values. The first is from Gibson (2008). According to his open question approach, I admire the following three characteristics about myself: broadmindedness, independence, and imagination. The other tool I used is the Values in Action Inventory of Strengths (Peterson & Seligman, 2004). This closed question approach reveals open-mindedness, curiosity, and love of learning as my highest-ranking character strengths. They belong to the virtue 'wisdom and knowledge' (Ruch et al., 2010, p. 139). Virtues like 'transcendence' scored very low in both assessments. An important basis for my values is the culture I grew up in. I live in a culture that is more individualistic than collectivistic and scores low on power distance (Hofstede et al., 2010). Characteristics like 'broadminded' or 'independent' fit well with these cultural values. This may be reflected in my stance towards knowledge as well. Moses and Knutsen (2012) differentiate between a naturalist and a constructivist perspective on knowledge. On this spectrum, I am closer to

naturalism than constructivism. For instance, I generally believe that there is something like objectivity and a 'real world'. Nevertheless, my doctoral study and professional experience allowed me to thoroughly reflect on my stance towards knowledge. Although I believe in objectivity, I accept that 'there can be more than one way to understand' (Moses & Knutsen, 2012, p. 11), which is an attribute of constructivist research. This shift in my perspectives may derive from my value of broadmindedness.

To discuss my confidence in being a practitioner researcher, I refer to my personal background and the research development framework (Vitae, 2010). My educational background includes an MSc in Psychology, an MAS in Human Resource Development and Career Counselling, and around two years of structured doctoral study on the Educational Doctorate programme at the University of Liverpool. In these studies, I wrote two theses and around 40 assignments. My professional background includes being an educator at a number of different private and public institutions. Considering my personal background alone, I have sufficient experience to engage in practitioner research.

The research development framework (Vitae, 2010) outlines the knowledge, behaviours, and attitudes a researcher in the United Kingdom should have. It is aimed, amongst others, at researchers who want to evaluate their development. The framework includes four domains: knowledge and intellectual abilities, personal effectiveness, research governance and organisation, and engagement, influence, and impact. In the first domain – knowledge and intellectual abilities – I meet the conditions. More specifically, I have a sufficient knowledge for the research, I have the cognitive abilities to do the research, and I meet the creativity criteria. The domain of personal effectiveness includes personal qualities, self-management, and professional and career development. Again, I fulfil the conditions in this domain. In the third domain – research and governance and organisation – I meet two requirements and fail to meet another. I am capable in the areas of research management and professional conduct, but I am not at a sufficient level in relation to finance, funding, and resources. I still need to learn more about funding and financial management. However, this area of development does not restrict my capabilities as a practitioner researcher in this study. The fourth domain includes engagement and

impact, communication and dissemination, and working with others. Again, I meet two aspects and need improvement in a third. I meet the requirements for engagement and impact and working with others, but I require improvement in communication and dissemination. My practitioner research aims to improve my knowledge and skills in using digital communication technologies in a learning environment (see also 1.5).

To conclude, my educational and professional background allow me to do practitioner research.

2.5 Synthesis

In the previous three sections, I outlined the theoretical framework, the blended learning design of my course, and my values and qualifications for being a practitioner researcher. This theoretical analysis is the base for the methodology and discussion of the findings. I will use the theoretical framework for the design of instruments and discussion of the findings. The learning design is at the heart of implementation and evaluation. In my role as a practitioner researcher, I influence the research on all levels: in the construction of the theoretical framework, the methodology, and the discussion of the findings. By having expressed my values, background, and qualifications in being a practitioner researcher, I allow readers to build their own opinion on how to situate this research in connection with their values and background.

In the next chapter, I will present the methodology of my research.

3 Methodology

As outlined in section 1.4, my research is justified around three original aspects: First, there exists no research on blended learning in the context of training Swiss career counsellors. Second, it bridges a knowledge gap in the literature by undertaking research on blended learning for the three interview techniques I teach. A final original part is the use of a self-developed theoretical framework.

In this chapter, I will situate this study within higher education research and discuss my methodological approach. I then present the methods, sample, data analysis, and ethical considerations. I use the term *methodology* to refer to the 'approach or paradigm that underpins the research' (Blaxter, Hughes, & Tight, 2010, p. 59), while the *methods* refer to the tools I use for data collection. The purpose of this chapter is to explain how I did the research and to justify my decisions.

3.1 Positioning in higher education research

This study is positioned within higher education research. Before I position this study within this research field, I will discuss 'higher education' in general. In Switzerland, higher education refers to education in traditional universities, universities of applied sciences, and universities of teacher education (State Secretariat for Education, Research and Innovation SERI, 2016; see also section 2.1.7). Higher education is a part of tertiary education, which includes professional education (EDK, 2018).
The focus of higher education in Switzerland is similar to the definition given in the Dictionary of Education (Wallace, 2015), which defines higher education as programmes of study that lead to advanced qualifications such as those at National Qualifications Framework (NQF) levels 5 or 6 and above. One NQF is the framework in England, Wales, and Northern Ireland that groups qualifications on nine levels (Government of the United Kingdom, n.d.). Level 5 includes diplomas of higher education, while level 6 includes bachelor's degrees. Swiss higher education institutions offer bachelor's degrees and above. Therefore, they compare to the NQF levels 6 to 8. To conclude, higher education research focuses on the higher levels of an educational system.

A search for 'Higher education research' in the Online Library of the University of Liverpool revealed 565,626 results in academic journals as of 23 April 2018. Limiting

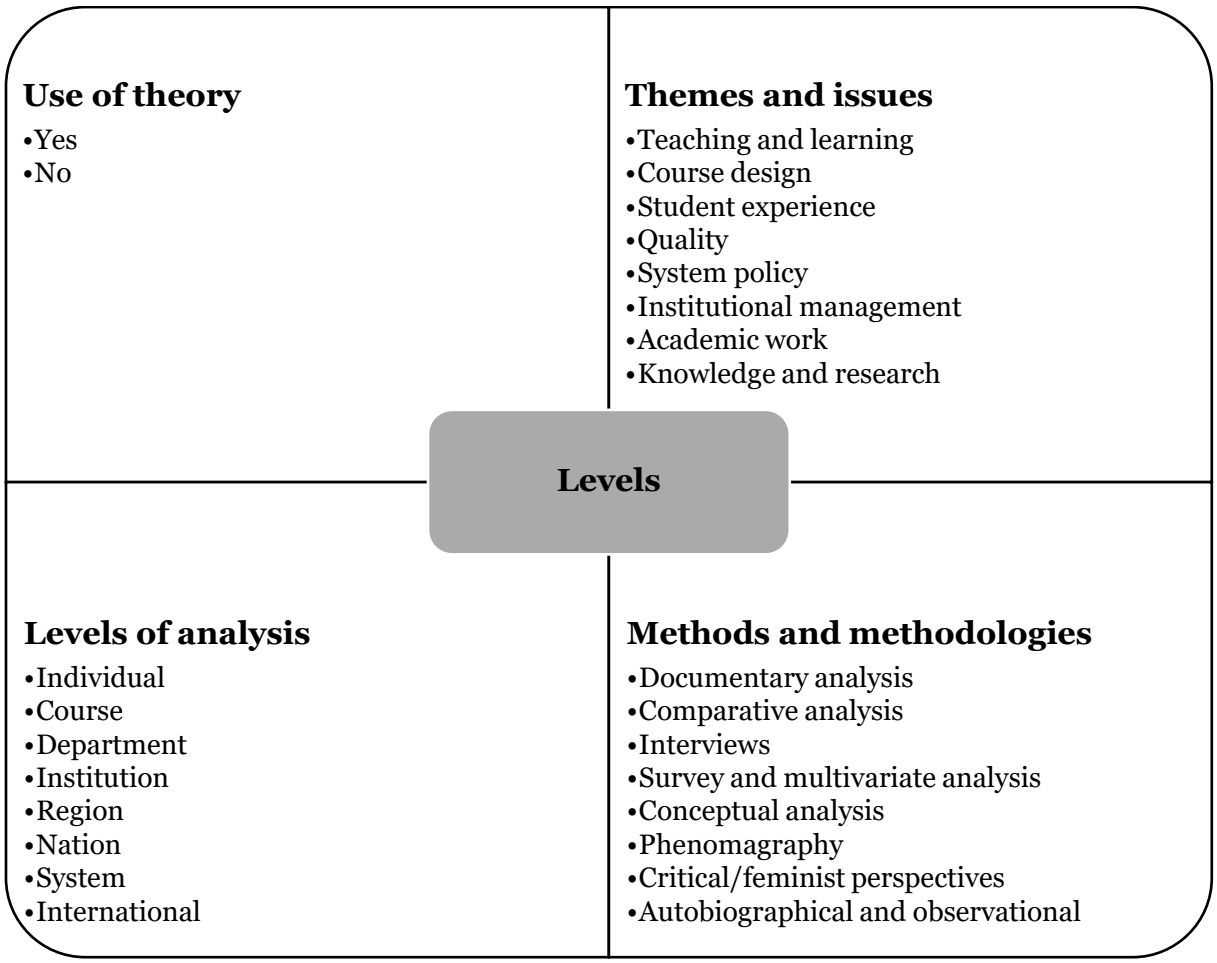
the search to the years 2017 and 2018 leads to 70,633 results in academic journals. Searches in other databases may lead to more or fewer results. However, these numbers reveal that higher education has been widely researched.

Various authors have analysed and structured educational literature. I will point to three of them, knowing that there exist more approaches for categorisations. Bray and Thomas (1995) focused on the field of comparative education and developed the Bray and Thomas Cube. This cube classifies comparative educational studies along three dimensions: geogragraphic/locational, nonlocational demographic groups, and aspects of education and of society. While Bray and Thomas focused on comparative educational literature on all educational levels, the next two authors focus on higher education in particular. Brennan and Teichler (2008, p. 261) structure the study of higher education around quantitative-structural aspects, knowledge aspects, aspects of processes and persons, and organisational aspects. Malcom Tight (2012) analysed 567 articles in 15 higher education academic journals that were published in 2010. He organised these articles around four levels: the use of theory, themes and issues, levels of analysis, and methods and methodologies (see Figure 8).

In the following sections, I will situate my study within these levels as Tight's analysis 'provides valuable intelligence' (Macfarlane, 2005, p. 361; review on the first edition of the book) on research in higher education.

Figure 8

Tight's levels (2012)



On the level of *use of theory*, I based my conceptual framework for the development of the blended learning on existing research, which implies the use of theory. Additionally, the methods I used for this research are entirely or partly based on scientific literature.

The *themes and issues* in my study were teaching and learning, course design, student experience, institutional management. The category teaching and learning fits my research since I explored the development, implementation, and evaluation of a blended learning course. Research provided the basis for the course design. After the course, the evaluation focused on both student experience and the institutional level.

My research focuses on the individual, course, and department *levels of analysis*. The analysis of my development occurs on the individual level. The design,

implementation, and evaluation of the course occur on the course level, with the exception of one aspect – implications for the organisation –, which occurs on the departmental level.

I employed interviews, surveys and multivariate analysis, conceptual analysis, and autobiographical *methods and methodologies*. Interviews were undertaken in both group and individual formats. I used a survey to evaluate students' satisfaction. My framework was developed with a conceptual analysis. Finally, I explored my development as a teacher – an autobiographical aspect.

Following these considerations on higher education and the positioning of my study within higher education research, I now turn to my methodological approach.

3.2 Methodological approach

In this section, I will discuss my methodological approach from four perspectives: the systemic/analytical divide, the quantitative/qualitative divide, research style, and evaluation setting. Before exploring these perspectives, it is necessary to outline the research question.

Shulman (1988) argues that a researcher should choose their methodological perspective depending on the question they ask. In other words, a practitioner researcher should not limit themselves to a specific methodology. The research question for this study was: How does a blended learning approach impact the training of three interview techniques in a programme for career counsellors in Switzerland?

This question was divided into three sub-questions:

Q1. What are the effects of blended learning on levels of satisfaction, knowledge, behaviour, and organisation?

Q2. How do the variables of the theoretical framework on blended learning prove themselves in practice?

Q3. How do I, as a teacher, develop while teaching this course?

To answer the main question and the three sub-questions, I used a mix of systemic and analytical perspectives in line with Salomon's (1991) framework. For instance, the measurement of the satisfaction level followed an analytical perspective. In contrast, the design of the blended learning on the basis of a framework was a more systemic task. Each sub-question required a mix of methods. The following justification is in line with the Bryman's (2009) recommendation to explicitly state 'why a mixed methods approach was employed' (p. 527).

The three sub-questions ask for both quantitative and qualitative research methods. Quantitative research methods aim to operationalise and quantify attributes of the measurable reality (Bortz & Döring, 2006, p. 138), while qualitative research methods are used for the interpretation of verbal and symbolic material (Bortz & Döring, 2006, p. 296). Whether or not mixed methods research is a new paradigm is a point of contention in the literature (e.g., Cohen, Manion, & Morrison, 2011, p. 26). Some authors even question the value of the quantitative/qualitative divide and call it 'a relic of the past' (Moses & Knutsen, 2012, p. 312). However, my research is not limited to one approach or another and therefore fits neither in the quantitative nor qualitative research families as suggested by Blaxter et al. (2010). Despite the theoretical controversy, my research is a mix of quantitative and qualitative methods and therefore a mixed methods approach.

Research question Q1 focuses on the evaluation of the training. The basis for this evaluation is the Kirkpatrick's (Catalanello & Kirkpatrick, 1968; see 2.1) model. To explore this research question, both quantitative and qualitative methods may be appropriate. I will discuss this in more detail in the Methods section. Research questions Q2 and Q3 ask for a more qualitative approach. This reasoning is in line with Cohen et al. (2011, p. 227). They state that quantitative research questions typically are 'what' and 'how much' questions (sub-question Q1), while the nature of qualitative research questions is often more probing and process-driven, such as 'how' questions (sub-questions Q2 and Q3).

Another line along which to situate one's methodological approach is research style. Blaxter et al. (2010) differentiate between four research styles: action research, case studies, experiments, and surveys. Cohen et al. (2011) add to these four approaches

two additional research styles: ethnography and 'testing and assessment'. My research was action research. Before providing arguments for why my study was conducted as action research, I explain why other research styles do not fit my project (see Cohen et al., 2011):

- A survey focuses mainly on opinions, scores, outcomes, conditions, and ratings.
- Experiments focus on initial states, interventions, and outcomes.
- Testing and assessment focus on the cognitive, affective, and psychomotor domains, achievement, and personality characteristics.
- Ethnography focuses on perceptions, views of participants, and issues as they emerge over time.
- Case study research focuses on local situations and bounded phenomena.

My study integrates all five research styles but enhances them with research *in* action, which is typical for action research. Coghlan and Brannik (2014) define action research as 'a research approach which focuses on simultaneous action and research in a collaborative manner' (p. 53). According to these authors, action research may include self-study-in-action as well as system-study-in-action. Practitioner researchers are insiders and engage in research both *on* and *in* action. Therefore, the other five research styles would not fit my research – they focus only on research *on* action. Lewin (1953) is considered the founder of action research. He conducted action research on the discrimination of minorities.

The aspect of doing research *in* action is a main benefit of action research. For instance, it allows one to gather insider information. Additionally, Coghlan and Brannik (2014) provide insights on how action research meets the needs of professional practice. I address two of them. First, their action research cycle (p. 9) includes four basic steps. Constructing, planning action, taking action, and evaluating action. These steps are similar to traditional management cycles, such as 'analyse – plan – act – control'. Therefore, one may argue that the basis of action research meets professional standards. Second, some aspects of action research are valuable for professional practice in general. An example is the importance of being aware of common judgment biases (Coghlan & Brannik, 2014, p. 33).

McNiff and Whitehead (2009) highlight a key aim of action research as the sharing of 'knowledge and the learning that led to the creation of that knowledge' (p. 13). In addition to being a teacher, I am a researcher and an employee of the university. Therefore, I influenced my research as a moderator variable (Bielska, 2011) by mediating the relationship between the independent variable (blended learning) and the various dependent variables (e.g., satisfaction or knowledge). For instance, if I had provided insufficient feedback during the course, the knowledge increase may have been lower than if I had provided valuable feedback.

Considering the perspective of the evaluation setting, action research provides the possibility of performing formative evaluations which focus on improving interventions by evaluating intermediate results. This is the case for sub-questions Q2 and Q3. Formative evaluation is one of two dimensions with which to categorise evaluations – the other one being summative evaluation, which addresses the overall efficiency of interventions (Bortz & Döring, 2006). Sub-question Q1 may be considered a summative evaluation.

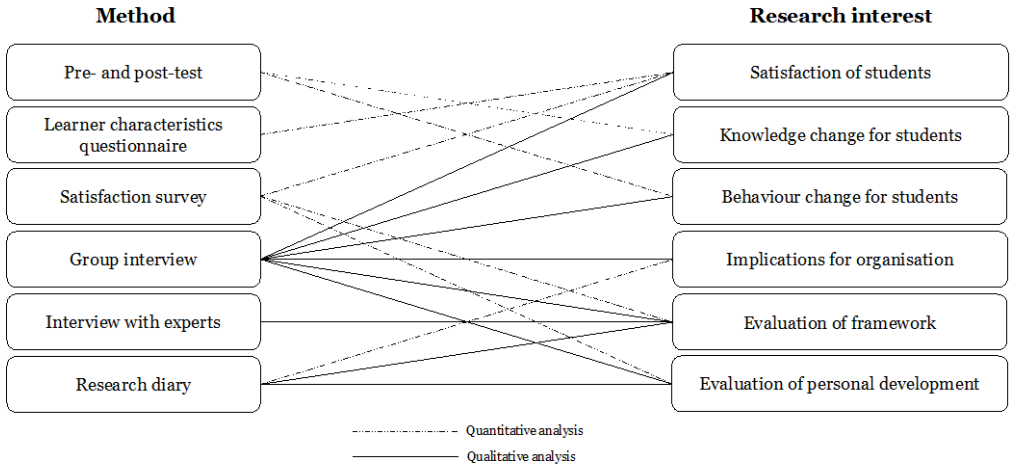
To summarise, this research integrates analytical and systemic perspectives and uses both quantitative and qualitative methods. The study is conducted as action research and incorporates other research styles. From an evaluation perspective, the research combines formative and summative evaluation. The next section explains the methods in more detail.

3.3 Methods

I first provide an overview of the different methods and justify why I chose these particular methods. The research sub-questions provide the structure for the justifications. Figure 9 stipulates an overview of the different methods, analysis, and research interests. After this introduction, I will describe and discuss each method in more depth. The analysis is a separate section that follows the discussion of methods.

Figure 9

Methods, analysis, and research interest



Sub-question Q1

The research interest for sub-question Q1 concerns the satisfaction, knowledge, and behaviour of students, as well the implications for the organisation. To explore these effects, I used a concurrent triangulation design (Creswell, 2009) on all four levels. This design allows for numerical ranking and statistical analysis while still receiving qualitative feedback from the students.

On all four levels, I employed a group interview method. An alternative instrument could have been to do individual interviews. The decision on group interviewing was based on its relative time efficiency (Cohen et al., 2011, p. 432). The quantitative methods differed between levels:

- To investigate the satisfaction of students, I employed the post-survey. An alternative instrument would have been individual interviews. I decided on a survey as this is a standard procedure at the university at which I teach, and it

is a quantitative method, which supplements the qualitative data gathered with the group interview.

- On the level of knowledge and behaviour change for students, I used the pre- and post-test. This is a pre-experimental design with one group (Cohen et al., 2011, p. 322). Such approaches are commonly used within an action research framework 'to test some methodological innovation, be that a set of more innovative teaching techniques, a selection of some modern teaching materials' (Bielska, 2011, p. 88). Other possible instruments for assessing the knowledge would have been individual interviews or biographical analysis. Behaviour change could have been measured with observations, role-playing, or simulations. However, these instruments are all mainly qualitative. Therefore, I decided on the pre- and post-test.
- To numerically explore the implications for the organisation, I collected the time and cost spent on developing and implementing the blended learning course. This quantitative method provides information that is useful for programme leaders when considering economic issues for the future of blended learning in their programme. Alternatives could have been to use management models like the Balanced Scorecard (Kaplan & Norton, 1992) or the Management Model of St. Gallen (Rüegg-Stürm, 2003). However, to use such sophisticated models was beyond the scope of this doctoral thesis.

A learner characteristics questionnaire provided information useful for explaining possible differences in the levels of satisfaction. Learner characteristics may be collected with instruments such as interviews, observations, biographical analysis, or questionnaires. My decision on a questionnaire was based on its efficiency since learner characteristics were not at the centre of my research.

From an evaluation perspective, the research on sub-question Q1 was a summative evaluation since I explored the overall efficiency of blended learning.

Sub-question Q2

The research interest for sub-question Q2 is the evaluation of my framework. I mixed a concurrent with a sequential design (Creswell, 2009). The group interview, satisfaction survey, and research diary were concurrent components. Data from all sources were used to develop the questions for the interviews with experts, which

formed the sequential part of the design. The selection of these research methods is justified by participants' perspectives. In the first step, both the students (group interview and satisfaction survey) and I (research diary) provided information that can be used to evaluate the framework. Parts of this information provided insights to aid with the development of the interviews with internal and external blended learning specialists. The variables of the framework were evaluated from four perspectives:

- The students' feedback was used to evaluate all variables of the framework, except the learner characteristic category in the input section and the organisational hard facts category in the output section.
- The research diary provided information for evaluating all aspects of the framework.
- The internal expert interview added an internal view on learner characteristics, course design, process category, and the institutional level.
- The external expert interview offered an external view on learner characteristics, course design, process category, and the macro level

A different evaluation instrument could have been an independent observation during the design and implementation of the course. However, that would have been too expensive. By including experts, I ensured that there was an external view on my framework and the course.

The research diary, and therefore my perspective, was the basis for a formative evaluation while the satisfaction survey, group interview, and expert interviews were parts of a summative evaluation. To reduce bias in the formative evaluation, I used the same structure throughout the whole process (see 3.3.6). This allowed me to separate data, reasoning, and conclusions. This is a central aspect of research 'in action' since it allows one to retrace steps from observable behaviour (data) to understanding (reasoning) and judgement (conclusions) (Coghlan & Brannick, 2014).

Sub-question Q3

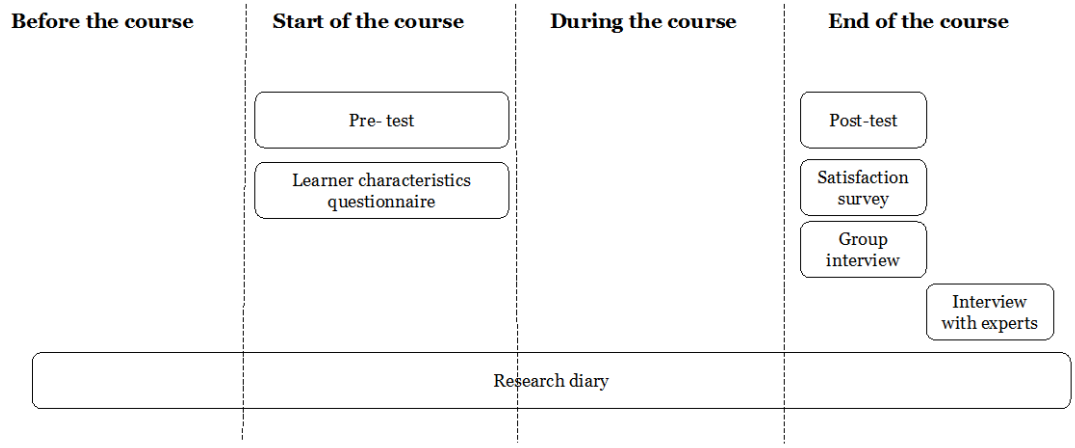
Sub-question Q3 relates to the research interest in my development as a teacher. The research methods to investigate this question were the keeping of a research diary, and feedback from students in the satisfaction survey and group interview. In the research diary, I regularly wrote down my insights while designing and implementing

the blended learning. I decided on a research diary as McNiff and Whitehead (2005) recommend keeping a diary for reflecting on one's action. The feedback from students added an external view to my reflections. As with sub-question Q3, an independent observation would have been a suitable alternative but would have been too expensive.

Reflecting on my development was a form of formative evaluation since I regularly evaluated my progress and insights, whereas the student feedback was summative.

Before I explore each method in more detail, I present the methods on a timeline (Figure 10). Students did the pre-test and the questionnaire about learner characteristics before the course began. After the course, I collected data with the post-test, the survey, the group interview with students, and the two interviews with experts. Before, during, and after the course, I collected data on time and costs, and recorded insights in my research diary.

