

International Journal for Business Education

April 2019
Number 159



la Société Internationale pour l'Enseignement Commercial

The International Society for Business Education

International Journal for Business Education

Number 159

ISSN 2164-2877 (print)

ISSN 2164-2885 (online)

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P.O. Box 84

Pardeeville, Wisconsin 53954

USA

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Message from the International President

Dear SIEC-ISBE Friends,

Welcome to the 159th edition of *The International Journal for Business Education*, formerly known as *The Review*. Our journal is a double blind, peer-reviewed publication for global business educators by global business educators. The journal is compiled once per year in April; however, accepted articles are placed online once formatted. ISBE members provide in-depth research articles that can be helpful in the classroom or with administrative responsibilities. Each article, based upon research conducted by our members, adds to the body of knowledge in global business education. As in the past, information about the upcoming conference will be included.

I want to thank Tamra Davis, Ph.D. of the USA Chapter and Michaela Stock, Ph.D. of the Austrian Chapter for taking on the task of editors. I also want to take a moment to thank our reviewers. The complete list of reviewers can be seen on our Editorial Board page. Your expertise was beneficial in helping improve the quality of the accepted manuscripts and offering guidance for improvement to those authors whose work was not accepted this year.

Our international conference 2019 will be located in Kefalonia, Greece. The conference theme, Diversity in Business Education, is an exciting theme that is very appropriate in today's business and Business Education. I hope to see you at the 2019 conference and our future conferences as well. Future conferences are planned in the following locations:

2020—Baltic Sea Cruise Stockholm-Helsinki-St Petersburg-Tallinn-Stockholm

2021—An Asian location

With warmest SIEC-ISBE regards until we meet again, digitally or face-to-face

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Review Process

The International Journal for Business Education is a double-blind, peer-reviewed journal. Due to the international nature of the journal, two or more editors work together to facilitate the review process. The editor from outside of the United States handles all manuscripts that originate from the United States. This editor assigns the manuscripts to the appropriate reviewers, handles all correspondence with the author(s) and reviewers, and makes the final decision on acceptance. The editor from the United States handles manuscripts that originate from outside the United States. Again, this editor assigns the manuscripts to the appropriate reviewers, handles all correspondence with the author(s) and reviewers, and makes the final decision on acceptance. By following this process, it is possible that one or more of the editors will also have a manuscript published in the journal. Additionally, it is also possible that someone who has submitted a manuscript is also selected to be a reviewer.

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Membership Information

Membership in SIEC-ISBE is open to everyone with an interest in Business Education. SIEC-ISBE has many national chapters.

Visit <http://www.siecisbe.org> to find out if a chapter exists in your country. You can contact the national chapter from this website. If a chapter does not exist, contact the General Secretary for information to join as an international member. Contact information: Dr. Lila Waldman, waldmanl@uww.edu.

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Preface

We would like to thank the professionals who filled the role of reviewers for this year's journal. Due to the number of manuscripts received, multiple reviewers were needed. Without their assistance, the job of editor would have been much more difficult. Thank you to the entire Editorial Board who are SIEC-ISBE members and volunteered to help when asked.

We hope that you find the articles included in this year's *The International Journal for Business Education* interesting. Thank you to everyone who submitted a manuscript for consideration. Without your submissions, we would not have had a journal. The acceptance rate for the 2019 *IJBE* was 28.5%.

Tamra S. Davis, Ph.D. and Michaela Stock, Ph.D.
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The Impact of Implementing a Design-Thinking Project in the Sales Classroom

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ABSTRACT

Experiential instruction has been implemented in classrooms as a method of learning and reinforcing complicated material. This study introduces a design-thinking project taken from a University Art & Design Program and adapted for a sales course. 'Pre' and 'post' comprehension testing of students on the SPIN selling approach was completed to establish the value of this project, and the study further investigates its impact on student interest and engagement. Results suggest that this project not only helps to reinforce key concepts, but also student confidence, level of interest, and perceptions of sales people as customer-oriented and benevolent service providers.

Keywords: sales education, design-thinking, active learning

INTRODUCTION

Research in business education has taken up a call for active learning opportunities (Whetten, 2007; Stefanou, Stolk, Prince, Chen & Lord, 2013; Mullen & Larson, 2016). For example, utilizing simulations, role-plays and games in the classroom can both enhance student engagement and provide a deeper level of understanding when applied correctly (Dubel, 2015; Inks, Schetzslle & Avila, 2011). Activities such as these are increasingly important within university sales curriculum, as sales is an applied discipline that should imply the use of some active learning

strategies. These efforts are especially significant, given that business students report they do not tend to work through difficult course material if they do not find it interesting, nor are they very likely to spend time considering how the concepts they are learning in class could be applied outside of the classroom (Greimel-Fuhrmann, 2009). Furthermore, students exposed to such activities report higher levels of elaboration and metacognition, while perceiving the instructor as more supportive of their autonomy (Stefanou et al., 2013).

As an example, the concept of process-oriented guided inquiry learning (herein referred to as 'POGIL') suggests that a student's learning experience can be enhanced if they are allowed the space to construct their own solutions to a problem, with the aid of three core learning structures: *exploration*, *term introduction*, and *application* (Abraham, 2005). Firstly, in the *exploration* stage, students are provided with some model through either visuals, audio, or slides, and presented with thought-provoking questions to help introduce a new concept. Next, *term introduction* involves providing definitions associated with this concept. Finally, *application* involves allowing the student to utilize their new understanding of this concept and to construct new meaning through some applied task (Hale & Mullen, 2009). The POGIL concept is student-focused and is meant to engage the student aurally, visually, and tactilely, making it practical for all learning styles. Students participate as active, rather than passive learners and the professor acts as guide, coach and facilitator, rather than purely a lecturer. This innovative teaching method of creating a more active learning environment has been found to reduce absenteeism, motivate students to be active learners, and increase student performance in classes (Eberlein et al., 2008).

Within a sales program, students are typically introduced to some form of routinized sales communication strategy for 'needs identification' (identifying the needs of the buyer as they relate to the product at hand) to effectively establish the value proposition (Rackham & DeVincentis, 1999). Within many university sales programs, this training is focused heavily on the use of the Situation-Problem-Implication-Need (SPIN) selling approach (Rackham, 1988). SPIN selling is simply a method of framing questions to a buyer in a way that is individually tailored to their business and their unique business problems. This technique is meant to help a salesperson turn implied needs into explicit needs through a needs discovery routine with the purposeful use of 'Situation,' 'Problem,' 'Implication' and 'Need Payoff' questions (Rackham, 1988). If utilized effectively, these questions allow the salesperson to essentially take on the role of consultant, by steering the conversation with a buyer towards a solutions-focused presentation. While the concept itself can be straightforward, a full understanding of how SPIN can work in guiding a conversation truly requires practice and experience in application of the method; in other words, it needs to be practiced within a real conversation. However, at this early stage in their sales education, students often lack any specific product knowledge with

which to practice the SPIN method; therefore, many sales programs seek to create a unique experience for introductory sales students, which would allow them the opportunity for applied practice of the SPIN technique using a simple product that they would create themselves (and therefore have full product knowledge of).

Statement of Purpose

The current manuscript provides two contributions to the Sales education literature. First, a POGIL-inspired project with the aim of enhancing student learning is described in detail. Then, the results of several inventories intended to investigate the impact of this project are presented.

The Stanford Wallet Project: User Experience Design

The project created for the above purpose in the sales classroom in fact originated in the design classroom. The original Stanford 'wallet project' was developed by faculty at the Stanford Design School for their inaugural Boot Camp in the winter of 2006 as a way of immersing art students into the process of design-thinking. Design-thinking as a concept can be considered as a set of three core principles: the ability to focus on user experience and to empathize with users, the use of prototyping and testing to explore a problem more deeply, and a tolerance for failure with the understanding that it is rare to get something right without first trying and failing (Kolko, 2015).

Specifically, the project strives to allow facilitators to touch on the design school fundamentals of human-centered 'user experience' design that is action-oriented and geared towards an iterative prototyping process (Plattner, 2012). Designing a wallet was chosen for the project because it is a common object that everyone should have some experience with; it can evoke feelings related to core aspects of a person's life and as a starting point allows for significant innovation. Also, it is something tangible that allows for recall of experiences that can support empathy and shared knowledge among participants (Plattner, 2012). Each student who participates in this project sources ideas on what features and benefits might be built into an ideal wallet, and then they build a prototype of that ideal wallet based on what users specify that they would want.

The Modified Wallet Project: Redesigned for a Sales Classroom

Moving the original Stanford wallet project from a design school context into a business school context for professional sales students was quite intuitive. The modified project retains the

same core function: recognizing that all products are solutions for the needs of unique individuals, and that understanding your target's needs allows you to offer a product that resonates with their needs. In addition to the project's original scope, a speed-selling element was added, such that students not only design a wallet but also then practice selling it using the SPIN method. The wallet project consists of a series of individual and group activities to facilitate learning and increase student knowledge of the SPIN selling approach. It was assumed that in using a product as simple and familiar as a wallet, students would have the mental freedom to focus on the task of applying SPIN, without worry or confusion over the depth of their product knowledge. Completing all aspects of the wallet project takes approximately two class sessions.

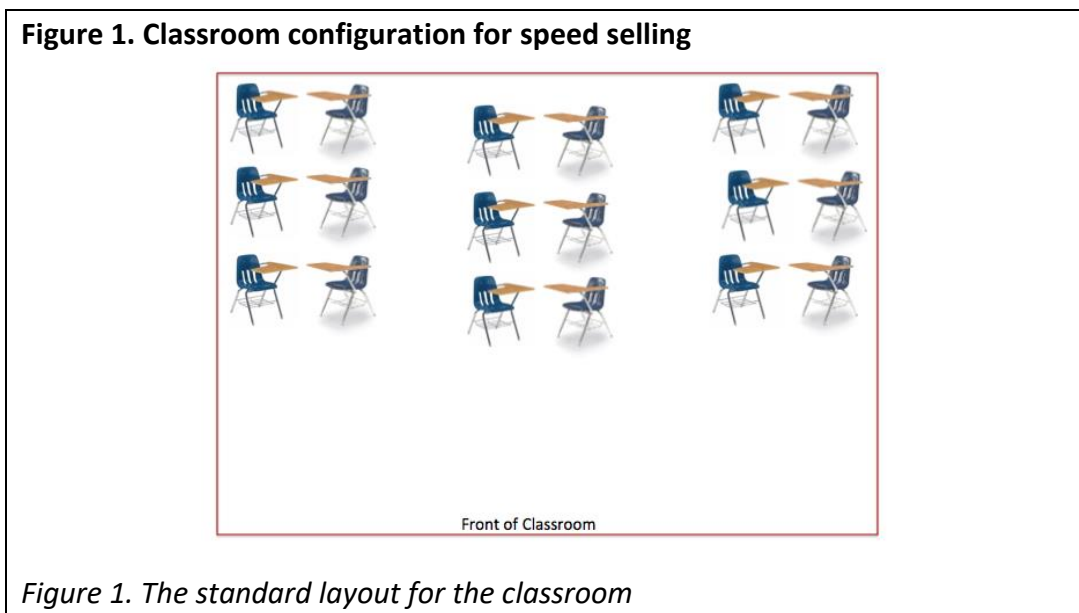
In the initial class session, students are provided a traditional lecture to introduce the SPIN technique and all of the terminology associated with it. This coincides with the 'exploration stage' of POGIL: Students are first asked key questions meant to lead to an understanding of why exactly a salesperson should be adept at asking the right types of questions, what those 'best' questions might look like, and how they might function in needs discovery. The 'term introduction' phase of POGIL follows, involving a more complete explanation of the SPIN concept and all the terminology associated with it. Essentially, this initial class session represents what is already typically done in the classroom utilizing traditional topical lecture. In the next class session, the 'application' phase of these ideas begins with the modified wallet project. As a first step, students form groups of five to six students, are asked to place their own wallet on the desk, and as a group discuss what they like and do not like about the functionality of their current wallet. As part of the discussion, the groups are instructed to discuss what an ideal wallet would look like, and how it might solve everyday problems they have encountered (for example, losing a wallet, overstuffing a wallet, no space for change), or novel problems that rise above the banality of a wallet (for example, how an imaginary wallet could be built to solve issues such as overspending, or being mugged, if disbelief were suspended for this project). During the discussion, each student writes down the many problems they might want a wallet to solve, as identified during the discussion.

At this point the students are notified for the first time that each one of them is going to build a prototype paper wallet, to include features and benefits that address the previously identified problems. The instructor provides a variety of materials for the wallet build: construction paper, tape, stickers, markers, etc. Students are reminded that their paper wallet is just a physical representation of the features and benefits they intend to show, therefore a red sticker might be a 'GPS locator' or a hand-drawn squiggly line might represent a 'mini receipt-shredder.' The paper wallet build takes approximately twenty minutes. After completing the wallet build, each student is given time to sketch out SPIN questions they'd want to ask of their buyer to

effectively present to them the product they have created. Once this is complete, each student will have built out their ideas for a SPIN strategy, to help identify in conversation which problems this wallet might solve for their buyer (A set of worksheets were designed by the authors for this purpose and are available upon request).

The final step in the activity is to practice SPIN selling their wallets, which is novel and not a part of the original wallet project meant for design students. Across the classroom, pairs of students place their desks face-to-face so that one student can act as the buyer and one as the seller (see Figure 1).

Each student as seller investigates their buyer's needs using the SPIN technique, followed by a demonstration of the paper wallet and how it specifically addresses buyer needs that were uncovered within the conversation. When the sales process is complete, the two students switch roles and the other student plays salesperson and sells their wallet. Once all students in the class have been both the buyer and the seller in their partnership, students must move down the row to find a new partner and repeat the sales process, selling the wallet to as many unique buyers as there is time for in the class period. The changing of partners provides a speed-selling atmosphere and allowing multiple opportunities to practice SPIN selling techniques. Once the students sell several different times, the instructor conducts a debriefing of the activity with the class reflecting on their experience.



SURVEY METHOD

Beyond creating this 'POGIL' inspired project for introductory sales courses, an effort was made to assess the impact of the project in the classroom. Specifically, the research questions of interest were as follows: Is learning of the SPIN method improved through the introduction of this project? Are there additional perceptual benefits derived among students, in terms of their confidence with utilizing SPIN, their interest in learning about SPIN, or their perceptions of salespeople as customer-oriented?