Figure 10
Methods on a timeline

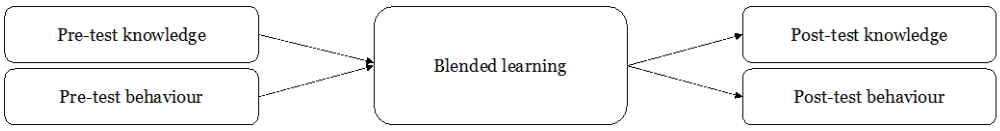


3.3.1 Pre- and post-test

The aim of the pre- and post-tests was to measure the change in student knowledge and behaviour before and after the course. I decided on a pre-experimental one group design (see Figure 11). This strategy is common practice for testing 'the value of new teaching methods' (Cohen et al., 2011, p. 322).

Figure 11

Pre-experimental one group design



Although these designs are often used, they have downsides. Other variables than the blended learning could influence the relationship between pre- and post-results. These extraneous variables threaten the validity of the method (Bortz & Döring, 2006). Nevertheless, the data may be valuable for pilot studies (Bielska, 2011). The decision for this design is based on sample size and feasibility. With 13 students, a true experimental design with both an experimental and control group would be theoretically possible. This design would be in line with the recommendation of Catalanello and Kirkpatrick (1968) to compare the results of the experimental group (doing the course) to the control group (not doing the course). However, the statistical analysis would not provide useful information due to the small sizes of the groups. Additionally, dividing the class into an experimental and control group would not be feasible – not doing the course was not an option. An alternative would have been to employ blended learning for the experimental group and not for the control group or comparing the whole class to a whole other class. However, these alternatives would not have been feasible due to the limitations of personal and organisational resources. Additionally, it would not have been ethical to deprive students of learning opportunities by assigning them to a control group. To summarise, the chosen design was feasible and provided valuable data that will need to be analysed cautiously.

The pre- and post-test included knowledge questions about interviewing in aptitude diagnostics and behaviour items derived from a German self-assessment tool called DIPA (Strobel & Westhoff, 2009). DIPA is short for ‘Diagnoseinstrument zur Erfassung der Interviewerkompetenz in der Personalauswahl’ (Diagnostic tool for measuring interviewer competence in personnel selection).

I constructed four knowledge questions. The three interview techniques I taught formed the basis for these questions. The goal was to assess learners' pre- and post-course knowledge. Since no such questions existed, I decided on one rating question and three knowledge questions. The validation of these questions focused on understandability, which was ensured by collecting feedback on the question from a researcher associated with the University of Liverpool.

Bloom et al.'s (1956) taxonomy formed the basis for the rating question. Figure 12 shows this question. A value of 2 equals knowing, 3 equals understanding, and 4 equals experience with application. The value of 1 means that the participant does not know this technique at all.

Figure 12

Knowledge question 1

Evaluate on a scale of 1–4 how familiar these interview techniques are to you. The numbers indicate the following familiarity:

1 – I do not know this technique.
2 – I know this technique, but cannot explain it to another person.
3 – I know this technique and can explain it to another person, but have never applied it.
4 – I know this technique, can explain it to another person, and have already applied it.

	1	2	3	4
Behaviour Description Interview				
Situational Interview				
Decision Oriented Interview				

Questions 2 to 4 were based on principles provided by Moosbrugger and Kelava (2008). Figure 13 presents these questions. Of the various types of questionnaires, I decided on a multiple-choice design. The main reason for selecting this format is that the probability of guessing is minimised (Moosbrugger & Kelava, 2008, p. 50).

Figure 13

Knowledge questions 2–4

In the following three questions, only one answer is correct. Please make an X for the correct answer. If you do not know the answer, please choose the last choice for each question.

Question no. 2
The Behavioural Description Interview is about …

Past behaviour
Current behaviour
Behavioural intentions
I do not know.

Question no. 3
The Situational Interview is about …

Past behaviour
Current behaviour
Behavioural intentions
I do not know.

Question no. 4
The Decision Oriented Interview is about the …

Analysis of past decisions
Preparation of satisfactory decisions
Systemic analysis of decisions
I do not know.

Question 5 was a selection question to decide whether or not questions 6 to 23 need to be answered. Questions 6 to 23 were based on the German assessment tool DIPA (Strobel & Westhoff, 2009). Figure 14 displays questions 5 to 23.

DIPA is used to assess one's own or another's behaviour in an interview setting. It is aimed at people who do selection interviews – a form of aptitude diagnostics. DIPA consists of 146 items and integrates various aspects of interview research that are

known to enhance the quality of interviews. I decided to base the behavioural questions on this assessment tool since there are no similar scientifically tested tools available in the German-speaking market and it allows one to use only parts of the questionnaire. The questions in the pre- and post-test are items I considered suitable for a career counselling setting.

Figure 14

Behavioural questions 5–23

Answer options for questions 5–8

Yes No

Question no. 5 in the pre-test

Have you conducted an interview or an interview section in the past during which you have examined aspects of the aptitude for a particular profession?

Question no. 5 in the post-test

Have you conducted an interview or an interview section during this course in which you have examined aspects of the aptitude for a particular profession?

Planning

Question no. 6

Was the interview planned?

Question no. 7

Did planning include the use of a requirement profile?

Question no. 8

Did the planning involve creating or using an interview guide?

Answer options for questions 9–22

Always Often Rare Never

Formulation of questions

Question no. 9

Were your formulations clear in the conversation?

Question no. 10

Were the questions related to the specific behaviour of the person seeking advice?

Question no. 11

Were the questions as short as possible?

Question no. 12

Were the questions adequately open?

Question no. 13

Were the questions appropriately direct?

Question no. 14

Did the questions assume something that could not be assumed?

Question no. 15

Did the questions suggest answers (leading questions)?

Question no. 16

Did the questions involve more than one aspect?

Question no. 17

Did the questions include an assessment of the person's behaviour?

Question no. 18

Did the questions contain technical terms?

Question no. 19

Did the questions contain foreign words?

Question no. 20

Did the questions include reasons (e.g., why)?

Question no. 21

Did some questions ask about future behaviour?

Question no. 22

Was the personality or the dignity of the person seeking counsel violated by the questions?

Evaluation	
Question no. 23	
Was the interview evaluated?	
Yes	No

3.3.2 Learner characteristics questionnaire

The learner characteristics questionnaire was used to gain insight into possible differences in the satisfaction levels of students (see 3.3.3). Before the start of the course, the students completed the questionnaire. The goal was to assess the learner characteristic variables of the conceptual framework:

- Learning style: questions 24–27
- Computer experience: questions 28–29
- Attitude towards technology: question 30
- Attitude towards e-learning: question 31
- Attitude towards classroom learning: question 32
- Learning motivation: questions 33–34
- Self-efficacy: questions 35–36

Various sources provided the basis for the questionnaire. The first three questions, assessing the learning style, were based on the VAK (Chislett & Chapman, 2005; see Figure 15). VAK stands for visual, auditory, and kinaesthetic. I included these questions although the idea that matching learning material to sensory preferences is more effective than using the same forms of media for all learners has not been adequately established in the literature (e.g., Coffield et al., 2004; Klitmøller, 2015). The reason for including it was the fact that I used texts, podcasts, and videos in my blended learning course. I wanted to test whether answers in the VAK may be linked to the preference for a learning material or not. The answers given may also contribute to general knowledge on the VAK concept.

Figure 15

Learner characteristic questionnaire, questions 24–26

Question no. 24
During my free time I most enjoy …

Going to museums and galleries
Listening to music and talking to my friends
Playing sport or doing DIY

Question no. 25
I first notice how people …

Look and dress
Sound and speak
Stand and move

Question no. 26
When I operate new equipment, I generally …

Read the instructions first
Listen to an explanation from someone who has used it before
Go ahead and have a go, I can figure it out as I use it

The fourth question set was one I created on the basis of the learning orientations outlined by Taylor (1983). Figure 16 displays this question. Taylor identified four learning orientations: academic, personal, vocational, and social. The first three orientations are divided into an intrinsic and extrinsic interest (Beaty, Gibbs, & Morgan, 1997). This led to seven items for assessing learning orientation (see Figure 16). These learning orientations are similar to those of Vermunt (1996). He includes four areas in his Inventory of Learning Styles. One area is 'learning orientation'. This area consists of five sub-scales: personally interested, certificate-oriented, self-test-oriented, vocation-oriented, and ambivalent.

Figure 16

Learner characteristic questionnaire, question 27

Question no. 27

Evaluate on a scale of 1–4 how important the following aspects are for you in your studies.
1 means that the aspect is very unimportant; 4 indicates it is very important.

	1	2	3	4
Training for daily business				
Recognition of the qualification on the labour market				
Intellectual confrontation with learning materials				
The certificate itself				
Extension of the horizon or personal development				
Feedback and grades				
Having a good time				

The questions to assess computer experience (questions 28 and 29), attitude towards technology (question 30), attitude towards e-learning (question 31), attitude towards classroom learning (question 32), learning motivation (questions 33 and 34), and self-efficacy (questions 35 and 36) are based on Bitzer, Söllner, and Leimeister's (2016) questionnaire. Figure 17 shows these questions. Questions 28, 30, 33, 35, and 36 were used unchanged from the original. Questions 29 and 34 were adapted and questions 31 and 32 are my own constructions but similar to Bitzer et al.'s (2016) original formulation. To keep consistency in the questionnaire and pre-test, I used a four-point rating scale.

Figure 17

Learner characteristic questionnaire, questions 28–36

Answer options in questions 28 – 36

Agree rather agree rather disagree disagree

Question no. 28

I feel confident when using IT systems.

Question no. 29

I usually understand new high-tech products.

Question no. 30

I like to be one of the first to be using new technologies.

Question no. 31

Online learning can be very effective if it is properly implemented.

Question no. 32

Classical learning in the classroom can be very effective if it is properly implemented.

Question no. 33

I expect to learn useful things in this course.

Question no. 34

I am looking forward to the content of this course.

Question no. 35

I am sure that I will be able to keep up with the content of this course.

Question no. 36

I know I have the abilities needed to learn the course content.

These learner characteristics were used to gain insight concerning possible differences in student satisfaction levels with the blended learning course.

3.3.3 Satisfaction survey

To gain insight into the satisfaction levels of students, I decided to collect individual responses in a survey and a collective opinion in a group interview (see 3.3.4).

In the satisfaction survey, the students provided feedback on various parts of the blended learning course, which were divided into four sections. Again, I decided on four answer categories to maintain consistency with the earlier questions and the pre-questionnaire.

The first section, *general course evaluation,* included questions about the satisfaction and output variables of my framework (see Figure 18). Question 24 is from the student survey questionnaire by Garrison and Vaughans (2008). Question 25 is from the University of Roehampton London Online (2016). Question 26 is adapted from Ngai, Poon, and Chan (2007) to evaluate perceived usefulness. I replaced 'web-based learning' from the original question with 'blended learning' to suit my needs. Question 27 is from Chmiel, Shaha, and Schneider (2017), who adapted from Ngai, Poon, and Chan (2007), and is used to assess perceived ease of use of e-learning. Question 28 is a self-developed question for assessing improvements in computer experience – a behavioural output variable in my framework. Question 29 is again from the student survey questionnaire by Garrison and Vaughans (2008). I used it to assess students' attitudes towards blended learning after having taken the course. Question 30 is a self-developed question for assessing procedural knowledge, which is a knowledge output variable in my framework. Question 31 is adapted from an evaluation questionnaire by Bitzer, Söllner, and Leimeister (2016) for assessing self-efficacy after the course. Question 32 is a self-developed question for assessing the level of motivation for applying the interview technique in the future, which is a behavioural output variable in my framework.

Figure 18

Satisfaction survey, questions 24–32

Answer options in questions 24–32

Agree rather agree rather disagree disagree

General course evaluation

Question no. 24

Overall, I am satisfied with this blended learning course.

Question no. 25

The learning outcomes for the course were clearly communicated.

Question no. 26

Blended learning gives me greater control over learning.

Question no. 27

Learning to operate the Moodle platform was easy for me.

Question no. 28

My technological skills improved because of taking part in this blended learning course.

Question no. 29

Given the opportunity, I would take another blended learning course in the future.

Question no. 30

I know how to plan, conduct, and evaluate an interview in aptitude diagnostics.

Question no. 31

I know I have the abilities needed to apply the interview techniques.

Question no. 32

I aim to use these interview techniques in the future.

In the second section, *elements of the course design*, I wanted to get feedback on the various elements of the course (see Figure 19). Questions 33–41 are self-developed

questions as these questions needed to be specific to this course. Questions 42 and 43 are adapted from the University of Roehampton London Online End of Module Survey (2016). In question 42, I added 'overall' as an introductory word. I changed 'readings' to 'media' in questions 43 since I provided video and audio as well.

Figure 19

Satisfaction survey, questions 33–43

Answer options in questions 33 – 43

Agree rather agree rather disagree disagree

Elements of the course design

Question no. 33

The texts provided in the first weeks of the course were useful for learning theory.

Question no. 34

The podcasts provided in the first weeks of the course were useful for learning theory.

Question no. 35

The videos provided in the first weeks of the course were useful for learning theory.

Question no. 36

The discussion of theory was useful for understanding the interview techniques.
Additional answer option: 'I did not do this element of the course' – not all students took part in the discussion.

Question no. 37

The development of my own interview questions was useful for learning the interview techniques.
Additional answer option: 'I did not do this element of the course' – not all students developed their own questions.

Question no. 38

The discussion of my own interview questions was useful for learning the interview techniques.
Additional answer option: 'I did not do this element of the course' – not all students discussed their interview questions.

Question no. 39
The application of my own interview questions in a real-life setting was useful for learning the interview techniques.
Additional answer option: 'I did not do this element of the course' – some students may not have been able to apply their own interview questions in a real-life setting.

Question no. 40
The discussion of the application in a real-life setting was useful for learning the interview techniques.
Additional answer option: 'I did not do this element of the course' – some students may not have been able to discuss interview questions.

Question no. 41
The development of a summary for fellow students was useful for learning the interview techniques.

Question no. 42
Overall, the structure of the course helped me to understand the module material.

Question no. 43
The course content (including media and activities) allowed me to meet the learning outcomes.

The third section, *learning group,* included questions that are linked to learning group variables in my framework (see Figure 20). Questions 44–46 are self-developed questions as I did not find suitable questions to assess the learning group variables. Question 47 is from the University of Roehampton London Online (2016).

Figure 20

Satisfaction survey, questions 44–47

Answer options in questions 44–47

Agree rather agree rather disagree disagree

Learning group

Question no. 44

I think my learning group held a similar level of knowledge to myself.

Question no. 45

I think my learning group had a similar level of expectations as myself.

Question no. 46

I think my learning group provided mutual support.

Question no. 47

Interactions with my fellow students made a positive contribution to my understanding of the course subject.

Finally, the section *instructor* included questions that relate to the teacher characteristics in my framework (see Figure 21). Question 48 is from the University of Roehampton London Online (2016) and is used to assess general satisfaction with the instructor. Question 49 is a self-developed question for assessing the fairness of the instructor. Question 50 is adapted from Walker and Fraser (2005) and was used by me to assess the 'responsiveness' variable. The original question is in the present tense; I changed it to the past tense. Question 51 is from the University of Roehampton London Online (2016) and is used to assess 'clear communication'. The original question 52 is from the University of Roehampton London Online (2016) and was used by me to assess 'effective facilitation'. I adapted it to my needs and added 'from the instructor' to be clear that it does not include feedback from fellow students. Question 53 is by Walker and Fraser (2005) and is a second question used to assess the 'effective facilitation' variable. The original question is in the present tense; I changed it to the past tense. Questions 54 and 55 are self-developed

questions for assessing ‘modelling and teaching of good board etiquette’ (question 54) and ‘transparency of course design’ (question 55).

Figure 21

Satisfaction survey, questions 48–55

Answer options in questions 48–55

Agree rather agree rather disagree disagree

Instructor

Question no. 48

Overall, I am satisfied with the faculty member.

Question no. 49

The instructor treated all students in a fair way.

Question no. 50

The instructor responded promptly to my questions.

Question no. 51

The feedback that I received made clear the strengths and weaknesses of my work.

Question no. 52

The feedback I received from the instructor helped me to improve my work.

Question no. 53

The instructor adequately addressed my questions.

Question no. 54

The instructor modelled and taught good board etiquette.

Question no. 55

The instructor was transparent about the course design.

3.3.4 Group interview

After the last face-to-face lesson, I conducted a group interview to explore satisfaction, perceived knowledge, and behaviour change in the blended learning course (see Appendix H). The objectives of this interview were three-fold:

1. To investigate satisfaction with blended learning, as well as perceived theoretical and behavioural learning.
2. To evaluate the course design.
3. To gain insights about the future use of blended learning.

For the first objective, I used three questions taken from work by Garrison and Vaughans (2008): 'How does this blended learning course differ from traditional classroom instruction?'; 'What was the most effective aspect of this blended learning course?'; and 'What was the least effective aspect of this blended learning course?' I decided on these three questions as they were open-ended questions used 'to gather student responses that will help inform the ongoing development of this and other blended learning courses' (Garrison & Vaughans, 2008, p. 188) at a university. The answers to these questions contribute qualitative data to the effects of blended learning on the level of satisfaction, knowledge, and behaviour (research sub-question Q1).

To evaluate the course design, I used a self-developed question: 'What would you change in this blended learning course and why?' This question did not lead the students, which ensured that they responded with what was on their mind. Moreover, asking for changes helps to improve the framework further. This question was used to gather qualitative student data for the evaluation of the framework (research sub-question Q2).

For the third objective, I used a self-developed question again: 'If you were the programme leader, what conclusions would you draw from this first-time blended learning course for other parts of the programme?' The answers to this question provided both qualitative information and a student's perspective on the implications for the organisation (research sub-question Q1).

Comments on my development as a teacher (research sub-question Q3) could have been mentioned in the answers to any of the questions.

3.3.5 Interviews with experts

After the course, I conducted two individual interviews with experts to investigate how variables of my conceptual framework on blended learning proved themselves in practice (see Appendix I). One expert was an e-learning specialist at the university where I teach. The second expert was an external blended learning specialist. I approached an author whose research was an inspiration in developing my own conceptual framework. For reasons of anonymity, both researchers are not named in this research and no further information is provided as this could give hints as to who the experts are. For both interviews, I had three objectives:

1. To evaluate the course design.
2. To evaluate the learner characteristics questionnaire.
3. To assess student feedback on my course.

I sent two documents to both experts. One was the curriculum for the course and the other the questionnaire for evaluating the learner characteristics of the students (see 3.3.2).

To evaluate the course design, I asked three questions: **'**What are your general thoughts on this curriculum?'; 'What would you add, change, or remove?'; and 'Do you think that the program provides 'the frequency and character of interactions among students and faculty members that are needed to foster learning?' (Stover, 2005, p. 7). The first two questions were self-developed. They did not lead the experts and allowed them to express any aspect they considered important. Therefore, this open-ended approach allowed the evaluation of the course design and process variables of the framework. The third question is one used to assess the learning effectiveness and focuses primarily on the process of blended learning. In case the expert answered the last question with a 'no', they would be presented with a fourth question: 'If not, what should be changed about the frequency and character of interactions?' The answers on this question could be used to develop the framework further.

For the second objective, I again used three questions. All of them were self-developed: 'What are your general thoughts on this questionnaire?' and 'What would you add, change, or remove?' Both questions do not lead the interviewees. The feedback may be used to evaluate the 'learner characteristics' category in my

framework. The third question was one I derived from a reflection in my research diary (see 3.3.6) and required an introduction: 'This questionnaire is one I developed on the basis of various literature. I looked for a short learner characteristics questionnaire tool but did not find one. Therefore, I thought that it would be useful to design and validate such a learner characteristic questionnaire tool. Please explain why you agree or disagree with my assumption that developing and validating a learner characteristic questionnaire tool would be useful?'

To evaluate student feedback on my course, I undertook qualitative analysis of the group interview (see 3.3.4). I provided two positive and then two negative points that students mentioned. I then asked the experts for their thoughts on each and what they would add, change, or remove (if any). The answers to these questions provided an external view on the students' perspectives. I included a general question on satisfaction as well: 'From your experience, in what ways could student satisfaction be increased in this course?' This question is taken from Stover (2005, p. 7) and addresses student satisfaction. Answers to this question are valuable for improving the framework and the course.

I concluded the expert interviews with a general question: 'Would you like to add or mention any essential points that I did not ask of you? If so, what points?' With these questions, I ensured that the experts could say all they had to say.

3.3.6 Research diary

During the whole research process, I used a research diary to keep track of my thoughts (see Figure 22). This is a strategy Blaxter et al. (2010) recommend for all kinds of research. It may be used to record the 'progress, feelings, thoughts, insecurities and insights' (Blaxter et al., 2010, p. 49) that arise during the research. I focused on the progress, thoughts, and insights and based my research diary on three questions taken from the work of McNiff and Whitehead (2005, p. 113): 'What did I do?'; 'What did I learn?'; and 'What is the significance of my learning?' I decided on these questions as they are valuable in action research and ensured that I maintained a reflective posture during the design and implementation of the blended learning course. I extended these questions with a fourth, to help keep track of my reflections for research sub-question Q2: 'How is this connected to my framework?'

Additionally, I collected the time and costs of the tasks I did before, during, and after the course in my research diary. This information was necessary for reflecting on the time and money spent on designing and implementing the blended learning course, which would have implications for the organisation if the programme leaders decided to offer more blended learning in their programme.

Figure 22

Research diary

Date	Minutes	Costs	What did I do?	How is this connected to my framework?	What did I learn?	What is the significance of my learning?

I used the research diary during the design and implementation of the blended learning course and at the data collection stages. The tool I used for the research diary was Microsoft Excel. Reflections during the phase of data analysis were included directly in this doctoral thesis.

Following this description of the methods used in my research, I will now turn to the sample, data analysis, and ethical considerations.

3.4 Sample

The sample for my research was the thirteen students of my class in 2017. That is a convenience sample, which is a form of non-probability sampling (Cohen et al., 2011). With this kind of sampling, the researcher chooses the nearest available individuals as participants for the research. The decision on this sample is justified by the frequency of this course and the introduction of blended learning to this course. My course takes place every one and a half years. Therefore, the next possible sample I could have chosen would have been the class at the end of 2018. Additionally, I introduced the blended learning to this specific course. Therefore, it was logical to include the students of this class as research participants. Convenience sampling implies that no generalisation is possible (Cohen et al., 2011). Four students were male, nine female. Nine worked for a public institution and four for a private organisation. Eight of the students had a university degree and five a Federal Diploma of Higher Education. Table 5 provides an overview of the sample.

Table 5
Sample characteristics

Category	Value 1	Value 2
Gender	4 male	9 female
Work	4 private organisation	9 public institution
Education	5 Federal Diploma of Higher Education	8 university degree

3.5 Data analysis

In this section, I describe the analysis of both the quantitative and qualitative data, which is illustrated in Figure 9 above.

3.5.1 Quantitative analysis

Blaxter et al. (2010) differentiate between descriptive statistics, inferential statistics, simple interrelationships, and multivariate analysis as levels of quantitative analysis. Descriptive statistics allow analysing averages, ranges, and variable frequencies (Blaxter et al., 2010). Table 6 shows how this kind of analysis was used.

Table 6
Descriptive statistics

Data collection method	Data analysis: descriptive statistics
Pre- and post-test	Means of scores
Learner characteristics questionnaire	Means and frequencies of scores
Satisfaction survey	Means and frequencies of scores
Group interview	Frequencies of themes
Research diary	Aggregation of time and costs

My research included nominal or ordinal data. Nominal data included the questions with answers ‘yes’/‘no’ and knowledge questions 2–4. The other questions were ordinal data. Their potential answers were arranged as an order. They are not interval data as it cannot be assumed that the intervals between the answer options are equal (Cohen et al., 2011). Nevertheless, the ordinal answer options were transformed into numbers to calculate mean levels. Those mean levels need to be considered cautiously due to the inequality of intervals between the answer options.

If one wants to make use of inferential statistics, simple interrelationships, and multivariate analysis, 30 cases should be the minimum in general (Cohen et al.,

2011). However, some tests allow analysis with smaller numbers, such as the Kruskal-Wallis-Test (Bortz & Schuster, 2010).

For further analysis of the pre- and post-test, I compared the results of the ordinal data level with the Kolmogorov-Smirnoff one-sample test. This test may be used for one-sample testing (Cohen et al., 2011). An increase in the level of knowledge and behaviour would indicate that blended learning had a positive effect. However, the problems of pre-experimental one group designs (see 3.3.1) need to be considered. Knowledge questions 2–4 and five behavioural questions are on the nominal level and were analysed with cross-tabulations only.

To analyse the influence of learner characteristics on satisfaction level, I employed the Kruskal-Wallis test. This test can be used for ordinal data and the comparison of more than two independent samples (Cohen et al., 2011). Since the number answer options for the learner characteristics was either three (questions 24–26) or four (questions 27–36), the participants may be seen as three or four independent samples. Independent means that if a participant is in one sample, then this does not affect in any way in which sample the other participants are (Bortz & Schuster, 2010). An example: If a participant is in the self-efficacy sample with a score 4, then other participants may be in the score-4 sample as well as in the other three samples.