Within three sections of a Professional Selling class, students participated in both pre and post testing of their understanding of the SPIN concept, their comfort with and interest in the SPIN concept, as well as their perceptions of salespeople. Pre-testing was completed after the first class session, in which exploration and term introduction was completed on the topic of SPIN selling; in other words, after a typical lecture is given on the topic of SPIN selling. Post-testing was completed after the second class session, in which students went through the application phase of designing and selling their wallets with SPIN. Any student who was not present for both of the two days set aside for this project was eliminated from the analysis, leaving 77 students who had been present for both the introductory lecture on SPIN, and the subsequent wallet project. Utilizing an online survey, students were asked to complete several inventories within one day following the introductory lecture, and then to complete the same inventories once again within one day following the wallet project. Participation was made fully anonymous and did not count towards any grade within the course, allowing students to participate without the pressure to answer in any way, or to cheat on the 'quiz' portion to obtain a higher score. Each student was provided a numerical identifier so that their first round of pre-test responses could be compared to their post-test responses.

Measures

Students first confirmed their participation in both the class lecture introducing the SPIN method, and the subsequent class date during which the wallet project was completed. Next, they took a 7-question SPIN quiz to assess their understanding of the concepts, adapted from Huthwaithe's SPIN assessment quiz (Rackham, 1996). Within the quiz, in addition to correct and incorrect response options, an option was available to select 'I am not sure,' and students were reminded within the instructions that this quiz not for a grade or course credit, therefore they should not feel pressure to guess if they were unsure of an answer. This format was meant to reduce the likelihood of results being impacted by chance guessing. An incorrect answer, or an 'I am not sure' answer was counted as incorrect.

Students then took several brief inventories, each built on 7-point scales. Adapted from a scale of general confidence created by Ozanne, Brucks & Grewal (1992), a 3-item semantic differential for confidence with SPIN scale was presented (Uncomfortable-Comfortable, Did Not Understand-Understand, Not Confident-Very Confident). The original reported reliability for this scale was .72; the Cronbach’s alpha computed with the current sample was .93. Next, a 3-item semantic differential scale on interest in SPIN (Boring-Interesting, Unexciting-Exciting, Unimportant-Important) adapted from Mano and Oliver (1993) was presented. The original reported reliability for this scale was .90; for the current sample Cronbach’s alpha was computed as .94. Finally, a 3-item Likert scale on general perceptions of the customer-orientation of a salesperson (ranging from ‘no salespeople’ to ‘all salespeople’) adapted from Saxe and Weitz (1982) was presented. Items included belief statements such as “Salespeople are trying to help customers achieve their goals,” “Salespeople have their customer’s best interest in mind,” and “Salespeople try to find out what kind of product would be most helpful to a customer.” The original reported reliability for this scale was .81; the Cronbach’s alpha computed for the current sample was .83.

Table 1
Scale items

	Scale Items	α
Confidence with SPIN	1. Uncomfortable/Comfortable 2. Did not understand/Understand 3. Not confident/Very confident	.93
Interest in SPIN	1. Boring/Interesting 2. Unexciting/Exciting 3. Unimportant/Important	.94
Customer-orientation of Salespeople	1. Salespeople are trying to help customers achieve their goals. 2. Salespeople have their customer’s best interest in mind. 3. Salespeople try to find out what kind of product would be most helpful to a customer.	.83

With these various inventories, the intention was to measure not only improvements in comprehension of the SPIN concept, but also student feelings about the SPIN concept (comfort with, and interest in), as well as whether the experience would influence student perceptions of

salespeople as benevolent actors. Oftentimes students entering the sales program may start off with stereotyped beliefs about salespeople as self-interested. In Dan Pink's (2012, p. 44-45) text on sales and psychology, he reflects on the fact that adjectives such as "pushy" and "manipulative" are frequently mentioned in his discussions with laypeople. SPIN as a practice is a highly consultative and customer-oriented method, meant to tailor a sale to the needs of the buyer. Therefore, a deeper appreciation of this process might help students see that sales is not necessarily a manipulative endeavor meant to swindle a buyer into purchasing.

ANALYSIS AND RESULTS

One-way repeated measures ANOVA was conducted to compare the effect of participation in the wallet project on understanding of the SPIN method, feelings of comfort utilizing SPIN, interest in the SPIN method, and perceptions of salesperson benevolence. Firstly, there was a significant impact of the wallet project on the SPIN quiz results [$F(1, 76)=11.197$, $p=.001$], such that this applied project significantly enhanced the number of correct responses to this quiz in post-testing, as compared to just the lecture portion of the curriculum in pre-testing. Next, a significant impact upon feelings of comfort with the SPIN method was found [$F(1, 76)=9.734$, $p=.003$], such that students reported significantly enhanced comfort with the SPIN method after the applied portion of the wallet project. The project also enhanced interest level in learning more about SPIN [$F(1, 76)=4.200$, $p=.044$], and perceptions of salespeople as customer oriented at near-significance [$F(1, 76)=3.800$, $p=.055$].

Table 2

Means table with ANOVA results

	Pre-Project		Post Project		Repeated Measures ANOVA	
	Mean	SD	Mean	SD	F-value	p-value
Spin comprehension quiz	4.87	1.48	5.43	1.43	11.197	.001**
Confidence with SPIN	4.80	1.09	5.17	0.98	9.734	.003**
Interest in SPIN	5.28	1.16	5.50	1.11	4.200	.044*
Customer-orientation	4.04	0.80	4.18	0.84	3.800	.055

Note: All items measured on a 7-point Likert scale

* $p < .05$, ** $p < .005$

DISCUSSION

In a literature review on the most effective means of improving student engagement, Zepke and Leach (2010) offered ten key propositions to educators. Of those ten actions proposed to enhance engagement, five are represented that can be seen in the implementation of the wallet project, namely: enhancing student self-efficacy, guiding students towards working autonomously, aiding in the recognition that teachers are central to engagement, creating a learning environment that is active and collaborative, and creating experiences that students find challenging.

The modification of Stanford's wallet project, originally intended to help art and design students better understand user-experience design, is a great fit for helping sales students understand how all products can be framed as solutions to business problems. It also allows for a unique project in which sales students can build up an understanding of a new concept, and then try to work through application of that concept using a familiar, everyday product. Introducing the concept of SPIN Selling as a technique can be highly abstract for introductory sales students, and the wallet project allows for contextualization of the technique within a low-pressure, high-energy experience.

Furthermore, analysis of student pre and post 'application phase' testing allowed for a comparison of the impact of lecture to the subsequent additive impact of the interactive wallet project. Results suggest that not only are students displaying a better understanding of the actual SPIN concept after applying it, but they also report feeling more comfortable with the SPIN method, more interested in learning about the SPIN method, and finally, students report perceptions of professional salespeople as more benevolent actors with a customer-focused orientation. These findings support the notion that as an applied discipline, students in sales will benefit from active learning experiences in which they are given the opportunity to engage with sales concepts directly. As such, future research may also focus on additional ways in which design-thinking projects may be incorporated into the sales classroom.