For both the Kolmogorov-Smirnoff one-sample and the Kruskal-Wallis test, I include cross-tabulations for statistically significant results. This is necessary for analysing where differences exist (Cohen et al., 2011).

3.5.2 Qualitative analysis

The group interview, the two expert interviews, and my research diary were analysed thematically (Braun & Clarke, 2006). Thematic analysis involves coding and searching for themes. Gibbs (2007) differentiates between a concept-driven and a data-driven strategy of coding. A concept-driven approach is based on initial codes derived from the theme of the research, while the data-driven approach allows new codes to emerge during analysis. With permission of the participants, audio recordings of the expert interviews and the group interview were made. I then

transcribed the interviews for the thematic analysis and used a mix of data- and concept-driven approaches to analyse the data.

Within the concept-driven approach, concepts used to analyse the group interview were derived from research interests:

a. Satisfaction, knowledge, behaviour, and organisation for the analysis related to research sub-question Q1
b. Variables of the conceptual framework for research sub-question Q2
c. Teacher characteristics for research sub-question Q3

While the concepts concerning sub-question Q1 are broad, the ones for sub-question Q2 and Q3 are narrow. The data-driven component for the latter questions leads to the identification of new variables or changes in the framework, while the themes that emerge from the data related to sub-question Q1 will be more explanatory.

Both the expert interviews and the research diary included concepts based on the conceptual framework. Additionally, the analysis of the research diary included instructor-related comments. Again, the data-driven parts for sub-questions Q2 and Q3 may lead to changes in the conceptual framework.

3.6 Ethical considerations

According to Cohen et al. (2011), 'ethical issues may stem from the kinds of problems investigated by social scientists and the methods they use' (p. 76). In this section, I address these issues within my research.

First, I researched within a class I taught. The students were the research participants, and taking the class was mandatory. That is, for instance, a problem within the code of ethics for the American Educational Research Association (2011). They expect researchers who are teachers and use their students as research participants to 'take particular care to ensure that consent to participate is voluntary and free of coercion' (p. 152). To mitigate this potential ethical issue, I provided a participation information sheet and ensured informed consent (Oliver, 2010, pp. 28–30; see appendices C and E). I assured students that taking part in the research was voluntary and that they were free to withdraw at any time without explanation and without incurring any disadvantage. Finally, since neither I nor anyone else graded

my students on the topic of my course, this ethical issue was less important than it may seem at first glance. I assessed the students only for research purposes.

A second ethical issue was that the students work in the 'same social milieu' (Oliver, 2010, p. 73) as myself. To reduce potential impact of this issue, I emphasised my researcher role and ensured confidentiality. Such a strategy is in line with Oliver (2010), who claims that 'the ideal situation is where there is in effect a mental barrier between the research activity and the other relationships and roles in which the researcher and participants are involved' (p. 74).

Third, an ethical issue arose from the group interview. Full confidentiality in this kind of interview could not be ensured due to the nature of the method. However, all students confirmed on the participant consent form that they would keep the information from the group interview confidential.

A fourth ethical issue was the use of the Moodle platform for tests and surveys. This platform is password protected. However, as with every activity on the internet, malicious attacks could not be completely ruled out.

Fifth, the students provided personal information (e.g., in the learner characteristics questionnaire). This issue was reduced by seeking informed consent and ensuring both confidentiality and anonymity, which are strategies mentioned by Cohen et al. (2011).

The interviews with experts required consideration of ethical issues too. I ensured confidentiality and anonymity. Both experts received a participant information sheet (see Appendix D) and provided informed consent (Appendices F and G). As the internal expert also had access to the Moodle platform, I sought assurance that they would keep confidential all information they received through the Moodle platform.

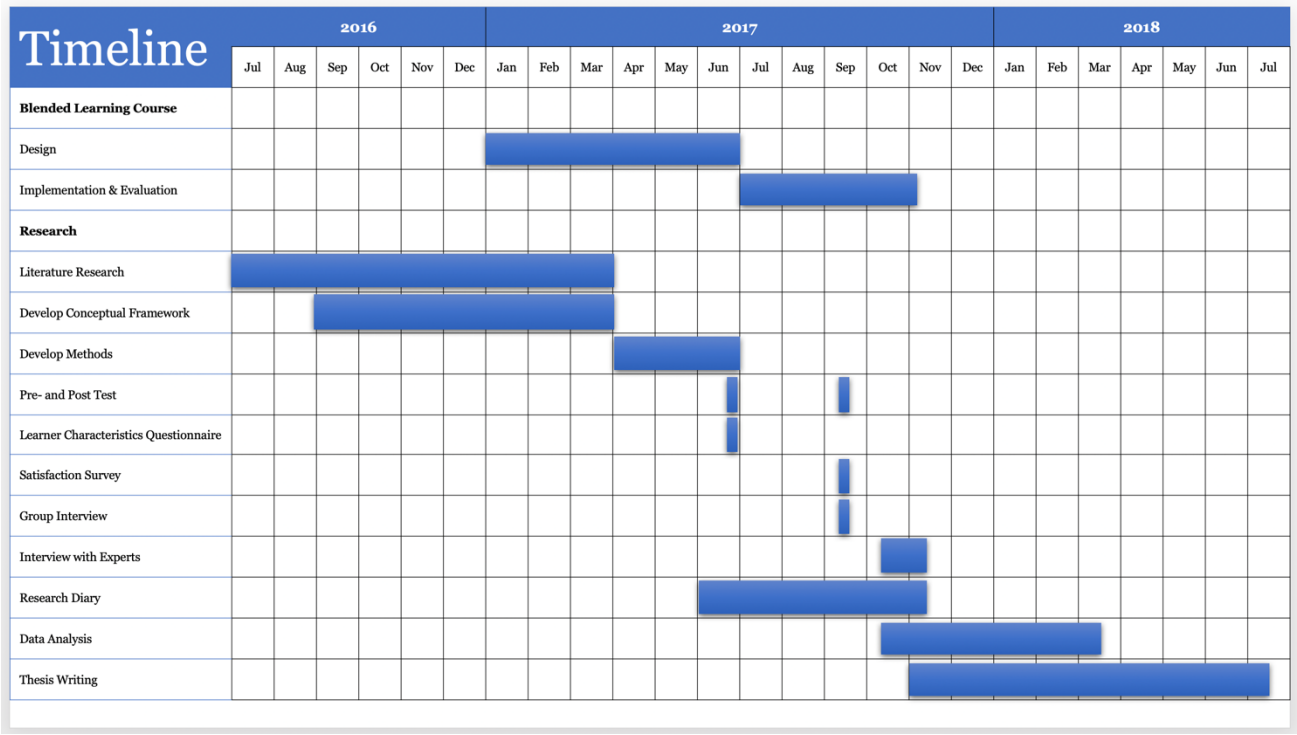
I addressed these ethical issues, and the Virtual Programme Research Ethics Committee (VPREC) of the University of Liverpool granted ethical approval (see Appendix B).

3.7 Timeline

The research took place between July 2016 and July 2018. Table 7 shows the phases of the research and relates them to the phases of the blended learning course. In the next chapter, *Results*, I will outline the results of the data analysis.

Table 7

Time plan



4 Results

In this chapter, I describe the data I collected with the methods explained in the previous chapter. I organise the information by research question, which is one of seven ways of presenting data (Cohen et al., 2011, pp. 551–552). This is an effective method since there are three sub-questions and various methods associated with them. Before the presentation of these results, I will describe the results of the learner characteristics questionnaire. I then describe the effects of blended learning on the four levels, the evaluation of the theoretical framework from the four perspectives, and my development as a teacher. The discussion of the results is not part of this chapter and will take place in chapter 5.

4.1 Learner characteristics questionnaire

Table 8 presents the answers to the VAK questions (24–26 in the Learner characteristics questionnaire). The predominant learning style was kinaesthetic; the least frequent was auditory learning.

Table 8

Learning style VAK

Question	Visual	Auditory	Kinaesthetic
24	2	4	7
25	8	4	1
26	3	1	9

The students rated the importance of seven learning orientations (question 27) with the following codes: 4 = 'very unimportant'; 3 = 'unimportant'; 2 = 'important'; and 1 = 'very important'. The two most important learning orientations were intrinsic academic ('Intellectual confrontation with learning materials') and intrinsic personal ('Extension of the horizon for personal development'). For both, the mean importance value is 1.38. The social learning orientation was considered the least important ('Having a good time' – mean 2.46).

Table 9 displays the answers to question 27.

Table 9

Learning orientations

Item	1	2	3	4	Ø
Training for daily business	7	4	1	1	1.69
Recognition of the qualification on the labour market	8	4	1	0	1.46
Intellectual confrontation with learning materials	8	5	0	0	1.38
The certificate itself	6	5	1	1	1.77
Extension of the horizon for personal development	9	3	1	0	1.38
Feedback and grades	1	7	4	1	2.38
Having a good time	1	6	5	1	2.46

Table 10 displays the answers to the other learning characteristics. The variable with the most substantial agreement was learning motivation (questions 33 and 34), while the attitude towards technology had the lowest level of agreement (question 30). The coding for the answers is 1 for 'agree'; 2 for 'rather agree'; 3 for 'rather disagree'; and 4 for 'disagree'.

Table 10

Answers in learner characteristic questionnaire, questions 28–36

No	Question	1	2	3	4	Ø
28	I feel confident when using IT systems.	7	5	1	0	1.54
29	I usually understand new high-tech products.	4	8	1	0	1.77
30	I like to be one of the first to be using new technologies.	2	3	6	2	2.62
31	Online learning can be very effective if it is properly implemented.	6	7	0	0	1.54
32	Classical learning in the classroom can be very effective if it is properly implemented.	10	3	0	0	1.23
33	I expect to learn useful things in this course.	11	2	0	0	1.15
34	I am looking forward to the content of this course.	12	1	0	0	1.08
35	I am sure that I will be able to keep up with the content of this course.	6	7	0	0	1.54
36	I know I have the abilities needed to learn the course content.	9	4	0	0	1.31

4.2 The effects of the blended learning

This section is about the first research sub-question: 'What are the effects of blended learning on levels of satisfaction, knowledge, behaviour, and organisation?'

4.2.1 Satisfaction

I first present the results of the satisfaction survey, then the relation of learner characteristics and variables of satisfaction, and, finally, the themes raised in the group interview.

All 13 students answered the satisfaction survey and took part in the group interview. In the general course evaluation, the highest score was given to students' knowledge regarding how to plan, conduct, and evaluate an interview in aptitude diagnostics. The lowest response score related to the improvement of technical skills due to taking part in the blended learning course. Concerning the elements of the course design, the students appreciated most highly the development of their own interview questions. The weakest point was the contribution of the structure of the course to understanding the module material. Regarding the learning groups, the highest score was given to feeling that learning group peers were on a similar knowledge level. The lowest rating related to students' interactions with other students and the contribution this made to understanding the course subject. Fairness was the most appreciated aspect of the instructor while modelling and teaching good board etiquette was the least appreciated facet.

Table 11 shows the responses and means for each question in the satisfaction survey. The answer option 'agree' was coded with 1; 'rather agree' with 2; 'rather disagree' with 3; and 'disagree' with 4.

Table 11

Responses and means in the satisfaction survey

No	Question	1	2	3	4	Ø
	General course evaluation					
24	Overall, I am satisfied with this blended learning course.	2	4	6	1	2.46
25	The learning outcomes for the course were clearly communicated.	6	5	2	0	1.69
26	Blended learning gives me greater control over learning.	2	2	6	3	2.77
27	Learning to operate the Moodle platform was easy for me.	3	7	3	0	2.00
28	My technological skills improved because of taking part in this blended learning course.	1	2	2	8	3.31
29	Given the opportunity, I would take another blended learning course in the future.	4	5	3	1	2.08
30	I know how to plan, conduct, and evaluate an interview in aptitude diagnostics.	5	8	0	0	1.62
31	I know I have the abilities needed to apply the interview techniques.	4	8	1	0	1.77
32	I aim to use these interview techniques in the future.	6	5	2	0	1.69
	Elements of the course design					
33	The texts provided in the first weeks of the course were useful for learning theory.	8	5	0	0	1.38
34	The podcasts provided in the first weeks of the course were useful for learning theory.	3	5	4	1	2.23
35	The videos provided in the first weeks of the course were useful for learning theory.	4	6	2	1	2.00
36	The discussion of theory was useful for understanding the interview techniques.	3	4	3	1	2.18
37	The development of my own interview questions was useful for learning the interview techniques.	8	4	0	0	1.33
38	The discussion of my own interview questions was useful for learning the interview techniques.	4	2	3	1	2.10
39	The application of my own interview questions in a real-life setting was useful for learning the interview techniques.	2	2	0	0	1.50
40	The discussion of the application in a real-life setting was useful for learning the interview techniques.	1	5	0	0	1.83
41	The development of a summary for fellow students was useful for learning the interview techniques.	5	4	1	1	1.73

42	Overall, the structure of the course helped me to understand the module material.	3	4	5	1	2.31
43	The course content (including media and activities) allowed me to meet the learning outcomes.	4	7	2	0	1.85

Learning group

44	I think my learning group held a similar level of knowledge to myself.	2	8	2	0	2.00
45	I think my learning group had a similar level of expectations as myself.	1	8	3	0	2.17
46	I think my learning group provided mutual support.	2	6	4	0	2.17
47	Interactions with my fellow students made a positive contribution to my understanding of the course subject.	2	4	3	3	2.58

Instructor

48	Overall, I am satisfied with the faculty member.	6	7	0	0	1.54
49	The instructor treated all students in a fair way.	12	1	0	0	1.08
50	The instructor responded promptly to my questions.	10	1	0	0	1.09
51	The feedback that I received made clear the strengths and weaknesses of my work.	6	4	1	0	1.55
52	The feedback that I received from the instructor helped me to improve my work.	6	6	0	0	1.50
53	The instructor adequately addressed my questions.	8	2	0	0	1.20
54	The instructor modelled and taught good board etiquette.	5	7	0	1	1.77
55	The instructor was transparent about the course design.	7	5	1	0	1.54

To identify relationships between learner characteristics and responses to the satisfaction survey, I conducted Kruskal-Wallis tests for questions 27–36 of the learner characteristics questionnaire and all questions of the satisfaction survey. I will present results that were significant.

The correlation between the extrinsic vocational learning orientation and the perceived usefulness of developing a summary for the fellow students was significant (Question 41; $p = .043$). The analysis of individual answers showed that the more important the recognition on the labour market was to a student, the more useful the summary was perceived to be (see Table 12). Two students did not take part in the development of a summary and are therefore not included in the cross tabulation.

Table 12

Cross-tabulation for extrinsic vocational learning orientation and question 41

		The development of a summary for the fellow students was useful for learning the interview techniques.			
		Agree	Rather agree	Rather disagree	Disagree
Recognition of the qualification on the labour market	Very unimportant	0	0	0	0
	Unimportant	1	0	0	0
	Important	0	1	1	1
	Very important	5	2	0	0

The relationships between intrinsic academic learning orientation and the following three satisfaction variables were significant: usefulness of podcasts (Question 34; p = .046), usefulness of videos (Question 35; p = .050), and usefulness of developing own questions (Question 37; p = .047). All three relationships are similar: The more important students found intellectual confrontation, the less useful they found podcasts, videos, and developing one's own questions. Tables 13, 14, and 15 display these relationships.

Table 13

Cross-tabulation for intrinsic academic learning orientation and question 34

		The podcasts provided in the first weeks of the course were useful for learning theory.			
		Agree	Rather agree	Rather disagree	Disagree
Intellectual confrontation with learning materials	Very unimportant	0	0	0	0
	Unimportant	0	0	0	0
	Important	2	3	0	0
	Very important	1	2	4	1

Table 14

Cross-tabulation for intrinsic academic learning orientation and question 35

		The videos provided in the first weeks of the course were useful for learning theory.			
		Agree	Rather agree	Rather disagree	Disagree
Intellectual confrontation with learning materials	Very unimportant	0	0	0	0
	Unimportant	0	0	0	0
	Important	3	2	0	0
	Very important	1	4	2	1

Table 15

Cross-tabulation for intrinsic academic learning orientation and question 37

		The development of my own interview questions was useful for learning the interview techniques.			
		Agree	Rather agree	Rather disagree	Disagree
Intellectual confrontation with learning materials	Very unimportant	0	0	0	0
	Unimportant	0	0	0	0
	Important	5	0	0	0
	Very important	3	4	0	0

The correspondence between social learning orientation and clarity of the instructor's feedback on the strengths and weaknesses of one's work was significant (Question 51; p = .024). The more important students believed it was to have a good time, the more important the feedback was for them (see Table 16).

Table 16

Cross-tabulation for intrinsic academic learning orientation and question 51

		The feedback that I received made clear the strengths and weaknesses of my work.			
		Agree	Rather agree	Rather disagree	Disagree
Having a good time	Very unimportant	1	0	0	0
	Unimportant	0	4	1	0
	Important	4	0	0	0
	Very important	1	0	0	0

The relationship between the second question assessing computer experience (Question 29 in the learner characteristic questionnaire) and the clarity of the instructor's feedback on the strengths and weaknesses of one's work was significant (Question 51; p = .045). The more the student believed they understood new high-tech products, the higher their appreciation was for feedback (see Table 17).

Table 17

Cross tabulation for question 29 and question 51

		The feedback that I received made clear the strengths and weaknesses of my work.			
		Agree	Rather agree	Rather disagree	Disagree
I usually understand new high-tech products.	Disagree	0	0	0	0
	Rather disagree	0	0	1	0
	Rather agree	2	4	0	0
	Agree	4	0	0	0

The correlation between the attitude towards technology (Question 30 in the learner characteristic questionnaire) and the rating of modelling and teaching good board etiquette was significant (Question 54; p = .012). The rating for the modelling and teaching was higher if the student liked to be one of the first to use new technologies (see Table 18).

Table 18

Cross tabulation for question 30 and question 54

		The instructor modelled and taught good board etiquette.			
		Agree	Rather agree	Rather disagree	Disagree
I like to be one of the first to be using new technologies.	Disagree	0	2	0	0
	Rather disagree	0	5	0	1
	Rather agree	3	0	0	0
	Agree	2	0	0	0

The first question assessing self-efficacy (question 35 in the learner characteristic questionnaire) and the following two satisfaction variables correlate significantly: Clarity of communication of learning outcomes (question 25; p = .016) and perceived improvement of technological skills (question 28; p = .014). The higher self-efficacy was rated, the higher was clarity rated and the lower perceived improvement in technological skills was rated (see tables 19 and 20).

Table 19

Cross tabulation for question 35 and question 25

		The learning outcomes for the course were clearly communicated.			
		Agree	Rather agree	Rather disagree	Disagree
I am sure that I will be able to keep up with the content of this course.	Disagree	0	0	0	0
	Rather disagree	0	0	0	0
	Rather agree	1	4	2	0
	Agree	5	1	0	0

Table 20

Cross tabulation for question 35 and question 28

		My technological skills improved because of taking part in this blended learning course.			
		Agree	Rather agree	Rather disagree	Disagree
I am sure that I will be able to keep up with the content of this course.	Disagree	0	0	0	0
	Rather disagree	0	0	0	0
	Rather agree	1	2	2	2
	Agree	0	0	0	6

The correlation of the second question assessing self-efficacy (question 36 in the learner characteristic questionnaire) and clarity of communication of learning outcomes was significant (question 25; p = .012). The higher self-efficacy was rated, the higher clarity was rated (see Table 21).

Table 21

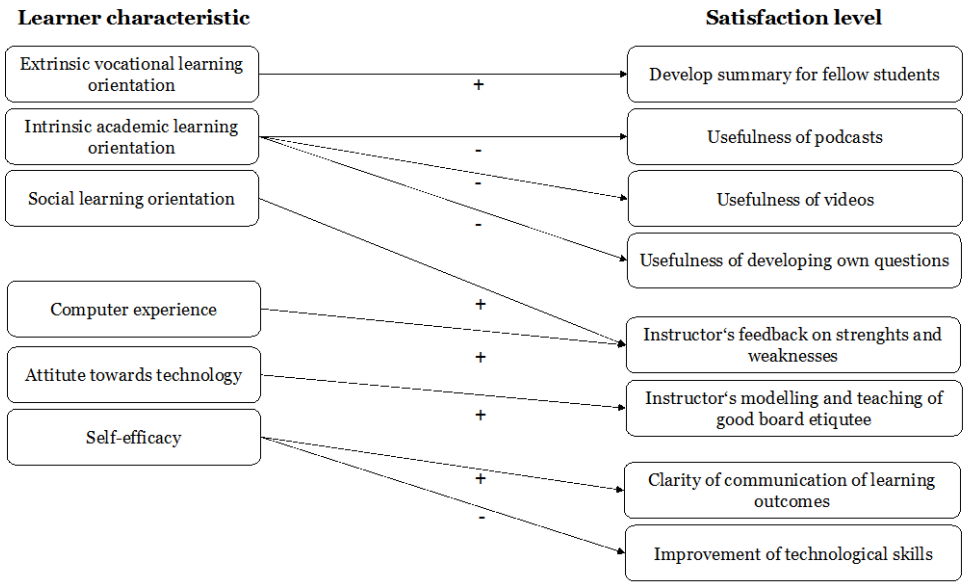
Cross tabulation for question 36 and question 25

		The learning outcomes for the course were clearly communicated.			
		Agree	Rather agree	Rather disagree	Disagree
I know I have the abilities needed to learn the course content.	Disagree	0	0	0	0
	Rather disagree	0	0	0	0
	Rather agree	0	2	2	0
	Agree	6	3	0	0

The significant relationships between learner characteristics and satisfaction variables may be summarised on the conceptual map below (see Figure 23). In Figure 23, '+' displays that this learner characteristic increases the specific aspect of satisfaction, while '–' represents a negative relationship between the learner characteristic and the satisfaction variable.

Figure 23

Relationships of learner characteristics and satisfaction level



No significant relationships existed between VAK learning styles and the learning material. For instance, a visual learning style did not correspond significantly differently to the preference of videos than an auditory or kinaesthetic learning style.

Thematic analysis of the group interview revealed various positive and negative aspects of the blended learning course. Table 22 summarises the themes with more than one mention, alongside the number of students commenting on that aspect.

Table 22

Positive (+) and negative (–) aspects mentioned in the group interview

+/–	Aspect	Frequency
+	Information was provided through various media	7
–	The timing of the course (e-learning and application parts during holidays)	5
+	Experience of a new way of learning	3
–	Too much coordination necessary	2
–	Weekly tasks	2
–	Navigating in the Moodle platform	2
+	Flexibility	2
+	Quality of the feedback of the instructor	2

Of these aspects, I took two of the positive and two of the negative points for use in the expert interviews (see 4.3).

4.2.2 Knowledge

Table 23 displays students' knowledge levels before and after the course. The one-sample Kolmogorov-Smirnov test revealed significant differences between the three pre- and post-test measures (p=.000 in all three tests). Before the course, more than half of the students replied for each item that they did not know the particular technique. After the course, all students reported at least knowing the techniques. This implies that knowledge about the three interview techniques increased significantly.

Table 23

Knowledge level before and after the course

	Situational Interview		Decision Oriented Interview		Behaviour Description Interview	
	Before	After	Before	After	Before	After
I do not know this technique.	8	0	9	0	8	0
I know this technique, but cannot explain it to another person.	2	0	3	6	3	1
I know this technique and can explain it to another person, but have never applied it.	3	8	1	7	2	9
I know this technique, can explain it to another person, and have already applied.	0	5	0	0	0	3

The three questions to test knowledge showed an increase in knowledge as well. Before the course, the majority of students did not know what the interviews were about. They either indicated explicitly that they did not know the particular interview technique or they marked the wrong answers. After the course, all but one student knew what the core of the techniques was (see tables 24, 25, and 26). The wrong answers in the Situational Interview and Decision Oriented Interview questions after the course were from the same student.

Table 24

Answers to the knowledge question concerning the Behavioural Description Interview

The Behavioural Description Interview is about …	Before	After
Past behaviour (correct answer)	2	13
Current behaviour	1	0
Behavioural intentions	4	0
I do not know	6	0

Table 25

Answers to the knowledge question concerning the Situational Interview

The Situational Interview is about …	Before	After
Past behaviour	3	0
Current behaviour	2	1
Behavioural intentions (correct answer)	1	12
I do not know	7	0

Table 26

Answers to the knowledge question concerning the Decision Oriented Interview

The Decision Oriented Interview is about the …	Before	After
Analysis of past decisions	0	1
Preparation of satisfactory decisions (correct answer)	2	12
Systemic analysis of decisions	3	0
I do not know	8	0

In the group interview, students stated that they understood the three interview techniques, which is in line with the statistical results. The students made no further comments on knowledge level.

4.2.3 Behaviour

On the behavioural level, I wanted to compare answers to the behavioural questions before and after the course. However, only two students were able to conduct an interview or an interview section during the course in which they examined aspects of aptitude for a profession (question 5). Therefore, statistical analysis is not possible. Moreover, except for the statement that they were not able to apply the techniques in their own contexts, the students made no further comments concerning skill

improvement. However, some stated explicitly that doing a blended learning course improved their technological skill level.

4.2.4 Organisation

Here, I will first present the results of the collection of data on cost and time and then move to the issues raised in the group interview. In total, I required 2,325 minutes or 38.75 hours to develop and implement this blended learning course. The development of the course took 1,830 minutes while teaching the course took 495 minutes. In total, extra costs for designing the blended learning totalled €599. Table 27 displays the time and extra costs for different tasks and whether the task was related to the face-to-face (F2F) or e-learning (E) part of the course.

Table 27

Time and costs for different tasks

Phase	**Task**	**Part**	**Minutes**	**Extra costs (€)**
Design	Plan introductory face-to-face lesson	F2F	330	0
	General course design and instructions	F2F / E	540	0
	Produce media (videos, podcasts, texts)	E	420	599
	Implementation in Moodle	E	540	0
Implementation	Introductory face-to-face lesson with technical support for students	F2F / E	120	0
	Reading, posting, commenting, and reminding	E	240	0
	Summary first week	E	75	0
	Final presentation by students	F2F	60	0

In the group interview, students provided their perspective on the future of blended learning in the programme. This feedback was two-fold: Three aspects focused on the blended learning itself, while one aspect related to the content of the blended learning course. The comments on blended learning were as follows:

- It is important to do blended learning in this programme.
- The e-learning part of blended learning needs to replace other self-study parts in the programme and not be an add-on to the already existing self-study.
- It needs to be made clear that blended learning is part of the programme before subscribing to the programme.

The issue related to content concerned whether it might be more valuable to offer blended learning with a more extensive topic. Examples mentioned by the students included the 'labour market' and 'vocational landscape'.

4.3 Evaluation of framework

In this section, I will present the results related to the second sub-question: 'How do the variables of the theoretical framework on blended learning prove themselves in practice?' I structure the section around four perspectives: student, teacher, internal expert, and external expert.

For the interviews with the internal and external expert, I made mention of two positive and two negative aspects mentioned by the students in the group interview (see 4.2.1 and Table 22). I chose the two positive aspects that were mentioned most frequently: 'information was provided through various media' and 'experiencing a new way of learning'. For the negative aspects, I decided on 'the weekly tasks' and that 'too much coordination was necessary'. These aspects are issues that may relate to blended learning in general. The other two negative aspects ('timing of the course' and 'navigating the Moodle platform') were specific to my context and therefore of less value for the evaluation.

4.3.1 Student perspective

The students provided feedback in both the satisfaction survey and the group interview. This feedback was used to evaluate how the variables proved themselves in practice. Table 11 and Table 22 show how the students rated the variables of the framework. Additionally, they commented on the organisational level (see 4.2.4). These results will be used to discuss how students evaluated the variables of the framework (see 5.2).

4.3.2 Teacher perspective

The basis for the evaluation from the teacher's perspective is my research diary. On a general level, thematic analysis of my research diary reveals that I made reflections on all categories except learning group, (social) cognitivism, humanism, and the organisational output variables. For the evaluation of the framework, I focus on the

question ‘What did I do’ in the research diary. I structure the presentation of the results by level and category.

Blended learning course – input

I first investigated these variables during the design of the course and then considered them further during the implementation phase.

Table 28 provides an overview of the associations of my actions during the design phase and the input variables.

Table 28

Actions during the design phase concerning the input variables

	Variable	**Action**
Learner characteristics	All variables	- Development of learner characteristics questionnaire
	Learning style	- Production of videos, podcasts, and texts
	Prior knowledge	- Development of knowledge questions for the tests
Learning group	- Homogeneity of knowledge - Homogeneity of expectations - Mutual support	- No actions
Teacher characteristics	Prior experience with LMS	- First-time use of Moodle
	Time spent on preparation	- Design the blended learning course - Production of videos, podcasts, and texts - Implementation in Moodle - Discussion with an e-learning specialist
	Knowledge	- Production of videos, podcasts, and texts.
	Control over technology	- Production of videos, podcasts, and texts - Discussion with an e-learning specialist - Testing of Moodle platform
	Effective facilitation	- Share my contact details in all formats - Research on weekly tasks - Present e-learning tools in introductory lesson

	Variable	Action
	Model and teach good board etiquette	- The explicit statement in the introductory lesson - Present policy in the introductory lesson - Research on best practices
	Transparency of course design	- Writing a curriculum and instructions - Sharing the curriculum with the students - Present e-learning tools in introductory lesson
	- Fairness - Responsiveness - Clear communication	- No actions
Course design	Curriculum	- Writing a curriculum and instructions
	Learning objectives	- The inclusion of learning objectives in the written curriculum
Information quality	All variables	- Design of the blended learning course
System quality	E-learning and classroom technology	- Design learning material for introductory lesson and e-learning in Moodle
	Media variety	- Production of videos, podcasts, and texts
	Accessibility for people with disabilities	- Production of podcasts
	- Integrate mobile tools - Ease of use - Availability - Good and stable internet connection	- No action

I developed the *learning characteristics* questionnaire based on all variables within this category. This decision was valuable since I had to think about the variables again, which led to insights concerning changes to the framework (see 5.2). Based on the concept of visual, auditory, and kinaesthetic *learning styles* and the system quality of *media variety*, I developed videos, podcasts, and texts. The different topics in the course were introduced through these media, which all included the same content. This development needed a considerable amount of *time for preparation* (420 minutes, see Table 27). Furthermore, I needed to acquire *knowledge* about how

to do this and then be able to *control the technologies*. Since I wanted to provide a good e-learning experience, I spent money on a tool for creating animated videos. To design and produce the other learning materials for the introductory lesson (presentation) and the e-learning (podcasts and texts), I used standard software and tools. This relates to the *quality of e-learning and classroom technology*. The use of podcasts was not only based on media variety and auditory preferences but also on the aspect of making the course *accessible to people with disabilities*. Podcasts are useful for people who have impaired vision.

The development of knowledge questions for the tests is associated with the assessment of *prior knowledge*. In the category learning group, I collected no reflections during the design phase.

I used Moodle for the first time. Since I had no *prior experience with this LMS* (Learning Management System), I needed more *time to prepare* than an experienced Moodle user. The implementation in Moodle included the following tasks: constructing the learner characteristics questionnaire, designing weekly tasks for the students, setting up three groups and implementing the learning material for each group in each week, uploading the curriculum, and implementing the electronic research methods (pre- and post-test, satisfaction survey). I discussed this implementation with an e-learning specialist, which added to the *time spent on preparation*. However, this discussion increased my *control over technology*, in conjunction with my testing in the Moodle platform. Since the entire e-learning aspect was new to me, the design of the blended learning course needed more *time to prepare* than the face-to-face component of the course. In the design process, I integrated aspects of *information quality* into all parts of the course. I ensured that all information was correct, structured the information in a way helpful for students, used up-to-date information, and related all information to the learning outcomes.

I included the general *learning objectives* in the written *curriculum*. The writing of this curriculum and the instructions caused me to rethink the entire design of the course. Sharing the written curriculum with students contributed to the *transparency of course design*. To enhance this aspect, I presented the e-learning tools in the introductory lesson. This presentation was associated with *effective*

facilitation, too. Considering this aspect, I made the following reflections: 'How may I enhance the course design?' and 'Is it better to show all the e-learning materials at once or on a week-by-week basis?' For the first question, I came to two conclusions during the design stage: I needed to tell the students why there are group learning activities (DeHei, 2016), and I decided that they should have the possibility of doing their final summary using any media they want to use. Considering the second question, I looked for recommendations on this topic but did not find anything. A final aspect of effective facilitation was sharing my contact details in all available formats.

During the design process of the course, I researched *modelling and teaching of good board etiquette* as well. Dell, Dell, and Blackwell (2015) provided information on this. Furthermore, in the introductory lesson, I presented a policy about what to do when someone is ill or on vacation and my expectations concerning participation in the e-learning part of the course.
To summarise, during the design phase, the majority of input variables proved themselves to be valuable in practice from a teacher's perspective. However, in my course, the learning group variables, three teacher characteristics variables, and four system quality variables were of no value (see Table 28).

During the implementation of the course, the input variables were of less value. I made reflections on three teacher characteristics: responsiveness, control over technology, and effective facilitation.

During the first week, 11 students posted on Moodle. I replied to all of them within 24 hours of their posting and included individual feedback so they could think about the theme in more depth. I maintained this behaviour, which relates to the aspect *responsiveness*. I felt confident in my ability to us Moodle. During the course, Moodle was updated to a new version. I checked the learning environment and saw that everything still worked. As in the design period, I had satisfactory *control over technology* in the implementation phase. I undertook various tasks to ensure *effective facilitation*:

- I addressed technology in the first face-to-face lesson: The students enrolled in the e-learning platform with their devices, and I made sure that everything

worked as it should. Some small issues occurred and could be solved immediately.

- I contacted students who did not participate: Two students did not complete the tasks in the first week. Therefore, I contacted them and asked if they needed help.
- My responsiveness (see above) and participant reminders (see process) may be regarded as effective facilitation as well.

Following these considerations, I will now turn to the process level.

Blended learning course – process

I included aspects of the process level in the design and reflected on these variables during the implementation phase of the course. Table 29 provides an overview of the actions in these two phases.

Table 29

Actions during the design and implementation phase concerning the process variables

		Variable	**Design phase**	**Implementation phase**
Learning theories	Behaviourism	Social presence	- Plan my participation during the e-learning part	- Log in every day - Make posts
		Provide rewards	- No action	- Thank students for posting
		Participant reminders	- No action	- Remind students of next tasks
		Learn from experience	- Include behavioural tasks in the course - Include discussions that focus on experiences	- Students ask for advice - Students and teacher offer advice
	(Social) Cognitivism	Goal-setting	- Planning an interview	- No action
	Humanism	Support	- Provide material for unprepared students	- Answer questions about content and technology

		Variable	Design phase	Implementation phase
		Intellectual development	- Include discussions and feedback	- No action
	Construc-tivism	Interaction and interactivity	- Include group learning activities	- Observation of group learning activities
Application		Face-to-face	- Include an introductory and final face-to-face lesson	- No action
		Online	- Include e-learning parts	- No action
		M-learning	- Ensure Moodle works on mobile	- No action
		Synchronous	- Face-to-face parts	- No action
		Asynchronous	- E-learning parts	- No action

My *social presence* was both planned and implemented. During the design phase, I planned to log in regularly and be active on the e-learning platform. During the course, I logged in every day and posted on the Moodle platform. These postings included rewards, participant reminders, sharing experiences, and support. I *provided rewards* by starting each answer to a post thanking the student for posting. The *participant reminders* were posts in which I reminded the students of the next tasks that needed to be completed. To *learn from experience*, some students explicitly asked other students for advice, some asked me, and still others did not ask at all. If students or I were asked for advice in a post, this support was provided. I planned to help students to learn from experience by including behavioural tasks and discussions that focus on experience. The fourth kind of post, *support of students*, is placed in the category of humanism. I provided the materials from the introductory face-to-face lesson on the Moodle platform. This ensured that if a student could not attend the face-to-face lesson, they would be able to prepare for the e-learning part of the course. During the course, I offered support regarding technology and content. *Goal-setting* was an aspect I considered in the design phase: Students had to plan an interview in advance. They received this information in April, two months before the start of the course. The students were told to arrange such an interview in August. This planning contributed to the goal of undertaking an interview.

The inclusion of discussions and feedback ensured that the students could move from dualism to at least multiplicity according to Perry's (1970) model, which is one aspect of *intellectual development*. In the implementation phase, I did not reflect on this variable. Discussions were an aspect of group learning activities that refers to *interaction and interactivity* on the constructivism level. Other group learning activities I planned were the summary and the final face-to-face presentation. I observed these activities and realised that some students were very active while others did not contribute at all.

In the application category, I only made reflections during the design phase. These were mainly related to the course design. I planned two *synchronous face-to-face* lessons. The e-learning parts were *online* and *asynchronous*. I ensured that my course worked on a mobile device, which may be considered part of *M-learning*.

The final category on the level of the course are the output measures, which I will discuss in the next section.

Blended learning course – output

While constructing the satisfaction survey, I changed the variable confidence to self-efficacy, for two reasons: First, I used self-efficacy in the input section. Therefore, using the same concept again was consistent. Additionally, self-efficacy is a well-research concept, while confidence is vague.

I made reflections on the level of output measures during and after the final face-to-face lesson. The students provided feedback on their *satisfaction*, *confidence, and motivation* in the group interview and the satisfaction survey. My reflections on this feedback will be examined in the discussion section.

In the knowledge category, I realised that the students understood the techniques (*factual knowledge*). The information in their summaries and presentations was correct. Additionally, they included evidence that they knew how to plan, conduct, and evaluate an interview in aptitude diagnostics, which is *procedural knowledge*.

Most students were not able to apply an interview in their context. Therefore, I undertook no reflection on the *skills improvement*. However, some students mentioned explicitly that their *computer experience* had improved.

My reflections in the organisation category will be outlined in the discussion section.

Institutional level
In the design phase of the course, I reflected on all three aspects of the institutional level. On the level of *strategy*, I thought about quality enhancement and the effectivity of blended learning. From a *structural* perspective, I was supported by an e-learning specialist employed at another faculty. I learned how the processes of implementing e-learning in Moodle works. The *organisational culture* was an aspect I experienced during collaboration with the e-learning specialist.

Macro level
I reflected on the macro level when deciding to introduce a blended learning course. These reflections focused on *technology* and *environment*. On the technological level, I considered internet availability and concluded that all students should have a decent internet connection at home or at their workplace. Should that not be the case, the university of applied sciences provides a robust wireless network, which is available for all students. My considerations about the environment referred to the issue of reducing paper use. The provision of electronic learning material reduced the need for printouts.

4.3.3 Internal expert perspective

The individual interview with an internal expert provided data for evaluation from an internal perspective. The internal expert commented on variables in the categories learner characteristics, teacher characteristics, course design, information quality, system quality, behaviourism, and constructivism. Table 30 presents these categories and summaries of his statements.

Table 30
Categories and summarised statements of the internal expert

Category	**Summarised statements**
Learner characteristics	- It may be meaningful to use or develop a learner characteristics questionnaire for research. - It is not meaningful to develop a validated learner characteristics questionnaire for practice. - Biographic learning variables are missing. - The VAK questions are not up-to-date and do not seem to be valid. - The attitude questions toward classroom learning and e-learning do not seem to be valid. - Prior knowledge is important.
Teacher characteristics	- Clear communication and transparency about course design is important. - A part of effective facilitation is the effectiveness of media variety. - Consider the wording of the evaluation survey for your presentations.
Course design	- The curriculum should include more components.
Behaviourism	- Enacting clear guidelines for participation is necessary. - Randomisation is an effective way to enact clear guidelines for participation in group learning.
Constructivism	- Group learning activities are an added value in adult education. - In addition to group learning activities, games and surveys are a valuable form of interaction.
Institutional level	- Justification for introducing blended learning is important. - Management needs to explicitly address what is expected of students in blended learning. - Embedding blended learning in the whole programme needs to be addressed.

The internal expert provided nuanced feedback on the question of whether it would be useful to design and validate a *learner characteristic* questionnaire. He thought that it could be meaningful to use or develop a learner characteristics questionnaire for research purposes. However, he warned that the validation of an instrument is a difficult statistical task. For the purpose of practice, he saw no added value in designing and developing a learner characteristic questionnaire:

> Practitioners construct their questionnaires with items from different existing tools. They are not interested in validity. The questionnaire they construct only needs to be fit for their purposes.

Considering the items for the VAK questions, the internal expert raised two issues. First, the answers are not self-explanatory and sometimes include more than one aspect. The answer options in question 24 provide an example:

- 'Playing sports and doing DIY': what is DIY? Is it Do-It-Yourself? If so, what does that include?
- 'Listening to music and talking to my friends': I might like listening to music and not like talking to my friend or vice versa. Therefore, this answer includes more than one aspect.

Moreover, the answer options are not up-to-date. The expert commented on question 24 again:

> The activities I do during my free time are not mentioned. I surf the internet and like watching movies on Netflix. So, what should I choose?

He argued that the questions concerning attitude toward classroom learning and e-learning do not seem to be valid either. The expert commented on the element 'if it is properly implemented' in questions 31 and 32:

> What does 'if it is properly implemented' mean? There are a thousand ways of teaching and, therefore, a thousand opinions about 'properly implemented'. It would be better to ask directly about the attitude towards e-learning and classroom learning.

The expert suggested assessing biographic learning variables as well:

> I would ask explicitly for experiences with e-learning, blended learning, and classroom learning. For instance, you could ask whether the students have experienced these kinds of learning, how often they have, and so on.

An important aspect is the prior knowledge of students. However, the expert questioned whether that was adequately addressed by the teacher:

> Did you know their prior knowledge? I would feel a bit surprised if I read the curriculum and found the term 'aptitude diagnostics interview'. What is that? Did the students know the meaning of this term?

These questions raised by the expert belong to the *teacher characteristics* variable 'clear communication'. This variable is linked closely to the transparency of the course design. Both variables are important for the expert. The expert pointed out a few aspects that were missing and that would have made the *course design* more transparent:

- Specification about the time needed for the various tasks
- Clear communication of learning objectives for each task
- Details about preparatory work that needs to be done
- Explanation of the e-learning platform

These aspects would have made the students feel more comfortable. Another aspect that is not clear in the course design is the teacher's presence:

> I see that you provide a summary. But what else do you do? I am sure that you are teaching, but where do I see your activities? I miss this information in the course design. I mean, you do not have to say that you teach face-to-face. But I would highlight the elements that are not self-evident.

To be transparent concerning the course design and communicate clearly contributes to effective facilitation. Another aspect of effective facilitation is the effectiveness of media variety:

> As an e-learning expert, I would want more information about the cost-benefit ratio of the various media. The students may like all three forms of presentation in your course. However, do statistics support this satisfaction? How often did they watch the video, listen to the podcast, or read the text? As a teacher, I would want to know which of the three presentation forms is the most effective for which theme. That way, I could tailor the media to the theme.

The expert provided an additional tip for effective facilitation:

> Use the wording of the evaluation survey for your learning material. I had an illuminating experience. For a long time, I used the term 'additional material' in my presentations. However, the evaluation did not include an item that asked for additional material. In the evaluation survey, students are asked whether the teacher provides 'media for self-study'. As long as I used the term 'additional material', the item 'media for self-study' was rated poorly. Then I just changed the headings in my presentation from 'additional material' to 'media for self-study' and made no changes to the content. The effect was that this simple change lead to the best possible rating. Recognition can be so powerful.

Another way to create efficient facilitation is to enact clear guidelines for participation, which is a part of *behaviourism* in my conceptual framework:

> I tell the students exactly what they should expect in the course. This guarantees that they do not accuse me of failing to provide information that was necessary to plan their time. I then tell them about my requirements, expectations, and consequences.

Randomisation is an option for enacting clear guidelines in group learning. The expert highlighted that he often works with random generators:

> In group learning activities, you always have those who do the work and others who are lazy. I often tell the students before the start of these group learning activities that the presenter will be chosen randomly. This strategy increases participation a lot and is accepted by the students.

Broadly, *constructivist* approaches such as group learning activities are an added value in adult education:

> In your course, there are many group learning activities. I think providing feedback to each other is a powerful strategy for enhancing learning. In my experience, such activities are the greatest added value in adult education.

In addition to group learning activities, the expert considered games and surveys a valuable form of interaction:

> I know teachers that use gamification elements all the time. In my experience, students do not like that. However, they like it if it is used sporadically. For example, I used it once in a class on data protection. The students liked this interactive approach to that theme.

On an *institutional level*, the expert highlighted three aspects. First, introducing blended learning needs a justification. I, as a teacher, want to be convinced that introducing blended learning has benefits. Second, the management needs to address what is expected of students in blended learning explicitly:

> We sometimes have the problem that students start their studies and do not expect self-study. Then a teacher does blended learning, and the students have to do something outside the classroom. Then, they do not like that. However, if the management communicates clearly that blended learning and e-learning are methods in the programme, then the students accept self-study. The teachers need to be aligned. It is absolutely necessary that self-study and face-to-face classes are connected. It is bad practice not to include self-study sections in some way in the face-to-face classes.

Third, the blended learning course needs to be embedded in the whole programme:

> I did not understand whether your course is a standalone course or whether there are a other modules in the programme. If it is one of many modules, then it should be embedded well in the programme and connected to familiar modules.

After this presentation of results from the perspective of the internal expert, I will now turn to the perspective of the external expert.

4.3.4 External expert perspective

The basis for the evaluation from an external perspective was the interview with an external expert. This expert commented on five categories: learner characteristics, course design, system quality, application, and the macro level. Table 31 provides an overview of the categories and summarised statements concerning the conceptual framework.

Table 31

Categories and summarised statements of the external expert

Category	Summarised statements
Learner characteristics	- It is meaningful to use and develop a learner characteristics questionnaire. - Feeling confident when using IT systems and new technologies is important. - Prior knowledge is important. - Content influences learner characteristics questionnaires. - Self-paced learning demands self-regulation.
Course design	- Learning objectives influence the form of application. - The more complex learning is, the more interaction is necessary.
System quality	- Media variety is important.
Application	- Knowing when to use face-to-face lessons or web conferences and when to use self-learning is important.
Macro level	- Students and society in general like learning on demand. - Students like flexibility in learning.

The expert's opinion was that a *learner characteristics* questionnaire could be meaningful. He agreed that developing and validating a learner characteristic questionnaire tool would be useful. The expert highlighted two themes: information technologies (IT) and prior knowledge. He stated that evaluating confidence with IT and the attitude towards new technologies is important. Moreover, assessing prior knowledge is important to IT and the content of the course. Prior knowledge about the content of the course is necessary for understanding how a teacher should explain the learning material. The expert emphasised that content influences a learner characteristics questionnaire:

> When constructing a learner characteristics questionnaire, you need to think about content. It makes a difference whether you use such a questionnaire in IT or leadership training. Additionally, you can be very specific or stay on the surface. Being specific contributes to validity, but it will be highly course-bound and lead to a large questionnaire.

Learning objectives are an important aspect of *course design*. The expert recommended linking the Bloom et al.'s (1956) taxonomy to the form of application. Acquiring knowledge may be done with self-learning, while understanding and applying may need discussion. A rule of thumb is to use more interaction if the learning is more complicated. The expert made the following statement about the form of *application* one might use:

> I think that online tools are good for factual knowledge. However, if it comes to application, then interactions are necessary. I am not sure whether this works with an online forum. It might be better to have true interaction in a web conference or face-to-face session.

The students gave negative feedback concerning the amount of coordination that was necessary for the course. From the expert's view, this is typical feedback. Self-paced learning demands self-regulation. However, this is the price students have to pay for more freedom in learning.

Another aspect of freedom in learning is media variety (category *system quality*). The expert thought that this was an advantage of e-learning. Students can use the media they prefer – anytime and anywhere. This is an aspect of the *macro level* as well. The expert named on-demand learning and the flexibility of when and where to learn as something people have come to expect.

4.4 Development as teacher

The third sub-question concerns my development as a teacher during the course. I will first present insights from my research diary (see Appendix J) and then link students' feedback to my development as a teacher. I situate these reflections within a framework of education skills for 21st century teachers (Kennedy et al., 2016).

My analysis of the answers to the questions 'What did I learn?' and 'What is the significance of my learning?' in the research diary revealed six aspects, which I will present in more detail after the following enumeration:

1. The use of a variety of media in blended learning requires more time and skills than traditional classroom teaching.
2. I learned how to handle Moodle and gained insights into privacy issues related to learning material.
3. Undertaking the enrolment in Moodle during the first face-to-face lesson was a valuable strategy.
4. Blended learning allows a better fit between teaching method and learning objectives than found in traditional classroom learning.
5. In the future, I need to clarify with management whether penalties are an option if students do not participate.
6. I think it would be useful to design and validate a learner characteristic questionnaire.

The first aspect of development relates to the variety of media I offered in the course. I realised that it takes a considerable amount of time to develop a video concept and implement it properly. The same was true for podcasts. However, creating these media improved my skills. I realised that building a blended learning course with different media demands a greater variety of skills than traditional classroom teaching. For instance, I had to become familiar with new software and record my voice for the videos and podcasts. Kennedy et al. (2016) conclude that 'teachers must be digital literate persons to be successful in their personal and their professional lives' (p. 33) and call this skill 'developing digital literacy'.

These various media had to be implemented in Moodle, which was the second facet of my development as a teacher. I learned about the various features of the platform. Some of these features were easy to handle and others not. For instance, I had to

upload the videos to an external platform and embed them in Moodle – it was not possible to do this in Moodle directly. The use of these external services forced me to consider the risks of e-learning. Depending on the service, I cannot control what will be done with my information. If everything had been in Moodle, I would have known that my material and information were safe. This aspect of privacy and learning materials needs to be discussed alongside the second sub-question (see 5.2). Again, this aspect belongs to the skill 'developing digital literacy' (Kennedy et al., 2016).