A major limitation of the project itself is the nature of any exercise that takes two full class days to complete, specifically in terms of ensuring that students have been in attendance on both dates. For example, if a student has missed the first class introducing the SPIN concept through lecture, then it can be difficult for that student to find meaning in the second class, during which they are expected to apply the concept autonomously. One solution that has been attempted is to have those students work side-by-side with either the professor or a highly competent student during the time they are given to begin developing SPIN questions, in the hopes that they will catch on quickly enough to engage in the speed-selling exercise. Since

those students who missed one of the two class sessions were removed from analysis (and since there are too few to draw conclusions from), it would be interesting to determine the degree to which these students make gains on the SPIN concept when learning about it primarily through the wallet project, without an initial lecture on SPIN.

Finally, it should be noted that while the current paper considers design-thinking specifically within the sales classroom, it has long been suggested that design-thinking should be brought into business school classrooms more generally. For example, in a discussion on MBA education, Dean Roger Martin of the Rotman School of Management has explicitly said that business education must “be made more like design education” in that MBA’s should learn to listen and understand the client or user at a deeper level (Dunne & Martin, 2006, p. 514). Design-thinking opportunities may allow business students to apply the theories they learn, actively experiment with their application of those theories, and reflect upon the success or failure of theory in practice (Glen, Suciu, Baughn, 2014).

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Implementing an ePortfolio to foster students' ability for (self-)reflection: Lessons learned and issues still to be addressed

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ABSTRACT

The purpose of this paper is to review the role of software within an ePortfolio (ePF) initiative for students of a five-semester master's program for Business Education and Development. The didactical aim of the ePF initiative presented is to enhance students' ability for (self-)reflection. An accompanying study of the implementation process allows for evaluating the impact of the ePF initiative as well as for the evaluation of its implementation. At six points of time students fill in questionnaires regarding their self-perception of their own competences and their rating of the side conditions of the implementation, leading to 1,925 questionnaires up to September 2018. Results show a positive impact on students' self-perception of their own competences and the perceived importance of self-reflective learning. Regarding the ePF implementation, students generally value the ePF work, especially with regard to the support of their reflection process by an external coach. However, they criticize the time intensity of the reflection process, resulting in the need of a clear communication of the aims of portfolio work to uphold students' motivation. Although the software only represents a side condition in the ePF initiative discussed, students have specifically criticized the software provided – leading to the conclusion that the software might act as hygiene factor on students' motivation to reflect. From these findings arises the need for further research, which is subject to an interview study among the participants of the ePF initiative being currently in preparation.

Keywords: ePortfolio (ePF), reflection, competence development, Business Education and Development, accompanying study

Introduction

Portfolio concepts represent valuable tools to support students' ability for reflection and self-reflection, especially with the focus on pre-service teachers (Beck, Livne, & Bear, 2005; Lin, 2008). The ability to reflect upon one's own action and to adjust future actions to the insights gained, is considered an important aspect of every professional's skill-set (Lynch, 2000; Schön,

1983). With the use of electronic portfolio concepts the results of this reflection process might be documented independently of time and place, thus increasing learner ownership over the portfolio and supposedly also learners' motivation (Barrett, 2005). The aim of this article is to show the implementation process of an electronic portfolio (ePortfolio, ePF) with the very specific learning goal of enhancing students' ability for (self-)reflection and to evaluate supporting and inhibiting factors for a successful portfolio work.

The ePF implementation presented is embedded into the curriculum of a master's program for Business Education and Development at an Austrian University. Business Education and Development is a master's program with a twofold objective, which entitles students to various professions in the fields of business (e.g. accounting, human resources) as well as to becoming a business teacher at vocational schools. Due to the polyvalent nature of the master's program, Business Education and Development (as implemented at Austrian Universities) shares many similarities with programs of teacher education (e.g. a teaching practice for pre-service teachers), although it is not a teacher training program in the strong sense.

The ePF initiative started in 2009 with the aim to assist students in their reflection and self-reflection processes (Stock & Winkelbauer, 2012). Up to now, 1,925 questionnaires from students who have successfully completed an ePF allow an insight into the impact of the specific ePF implementation. In the past eight years, the ePF has been proven as a tool to enhance students' (self-)reflection (Dreisiebner, Riebenbauer, & Stock, 2017; Slepcevic-Zach, Riebenbauer, Fernandez, & Stock, 2015; Slepcevic-Zach & Stock, 2018; Stock & Winkelbauer, 2012). However, since starting the ePF initiative, technology has rapidly evolved with online and mobile learning becoming increasingly important.

The individual acceptance for an ePF is strongly dependent on the individual's attitude towards the ePF (Chen, Chang, Chen, Huang, & Chen, 2012). Literature regarding the implementation of ePFs for pre-service teachers suggests that technology-related issues might be one obstacle for a successful ePF implementation (Lin, 2008; Oakley, Pegrum, & Johnston, 2014). If so, technological factors might act as hygiene factors for ePF work, which should bear close examination whenever implementing an ePF. The term hygiene factor originates in the *dual-factor theory* (Herzberg, Mausner, & Snyderman, 1959) and describes an aspect of (workplace) motivation, which solely contributes to dissatisfaction. In the case of the ePF-implementation, a dissatisfying software might have a negative impact on the readiness to reflect (while a satisfying software might have no positive effect either). In the face of the technological development since 2009, the aim of this paper is to review the 'e' within the ePF. Formally, the technological aspect has been just a side condition to enable the reflection processes.

Literature Review

The following aspects are intended to become clear within this literature review: (1) Reflection and self-reflection are a (circular) process of reflecting upon past actions and developing or improving future actions. This process is a vital component of every teacher's skill set. (2)

Electronic portfolios might take a multitude of forms. In this specific case, an implementation of an electronic portfolio fostering students' ability to (self-)reflection is discussed. (3) Herzberg's dual-factor theory (Herzberg, Mausner, & Snyderman, 1959) may be used to explain students' motivation to reflect upon their competences in the current setting of the ePF-implementation.

Reflection and self-reflection as basis of portfolio-work

Reflection is a key component of every professional's skill set to enable a person to commence processes of continuous learning (Lynch, 2000; Schön, 1983). Reflection might be directed towards the own environment as well as specifically towards one's own action in the form of *self-reflection* (Helsper, 2001). This self-reflection might take two forms (Schön, 1983): *Reflection-in-action* refers to reflection processes which take place while still in the situation reflected upon. The reflecting individual becomes a „researcher in the practice context“ (Schön, 1983, p. 68), thus constructing „a new theory of the unique case“ (Schön, 1983, p. 68), still being able to influence the situation reflected upon. After the event, *reflection-on-action* might take place as “thinking back on what we have done” (Schön, 1983, p. 26). In this case, the reflecting individual might benefit from the insights gained in future actions, but not in the action reflected upon.

As indicated by Schön (1983), reflection processes are of circular nature: Both reflection-in-action as well as reflection-on-action might result in alternative methods of action, which lead to new situations to be reflected upon. The *ALACT model* (Korthagen, 1999) can be used to visualize this process within five steps (see figure 1): The starting point of each reflection process is an *action*, followed by *looking back on the action* and on the own desires and feelings during the action. In a third step the individual gets *awareness of essential aspects* (e.g. the reasons for a specific issue). Based on these insights, the individual begins with *creating alternative methods of action* by formulating aims, considering advantages and disadvantages and reviewing their feasibility. The alternatives are tested out in a final *trial*. In the circular reflection process this trial represents another action to be reflected upon and the process starts anew.