In the first face-to-face lesson, I had the students enrol on Moodle. This was a valuable strategy as the few technical problems that arose could be solved immediately. Additionally, I learned that I could use this strategy again in a 'bring your own device' (BYOD) setting. However, whether the same strategy would be valuable in a setting without BYOD needs to be discussed (see 5.2.2). This critical reflection of the setting is related to the skill 'critical thinking'. Kennedy et al. (2016) argue that 'we can't teach critical and creative thinking if we are not ourselves critical and creative thinkers' (p. 67).

After the first week, I produced a summary. This was a valuable task for two reasons. First, I realised that the students made interesting and meaningful summaries. Second, I compared this experience to the last time I undertook a similar task in a traditional course. I found that during this more recent experience, I gathered richer information. For instance, students collected more sources. Since the students had to collect sources that were widely available on the internet, it might be better to do this collection task in an e-learning setting. This is the fourth facet of my development: I learned that blended learning allows a better fit between teaching method and learning objectives than found with traditional classroom learning. Kennedy et al. (2016) conclude that 'course materials and methods of teaching with technologies need upgrading'. They call this skill 'regular upgrading'.

The fifth aspect of development relates to my style of facilitation. During the e-learning part of the course, the students had to take part in discussions. I gave clear guidelines at the beginning of the course. Each week, I reminded the students of the tasks that had to be done. However, I did not enforce the tasks in a demanding style. That was justifiable in my context since I did not outline any consequences if the

participation requirements were not met. Next time, I would clarify with management whether penalties are an option if students do not participate. This belongs to 'skills in social and work-related networks' (Kennedy et al., 2016). One aspect of these skills is that teachers need to learn how to deal with a lack of participation.

The learner characteristic questionnaire I used for this research was one I developed based on a variety of literature (see 3.3.2). I looked for a short learner characteristics assessment tool. Unfortunately, I could not find a suitable one. This led to the sixth facet of my development: I have concluded that it would be useful to design and validate a learner characteristics questionnaire. I included this insight as a question in the expert interview (see 3.3.5). This reflection is associated with the skill of 'regular upgrading' (Kennedy et al., 2016), as it is critical for renewing teaching materials and methods.

From the student feedback, three aspects arose related to my development as a teacher:

1. I realised that my facilitation style and feedback were valuable for students.
2. I could have modelled better board etiquette.
3. I designed media that were appreciated by the students.

The first aspect is connected to the answers to questions 49–53 in the satisfaction survey and the statements in the group interview that the quality of my feedback was good. Therefore, I fulfilled the skills of 'facilitating fast' and 'question generating' (Kennedy et al., 2016). The second facet derives from question 54 in the satisfaction survey and is associated with the 'skills in social and work-related networks' (Kennedy et al., 2016). One facet of these skills is knowing 'how to moderate online networks' (Kennedy et al., 2016, p. 64). Finally, the third aspect relates to the statement in the group interview that students liked the provision of information through various media. If the videos or podcasts had been of low quality, the students probably would not have liked them. This aspect relates to the skill of 'developing digital literacy' (Kennedy et al., 2016).

Following this presentation of my results, I will now turn to the discussion.

5 Discussion

In this chapter, I will discuss the results of the previous chapter in association with the research question and sub-questions. The main research question for this study was 'How does a blended learning approach impact the training of three interview techniques in a programme for career counsellors in Switzerland?' This question was divided into three sub-questions:

Q1. What are the effects of blended learning on levels of satisfaction, knowledge, behaviour, and organisation?

Q2. How do the variables of the theoretical framework on blended learning prove themselves in practice?

Q3. How do I, as a teacher, develop while teaching this course?

The structure of this chapter follows these three sub-questions. I first discuss the effects of blended learning, then consider how the variables worked in practice, and conclude with reflections on my development as a teacher.

5.1 Effects of blended learning

I evaluated the effects of blended learning on four levels: satisfaction, knowledge, behaviour, and organisation. In this section, I will discuss each level and conclude with a synthesis. Since I refer to the learning objective of my lessons in various places, I will repeat the learning objective here: Students need to know the basics of interviewing in an aptitude diagnostic setting and be able to apply these in a counselling context.

5.1.1 Satisfaction

Students provided information about their satisfaction in the satisfaction survey and group interview. On a general level, the satisfaction of the students was average (question 24). Six students were at least 'rather satisfied' with the course, six students were 'rather unsatisfied', and one was 'unsatisfied'. I will first discuss the negative aspects and then move to the positive aspects mentioned in the group interview. Where appropriate, I include the associated answers from the survey and feedback from the experts. I conclude with a discussion of the other survey items.

The thematic analysis of the group interview reveals four major negative factors which led to this average rating: the timing of the course, weekly tasks, amount of coordination, and navigation on the Moodle platform.

Considering the *timing of the course*, I misjudged this issue when designing the course. I knew that July and August are vacation times in Switzerland. However, I thought that my written instructions in April to arrange an interview in August would have resolved this issue, as the students had about three months to prepare an interview. I underestimated the influence of vacation time on both the preparation of the interview and the completion of weekly tasks. Timing needs to be considered in future courses. However, I need to decide whether the *weekly tasks* should be implemented in the same way in the future. In addition to the negative comments in the group interview, the following three questions were connected to the weekly discussion tasks and had an average score in the survey (1 was 'agree'; 4 was 'disagree'):

- Interactions with my fellow students made a positive contribution to my understanding of the course subject (Ø=2.58).
- The discussion of theory was useful for understanding the interview techniques (Ø=2.18).
- The discussion of my own interview questions was useful for learning the interview techniques (Ø=2.10).

Interestingly, I reflected on the weekly task issue during the design phase (see 4.3.2). The question I asked myself was whether it would be better to provide all e-learning materials at once or on a week-by-week basis. As I did not find any recommendations on this issue, I decided on a mix and provided some information at the start of the course and other information later. However, this only concerned the provision of materials and not the weekly tasks themselves. Holmes (2018) researched the effect of introducing weekly assessments on student engagement. She concluded that the introduction of these assessments increased the engagement of students. Satisfaction may be considered a variable that contributes to student engagement (Kuh, Kinzie, Buckley, Bridges, & Hayek, 2007). Satisfaction might be increased with the introduction of assessments for the weekly tasks. This conclusion is supported by the internal expert's comment on the issue of dissatisfaction with the weekly tasks. He argued that a teacher needs to clearly state the requirements, expectations, and

consequences present in a blended learning setting. However, in my course, I did not assess the students. Therefore, my assessments could only be an offer to the students and there would have been no consequences were students not to engage. Nevertheless, introducing weekly assessments would contribute to a deep approach to learning (Biggs & Tang, 2011) in the first weeks of the course in which understanding is important. However, it would also increase the amount of time I would have to invest, which is a downside of introducing weekly assessments. On a theoretical level, it would be interesting to investigate whether student satisfaction may be increased by introducing weekly assessments. This is in line with Costley and Lange's (2016) recommendation for future research 'to see which parts of instructional control have a positive impact on learning' (p. 179). These authors researched the effect of instructor control on the satisfaction and perceived learning of students. They revealed that an increased level of instructor control had no effect on satisfaction, but did have a positive effect on student learning. However, with their study design, they could not infer which variables of instructor control led to the increase in student learning.

Some weekly tasks demanded coordination. The *amount of coordination* arose as a third piece of negative feedback. Both experts responded that this is a common complaint in blended learning. This is in line with Pool, Reitsma, and van den Berg (2017), who identified ineffective coordination and a lack of self-regulation as challenges for students in blended learning. The external expert emphasised the importance of self-regulation for self-paced learning as well.

The fourth negative piece of feedback concerned *navigation on the Moodle platform*. To discuss this aspect, I refer to two questions in the satisfaction survey:

- 10 of the 13 students replied that learning to operate the Moodle platform was 'easy' or 'rather easy' for them, while three answered that it was 'rather difficult'.
- 10 of the 13 students 'disagreed' or 'rather disagreed' that their technological skills were improved by of taking part in the course, while three 'rather agreed' or 'agreed' that their experience improved their technological skills.

The feedback concerning navigation refers to the ease of use. As outlined in the theory section, Dell et al. (2015) recommend that navigation should be both simple

and consistent. As the majority of students answered that learning to operate the Moodle platform was easy and that their technological skills did not improve, I conclude that this aspect is not as important as it may seem at first glance. This conclusion is supported by the number of students who gave this negative feedback (two).

The four positive aspects that arose were that information was provided with various media, that students could experience a new way of learning, that the course had flexibility, and that my feedback was of good quality. The *provision of information with various media* was the most mentioned aspect (seven students). Interestingly, the results in the satisfaction survey were not as positive. All students answered that the texts in the first weeks of the course were useful for learning theory. However, five students 'disagreed' or 'rather disagreed' that the podcasts were useful, and three 'disagreed' or 'rather disagreed' that the videos were useful for learning theory. These results imply that the students appreciated the possibility of using various media, but mainly benefited from the use texts for learning theory. This contrasts with Koppelman's (2016) findings. He researched the impact of videos in a course in human-computer interaction and found that videos were useful in the learning process for students. Further research would be necessary to investigate which specific factors increase the perceived usefulness of videos (and podcasts) for students. This is in line with the comment from the internal expert concerning media variety. He said that he would want more information about the cost-benefit ratio of the various media and which presentation form is the most effective for which theme. For my course, I will keep the videos and podcasts since they had a positive effect on the satisfaction and I have now already produced them. Moreover, the additional provision of auditory learning materials contributes to accessible for students with disabilities (Dell et al., 2015).

Experiencing a new way of learning was the second most mentioned positive aspect. This may relate to the results of the learning orientation questions. The two most important learning orientations were the intrinsic academic ('intellectual confrontation with learning materials') and intrinsic personal ('extension of the horizon for personal development'). My course allowed the students to intellectually engage with various learning materials and to extend their horizon. The two experts

did not provide a direct comment on the positive rating of experiencing a new way of learning. The external expert pointed to the advantage of *flexibility* in blended and e-learning. Nowadays, students expect to learn anytime, anywhere, and with the media they want. That may be another explanation for the negative rating of the weekly tasks I discussed above. Weekly tasks limit the flexibility of learning since a task needs to be completed every week. Combining the negative rating of the weekly tasks and the positive feedback on flexibility, I can improve the course design by reducing the frequency of tasks. By changing this part of the course design, I may increase the perceived usefulness of blended learning: In the survey, nine students 'disagreed' or 'rather disagreed' that blended learning gives them greater control over learning. This result stands in contrast with the comment of the external expert concerning flexibility and the discussion on blended learning in the literature. For instance, Boelens, De Weyer, and Voet (2017) provide various positive arguments about the aspect of flexibility in blended learning.

The final positive aspect was the qua*lity of the feedback of the instructor*. This is in line with the results in the survey as the instructor variables were the best rated questions. In section 0, I linked students' feedback to my development as a teacher. Broadly, my teaching style was appreciated by the students, and I need to adjust only a small number of minor aspects. However, some adjustments may have a negative effect on students' satisfaction. For instance, if I introduced penalties for students who do not participate, I might receive lower satisfaction ratings.

I will now discuss the answers to the survey items that were not included in the discussion above. In the general course evaluation, these are:

1. The learning outcomes for the course were clearly communicated.
2. Given the opportunity, I would take another blended learning course in the future.
3. I know how to plan, conduct, and evaluate an interview in aptitude diagnostics.
4. I know I have the abilities needed to apply the interview techniques.
5. I aim to use these interview techniques in the future.

The positive rating of the first item is in line with the answers concerning the instructor, especially that the instructor was transparent about the course design. The

second item addressed the attitude towards blended learning after the course. Before the course, students had a positive attitude towards classroom and online learning. The attitude towards blended learning was less positive. This may derive from the overall average satisfaction with the blended learning course. Other explanations relate to the items in the questionnaires. Before the course, I measured attitudes towards online and classroom learning. After the course, the item addressed blended learning, which is another kind of learning. Additionally, the items were formulated differently. The items I used in the learner characteristics questionnaire were from Bitzer, Söllner, and Leimeister (2016), while the questions about the attitude towards blended learning were based on the questionnaire by Garrison and Vaughans (2008). This difference in item construction would need to be addressed in further development of instruments (see also 5.2.2).

The third item addressed the procedural knowledge and will be discussed in the next section (5.1.2). Self-efficacy was the concept for the fourth item. All but one of the students 'agreed' or 'rather agreed' that they had the ability needed to apply the interview techniques. Although this is an encouraging result, the rating was less positive than the assessment of self-efficacy before the course. Nine students answered that they 'agree' and four students that they 'rather agree' that they have the abilities needed to learn the course content, which was an item for assessing self-efficacy in the learner characteristics assessment. An analysis of the individual answers to these two questions reveals that five changed from 'agree' to 'rather agree' and one from 'rather agree' to 'rather disagree' (see Table 32).

Table 32

Cross tabulation for question 36 and question 31

		I know I have the abilities needed to apply the interview technique.			
		Agree	Rather agree	Rather disagree	Disagree
I know I have the abilities needed to learn the course content.	Disagree	0	0	0	0
	Rather disagree	0	0	0	0
	Rather agree	0	3	1	0
	Agree	4	5	0	0

Since the change in self-efficacy is regular and no unexpected pattern exists, it appears that the students felt less secure about applying the interview techniques than they did with learning the course content. This may be explained by the results on the behavioural level (see section 4.2.3). Most students did not have the opportunity to apply the techniques during the course. Mastery experiences are the most important of the four pillars of self-efficacy (Bandura, 1997). As the students did not experience application, they could not fully build their self-efficacy.

The fifth item addressed motivation to use the interview techniques in the future. Six students 'agreed' and five 'rather agreed' they would use the techniques in the future. This is an encouraging result, although motivation alone does not guarantee that the students will apply a technique. However, behavioural intention is a necessary aspect for performing a planned behaviour (Ajzen, 2002). According to the theory of planned behaviour (Ajzen, 2002), behavioural intentions are formed by attitude, subjective norms, and perceived behavioural control. The latter variable is a development of self-efficacy (Bandura 1997). As discussed above, self-efficacy was not fully built. This may explain why the motivation to apply the technique in the future was not higher. Table 33 shows the cross-tabulation for self-efficacy and motivation. It provides some evidence for this connection.

Table 33

Cross tabulation for question 36 and question 32

		I know I have the abilities needed to apply the interview techniques.			
		Agree	Rather agree	Rather disagree	Disagree
I aim to use these interview techniques in the future.	Disagree	0	0	0	0
	Rather disagree	0	2	0	0
	Rather agree	2	2	1	0
	Agree	2	4	0	0

I have not yet discussed the following questions concerning course design:

1. The development of my own interview questions was useful for learning the interview techniques.

2. The application of my own interview questions in a real-life setting was useful for learning the interview techniques.
3. The discussion of the application in a real-life setting was useful for learning the interview techniques.
4. The development of a summary for fellow students was useful for learning the interview techniques.
5. Overall, the structure of the course helped me to understand the module material.
6. The course content (including media and activities) allowed me to meet the learning outcomes.

The first item was the best rated element of course design. Therefore, I will keep this element in future courses. The second and third items investigated the application of the interview technique. Interestingly, four students 'agreed' or 'rather agreed' that application was useful, but only two applied it. Since the results were anonymised, I could not clarify this issue. Considering the fourth item, most students 'agreed' or 'rather agreed' that the development of a summary for fellow students was useful. Hence, I will keep this element in the future. The fifth item was the lowest rated in the section concerning elements of course design. As discussed above, the weekly tasks and amount of coordination were unappreciated aspects of the course. Since these were the only negative aspects mentioned in the group interview concerning the structure, I conclude that the average rating of the structure originates from these two aspects. Most students 'agreed' or 'rather agreed' that the course content (including media and activities) allowed them to meet the learning outcomes. This overall rating of the course content is consistent with the answers concerning elements of course design.

Considering the learning group variables, I already linked the average rating of the interaction with the fellow students to the weekly tasks. The other three learning group variables were better rated, but still not fully positive. Based on these answers, the negative comments on the weekly tasks, and the results in the section concerning the elements of course design, I will change the tasks for the learning groups in the next course. I aim to use learning groups to assign students to one of the three interview techniques, optional discussion groups, and to organise the summaries for fellow students.

5.1.2 Knowledge

The first part of the learning objective in the course was achieved: Students needed to know the basics of interviewing in an aptitude diagnostic setting. All but one student knew these basics after the course. Before the course, only one to two students knew what the three basic interview techniques concerned, depending on the technique. This increase in declarative knowledge is important since knowledge is at the core of higher education. For instance, depending on the philosophy, higher education institutions should control knowledge (e.g., Bloland, 2005) or be the arbiter of knowledge (e.g., Strohl, 2006). Although opinions about how knowledge should be framed within higher education differ, there is wide agreement that knowledge is a pillar of higher education. However, as the internal expert disclosed, I missed an opportunity for addressing one aspect of prior knowledge: whether or not the students knew what the term 'aptitude diagnostics interview' meant. This aspect needs to be added in future courses.

The procedural knowledge level was satisfactory after the course. Five students 'agreed' or 'rather agreed' and eight 'disagreed' or 'rather disagreed' that they knew how to plan, conduct, and evaluate an interview in aptitude diagnostics. Since I did not ask the same question before the course, I cannot provide evidence for an increase in procedural knowledge. However, the fact that the majority of students did not know the techniques before the course provides a strong argument for reasoning that procedural knowledge increased. It is a limitation that I did not assess the prior procedural knowledge. This will be discussed in section 5.2.2.

5.1.3 Behaviour

Since only two students could conduct an interview or an interview section during the course, I could not conduct any statistical analysis on this activity. This is a risk of doing research in the field – not everything works as planned and I could not control that this happened. Therefore, I cannot provide insights into skill improvements.

However, some students mentioned in the group interview that doing the blended learning course improved their technological behaviour skills. At first glance, this is contrary to the answers in the survey, which indicate that technological skills did not improve. However, three students did 'agree' or 'rather agree' that these skills

improved. Unfortunately, I cannot retrace which students gave which answers in the group interview. Perhaps, these were the same students who answered in the survey that their skills improved. Nevertheless, this is an assumption with no evidence. If I wanted to gain such insights in a future study, I would need to think of a solution as to how the answers given by participant in a survey may be linked to answers by the same participant in a group interview.

Additionally, I used a simple retrospective question to ask about improvements in technological skills and did not assess technological skills before and after the course as I did with the interviewing skills. I will discuss this aspect in sections 5.2.2 and 5.2.4.

5.1.4 Organisation

On the organisational level, I gained two valuable insights. The first relates to the time and costs of blended learning. Designing a blended learning course needs more time than designing a traditional course, at least for a teacher such as myself who is undertaking blended learning for the first time. This insight is in line with McCaslin and Brown (2015) and Baldi (2015), who concluded that preparing the online part of blended learning takes more time than preparing a traditional face-to-face course. However, the implementation time was about the same as in traditional classes. This has implications for external teachers, such as myself, who are paid by the day. My salary may stay the same in a blended learning course as in a traditional setting if one considers the time required for the implementation phase. Nevertheless, since the design phase takes more time than designing a traditional face-to-face class, institutions may need to introduce incentives for teachers to introduce blended learning. Examples of such incentives are payment for the design phase, training to teach the design and implementation of blended learning courses, or free licences for software. For this course, I privately bought a licence for software for producing animated videos. Although these incentives may seem to be more expensive at first glance, full-cost accounting is necessary to compare traditional and blended learning. For instance, the online part of blended learning saves rental fees since students do not need a classroom.

The second valuable insight is the importance attributed by students to blended learning in this programme. Although the satisfaction with my course was average, students agreed that blended learning is important. One student emphasised that career counsellors need the same knowledge their clients have. He argued that today, online and blended learning are becoming more common and their clients will want advice on these courses as well. This argument is in line with the principles mentioned in the Swiss Ordinance on Vocational and Professional Education (Federal Council, 2016). The law expects career counsellors to provide general information about existing education and training programmes. Furthermore, students expect clear communication as to whether blended learning is to be a part of the programme they are on and whether it replaces other self-study sections. The students suggest offering blended learning with more extensive topics such as 'labour market' or 'vocational landscape'. Based on these considerations, I conclude that the university should keep my blended learning and add more blended learning courses to the programme.

5.1.5 Synthesis

Based on the evaluation and additional feedback from experts, I will now outline my planned changes for the next course, what future research might be valuable in light of my evaluation, and my recommendations for programme leaders.

First, I need to ensure that the timing of the course is suitable for students. I will talk to the programme leader and discuss the start and end date of the course. Another change should be the frequency of tasks. I aim to reduce the discussion tasks. The internal expert highlighted that many group learning activities in my course were valuable for enhancing learning. However, as discussed in section 5.1.1, the feedback from students was different. Therefore, a reduction of discussion tasks may enhance student satisfaction and still provide group learning activities. These group learning activities will take place in the learning groups. The two main activities are the discussions with other students and the development of a summary.

The internal and external experts provided additional feedback on course design which was not included in the evaluation in the previous sections. In the next course, I will integrate the following recommendations from the experts:

- Provide specifications about the time needed for the various tasks
- Clearly communicate the learning objectives for each task
- Provide details about preparatory work that needs to be done
- Explicitly clarify my presence in the course
- Explicitly highlight that interaction may be done in the forum, self-organised web-conferences, or in self-organised face-to-face meetings

These changes have led to a revised curriculum, displayed in Figure 24. The original curriculum is available in Appendix A.

Figure 24
Revised curriculum

Curriculum: Interviewing in Aptitude Diagnostics

Start: Introductory face-to-face lesson (60 minutes)

Learning objectives
Get to know the basics of aptitude diagnostics interviewing
Get to know the Moodle platform and how blended learning works

Preparatory work
None

Description
In the introductory lesson, you will receive an initial overview of interviewing in aptitude diagnostics and the methodology in this course.

Role of the instructor
Teaching the face-to-face lesson

Week 1: Questions and research on requirements (60 minutes)

Learning objectives
Understand the basics of aptitude diagnostic interviewing

Preparatory work
None, except taking part in the introductory face-to-face lesson

Description
You will find various learning materials (video, audio, and text) under the heading 'Questions and requirements'. The content is the same in all three media formats. Decide for yourself which learning material you can best work with. Then, answer the questions provided in the forum and share your answers by the end of the week at the latest.

Role of the instructor
Provide a summary with the results and make it available to everyone

Weeks 2–9: Theory and practice (240 minutes)

Learning objectives
Understand one interview technique
Apply an interview technique in a real-life context
Analyse and evaluate the application

Preparatory work
Tasks of the first week
Additionally, please remember to plan an interview or an interview sequence for (month to be defined).

Description
From now on, you work in groups. Each group works on a different interview technique. In the second face-to-face meeting on (date to be defined), you will learn about the interview techniques used by the other groups and then gain access to the learning materials of the other groups.

You will find various learning materials (video, audio, and texts) under the heading 'Interview techniques and practice'. The content is the same in all three media formats. The further literature serves the acquisition of deeper knowledge.

After learning the theory, start preparing your interview. Create a list of requirements and questions for the interview in (month to be defined). Do the interview, record the results, and interpret them.

If you want to, you can use the board for discussions with your fellow students or for organising web conferences or face-to-face meetings by yourself.

Role of the instructor
Facilitates the board discussion, if necessary

Weeks 10–12: Joint summary (120 minutes)

Learning objectives
Reflect on the interview technique and its application in the real-life context
Create a summary for fellow students
Create a presentation for fellow students

Preparatory work
Tasks of the previous weeks

Description
Summarise your most important findings. Create a joint summary in which your colleagues from the other two groups receive the most important information about your interview technique, its application, and your practical experience. You are free to choose the form in which you create the summary (video, audio, graphics, text, etc.). Upload the document by (date to be defined) to the forum.

In addition, prepare a presentation of no more than 5 minutes in which you convey the contents of the summary. You are free to choose your presentation media (PowerPoint, flipchart, video, graphics, etc.). The presentation takes place on (date to be defined).

Again, you can use the board for discussions with your fellow students or organising web conferences or face-to-face meetings by yourself.

Role of the instructor
Facilitates the board discussion, if necessary

End: Face-to-face presentation and end of course (60 minutes)

Learning objectives
Get to know two more interview techniques

Preparatory work
Tasks of the previous weeks

Description
Today, we dedicate ourselves to the three presentations (max. 5 minutes each) and the discussion of these presentations (max. 10 minutes each).

Role of the instructor
Facilitates the presentations
Looks back on the course

On the organisational level, my summarised recommendations for the programme leaders are (see 5.1.4):

- The organisation should keep my blended learning and add more blended learning courses to the programme.
- Full-cost accounting is needed to compare traditional and blended learning costs.

- The organisation may need incentives for teachers if it wants to introduce blended learning in other parts of the programme.

Following this synthesis of the evaluation of blended learning, I will now turn to the evaluation of the framework.