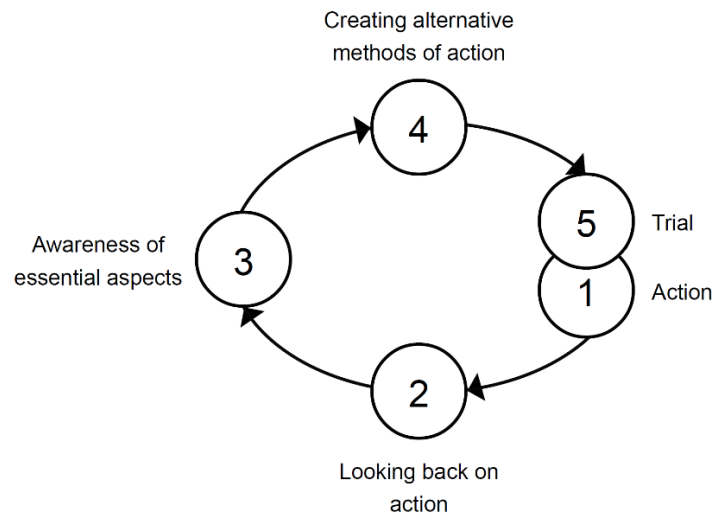
Figure 1: ALACT model

Figure 1. The ALACT model (Korthagen, 1999, p. 193) refers to reflection as a five-step-process of circular nature. Graphic adapted from Korthagen (1999, p. 193).

Introducing the concept of a competence development portfolio

Baumgartner (2009) differentiates between three types of portfolios: reflection, development and presentation portfolio. For every type of portfolio Baumgartner (2009) introduces a personal and an organizational type of portfolio: *personal portfolios* are owned by the learners. These portfolios might serve their purpose without giving the organization (e.g. university teachers) insight into the portfolios. They might even serve their purpose better if they remain private (e.g. by limiting socially desired tendencies in reflection portfolios). *Organizational portfolios*, on the other hand, may only serve their purpose if they do not remain private to the organization (e.g. an assessment portfolio may only serve its purpose if a teacher is allowed insight into the portfolio). Each of the three main portfolio types might be implemented with regard to its personal or organizational nature (Baumgartner, 2009):

- Reflection portfolio
(*personal*) *learning portfolio* (reflection about specific learning product or process as a whole as primary goal), (*organizational*) *assessment portfolio* (documentation of the student's learning process through individual assignments or through the whole curriculum, in some case to facilitate grading of students)
- Development portfolio
(*personal*) *development portfolio* (fosters the development of predetermined qualifications or – more generally defined – competences), (*organizational*) *career portfolio* (focusses the planning process of the rise to the next hierarchy level within a company or for an individual's career as a whole)
- Presentation portfolio
(*personal*) *demonstration portfolio* (the aim of this type is to demonstrate one's own

competencies for job applications), (*organizational*) *business portfolio* (aiming at advertising a specific product or the company as a whole)

The ePF implementation described within this paper shares characteristics with multiple types of electronic portfolios (see Figure 2): First, the portfolio might be characterized as *reflection portfolio* (specifically as learning portfolio) aiming at developing students' ability to reflect. However, it is not the goal of the ePF to act as basis for students' assessment. Second, the portfolio might be characterized as *development portfolio* since the competence dimensions to be reflected upon are predetermined. Students are required to reflect upon their most distinctive competences in the following four dimensions: professional, methodological, social and self-competence. The idea behind this concept is that only through interaction of all four competence dimensions holistic "learning empowerment" (Stock & Winkelbauer, 2012, p. 50) might be achieved. As a result, the portfolio implementation presented can be described as an *electronic competence development portfolio* (Stock, Slepcevic-Zach & Dreisiebner, 2019, in Print, translation by authors).

Figure 2: Taxonomy of electronic portfolios

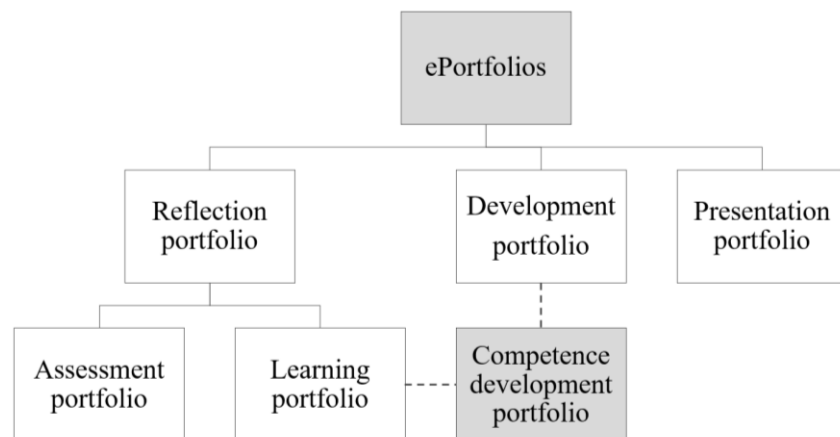


Figure 2. Competence development portfolios as a combination of reflection and development portfolios. Graphic adapted from Baumgartner (2009, p. 33) and Stock, Slepcevic-Zach and Dreisiebner (2019, in Print).

Important factors for conceptualizing a competence development portfolio

The ePF initiative presented closely follows existing guidelines for portfolio implementations (Breault, 2004; Paulson, Paulson, & Meyer, 1991). The ePF is closely embedded into the curriculum of the master's program Business Education and Development and therefore mandatory for all students. Since reflection in the sense of Korthagen (1999) is considered a circular process, it was deemed important for all the students to engage into reflection processes at multiple points of time: Students are required to attend three designated courses in the first, third and fifth semester of their master's program (see figure 3). All three courses consist of an attendance phase, followed by an online phase where students work at their

individual portfolios. During both phases, students receive intensive support by an external coach (Slepcevic-Zach & Stock, 2018). Questionnaires handed out at the beginning and the end of all three courses provide data for the ongoing accompanying research of the ePF-implementation (described in more detail in the methodology-section). After successfully attending the courses and handing in their portfolios, students are granted credit points to value the time and effort behind the reflection processes conducted.

Figure 3: Implementation of the ePF into the Masters' Program of Business Education

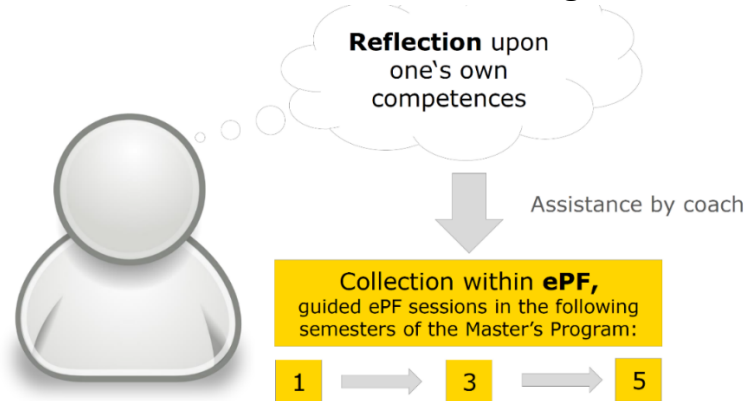


Figure 3. Guided ePF sessions in the first, third and fifth semester of the master's program.

At the beginning of the very first session, the aims of the portfolio are clearly communicated to all students: The portfolio is a tool to enhance students' (self-)reflection. It captures students' self-perception of their own competences, but it does *not* provide a formal assessment of these competences. It is neither a tool to assess the competences of the students nor a tool to assess students' ability to reflect (Dreisiebner et al., 2017; Slepcevic-Zach & Stock, 2018). The portfolio itself is not graded and is not visible for any university teacher, except for a coach from an external institution (Stock & Köppel, 2012). Students have the possibility to make parts of the portfolio invisible to the coach, thus granting them an even greater amount of privacy.

The role of the coach within the first ePF session is to introduce the students to reflection and portfolio work. All sessions are conducted according to the principle *collect – select – reflect – connect* (Barrett, 2005). Students *collect* all competencies they think to have obtained so far (partly in group-work), they *select* their most distinctive ones and *reflect* how they might enhance their competence profile and *connect* their competences on four competence dimensions (professional, methodological, social and self-competence) to gain insight into their "holistic ability to take action" (Stock & Winkelbauer, 2012, p. 50). After the students have finished a first draft of their portfolio, they receive feedback and additional impulses for reflection from their coach.

Digitalizing the reflection process – Bringing the ‘e’ into ePF work

An extensive part of the students’ reflection process is scheduled to take place after the initial attendance phase. Students have the possibility to carry out their reflection processes at a venue and point of time of their choice and document their insights on an electronic platform. One intention behind introducing multimedia tools to the didactical setting is to help to “maintain learner intrinsic motivation to willingly engage in the portfolio process” (Barrett, 2005, p. 16). Within the presented ePF-implementation in the curriculum of the master’s program Business Education and Development at the University of Graz, a custom-made software is utilized: Students are able to work online on their portfolios, while the basic structure of the portfolios is predetermined by the software. In addition, the portfolio might be transferred into a presentation-portfolio, which might be shared online with other persons, e.g. future employers.

However, the core aspect of the ePF work – *students’ reflection* – cannot be digitalized since reflection is solely a process of thought. Nevertheless, the *results* of this reflection process might be very well verbalized and documented digitally. If so, the electronic component of the portfolio work is just a supportive measure to ease the organizational procedure rather than being the sole purpose of the portfolio work. The intention behind utilizing an electronic platform is not to make the students digitally competent (which would require a very different didactical setting), but to gain various other advantages:

(1) The simple design requires students to follow the given structure of the reflection process (e.g. to reflect about all four competence dimensions instead just about their professional competences) and requires them to solely focus on the content of their portfolio instead of design issues. This initial institutional guidance – as proposed by Barrett (2005) – is replaced by full learner ownership regarding content, purpose and development process of the portfolios as soon as the learners have finished the last ePF course.

(2) The ePF work is conceptualized to last over the course of 5 semesters. With a central electronic portal where all data is stored, it is ensured that all students have the possibility to continue the work at their very own portfolio without the risk of data loss. Therefore, students might truly engage into a circular process, where reflection can focus on the actions undertaken since the last ePF session. In this case, the electronic storage works as “convenient central location” (Mandel Glazer, Rooman, & Luberto, 1996, p. 80), which is considered a vital component of every portfolio implementation (electronic or non-electronic).

(3) Since the portfolio is already online (although not publically available), it can be easily transferred into a presentation portfolio and shared with others (e.g. to be added to a letter of application as hyperlink for a future employer).

Motivators and hygiene factors for portfolio work

Previous research regarding the present ePF implementation (Dreisiebner et al., 2017, pp. 39–41; Slepcevic-Zach et al., 2015, pp. 80–81; Slepcevic-Zach & Stock, 2018) suggests that external factors (e.g. job application, obligation) are primary triggering events for students' reflection. This raises the question whether students' motivation to engage into the portfolio work might be linked to side conditions of the ePF implementation.

The *dual-factor theory* by Frederick Herzberg relies on two aspects to explain work motivation: motivators and hygiene factors (Herzberg et al., 1959). Motivators directly refer to the content of the work (e.g. sense of achievement), whereas hygiene factors are of contextual nature (e.g. working conditions). *Motivators* refer to work satisfaction of an individual who might be satisfied or dissatisfied with the work. *Hygiene factors*, however, do not contribute to workplace satisfaction, but solely to dissatisfaction: If the working conditions are bad, the individual is dissatisfied with a negative impact on work motivation being the result. If, in turn, working conditions are well, the individual is just 'not dissatisfied' (but not satisfied either). The dual-factor theory has previously proven to hold for academic motivation instead of workplace motivation (Magoon & James, 1978).

One possible implication for ePF work is that hygiene factors deserve special attention when evaluating the implementation of an ePF. As long as these hygiene factors are fulfilled, they are unrecognized since they do not affect motivation positively. However, as soon as they become unfulfilled, students become dissatisfied with a negative impact on their motivation to reflect being one possible outcome. If the software used would truly act as a hygiene factor, then a well-working software would not be recognized in a positive way by the students. But as soon as the software is not fulfilling students' expectations, this would lead to negative evaluation results and a negative impact on students' motivation.

Research Methodology

Since students' portfolios are only visible to the external coach for the purpose of enhancing the reflection process, these portfolios cannot provide a data source for an insight into students' perception of portfolio work. However, an accompanying study of the PF work gives insight into this matter and reveals which factors might be considered motivators and which factors might be considered hygiene factors.

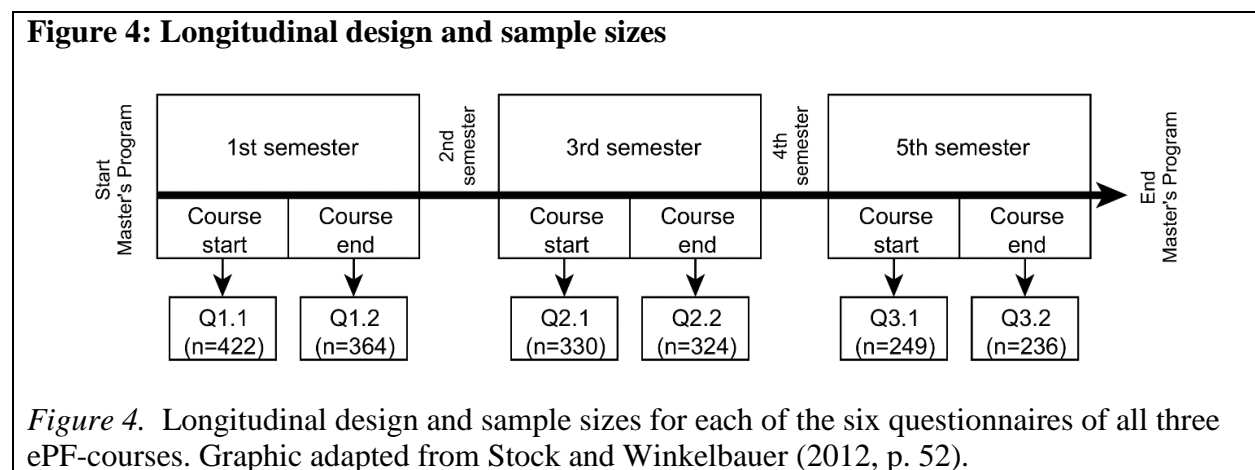
Participants

The current sample exists of 1,925 questionnaires which have been collected from all students studying Business Education and Development at the University of Graz since 2011. The students represent a homogenous sample: Within the first ePF course students are in the first semester of their master's program. All of these students have successfully completed a bachelor's program with a business or economic focus, but they have not yet received any

pedagogical training regarding Business Education and Development (e.g. subject “didactics accounting”). Almost all (85.9 %) of the participants in the first semester have no previous experience regarding portfolio work.