5.2 Proof of variables in practice

The main function of the theoretical framework was to provide the basis for designing, implementing, and evaluating the blended learning course. The second research sub-question, Q2, asks how the variables of the framework on blended learning proved themselves in practice. I will discuss this proof with the same structure as in section 2.1, in which I outlined the framework: structure, input variables, process variables, output variables, institutional level, and macro level. I conclude with a synthesis in which I integrate the insights to provide an answer to sub-question Q2.

5.2.1 Structure

The general structure of the framework worked well. I do not see the need for adjustments, neither based on the feedback from students nor based on that from the two experts. The only aspect that may need consideration is the placement of variables. For instance, effective facilitation is placed in the input category, while social presence is in the process category. During my reflection on the framework, I concluded that social presence is an aspect of effective facilitation. As outlined in the theory section, social presence derives from Hauser (2010), who concluded that it is important to hold regular conferences and to enact clear rules during the virtual phases of a training. These aspects clearly refer to the process. Effective facilitation focuses on teacher skills as well. McRee and Haber-Curran (2016) name being student-centred, showing passion, exhibiting humour, being committed, being personal, and creating positive learning environments as aspects of effective facilitation. Therefore, I conclude that the placement of these variables is reasonable.

5.2.2 Course level: input variables

The input variables include the categories learner characteristics, learning group, teacher characteristics, course design, information quality, and system quality. I structure the discussion by these categories.

Learner characteristics

In this category, most variables proved to work well in practice. I will first discuss three variables that need adjustments. Then I will reflect on possible additions to this category. I conclude with considerations about the design and validation of a short learner characteristic assessment tool.

Three variables need adjustments: learning style, attitude towards classroom- and e-learning, and prior knowledge. I specified the variable *learning style* based on the VAK (Chislett & Chapman, 2005) and the learning orientations by Taylor (1983). I included the VAK to test whether answers in the VAK may be linked to preferences regarding learning materials. However, the answers to the VAK questions did not provide a reasonable basis for analysing such relationships. This may be related to the argument that the VAK concept is not a valuable or proven approach (Coffield et al., 2004; Klitmøller, 2015). Other explanations were provided by the internal expert who questioned the antiquated and indistinct answer options to the test questions. Based on these insights, I reflected again on Li et al.'s (2016) conclusion that 'we should be careful and critical when drawing on learning styles for course design' (p. 92). I included the learning orientations by Taylor (1983) in this variable. This concept seems to be useful. In Figure 23, I demonstrated the existence of a significant relationships between learner characteristics and satisfaction level. The extrinsic vocational learning orientation (Taylor, 1983) correlates positively with the rating of developing a summary for fellow students. This may be due to the nature of a summary that is distributed among students. It is a visible proof of what one did and therefore has similarities to the recognition of a qualification's value, which is the main concern of this learning orientation. The intrinsic academic learning orientation (Taylor, 1983) correlates negatively with the usefulness of podcasts, usefulness of videos, and usefulness of developing one's own questions. Considering the first two correlations, this may be explained by the main concern of this learning orientation, which is to have stimulating lectures. Podcasts and videos are not lectures and may be considered trivial learning media. However, this claim is not based on evidence and would need further research. Again, the third negative correlation may be explained with the main concern of the intrinsic academic learning orientation. The development of questions is more than just intellectual confrontation. The social

learning orientation is the third one with a significant relationship. It correlates positively with the instructor's feedback on strengths and weaknesses. Interestingly, this learning orientation is associated with the knowledge questions (see 5.1.2). The one student who gave the wrong answers to questions on the Situational Interview and Decision-Oriented Interview was the only student who rated 'having a good time' as 'very important'. The lack of knowledge increase is an indication that the concept of this learning orientation is valid. Based on these considerations, I will change the first variable from 'learning style' to 'learning orientation'.

Attitude towards classroom- and e-learning needs a name adjustment. As discussed in section 4.2.1, I measured the attitude towards online and classroom learning before the course and the attitude towards blended learning after the course. This is an illogical change. To be consistent and complete, I will rename the variable to *attitude towards blended, classroom, and e-learning*.

The third variable that requires adjustment is *prior knowledge*. As discussed in 5.1.2, it is a limitation that I did not assess the prior procedural knowledge. To be certain that I assess that in the future, I will explicitly include declarative and procedural knowledge in the framework. Furthermore, this is consistent with the knowledge category in the output section (see 5.2.4).

Considering possible additions, I refer to one piece of feedback from the internal expert and one piece from the external expert. The internal expert highlighted that the assessment of biographic learning variables is missing. I will include this aspect in the future and call the variable *learning experience*. This variable includes prior experiences with e-learning, blended learning, and classroom learning. As with the variable *computer experience*, the effect derives from the behavioural concept of stimulus and response. Doing something repeatedly helps to form a habit (Lally et al., 2010). If someone is used to e-learning, blended learning, or classroom learning, these kinds of learning become easier. The external expert emphasised that self-paced learning demands *self-regulation,* which is a second addition to my framework. Barnard, Lan, To, Paton, and Lai (2009) emphasise that self-regulation is a critical factor for success in online learning. Pool et al. (2017) conclude that it is 'imperative for students to have self-regulation skills in a blended learning

environment' (p. 162). Self-regulation includes time-management skills, self-discipline, self-reliance, goal-setting, and task management (Pool et al., 2017).

After this discussion on changes and extensions to the learner characteristics category, I will now turn to considerations on the design and validation of a short learner characteristic assessment tool. Both experts agreed that the design and validation of such a questionnaire is meaningful. The external expert emphasised that the more tailored the questionnaire to the course, the more valid the instrument. This is in line with a comment by the internal expert who argued that practitioners self-construct such questionnaires and tailor them to their purposes. However, the internal expert argued that validity is no concern for practitioners. He stated that developing and validating such a questionnaire is primarily meaningful for research purposes. I agree that a learner characteristic questionnaire may be useful for research. However, I do not agree with the expert that developing and validating such a questionnaire is not valuable for practitioners. The following variables are not content-bound and may be used for any course: learning orientation, learning experience, attitude towards classroom and e-learning, self-regulation, self-efficacy, and learning motivation. The computer experience variable is useful if computers are used in the course, while prior knowledge is the only variable that needs to be tailored to course content. In my study, four variables had a significant effect on satisfaction. Although these relationships need to be considered with caution due to the small sample, further research with a validated learner characteristics assessment tool may reveal effects of some of these variables on the satisfaction, knowledge, and behaviour of students. If that were the case, a teacher or organisation would gain the chance to personalise the learning experience and to better understand the needs and feedback of students. This would support organisations and teachers in responding to the trend towards personalised education which requires 'flexibility in educational approaches' (Thompson and Miller, 2018, p. 93). Therefore, I argue that the development and validation of a short learner characteristics assessment tool may be valuable for both researchers and practitioners.

If I wanted to continue with the design and validation of a short learner characteristic assessment tool, I would have to consider the critical feedback from the experts. In section 5.1.1, I concluded that the item construction for the attitude questions would need to be revised. This is in line with a comment from the internal expert. He

emphasised that these items do not seem to be valid and suggested it would be better to ask directly about the attitude towards e- and classroom learning.

Learning group

For this category, I will refer to the feedback from students. Their attitude to items considering the learning group were average or a little above average. I made no reflections on the learning group during the design and implementation phase of the course, and the experts did not comment on this aspect. Based on these reflections, I could delete this category. However, I used the variables as they are valuable antecedents of blended learning (Bitzer et al., 2016). The fact that neither I nor the experts made any reflections on this category does not mean that it is not important. I could focus more extensively on the learning group variables in future practitioner research. For instance, the assessment of prior knowledge could be used for the creation of learning groups. This may provide insights concerning the value of the *homogeneity of knowledge* variable. Based on these reflections, I will not delete or change this category or the variables in it.

Teacher characteristics

The variables in this category proved to work well in practice. They provided guidance on what is important in my behaviour and allowed me to reflect on myself as a teacher (see 5.3). This reflection on my development as a teacher made reference to my framework where appropriate. In the following discussion, I will focus on changes in variables and further insights.

The *prior experience with LMS* (learning management system) variable is too narrow. In my reflection on my development as a teacher, I realised that building a blended learning course demands more skills than traditional classroom teaching. Prior experience with LMS contributes to the development of digital literacy (Kennedy et al., 2016). However, to be digitally literate requires further skills, such as producing learning material with various media or becoming familiar with new software. Additionally, for a blended learning framework, prior experience in classroom teaching is important. Therefore, I will rename *prior experience with LMS* to *teaching experience*. This change is similar to the addition of the variable *learning*

experience in the learner characteristics category, which includes prior experiences with e-learning, blended learning, and classroom learning.

A second variable that needs additional consideration is *effective facilitation*. The Oxford Dictionary of English defines facilitation as the action of making a process or action easy or easier (Stevenson, 2010). In a blended learning framework, effective facilitation as a teacher characteristic refers to actions the teacher undertakes to make learning easy or easier for students. Based on this definition, effective facilitation includes aspects of other variables of the framework. For example, the internal expert emphasised that clear communication (teacher characteristic) or social presence (behaviourism) contribute to effective facilitation. However, both variables include aspects that do not necessarily make learning easy or easier. Giving clear guidelines and clearly communicating consequences for a lack of participation may be valuable for ensuring that the students participate, but they do not make learning easy or easier. One possibility for facilitating effectively is considering a teacher's teaching approach (Prosser & Trigwell, 1999). The same authors provide an overview of teacher-learning relations (Prosser & Trigwell, 2017).

Moreover, I gained valuable insights on effective facilitation from my reflections and the feedback from the internal expert. I concluded that undertaking the enrolment on Moodle in the first face-to-face class was a valuable strategy in my 'bring your own device' (BYOD) setting. However, I have wondered whether the same strategy may be useful in a setting without BYOD. Based on the discussion about learner characteristics, I conclude that this reflection needs to be extended. The device itself may be an aspect that needs to be considered when enrolling on Moodle in a face-to-face lesson. However, in a first face-to-face lesson, wider aspects like learning experience, computer experience, and self-regulation may also be addressed. Students who are experienced in blended learning, know how to handle devices, and have strong self-regulation skills do not need the same amount of support as students who are missing one or all of these aspects. One recommendation from the internal expert was to use the same wording in the evaluation survey as in the learning material. From this suggestion, I have decided to use the same wording throughout all classroom material. This will be a valuable strategy for enhancing effective facilitation.

The internal expert provided more feedback that relates to teacher characteristics. I included his comments on *clear communication* and *transparency of course design* in the further development of the course design (see 5.1.5).

Course design

The category course design proved to work well in practice. I will discuss it from all four perspectives. The students emphasised that the e-learning part of blended learning needs to replace other self-study parts in the programme and not be an add-on to the already existing self-study components. This aspect needs to be considered in *curriculum* design. Both the internal and external experts provided valuable feedback for the curriculum and the *learning objectives*, which was included in 5.1.5. From my perspective, I observed that writing the curriculum made me rethink the whole design of the blended learning course. Therefore, the curriculum variable is especially useful for a teacher's reflection. However, one may use the terminology of 'learning outcome' instead of 'learning objective'. For instance, Biggs and Tang (2011) explain in their discussion of constructive alignment that intended learning outcomes, teaching activities, and assessment tasks should be aligned. This is similar to Bloom et al.'s (1956) statement that learning objectives help 'to plan learning experiences and prepare evaluation devices' (p. 2).

Based on the feedback by the internal expert, I aim to add a third variable to this category: *embeddedness in programme*. If a blended learning course is embedded in a programme with other courses. it needs to be meaningfully connected to familiar courses.

Information quality

This category proved to work well in practice. Its main function was to provide a guideline for the development of learning material. In other settings, it may be used to explain the satisfaction level of students. For example, this might be relevant in relation to dissatisfied students who complain about outdated or wrong information. In my setting, the students did not comment on the information quality.

System quality

Again, the variables in this category proved to work well in practice. The *e-learning and classroom technology* were integrated into my course. Therefore, I had to become familiar with it. This would be different if an organisation or individual starts a blended learning course from scratch. In such a case, the e-learning and classroom technology variable would not be a pre-set one. An organisation or individual could use the technology that best suits their needs. One aspect to consider would be the possibility of *integrating mobile tools*. This is an element I did not reflect on in my course and nor did I receive comments on it from the students or experts. Since I did not integrate mobile tools, I could not verify whether this integration may have any effect on satisfaction, knowledge, or behaviour. As discussed in 5.1.1, *ease of use* proved to be important for a few students. *Availability* and a *good and stable internet connection* were important environmental variables that helped the online part of the blended learning work. *Media variety* was valuable, especially for student satisfaction. The external expert emphasised that media variety is an advantage for the online part of blended learning. Students have the possibility of learning with the media they prefer. However, the internal expert pointed to the aspect of cost-benefit ratios. He emphasised that he would have liked statistics about how often students watched videos, listened to podcasts, and read texts. This could help to tailor the media to the theme. Future research is necessary to address these aspects. The variable media variety is associated with making the course more *accessible to people with disabilities*. As discussed in 5.1.1, additional auditory learning materials enhance the learning experience for students with impaired vision. However, I came to realise that 'Accessibility for people with disabilities' may be too narrow. Equality in relation to the system may also include considering the needs of people from other cultures or differences between young and old people. Therefore, I decided to rename this variable to 'considering diversity, inclusion and equity', which is based on a report by the Organisation for Economic Co-operation and Development (OECD, 2003).

In my reflections on my development as a teacher, I argued that the privacy of learning material needs to be discussed. Analysing confidentiality and security in software systems, Kumlander (2015) emphasises that 'the confidentiality of data is a complex question which is often underestimated and sometimes solved by disabling processing such data or exposing it' (p. 312). This argument does not solve my

concern about the security of my and my students' information. However, it is evident that the variable 'confidentiality and security' needs to be added.

The reflections in this section led to an update of the input variables, which is displayed in Table 34.

Table 34

Revised input categories and variables

Learner characteristics ▪ Learning orientation ▪ Learning experience ▪ Attitude towards blended, classroom, and e-learning ▪ Computer experience ▪ Self-regulation ▪ Self-efficacy ▪ Learning motivation ▪ Prior knowledge (declarative, procedural)
Learning group ▪ Homogeneity of knowledge ▪ Homogeneity of expectations ▪ Mutual support
Teacher characteristics ▪ Teaching experience ▪ Time spent on preparation ▪ Knowledge ▪ Fairness ▪ Responsiveness ▪ Control over technology ▪ Effective facilitation ▪ Clear communication ▪ Model and teach good board etiquette ▪ Transparency of course design
Course Design ▪ Curriculum ▪ Learning objectives ▪ Embeddedness in programme
Information quality ▪ Correctness of information ▪ Structure of information ▪ Up-to-date information ▪ Information related to learning objectives
System quality ▪ E-learning and classroom technology ▪ Integration of mobile tools ▪ Ease of use ▪ Availability ▪ Confidentiality and security ▪ Good and stable internet connection ▪ Media variety ▪ Considering diversity, inclusion, and equity.

5.2.3 Course level: process variables

I will structure this section around the categories of behaviourism, (social) cognitivism, humanism, constructivism, and application.

Behaviourism

Within this category, all four variables proved to work well in practice. *Social presence* includes the recommendation to enact clear rules during the virtual phases of a training (Hauser, 2010). As discussed in association with my development as a teacher (see 5.3), I enacted clear guidelines at the beginning of the course. Although I did that, one student did not participate at all and others did not fully participate. This variable helped me to reflect on my skills and conclude that I need to learn how to deal with a lack of participation. The internal expert suggested random generators to improve participation. This is an interesting strategy, which I aim to use in future courses. Another possibility would be clarifying with management whether penalties are an option. Other aspects of *social presence* were that I purposefully planned my participation during the e-learning part and then logged in every day and wrote posts. These posts included the *provision of rewards* and *participant reminders*. These two variables were valuable reminders for me as a teacher.

Learning from experience was an aspect I considered during the design and implementation phases. Unfortunately, only a few students applied the interview techniques in a real-life setting and were consequently able to learn from their own experience. However, all students could learn from the experience of others, which will be discussed in the following paragraph.

(Social) Cognitivism

The one variable in this category, *goal-setting*, did not prove to work well in practice. One task was that the students had to plan an interview. However, most students did not achieve this goal. This issue relates to the enactment of clear guidelines. If the interview were mandatory, or if not doing it had had consequences, then students would have been more likely to set and achieve this goal. Although this variable did not prove to work well in practice, I do not question the importance of goal-setting.

During my reflections concerning learning from experience, I realised that a variable in this category is missing: *learning from observation*. As outlined in 2.1.4, social cognitivism includes learning by observing others (Merriam et al., 2007). In my course, all students could learn from the experience of other students. For instance, they could ask for or offer advice. In the final face-to-face lesson, those who applied the technique told other students about their experiences in a real-life context. To learn from others in this way is a variation of learning by observation, which is the core of social learning theory (Bandura, 1977).

Humanism

The two variables *support* and *intellectual development* proved to work well during the design phase. They reminded me to provide material for unprepared students and of the importance of discussion and feedback. However, during the implementation phase, it was mainly support that proved useful. Students and I answered other students' questions. I raised questions, which is a strategy for contributing to intellectual development (Perry, 1970). However, I did not observe or assess the intellectual development of students. I know that their knowledge increased, but I do not know whether they progressed along the intellectual stages outlined by Perry (1970). In future research, I could address this.

Constructivism

The variable *interaction and interactivity* proved of average usefulness in practice in association with the learner-learner and learner-interface interaction. I discussed these issues in relation to students' satisfaction (see 5.1.1). However, the other two types of interaction (Thurmond, 2003) proved to work well. Both the learner-content and the learner-instructor interactions were satisfactory. Initially, I mainly focused on group learning activities, as these are a central aspect of interaction and interactivity (de Hei et al., 2016). However, the internal expert provided more ideas for this variable. Interaction and interactivity may include games, surveys, and other activities as well.

Application

This category proved to work well in practice. Apart from M-learning, I employed all modes and synchronies of blended learning. However, synchronous learning took

place in the face-to-face lessons only. I may use synchronous tools during the online phase in future courses. The variables proved to work well, but I will make structural changes to this category. I will use the titles 'mode of blended learning' and 'synchrony' to provide a more consistent structure in the framework.

Table 35 summarises the revised process category.

Table 35

Revised process categories and variables

Behaviourism ▪ Social presence ▪ Provide rewards ▪ Participant reminders ▪ Learning from experience
(Social) Cognitivism ▪ Goal-setting ▪ Learning from observation
Humanism ▪ Support ▪ Intellectual development
Constructivism ▪ Interaction and interactivity
Mode of blended learning ▪ Face-to-face ▪ Online ▪ M-learning
Synchrony ▪ Synchronous ▪ Asynchronous

5.2.4 Course level: output variables

I used the output variables to answer research sub-question Q1 (see 4.2). They proved to work well in practice. However, I will change and add variables. In section 4.3.2, I described that I had changed the variable *confidence* to *self-efficacy* while constructing the satisfaction survey. Further reflection on the output variables caused me to realise that I had extended the satisfaction survey with the *learner characteristic* variables *computer experience* and *attitude towards blended learning*. As discussed with the input variables (section 5.2.2), it was illogical to only evaluate students' attitude towards blended learning. After the course, I should have assessed attitudes towards classroom and online learning as well. Therefore, I will now name

this variable as the input variable: *attitude towards blended, classroom, and e-learning*. A final addition is *self-regulation*. Since I added this variable in the input section, it is valuable to assess it after the course as well. The goal is to increase or at least keep the self-regulation skills of students.

Since I included computer experience in the learner characteristics category, I removed it from the behavioural category. This has the positive effect that the behaviour category now includes interviewing *skills improvement* alone. For instance, my evaluation on the behavioural level focused only on interviewing skills. I think it is valuable to stay focused in this category and refer to the topic of the course alone. Therefore, I will rename this variable to *course content related skills improvement*. Moreover, the structure of the output variables derives from Catalanello and Kirkpatrick (1968). These authors suggest measuring behavioural changes with a pre- and post-course test. Such an evaluation will probably focus on the content of the course. The increase in other skills may be measured with a pre- and post-test questionnaire, which includes questions concerning the perceived skills of students before and after training.

The categories learner characteristics, knowledge, and behaviour concern the learners. However, I realised that I missed an opportunity to incorporate teacher characteristics into the output section. Therefore, I will include variables from the input section in the *teacher characteristics* category. This inclusion allows a teacher to reflect on their own development. The variables I will include are: knowledge, fairness, responsiveness, control over technology, effective facilitation, clear communication, model and teach good board etiquette, and transparency about course design. Table 36 presents the updated output categories and variables.

Table 36

Revised output categories and variables

Learner characteristics ▪ Satisfaction ▪ Attitude towards blended, classroom, and e-learning ▪ Computer experience ▪ Self-regulation ▪ Self-efficacy ▪ Motivation
Learner knowledge ▪ Declarative knowledge ▪ Procedural knowledge
Learner behaviour ▪ Course content related skills improvement
Teacher characteristics ▪ Knowledge ▪ Fairness ▪ Responsiveness ▪ Control over technology ▪ Effective facilitation ▪ Clear communication ▪ Model and teach good board etiquette ▪ Transparency about course design
Organisation: hard facts ▪ Costs ▪ Time
Organisation: soft facts ▪ Image/reputation ▪ Culture

5.2.5 Institutional level

The variables of the institutional level proved to work well in practice. For instance, students provided valuable insights for the organisation by commenting on possible extensions of blended learning within the programme (see 5.1.4). Combining these comments and my considerations for implementing blended learning (see 1.3) could provide management with a justification for introducing blended learning in other parts of the programme. Such a justification is necessary, according to the internal expert. A second requirement is that management needs to address what is expected of students in blended learning explicitly. While reflecting on the institutional level, I have come to realise that I should add *organisational processes* into the framework. Initially, I argued that these are not a focus and therefore did not include it. However,

I have since realised that the three process categories in the New St. Gallen Management Model (Rüegg-Stürm, 2005) are valuable. *Management processes* include all work that is done to manage an organisation; *business processes* are directly aimed at the creation of customer benefit; and *support processes* provide infrastructure and internal services for business processes. The value of these processes can be seen in the context of examples from my research:

- Deciding on the implementation of blended learning in other parts of the programme is a management process.
- A teacher's carrying out of blended learning is a business process.
- The provision of Moodle and support by internal e-learning specialists for teachers are support processes.

These variables will be included in the revised conceptual framework (see Table 38).

5.2.6 Macro level

The practical use of these variables was minimal. They helped me to reflect on technological and environmental aspects affecting the course (see 4.3.2). Additionally, the external expert referred to societal aspects by naming on-demand learning and flexibility of when and where to learn as expectations of today's students. The fact that these variables received little consideration does not mean that they are not important. In other contexts, these variables play a more important role and would need further consideration. I discussed this in depth in section 2.1.7.

5.2.7 Interactions

Originally, I focused on interactions between the course, institutional, and macro levels (see 2.1.8). However, I have since realised that I did not address interactions within levels. In this research, I have gained valuable insights into interactions within the course level. Consider the following two examples: First, the assessment of *prior knowledge* (learner characteristics) may be used to form learning groups. Students with similar knowledge characteristics could form a learning group, which would ensure the *homogeneity of knowledge*. Second, *learning objectives* may be linked to the form of *application*. The external expert explicitly recommended using the Bloom et al.'s (1956) taxonomy. This is in line with my conclusion that blended learning allows a better fit between teaching method and learning objective than is found in traditional classroom learning (see 4.4). However, both claims need further research.

One possibility would be to link a large number of teaching methods to the taxonomy created by Bloom et al. (1956) and research which methods best suit which learning objectives. There exists research on partial aspects of this idea. Consider the following two examples:

- Brierton et al. (2016) concluded that asynchronous methods address higher order thinking skills better than synchronous methods.
- Cheung and Hew (2011) assigned instructional modes to the Bloom et al.'s (1956) taxonomy.

Nevertheless, in-depth research that provides a holistic perspective on the interaction between learning objectives and instructional methods is absent. One may think of various other interactions between the variables in this framework, be them within the same level or between different levels.

5.2.8 Synthesis

In this synthesis, I combine the discussion of the previous sections to provide an answer to the second research sub-question Q2 ('How do the variables of the theoretical framework on blended learning prove themselves in practice?') and present the revised framework for blended learning (see Table 38). Broadly, the variables of the theoretical framework on blended learning proved to work well in practice. Table 37 provides an overview. This judgment is based on the discussion above and represents my opinion. Therefore, others may judge the proof of variables in practice differently than I have. The reader may refer to my values and confidences in being a practitioner researcher (see 2.3). Additionally, this judgement is based on this study, acknowledging all of its limitations (see 6.1).