Procedure

At the start and the end of each of the three ePF courses, students are required to fill out questionnaires regarding their competence development, their triggering events for reflection and their evaluation of the implementation process. Figure 4 shows the longitudinal design and the corresponding sample sizes starting with questionnaire Q1.1 at the beginning of the first ePF session in the first semester and ending with questionnaire Q3.2 after the last ePF session in the fifth semester of the master’s program.



Each of the six questionnaires is assigned an individual code by each student, allowing for tracking students’ development from the first to the fifth semester, while still granting anonymity to the individual student. All questionnaires contain quantitative as well as qualitative items. The *quantitative items*, using Likert-scales, target students’ impressions of the implementation process regarding factors like time, feedback or software. The *qualitative items* focus on students’ self-perception of their own competences: students report which competences they see as their most distinctive ones and which competences they could develop following the last ePF session. However, this data allows only an evaluation of students’ self-perception and does not enable a formal assessment of students’ competence development. Since this paper focuses specifically on the evaluation of the *implementation process* (with regard to the role of the software utilized), the reader is referred to prior publications (e.g. Dreisiebner et al., 2017; Slepcevic-Zach et al., 2015) for a more detailed description of the qualitative and quantitative items.

One specific item battery in the questionnaires Q1.2, Q2.2 and Q3.2 (i.e. the questionnaires at the end of each semester) is dedicated to the evaluation of the implementation process. Students are required to indicate how satisfied they were with the following aspects on a scale

from 1 to 5 (with 1 being equal 'very satisfied' and 5 being equal to 'dissatisfied'). In a free-text field students are able to offer additional explanations for their judgement. Specifically, students are able to evaluate the following aspects:

- *(physical and virtual) learning space*: point of time, facilities, software
- *different phases within the ePF course*: information phase, group working phase, creation process (at home), support and feedback
- *didactical setting as a whole*: workload, summative evaluation of the project as a whole

The variable 'point of time' refers to the point of time within the semester the ePF courses take place. In general, this consists of an attendance phase at the beginning of the semester, followed by a reflection phase and a final attendance session towards the end of the semester. The variable 'facilities' refers to the rooms where the attendance sessions were held, 'software' to the online-platform used and 'workload' to the perceived workload by the individual students. The variables 'information phase', 'group working phase', 'creation process' and 'support and feedback' gave the students the possibility to rate the corresponding phases of the ePF implementation. For every variable students were able to provide feedback in the form of a free text field.

A qualitative content analysis (Mayring, 2000) was conducted to gain insight into students' evaluation of the ePF implementation. Analysis was conducted for each cross sectional cohort (all students participating at the questionnaires Q1.2, Q2.2 and Q3.2). Students' free text answers are categorized, with the single categories being the result of an inductive process: Categories are not derived from theory, but directly from the material and are subject of constant revision during the coding process.

Findings

The positive impact of the specific ePF initiative evaluated within this paper is well documented. Specifically, utilizing the ePF as a tool for reflection and self-reflection, has helped the students to gain enhanced awareness of their own competence spectrum (Dreisiebner et al., 2017; Slepcevic-Zach et al., 2015; Stock & Köppel, 2012; Stock & Winkelbauer, 2012) and increased the importance of self-reflective learning (Slepcevic-Zach et al., 2015; Slepcevic-Zach & Stock, 2018). Extrinsic factors were identified as main motivators for students' portfolio work (Dreisiebner et al., 2017; Slepcevic-Zach et al., 2015). However, sustainability of the ePF initiative among graduates is given via the usage of the ePF for job application purposes, even though graduates mostly do not continue working on their ePF (Dreisiebner et al., 2017).

This paper solely focusses on the evaluation of the implementation process. The underlying data originates from the questionnaires Q1.2 (n= 363), Q2.2 (n=321) and Q3.2 (n=236). Mean values of the students' rating on a Likert scale ranging from 1 (very satisfied) to 5 (not satisfied) are shown in Table 1.

Table 1
Evaluation of the implementation process

Mean values	Q1.2 (n = 362)		Q2.2 (n = 321)		Q3.2 (n = 236)	
	M	SD	M	SD	M	SD
Point of time	1.96	(1.05)	1.83	(0.93)	1.96	(1.06)
Facilities	1.77	(1.03)	1.77	(1.02)	1.72	(0.99)
Software	2.24	(1.01)	2.20	(1.04)	2.24	(1.05)
Workload	2.32	(0.95)	2.21	(0.99)	2.50	(1.04)
Information phase	1.46	(0.71)	1.58	(0.79)	1.56	(0.75)
Group working phase	1.75	(0.87)	1.68	(0.83)	1.75	(0.96)
Creation process (at home)	1.92	(0.77)	1.97	(0.82)	1.94	(0.85)
Support and feedback	1.41	(0.76)	1.59	(0.84)	1.49	(0.79)
Overall project	1.80	(0.72)	1.91	(0.82)	1.90	(0.80)

1 = very satisfied, 5 = not satisfied

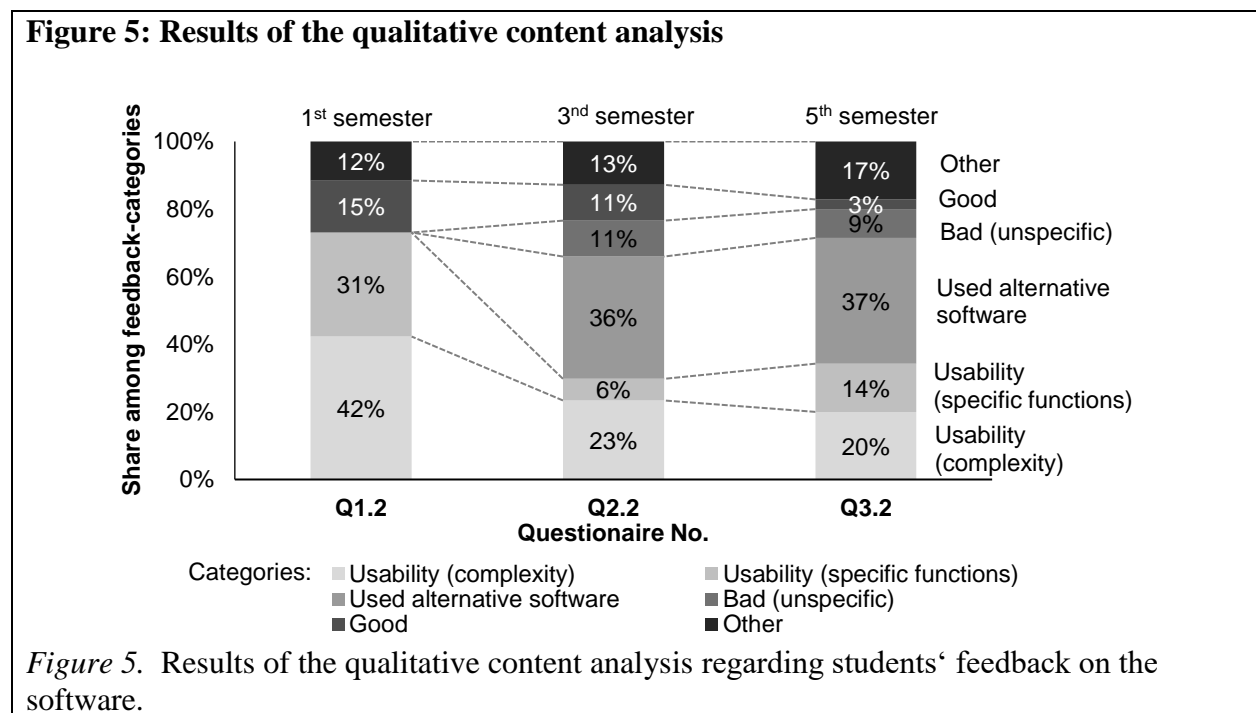
Above all, students value the support and feedback by the external coach. Within all three ePF courses, this is the best-rated aspect of the ePF implementation among the students, along with the information phase at the beginning of each ePF course. Since the dual factor theory suggests that hygiene factors never receive positive feedback but are just recognized if they are unfulfilled, especially items with solely negative verbal feedback are of interest during the analysis of the implementation process. Qualitative content analysis of students' feedback regarding the implementation process reveals that all aspects regarding the *different phases within the ePF course* (information phase, group working phase, creation process, support and feedback) did not receive any kind of negative verbal feedback by multiple students. However, for the following implementation variables numerous students issued negative feedback: *point of time* (negative: incompatibility with own time schedule), *facilities* (negative: room too small) and *workload* (negative: too time intensive).

Although not the core aspect of the ePF work, the *software*, received almost exclusively negative feedback within the questionnaires. Students who were satisfied with the software choose not to give any feedback (but gave feedback to other implementation variables they were satisfied with) and mostly students who were not satisfied choose to answer this item. Regarding students' feedback on the software, the following six categories emerged inductively:

- *Usability (complexity)*. Students reported to be unable to cope with the software's complexity (e.g. "confusing layout", "hard to work with").
- *Usability (specific functions)*. Students denoted the missing of specific functions (e.g. "problems with tables", "few layout options").

- *Used alternative software.* Students reported to have used alternative text-processing software to develop their portfolio.
- *Bad (unspecific).* Students reported that the software did not fit their needs, but did not specify which aspect (e.g. “not good”).
- *Good.* Students reported that the software fitted their needs. In some cases, they referred to a specific aspect (e.g. “easy to handle”).
- *Other.* (e.g. “new layout would be nice”, “layout outdated”, “a little bit special to work with”).

Figure 5 shows the distribution of the six categories of students’ feedback regarding the software from the first to the fifth semester. Within the first semester almost three quarter of the students criticized the usability of the software, either with regard to missing functions or the overall complexity of the system. In the third semester (Q2.2), 32 % of the students giving verbal feedback reported to use an alternative text-processing software to create their portfolios (which they transferred into the online-platform after completion). A similar situation becomes apparent when analyzing the software feedback of fifth semester students.



While other aspects of the implementation received positive as well as negative verbal feedback or exclusively positive feedback, almost all verbal feedback regarding the software was negative. However, students were generally quite satisfied with the software (as indicated in Table 1) and only a fraction of all students chose to give verbal feedback on the single items. Based on the results it can be concluded that the software might act as hygiene factor on students’ motivation: As long as the software satisfies the students’ needs, the students do not report anything (i.e. they do not report that the software was ‘good’). But as soon as there are

problems with the software, students notice them and report them in their evaluation. A negative impact on students' motivation to reflect might be the result – even though a 'good' software might not have a positive effect on students' motivation but might be taken for granted by the individuals.

Conclusion

The aim of the research presented within this paper is to give insight into an ePF initiative carried out for students of a master's program for Business Education and Development. When reviewing students' evaluation of the implementation process, three core aspects become apparent: (1) Students value the support and feedback of the external coach. (2) Motivating students to reflect is a key issue – especially due to the organizational control over content, purpose and process of the portfolio work, motivation seems to be of a rather extrinsic nature. (3) Side conditions of the portfolio work – in this case the software – have to be closely monitored in order to avoid a negative impact on students' motivation.

The coach as key factor in competence development portfolios

Students greatly value all aspects with regard to the external coach, specifically the support and feedback during the creation process as well as the previous information phase in the attendance sessions. However, with the current research design it is not possible to determine whether this effect is due to the course design or due to a good coaching process. The implementation of the portfolio as *electronic* competence development portfolio enhances the role of the coach since it enables the coach to support students' reflection processes independently from time and location. The possibility to interact with the coach directly within one's own portfolio, outside of the attendance sessions, is suspected to be one reason behind the positive evaluation results with regard to the coaches' support and feedback.

Time intensity – The necessity to motivate students

Within the evaluation results, specifically time intensity and workload represented issues for the students, even though the ePF work is embedded in the curriculum and students receive credit points for successfully developing their ePF. Increased learner ownership might be one solution to increase students' motivation to reflect within the given didactical setting. Currently, the *content* of the portfolio is predetermined (students' self-perception of their own competences and their developmental potentials) as well as the *purpose* (enhancing students' ability for self-reflection) and the *process* (timeframe of the designated ePF-courses). Barrett (2005) suggests that with an increased learner ownership over content, purpose and process, a shift from extrinsic to intrinsic motivation can be achieved.

Measures of increasing learner ownership have already been implemented during the early conception phase of the ePF initiative presented: As a first step towards learner ownership of the portfolio, privacy is guaranteed to all students, with only an external coach being able to

access the portfolios. Students are not assessed regarding their self-perception of their own competences. As reported in Table 1, students greatly value the current design of the ePF implementation and/or the work of their ePF coach. In addition, the implementation as *electronic* competence development portfolio increases learner ownership over the *process*, with the students now being able to decide when and how they wish to reflect upon their competences. A positive attitude of students towards the method of ePF is deemed important since this positive attitude towards the method itself is considered to have a strong influence on students' usage intentions (Chen et al., 2012). Therefore, the aims and advantages of the portfolio work are communicated to the students in the first ePF session.

Software as hygiene factor for the implementation of electronic portfolios

Electronic Portfolios might address very different issues: to assist students' learning and reflection processes, to act as basis for students' assessment or to help students to present their collected works to others (Baumgartner, 2009). With the portfolio being a *competence development portfolio* comes a very distinctive objective: The aim is not to make students digitally competent (as suggested by Lin, 2008, p. 45; Oakley et al., 2014), but to ignite processes of (self-)reflection among the students. In this setting, the 'e' within the portfolio just plays the role of a final documentation platform of the reflection processes. Nevertheless, the present results indicate that the software acts as hygiene factor (Herzberg et al., 1959) on student motivation to reflect. Although the software is not the key aspect of the ePF work, the software has to be considered as hygiene factor, which should be examined closely when evaluating the implementation of ePFs.

From these conclusions arises the need for further research, which is subject to a qualitative interview study currently in preparation among the participants of the ePF initiative. Further research is specifically needed to identify which effects can be contributed to the *coach* (e.g. positive effects through feedback and interaction with students during the ePF sessions) and which effects can be contributed to the *course design* (e.g. positive effects through three consecutive courses throughout the master's program). In addition, further research regarding students' triggering events for reflection might be utilized to purposefully create incentives for students to reflect upon their own competences.

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