Table 37

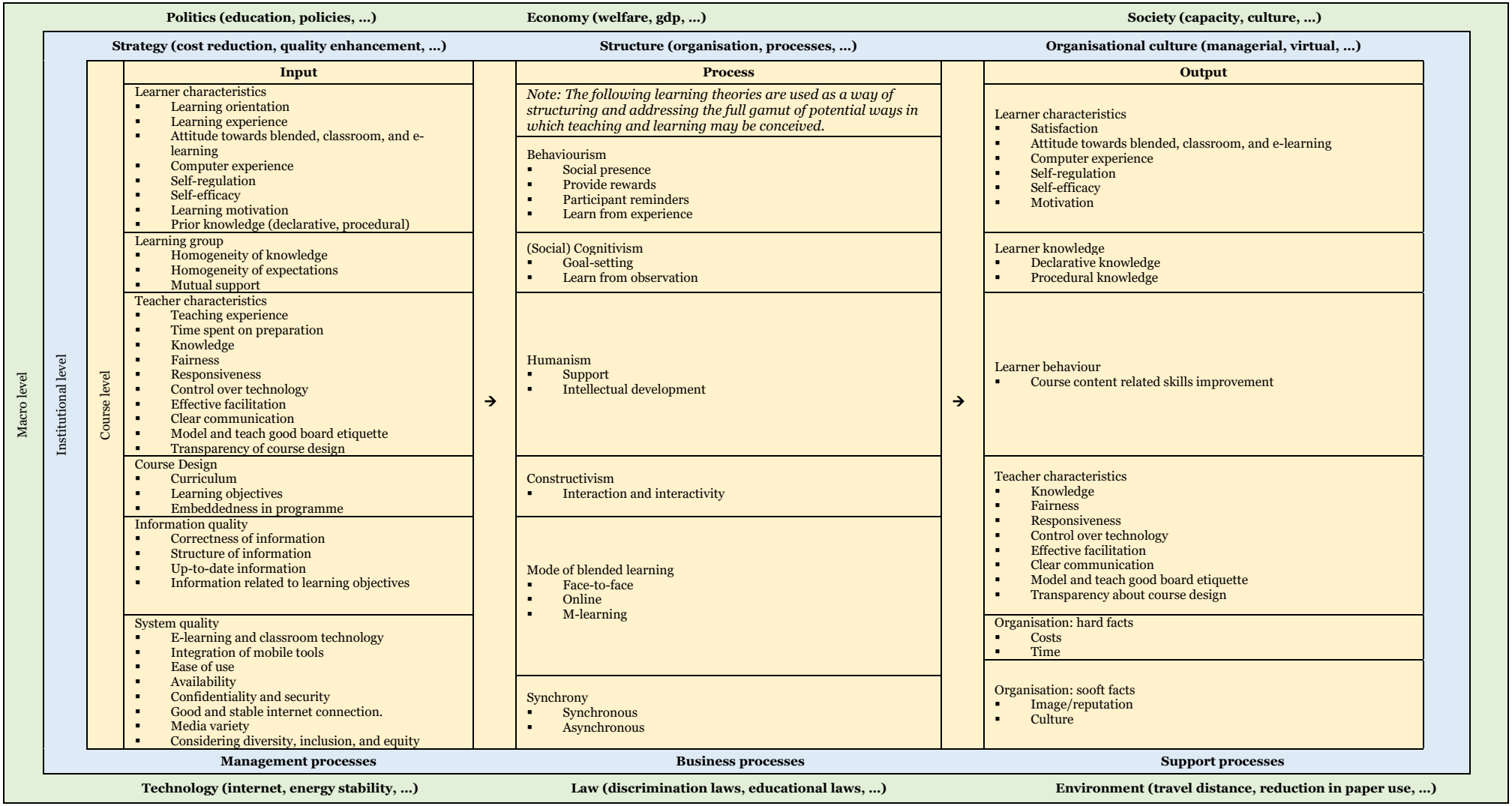
Proof of variables in practice

Category	**Proof of variables in practice**
Learner characteristics	Most variables proved to work well
Learning group	Proved to work poorly, but still important
Teacher characteristics	Proved to work well
Course design	Proved to work well
Information quality	Proved to work well
System quality	Proved to work well
Behaviourism	Proved to work well
Cognitivism	Proved to work moderately well, but still important
Humanism	Proved to work well
Constructivism	Proved to work moderately well to well
Application	Proved to work well
Output variables	Proved to work well
Institutional level variables	Proved to work well
Macro level variables	Proved to work poorly, but still important

Although the variables proved to work well, that does not mean that the theoretical framework does not need further development. The revised theoretical framework is a work in progress and may be used to start a new action research cycle, which is typical for action research (Coghlan & Brannick, 2014).

Table 38

Revised theoretical framework for blended learning



5.3 My development as a teacher

In this section, I further discuss my development as a teacher while teaching this course. I analysed my development in section 4.4 in the context of education skills for 21st century teachers (Kennedy et al., 2016). In my reflections, I considered my development as a teacher in relation to the following skills: developing digital literacy, critical thinking, regular upgrading, facilitating fast, generating questions, and skills in social and work-related networks. Most of these skills reflect my values as outlined in section 2.3: broadminded, independent, imaginative, and valuing wisdom and knowledge. For instance, developing digital literacy and regular upgrading fit well into values of wisdom and knowledge. However, I did not reflect on other skills for 21st century teachers (Kennedy et al., 2016). I will illustrate this with a distinct example. The virtue 'transcendence' scored low in the assessments I undertook. This was mirrored in my ignorance of 'ethics' skills in my reflections. Nevertheless, I valued all the learning from this research and course. I believe I have improved my knowledge and skills in the use of digital communication technologies in a learning environment (Vitae, 2010; see also 2.3), which was one intended impact of this research.

My perspective is still closer to a naturalist than a constructivist one (Moses & Knutsen, 2012). However, having undertaken an evaluation from four perspectives and having attributed those perspectives the same importance is a mark of personal development. For instance, I always value student feedback. However, in this course, I valued it more highly than in other courses. I reflected more thoroughly on their feedback. This allowed me to further critically reflect on my stance towards knowledge. An example would be the comment made by a student that career counsellors need the same knowledge as their clients, and, therefore, blended learning is important (see 4.2.4). This was an argument I did not expect and reminded me once again that there are other ways to understand.

6 Conclusion

I will conclude this thesis with a reflection on my research, the limitations of my study, and a look to the future.

The main research question for this study was 'How does a blended learning approach impact the training of three interview techniques in a programme for career counsellors in Switzerland?' This question may be answered from four perspectives: student, teacher, organisation, and research.

From the students' perspective, the blended learning approach had a positive impact on their knowledge. They know the three interview techniques, which was scarcely the case before the course. Unfortunately, the course had only limited impact on the interviewing skills of the students. In future research, the timing of the course needs to be considered a crucial aspect so that all students will be able to apply an interview technique in a real-life context. The timing had an impact on satisfaction as well. It contributed to the only average ratings in the student survey. However, the students named various aspects they liked about the course. To sum up, from a students' perspective, I conclude that the blended learning course may be continued but with adjustments.

These adjustments will be implemented by me, the teacher. From my perspective, the course improved my knowledge and skills in blended learning. This contributes to my development as a practitioner researcher, as I now know better how to use digital communication technologies and developed a theoretical framework.

My research may have implications for the organisation in which I work. Based on this study, I recommend that the organisation should keep my blended learning and add more blended learning courses to the programme. This recommendation is based on the feedback from students, my reflections, and the evidence that blended instruction is more effective than conventional face-to-face classes (Bernard et al., 2014). To make this suggestion stronger and add a further perspective, I suggest doing a full cost accounting to compare traditional and blended learning on a financial basis. If the organisation decides to introduce blended learning in other

parts of the programme, it may need to introduce incentives for teachers who are not used to blended learning.

From the perspective of research, my study contributes to the general disciplinary knowledge on blended learning and the teaching of the three interview techniques. My conceptual framework may be valuable for other blended learning courses and further research. The curriculum may provide ideas for practitioners who aim to organise similar courses. However, practitioners who aim to use my research need to judge it in relation to its translatability (Cohen et al., 2011), as the results and conclusions may not be generalisable. To help others make this judgment, I have outlined the context and my values in depth.

To conclude, this study has allowed me to answer my main research question and the three sub-questions:

Q1. What are the effects of blended learning on levels of satisfaction, knowledge, behaviour, and organisation?
Q2. How do the variables of the theoretical framework on blended learning prove themselves in practice?
Q3. How do I, as a teacher, develop while teaching this course?

6.1 Limitations

Limitations for this study stem from the setting and methods. My conclusions derive from a small convenience sample. In a future course, the sample will be different. Hence, effects of my planned changes in the course may not be attributable to the changes I make alone. Other students will have other patterns in learner characteristics. A further limitation in the setting is language. Since I did the research in German, I would have had to validate the English translations of my instruments. However, I did not do that due to time restrictions. Considering my methods, I used items of a tool that is aimed at interviewer competence in personnel selection. Although the selected items were valuable for my study, it was not a validated choice of items, and from a tool that is not directly aimed at career counsellors. The issue of validation is true for the learner characteristics questionnaire and satisfaction survey. To better understand student feedback in the group interview and satisfaction survey, it would have been valuable to collect data about the use of media and Moodle. For

instance, students answered that they liked the media variety. However, I do not know how often they watched the videos, listened to the podcasts, or read the texts.

6.2 Future

This study's conclusions for the future are two-fold. I will first reflect on my own future and that of the course and then on what other research could be conducted based on this study. I aim to teach the adjusted blended learning course again with the next cohort. The new curriculum was presented in section 5.1.5. However, I did not include all expansions I outlined in the discussion. Therefore, I aim to include the following aspects later: use of synchronous tools during the online phase, integration of mobile tools, and introduction of random generators. Moreover, I aim to further develop my conceptual framework. This framework may be used, developed, and scrutinised by other teachers and researchers as well. Ideas for concepts or theories to include in the future are: experiential learning theory (Kolb, 1984), situated learning (Lave & Wenger, 1991), adult learning principles (Knowles, Holton, & Swanson, 1998), and the cognitive apprenticeship model (Collins, Brown, & Newman, 1989), to name a few.

My research raised questions that I consider worth researching in the future. These include:

- The development and validation of a short learner characteristics assessment tool that is based on the learner characteristics variables in my framework. This may be valuable for both researchers and practitioners.
- Variables of this validated learner characteristics assessment tool may be associated with effects on satisfaction, knowledge, and behaviour of students; it may be useful for the creation of learning groups, or for the personalisation of the learning experience and materials.
- It would be valuable to connect a large number of teaching methods to the taxonomy created by Bloom et al. (1956) or any other suitable taxonomy, and to research which methods best suit which learning objectives.
- It would be interesting to investigate whether students' satisfaction may be increased by the introduction of weekly assessments.
- I think it would be interesting to research which specific factors increase the perceived usefulness of videos (and podcasts) for students.

- Finally, one may think of research on all variables or their interactions in my conceptual framework. For instance, it would be interesting to assess whether students progress through intellectual stages (Perry, 1970).

To summarise, I have answered my research question and will further develop myself, the blended learning course, and my conceptual framework, and I will aim to contribute to research in higher education.

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8 Appendix

Appendix A

Course Outline: Interviewing in Aptitude Diagnostics

28 June: Introductory face-to-face lesson and questionnaire

In the introductory lesson, you will receive an initial overview of interviewing in aptitude diagnostics and the methodology in this course. Please remember to plan an interview or an interview sequence for August.

The first task in Moodle is to fill out a questionnaire.

28 June - 5 July: Questions and research on requirements

You will find various learning materials (video, audio, text) under the heading "Questions and requirements". The content is the same in all three media formats. Decide for yourself which learning material you can best work with.

Then answer the following questions and share your answers in the forum by 5 July at the latest:

- In which concrete situations do I have to deal with questions related to requirements in my daily work?
- When I think of indirect customers such as employers or insurance companies, what are the requirements-related questions that arise there?
- Where and how can I find concrete requirements for a profession? To answer this question, choose a specific profession and look for suitable sources.

Roland von Euw will then summarise the results and make them available to everyone.

5 July - 12 July: Theory of interview techniques and connection with practice

From now on you work in groups. Each group works on a different technique. In the second face-to-face meeting on 12 September 2017, you will learn about the discussion techniques used by the other groups and then gain access to the learning materials of the other groups.

You will find various learning materials (video, audio, texts) under the heading "Interview techniques and practice". The content is the same in all three media formats. The further literature serves the deepening.

After learning the theory, answer the following questions and share your answers in the forum by 12 July at the latest:

- What are the most important statements about this interview technique for me?
- Where do I see concrete implementation possibilities in my daily work?
- How do I implement this interview technique in a specific case? To answer this question, select a specific requirement and formulate your own questions.

12 July - 19 July: Discussion on the connection with practice

Read the contributions of your colleagues. Provide constructive feedback on at least two contributions and discuss the findings and specific questions. The aim of this discussion is the further development of the questions and the examination of different points of view.

19 July – 26 July: Preparation of own interview

Create a list of requirements and questions for the interview in August. Then share this catalogue and some basic information on the counselling situation (counselling event, personal details, facts about the education and career biography, wishes of the person seeking advice, questions) in the forum by 26 July at the latest.

26 July - 2 August: Discussion to prepare your own conversation

Examine the catalogues of your colleagues. Provide constructive feedback on at least two of them. The aim of this discussion is the further development of your own catalogue of requirements and questions.

2 August - 31 August: Conducting the interview and exchange of results

Do the interview. Then record the results and interpret them. Share your results and the interpretation with your colleagues in the forum. Discuss your findings if necessary.

31 August - 12 September: Joint summary

Summarize your most important findings. Create a summary together, in which your colleagues from the other two groups receive the most important information about your conversation technique, its application and your practical experience. You are free to choose the form in which you create the summary (video, audio, graphics, text,...). Upload the document by September 12th in the forum.

In addition, prepare a maximum 5-minute presentation in which you convey the contents of the summary. You are free in the choice of presentation media (powerpoint, flipchart, video, graphics,...). The presentation takes place on September 12.

12 September: Presentation, group interview and questionnaire

Today we dedicate ourselves to the three presentations (max. 5 minutes each) and the discussion to these presentations (max. 10 minutes each). This part of the seminar will be followed by a group interview. The final step is to fill out a questionnaire in Moodle.

Appendix B

Dear Roland von Euw				
I am pleased to inform you that the EdD. Virtual Programme Research Ethics Committee (VPREC) has approved your application for ethical approval for your study. Details and conditions of the approval can be found below.				
Sub-Committee:		EdD. Virtual Programme Research Ethics Committee (VPREC)		
Review type:		Expedited		
PI:				
School:		Lifelong Learning		
Title:		Design, Implementation and Evaluation of a Blended Learning Course in Interview Training for Swiss Career Counsellors		
First Reviewer:		Dr. Lucilla Crosta		
Second Reviewer:		Dr. Kathleen Kelm & Dr. Kalman Winston		
Other members of the Committee		Dr. Josè Reis Jorge, Dr. Viola Manokore, Dr. Martin Gough		
Date of Approval:		05/07/2017		
The application was APPROVED subject to the following conditions:				
Conditions				
1	Mandatory	M: All serious adverse events must be reported to the VPREC within 24 hours of their occurrence, via the EdD Thesis Primary Supervisor.		

This approval applies for the duration of the research. If it is proposed to extend the duration of the study as specified in the application form, the Sub-Committee should be notified. If it is proposed to make an amendment to the research, you should notify the Sub-Committee by following the Notice of Amendment procedure outlined at http://www.liv.ac.uk/media/livacuk/researchethics/notice%20of%20amendment.doc.

Where your research includes elements that are not conducted in the UK, approval to proceed is further conditional upon a thorough risk assessment of the site and local permission to carry out the research, including, where such a body exists, local research ethics committee approval. No documentation of local permission is required (a) if the researcher will simply be asking organizations to distribute research invitations on the researcher's behalf, or (b) if the researcher is using only public means to identify/contact participants. When medical, educational, or business records are analysed or used to identify potential research participants, the site needs to explicitly approve access to data for research purposes (even if the researcher normally has access to that data to perform his or her job).

Please note that the approval to proceed depends also on research proposal approval.

Kind regards,

Lucilla Crosta

Chair, EdD. VPREC

Appendix C

Participant Information Sheet

Title of Study

Design, Implementation, and Evaluation of a Blended Learning Course in Interview Training for Swiss Career Counsellors.

Version of Participant Information Sheet

1.0, 12 July 2017

Introduction

You are being invited to participate in a research study. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and feel free to ask us if you would like more information or if there is anything that you do not understand. Please also feel free to discuss this with your friends, relatives and GP if you wish. We would like to stress that you do not have to accept this invitation and should only agree to take part if you want to.

Research Purpose

I employ a blended learning course on three interview techniques in the programme for Swiss career counsellors. The purpose of my study is to design, implement, and evaluate this blended learning. This study is my final research project in a doctoral programme at the University of Liverpool.

Why you have been chosen to take part

You are enrolled in the programme for Swiss career counsellors at the University (anonymised). Since you are the students who will benefit from my blended learning, you are chosen to take part in my research.

Do you have to take part?

Your participation is voluntary and you are free to withdraw at anytime without explanation and without incurring a disadvantage.

What happens if you take part?

If you decide to take part, then I will collect data with various methods

- You will do an online test before and after the blended learning on Moodle. These two tests last about 10 minutes each. The purpose of these tests is to gather general information about you and to measure your knowledge and skills in interviewing in an aptitude diagnostic setting.
- After the training, you will do an online survey on Moodle. This survey lasts about 5 minutes. The purpose of the survey is to gather information about your satisfaction with the course.
- Additionally, we will do a group interview after the training. This group interview takes place at the university in a safe place where confidentiality and privacy is assured. With your permission, it will be audio recorded and lasts about 20 minutes.

In summary, the total time for taking part in this study is about 45 minutes. These 45 minutes are included in the curriculum. Therefore, they are not additional time.

Confidentiality

All data will be anonymised and is used for this research project only. The online tests and survey will be downloaded from the e-learning platform and deleted from this platform afterwards. After the deletion, only I will have access to your answers. The audio-recording will be done with an iPhone to which only I have access. I will replace your names randomly with labels like “Student A”, “Student B”, … . Your identity and information will be protected in front of external audience and in front of experts. The anonymised data will be stored for five years on a password protected external hard drive disk. To summarise, no personalised information will be given to anyone

What will happen to the results of the study?

The results will be published in at least three different ways. First, they will be mentioned in the thesis. Second, there will be a written summary for the relevant leaders at the University (anonymised). Third, a general summary will be available on a internet platform for blended learning. Forth, if possible, an article will be published in a scientific magazine. You will not be identifiable in any way (see also section about confidentiality).

Expenses and Benefits

You will not have any expenses by taking part in this study. Your main benefits are:

- You probably gain insights about what you learned in my training
- You see how research may be done and probably learn for your own MAS thesis

There will be no fees or reimbursements for taking part in the study.

Risks

You will use the Moodle platform for the tests and survey. This platform is password protected. However, as with every activity in the internet, malicious attacks cannot be completely ruled out. A second risk is the relationship of me and you, since I am your teacher and the researcher at the same time. I will treat all your data confidential and assure this with my signature at the end of this information sheet. A final risk is taking part in the group interview. Your fellow students will hear what you say. Like you, they will confirm in the participant consent form that they keep the information of the group interview confidential. To summarise: Confidentiality is assured by the researcher and the participants.

What if you are unhappy or if there is a problem?

If you are unhappy, or if there is a problem, please feel free to let us know by contacting Roland von Euw, (anonymised) or the primary supervisor Dimitrios Vlachopoulos, (anonymised). If you remain unhappy or have a complaint that you feel you cannot come to me with then you should contact the Research Participant Advocate, liverpoolethics@ohecampus.com. When contacting the Participant Advocate, please provide details of the name or description of the study (so that it can be identified), the researcher involved, and the details of the complaint you wish to make.

What will happen if you want to stop taking part?

You can withdraw at any time without explanation. Results up to the period of withdrawal may be used. Otherwise, you may request that they are destroyed and no further use is made of them. If results are anonymised you should make clear that results may only be withdrawn prior to anonymisation. Anonymous withdrawal will only be possible prior to the group interview. During the group interview, withdrawal will be known to other participants.

Potential conflicts of interest

You are my students. This could be a potential conflict of interest. However, I only teach you. I do not grade you or provide any information to anyone grading you.

In this study, I am both a researcher and a part-time employee of the institution in which the research takes place. All issues related to this research were discussed with the relevant persons and there are no conflicts of interest in my role as a teacher and my role as a researcher.

Contact for further questions

Please contact Roland von Euw, (anonymised) for any further questions.

Please keep/print a copy of the Participant Information Sheet for your reference. Please contact me and/or the Research Participant Advocate at the University of Liverpool with any question or concerns you may have.

Researcher	Date	Signature

Appendix D

Participant Information Sheet

Title of Study

Design, Implementation, and Evaluation of a Blended Learning Course in Interview Training for Swiss Career Counsellors.

Version of Participant Information Sheet

1.0, 30 June 2017

Introduction

You are being invited to participate in a research study. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and feel free to ask us if you would like more information or if there is anything that you do not understand. Please also feel free to discuss this with your friends, relatives and GP if you wish. We would like to stress that you do not have to accept this invitation and should only agree to take part if you want to.

Research Purpose

I employ a blended learning course on three interview techniques in the programme for Swiss career counsellors. The purpose of my study is to design, implement, and evaluate this blended learning. This study is my final research project in a doctoral programme at the University of Liverpool.

Why you have been chosen to take part

You are an expert in blended and e-learning. As an expert, you may provide valuable feedback. I asked an external and an internal expert to take part in this study and evaluate my blended learning approach. Both are related to my research. The internal expert provides technical support for my course and the external expert did research that is an important theoretical foundation of my blended learning..

Do you have to take part?

Your participation is voluntary and you are free to withdraw at anytime without explanation and without incurring a disadvantage.

What happens if you take part?

If you decide to take part, then I will collect data with a semi-structured interview. This interview is by telephone. With your permission, it will be audio recorded and lasts about 45 minutes. To provide answers to my questions, you will need to do approx. 45 minutes of preparatory work prior to the interview (e.g., take a look at the implementation of the blended learning).

Confidentiality

All data will be anonymised and is used for this research project only. The audio-recording will be done with an iPhone to which only I have access. I will replace your names with the label “internal expert” or “external expert”. The anonymised data will be stored for five years on a password protected external hard drive disk. To summarise, no personalised information will be given to anyone.

What will happen to the results of the study?

The results will be published in at least three different ways. First, they will be mentioned in the thesis. Second, there will be a written summary for the relevant leaders at the University (anonymised). Third, a general summary will be available on a internet platform for blended learning. Forth, if possible, an article will be published in a scientific magazine. You will not be identifiable in any way (see also section about confidentiality).

Expenses and Benefits

You will not have any expenses by taking part in this study. Your main benefit is that you gain insights into a specific implementation of a blended learning course. There will be no fees or reimbursements for taking part in the study.

Risks

The interview will take place by phone where confidentiality and privacy will be assured. However, as with every activity on the phone, malicious attacks cannot be completely ruled out. I will treat all your data confidential and assure this with my signature at the end of this information sheet.

What if you are unhappy or if there is a problem?

If you are unhappy, or if there is a problem, please feel free to let us know by contacting Roland von Euw, (anonymised) or the primary supervisor Dimitrios Vlachopoulos, (anonymised). If you remain unhappy or have a complaint that you feel you cannot come to me with then you should contact the Research Participant Advocate, liverpoolethics@ohecampus.com. When contacting the Participant Advocate, please provide details of the name or description of the study (so that it can be identified), the researcher involved, and the details of the complaint you wish to make.

What will happen if you want to stop taking part?

You can withdraw at any time without explanation. Results up to the period of withdrawal may be used. Otherwise, you may request that they are destroyed and no further use is made of them. If results are anonymised you should make clear that results may only be withdrawn prior to anonymisation.

Potential conflicts of interest

In this study, I am both a researcher and a part-time employee of the institution in which the research takes place. All issues related to this research were discussed with the relevant persons and there are no conflicts of interest in my role as a teacher and my role as a researcher.

Contact for further questions

Please contact Roland von Euw, (anonymised) for any further questions.

Please keep/print a copy of the Participant Information Sheet for your reference. Please contact me and/or the Research Participant Advocate at the University of Liverpool with any question or concerns you may have.

Researcher	Date	Signature

Appendix E

Committee on Research Ethics

PARTICIPANT CONSENT FORM

Title of Research Project: Design, Implementation, and Evaluation of a Blended Learning Course in Interview Training for Swiss Career Counsellors

Researcher: Roland von Euw

	Please mark
1. I confirm that I have read and have understood the information sheet dated 30.6.17 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected. In addition, should I not wish to answer any particular question or questions, I am free to decline.	☐
3. I understand that, under the Data Protection Act, I can at any time ask for access to the information I provide and I can also request the destruction of that information if I wish.	☐
4. I confirm that I will keep all information provided by my fellow students and their decisions in relation to this research confidential (e.g., during the group interview).	☐
5. I agree that the group interview will be audio recorded.	☐
6. I agree to take part in all phases of the above study.	☐
7. The information you have submitted will be published as a report; please indicate whether you would like to receive a copy.	☐

_____ _____ _____

Participant Name Date Signature

Researcher Date Signature

Principal Investigator:
Roland von Euw
(anonymised)

Version 1.0, 12 July 2017

Appendix F

Committee on Research Ethics

PARTICIPANT CONSENT FORM

Title of Research Project: Design, Implementation, and Evaluation of a Blended Learning Course in Interview Training for Swiss Career Counsellors

Researcher: Roland von Euw

		Please mark
1.	I confirm that I have read and have understood the information sheet dated 30.6.17 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
2.	I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected. In addition, should I not wish to answer any particular question or questions, I am free to decline.	☐
3.	I understand that, under the Data Protection Act, I can at any time ask for access to the information I provide and I can also request the destruction of that information if I wish.	☐
4.	I confirm that I will keep all information provided by the researcher confidential (e.g., anonymised data I receive for the evaluation).	☐
5.	I confirm that I will keep all information of students I see in the moodle platform for this course confidential (e.g., postings of students).	☐
6.	I agree that the interview will be audio recorded.	☐
7.	I agree to take part in all phases of the above study.	☐
8.	The information you have submitted will be published as a report; please indicate whether you would like to receive a copy.	☐

_____ _____ _____

Participant Name Date Signature

Researcher Date Signature

Principal Investigator:
Roland von Euw
(anonymised)

Version 1.0, 30 June 2017

Appendix G

Committee on Research Ethics

PARTICIPANT CONSENT FORM

Title of Research Project: Design, Implementation, and Evaluation of a Blended Learning Course in Interview Training for Swiss Career Counsellors

Researcher: Roland von Euw

	Please mark
1. I confirm that I have read and have understood the information sheet dated 30.6.17 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.	☐
2. I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected. In addition, should I not wish to answer any particular question or questions, I am free to decline.	☐
3. I understand that, under the Data Protection Act, I can at any time ask for access to the information I provide and I can also request the destruction of that information if I wish.	☐
4. I confirm that I will keep all information provided by the researcher confidential (e.g., anonymised data I receive for the evaluation).	☐
5. I agree that the interview will be audio recorded.	☐
6. I agree to take part in all phases of the above study.	☐
7. The information you have submitted will be published as a report; please indicate whether you would like to receive a copy.	☐

_____ _____ _____

Participant Name Date Signature

Researcher Date Signature

Principal Investigator:
Roland von Euw
(anonymised)

Version 1.0, 30 June 2017

Appendix H

Group Interview

As part of a research project carried out in my doctoral studies, I conduct a group interview to investigate your satisfaction and perceived knowledge and behaviour change in the blended learning course you just finished. This is a relatively new field for which we do not have much information about, so your contribution will be valuable.

This interview will be used exclusively in the context of this research and will be anonymous. Please reply freely without hesitation for correct or incorrect answers. There is no right or wrong answer.

We are going to record our interview with your consent. Thanks in advance for your time and collaboration.

Objectives of the interview

1. **To investigate the satisfaction with the blended learning, as well as the perceived theoretical and behavioural learning**

How does this blended learning course differ from traditional classroom instruction? (Garrison and Vaughans, 2008).

- Prompts, if not mentioned by the interviewees:
    - Satisfaction
    - Learning theory
    - Behavioural learning

What was the most effective aspect of this blended learning course? (Garrison and Vaughans, 2008).

What was the least effective aspect of this blended learning course? (Garrison and Vaughans, 2008).

2. **To evaluate the course design**

What would you change in this blended learning course and why?

- Prompts, if not mentioned by the interviewees:
    - General course design
    - General Moodle design
    - Specific elements of the course design
    - Future with Blended, traditional or online learning?

3. **To gain insights about the future use of blended learning**

If you were the programme leader, what conclusions would you draw from this first-time blended learning course for other parts in the programme?

- Prompts, if not mentioned by the interviewees:
    - Use in other parts of the programme? If so, in which parts and why?
    - Changes needed to implement blended learning successfully?

Appendix I

Interview with expert

As part of a research project carried out in my doctoral studies, I conduct an individual interview with two experts to investigate how variables of a theoretically based conceptual framework on blended learning proved themselves in practice.

This interview will be used exclusively in the context of this research and will be anonymous. Please reply freely without hesitation whether you think your response is correct or not. There is no right or wrong answer.

With your consent, we will record our interview. Thanks in advance for your time and collaboration.

Objectives of the interview

1. **Evaluation of the course design:** In document 01, you see the curriculum for the course.
    a. What are your general thoughts on this curriculum? (self-developed question)
    b. What would you add, change, or remove? (self-developed question)
    c. Do you think that the program provides the frequency and character of interactions among students and faculty members that are needed to foster learning? (Stover, 2005, p. 7) If not, what should be changed in relation to frequency and character of interactions
2. **Evaluation of the assessment of learner characteristics:** I used a questionnaire to assess learner characteristics (see document 02).
    d. What are your general thoughts on this questionnaire? (self-developed question)
    e. What would you add, change, or remove? (self-developed question)
    f. This questionnaire is one I developed based on various literature. I looked for a short learner characteristics assessment tool, but did not find one. Therefore, I think that it would be useful to design and validate such a learner characteristic assessment tool. Please explain why you agree or disagree with my assumption that designing and validating a learner characteristic assessment tool would be useful?? (self-developed question) → *This question is derived from a reflection in my research diary*
3. **Evaluation of the student's feedback in my course:** The students provided feedback about the blended learning course in a group interview. I will first mention two positive and then two negative points that the students mentioned. Please provide your thoughts on each feedback and what you would add, change, or remove (if any).

    Positive
    g. Information was provided with various media
        i. What are your thoughts on this feedback? (self-developed question)
        ii. What would you add, change, or remove? (self-developed question)
    h. To experience a new way of learning
        i. What are your thoughts on this feedback? (self-developed question)
        ii. What would you add, change, or remove? (self-developed question)

    Negative
    i. Students did not like the weekly tasks
        i. What are your thoughts on this feedback? (self-developed question)
        ii. What would you add, change, or remove? (self-developed question)
    j. The curriculum required too much coordination
        i. What are your thoughts on this feedback? (self-developed question)
        ii. What would you add, change, or remove? (self-developed question)
    k. From your experience, in what ways could student satisfaction be increased in this course? (Stover, 2005, p. 7)
4. Would you like to add or mention any important points that I did not ask of you? If so, what points?

Appendix J

Research Diary						
	a	a	c	b	c	c
Date	Minutes teach	Costs	What did I do?	How is this connected to my framework?	What did I learn?	What is the significance of my learning?
5 June 2017	150		Plan the introductory face to face lesson. I had to think about how much to tell in the introductory lesson and what theoretical parts should be done in the following e-learning part. I decided to just give a general overview in the introductory lesson (see Erpenbeck und Sauter).	TC: Time spent to prepare TC: Model and teach good board etiquette (I do that in the introductory lesson)	It feels somehow like a more practical and 'common sense' task to think about what to include in the face to face lessons and what to include in the e-learning parts.	There exist some recommendations on what to include in which part of the blended learning. However, is there research on this? I need to look this up.
5 June 2017	300		Write the instructions and rethink the whole course design: Does it all fit well together?	TC: Transparency about course design CD: Curriculum	Although I already built the curriculum some time ago, I had to reassure that all works well when writing the instructions.	
7 June 2017	420	599	Produce four videos with goanimate.com, write fourth texts for podcasts and four documents for reading. Each of four topics will be introduced with a video, podcast and text which include the same content. The learner may choose which media he or she wants to use.	LC: Learning style TC: Time spent to prepare TC: Knowledge TC: Control over technology IQ: All four SQ: E-learning technology, media variety, think of people with disabilities (not seeing --> podcast)	It takes time to do a video concept and implement it properly. I think it is important that learners can choose between different media. However, this increases the time spent to prepare for the teacher. With good control over technology, the additional time may be reduced (e.g., good handling of recording devices).	I realise that to build all the different e-learning media demands a lot more skills than traditional classroom teaching. For example, I need to record my voice with audio equipment and a software. I need to be able to handle both. Another example is the use of goanimate.com. With earlier practice about one month ago, I was now able to build the videos smoothly. I gained a skill I would not have if I remained traditional in my teaching.
8 June 2017			I developed the knowledge and behaviour questions for the pre-test. The knowledge questions are an own construction. The behaviour questions are based on the DIPA, a German assessment tool. I read about the development, validity, and reliability of the test.	LC: Prior Knowledge Generally, these questions are for measuring the change in knowledge and behaviour	I read the manual to gain insights on whether it is okay to use not the whole questionnaire. There is no statement about using just parts of it. However, the authors describe that it is okay to leave out items one cannot respond. I concluded from that statement that it is okay to use just parts of the questionnaire.	I looked up information about constructing surveys from earlier studies and realized that I still have good knowledge about it. The DIPA might not be the best test to use in my situation since it is aimed at personnel recruiters and is mainly based on one interview technique (DOI) and not the other two interview techniques I teach (SI, BDI). However, it is the most suitable that is available on the market. It could be an interesting further task to construct and validate a measure instrument for interviewing in an aptitude diagnostic interview setting for counsellors and to include various interview techniques (DOI, SI, BDI, maybe others).

9 June 2017			I looked for suitable measures for the learner characteristics. Since I want to apply a short assessment for these, the knowledge and the skills (total 10 min for the pre- and 10 min for the post-test), I am looking for short questionnaires. However, most questionnaires are long. Therefore, I may use some items of different assessment tools to construct my own solution.	LC: All	Learning styles are discussed ambivalent in the literature. However, practitioners seem to like this concept. I am not sure yet how I want to measure the learning style.	
10 June 2017			I got the feedback on my ethical documents. There were many questions raised by the committee. I answered them all and resent the updated documents and answers to Lucilla.	Depending on the institution that does research and implements a blended learning, one might has to consider more or less and different ethical questions. The topic of organizational ethics is reflected in the structural (processes) and cultural dimensions of the institutional environment and depends on variables of the macro environment as well (culture in society, policies)	I got to know the thorough ethical approval process of the university of liverpool.	I am not used to such a thorough ethical approval process from my earlier studies. May this be because such processes are only applied in doctoral studies? Or because Swiss universities do not have such detailed processes? That might be interesting to think about and maybe include in the discussion of my thesis as well.
11 June 2017	180		Look at readings of earlier modules, realise that I should update the instructions at some points (e.g., tell the students why GLA --> DeHei 2016) or that students should have the possibility to do the final summary with the media they want (--> similarity Bloom Create --> maybe more literature)			
12 June 2017	480		I implemented everything in Moodle. More specific: I constructed the survey and pre-test with a Moodle tool, designed the weekly tasks for the students, made three groups and implemented the dependencies of the material that students depending on the group they are in (which lead to 18 different weekly tasks), uploaded the reading material and curriculum, created a soundcloud account for the podcasts I also updated the curriculum with the learning objective on top and the introductory face to face power point with a general sentence about the expectations (--> teach good board etiquette)	TC: Prior Experience with LMS (increased time) TC: Time spent to prepare (spent a lot of time) TC: Control over technology TC: Transparency about course design (uploading the curriculum) CD: Curriculum CD: Learning objectives TC: Model and teach good board etiquette	One week ago, I finalised the instructions and the curriculum. While implementing this in Moodle, I rethought various parts. For instance, I forgot the learning objective on top, which might be a simple thing to think of. However, while trying to include everything I want and should include based on my framework, I forgot such a basic task. I also learned various functionalities of Moodle. Some were easy to handle, others not. For instance, I could not include my podcast audios and videos in Moodle directly. Therefore, I had to upload the videos to YouTube and the podcasts to soundcloud and embed these in Moodle. I did already have experience with YouTube, but soundcloud was new to me.	For me, forgetting the learning objective in the curriculum is an interesting observation: Not forgetting the basics when trying to be scientific. To include external services like YouTube and soundcloud is easy, but shouldn't it all be possible in one solution? One never knows what these external services really do with your information. If everything were in Moodle at the university, then I knew that my material was safe. It might be a risk for a teacher to upload learning material on external services, since everyone could access it (although there are private settings and the like, knowing the direct link means one can access it).

Research Diary						
	a	a	c	b	c	c
Date	Minutes teach	Costs	What did I do?	How is this connected to my framework?	What did I learn?	What is the significance of my learning?
13 June 2017			I decided on the assessment items for the learning style and included this in the survey.	LC: All	Unfortunately, I did not find a short questionnaire to assess the different learning characteristics. Therefore, I decided to use items of various authors to construct my own assessment. I do not have time to validate this assessment, but will probably gain insights on its application when applying it in my course.	I think it would be useful to design and validate a learner characteristic assessment tool. This is a task for the future, which would be the start of a new action research cycle.
14 June 2017			I translated the questionnaire and pre-test in English and submitted it to Dimitrios. I also asked him various questions about the assessment of learner characteristics.			
20 June 2017	60		I discussed the functionality of my course design with the internal e-learning specialist.	TC: Time spent to prepare TC: Control over technology	Everything seems to work. The specialist told me how students now have to subscribe to my course. Additionally, I was informed that there will be a Moodle update in August. This is an aspect I did not have in mind so far.	I was able to create the whole e-learning elements of my course myself. Everything worked properly. I conclude that I developed myself in this field. For another course, I need to clarify whether there will be any updates during the course since that could lead to problems while teaching.
20 June 2017			Dimitrios provided feedback on my questionnaire. I updated the questionnaire accordingly. The main updates are: a short rationale for each section, adding a general introduction, extending the instructions.	LC: Prior Knowledge Generally, these questions are for measuring the change in knowledge and behaviour	I forgot to add the general introduction. Again, like noted on 12 June on another issue, I forgot a basic thing.	For me, forgetting the general introduction in the survey is an interesting observation: Not forgetting the basics when trying to be scientific.
24 June 2017	180		I revised the introductory presentation and did some updates: I added a policy about what to do when someone is ill or on vacation, added information on what the tools will be (Video, Podcast, ...), and added my contact details. Additionally, I did the three groups and tested whether my mail from the UOL account will be delivered regularly to my university account (and not get recognised as spam)	TC: Board etiquette (policy) TC: Transparency about CD (tools-information) TC: Effective facilitation (contact details) TC: Control over technology (Mail-Test)	As in traditional teaching, revising the prepared material before the start of the course is a valuable task for me. I realised that I should include some more information in the introductory presentation. I built the groups based on what I know about the students from the student list. One thought was to put together those who have a similar background to contribute to the homogeneity of knowledge (learning group variable). However, the pre-test will show more accurately how homogene the knowledge is. Therefore, I decided not to build the groups on my assumptions.	Probably, it would be best to do a pre-test about knowledge and then do the groups to achieve a high homogeneity of knowledge. However, may mixed knowledge not be as important as homogeneity? For instance, an experienced student may provide valuable insight for inexperienced students. Moreover, a second learning group variable is homogeneity of expectations. How should those two variables be weighted against one another?

Research Diary						
	a	a	c	b	c	c
Date	Minutes teach	Costs	What did I do?	How is this connected to my framework?	What did I learn?	What is the significance of my learning?
25 June 2017	60		I looked up again the ideas about modelling and teaching good board etiquette. These are: "Organizing discussions topics in advance so that students can keep track of topics is important" (Dell, Dell, & Blackwell, 2015, p. 179) and "Instruct students to avoid creating a new thread unless they are indeed introducing a new idea" (Dell et al., 2015, p. 180).	TC: board etiquette	I realised that I organised the topics well. However, I did not provide instructions about creating new threads. I decided to let it be like this since the board in moodle is, at least in my eyes, self-explaining. If there should be problems, then that will be something I need to facilitate, which is also an important part of teaching online (see my model TC: effective facilitation).	My online design for forums is one that fits the organisational recommendations of Dell, Dell and Blackwell (2015, p. 179).
25 June 2017			As of today, I designed the course in a way that students can see all the learning material once they have completed the pre-test and pre- survey. However, I wondered whether it might be better to release each task week for week? To get an answer, I did a quick search for articles or recommendations about that. Unfortunately, I did not found anything.	Course Design	I found neither in the UOL Online library nor with Google any recommendations. Maybe a more thorough research will provide some insights. However, I do not have time to do this research right now and the course starts in three days. Therefore, I will deliver the content as intended.	From my own experience at UOL, I implicitly reasoned that delivering all material at the start of the course is reasonable. Since I have adult students, that might be the most appropriate solution. However, I did not do enough research on whether there are scientific recommendations. I will do that and use these insights for further development of my model and myself.
26 June 2017			Dimitrios provided feedback on my second submission for the questionnaire. I included most of his suggestions in my questionnaire.	LC: Prior Knowledge Generally, these questions are for measuring the change in knowledge and behaviour	Maybe I was a bit too general with my knowledge questions. I shaped them and used the first three levels of Blooms' taxonomy for the answers (remember, understand, apply).	I was fast in finding a solution for the knowledge question answers (answer choices based on bloom's taxonomy). That showed me that I can connect my earlier learning well.
28 June 2017	120		Today was the introductory lesson. I explained the curriculum and answered questions of the students. After this, we enrolled in the course in Moodle and did the questionnaire in class. That was a strategy to be sure that every student could technically do what was expected. For one student, a technical problem was that this student did not have an up do date pdf reader. Additionally, I made some configuration errors in Moodle so that not everything was visible to the students that should have been visible. I informed the students about the plans to include the data in my thesis. However, I need to wait for ethical approval and may be able to provide more information once I received this approval.	LC: Control over Technology LC: Effecitve Facilitation	It was valuable to enrol together in moodle. Since the setting is BYOD, there were some minor issues. If the university would provide devices, these problem probably would not have occurred. However, there were only minor issues, in general everything worked technically fine.	The login and introduction in a presence lesson was valuable. In an BYOD setting, I would probably do that again in the future. I am not sure whether one person is really on board (the one with technical difficulties). I might emphasise another time more that people with difficulties should be open and may ask during or after the lesson. However, several people asked me things after the lesson, but not the one with the difficulties.

Research Diary						
	a	a	c	b	c	c
Date	Minutes teach	Costs	What did I do?	How is this connected to my framework?	What did I learn?	What is the significance of my learning?
28 June 2017	30		The first two submissions were posted in the forum. I replied to them with questions so they could go a bit deeper into the theme. Additionally, I thanked them for posting	TC: Responsiveness TC: Effective Facilitation Behaviour: Provide rewards (thank you) Behaviour: Social presence	It is interesting to see the first postings! At least two students know what to do in the task. I am not sure whether my variables in the model are well clustered. For instance, Group learning activities may be something that happens during learning, but I had to plan it before. So is it an input or a process variable?	I know that the start in the online platform worked. I will rethink the variables and the clustering, maybe it is okay to say that GLA are something that happens during the training, but a teacher has to plan it before (seems logical, but I want to think about it again later).
29 June 2017			I received feedback of the VPREC. Some updates are needed, but then ethical approval should be provided.			
5 July 2017	30		I received ethical approval. 11 students posted until today. I replied to all of them with questions and thanked them for posting. Additionally, I included a message that now it is time to turn to week 2.	TC: Responsiveness TC: Effective Facilitation Behaviour: Provide rewards (thank you) Behaviour: Social presence Behaviour: Participant Reminder		
6 July 2017	15		Of the fourteen students, three did not post anything so far. As I learned, one student does not have to do this module (I did not know that before). I contacted the other two and asked them if they need help.	TC: Effective facilitation	That is not directly linked to the methodology, but I should have been informed that one student does not have to do my class.	
8 July 2017	75		I did the summary for the first week and uploaded it to moodle.	TC: Effective facilitation	The postings were interesting and I could do a valuable summary for the first week. Compared to the last time I did this course in a traditional way, I gathered richer information (e.g., more sources for skill descriptions)	A lot of information about jobs is available online today. Therefore, it might be better to collect sources for skill descriptions with an e-learning method? --> I did not think of that before, but the matching of task - method was valuable for the first weeks' task.
13 July 2017	30		Last week, the students had to read something and post their insights. This week, they will provide feedback to each other about what they wrote. I introduced the week with a reminder what is to do this week. That will be the first group learning activity in this course.	TC: Effective facilitation Behaviour: Social presence Behaviour: Participant reminder Constructivism: GLA	I think it is useful to have such variables like "reminders" in a framework. Although that might seem obvious, I consider it as useful since it provides a structure and I know what to do at the start of a new week, for example	Nothing special

Research Diary						
	a	a	c	b	c	c
Date	Minutes teach	Costs	What did I do?	How is this connected to my framework?	What did I learn?	What is the significance of my learning?
15 July 2017	60		So far, one student replied to his colleagues. Therefore, I decided to start replying to each post. I provided individual feedback, some were shorter, some longer.	TC: Effective facilitation Behaviour: Social presence Behaviour: Social presence --> guidelines Constructivism: GLA	One student complained about the weekly routine. That is too much for her. I did not question her statement and thanked her for the information, in addition with an advance thank you for providing the post soon. From this statement, I learned that I will ask in the final survey about the satisfaction with the arrangement and what could be done different.	If blended learning were applied in future courses, then students might need to be informed before the programme starts about such a weekly routine. Although I was transparent in the course design, the students did not expect such a blended learning when they subscribed. I hope that other students will still go on doing it as expected.
15 July 2017			I implemented the consent form for the students in moodle.	-	I got pretty fast and now understand moodle a lot better.	My own learning from experience works well
20 July 2017	15		I noticed that one student in one group (DOI, Minnie) suggested how to go on for the next weeks. She took the lead.	Maybe this 'taking the lead' is a form of motivation? I will compare this observation with the LC	It is valuable to have such students, because this group is more active than the other two groups.	Maybe the learning motivation assessment should be considered at a very early stage?
25 July 2017			I extended my number collection and start collecting the activity of students as well (Did they post? In tasks where replies were required: How many replies did they post?)	Constructivist: Interaction LC: Maybe learning motivation, LS --> interaction Influence on satisfaction level?	I did not include any quantitative collection of process variables in my research design	Include both quantitative and qualitative variables in all stages of the learning, if possible and reasonable
7 August 2017	30		Moodle was updated to a new version. I controlled the learning environment and see that everything still works.	TC: Control over Technology System quality: E-learning and classroom tech.	Another time, I need to check before starting whether there will be an update during a class	Important for my personal development
9 August 2017			By now, I gained some interesting insights. Some students are very active, others are not active at all. Some students explicitly ask for advice of other students, others ask me for advice, while still others don't ask at all.	Constructivist variables Behavioural variable: learn from experience Behavioural variable: Social presence Behavioural variable: Clear guidelines for participants. Trainer characteristics: responsiveness, ...	Group learning doesn't seem to be a "fits it all"- solution. I enacted clear guidelines. However, I do not enforce them in a way that the students have to do the tasks. Probably an enforcement that shows that participation is necessary would be more effective?	It is difficult to enforce the participation if the students do not have to do the tasks.
24 August 2017	30		I remembered the students of the remaining tasks that need to be done	B: Participant reminders	Participation is not that high and could be better. One student did not participate at all so far.	Fontaine (2016) Highlight that "participant reminder are often overlooked but crucial to asynchronous Web-based e-learning" --> I think that is an important aspect I did not give the importance I should have so far

Research Diary						
	a	a	c	b	c	c
Date	Minutes teach	Costs	What did I do?	How is this connected to my framework?	What did I learn?	What is the significance of my learning?
27 August 2017			I changed "confidence" in the output section to "self efficacy" --> This is a variable in the input section, too, and might increase. Additionally, self efficacy is a well researched concept (Bandura, ...), while "confidence" is somehow vague	Development of my model	I looked at each output variable in my model to determine whether I really want to use it or change it. This critical analysis is a development of myself. In earlier years, I would have taken my first approach as a good one and then use it without rethinking and changing it.	My own professional and/or doctoral development
1 September 2017			I developed the satisfaction survey. The questions are a mix of theoretically based and self-developed questions.	Output: Satisfaction Maybe I can suggest a satisfaction survey that is based on my model.	There exist some satisfaction surveys. However, none is a 'fits it all' solution. Therefore, I decided to adapt some of these questions and enrich it with my own questions.	With a framework like mine, it might be easier to provide a satisfaction survey since all questions relate to a variable in my model.
5 September 2017			I developed the interview questions for the experts and discussed it with the two tutors.	Evaluation of whole blended learning	The feedbacks of Susan and Dimitrios were useful. I extended the third question with some insights from the group interview.	To discuss questions is useful for me. This is significant since I used to be a person that did not like such discussions.
12 September 2017	60		The students presented their summaries.	Output: Knowledge, behaviour	The students understood the technique. However, most of them were not able to apply them in their own context.	Spontaneous. The students need more time to apply it in their context.
12 September 2017			Feedback of students (group interview)	Output: Satisfaction	Spontaneous: The weekly tasks were the worst part, the various media the best part.	
16 October 2017			Interview with internal expert	Most of the model in practice		
23 October 2017			Interview with external expert	Most of the model in practice	Spontaneous: I forgot to include the previous experience with moodle/e-learning in the assessment. And include Bloom's taxonomy at a suitable place in my framework.	Maybe I was too focused on learner characteristics?