The image shows a spiral-bound notebook with a light blue cover and a cream-colored page. The spiral binding is on the left side. The title and subtitle are printed on the page. The author's name is in a blue box at the bottom.

Towards a strong professional identity within higher education

Increasing the effectiveness of critical reflection through autobiographical reflexivity and persuasive technology

Monique Engelbertink

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Monique Maria Josephina Engelbertink

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1

General introduction

CONTEXT

The social work profession is continuously changing due to the pressure of a shifting political vision on the interpretation of care and welfare and declining government resources. Instead of taking care of clients the professional is more focused on arranging care for clients (Kloppenburger, Van Bommel, & De Jonge, 2018). The professional enters primary care settings occupying new roles, such as a participation coach, facilitator or coordinator, to ensure that all citizens are able to participate in society and that the organizations involved can connect and complement each other (De Bruijn, Van Ewijk, Kunst, & De Koning, 2012; Verkenningcommissie Hoger Social Agogisch Onderwijs, 2014; Witte, 2015). There are four crucial professional competences which form a new profile of social workers (De Bruijn et al., 2012): connection (connections between residents and the relevant authorities); integral and inclusive thinking and acting (works across the boundaries of their own discipline); broad professional basis (intervenes with a large number of habitats and can go into depth in specific areas); reflection and professionalization (reflecting on the context of the work, in the work and at work, therefore contributing to the professionalism of the role). These changing roles can affect the professional identity (PI) of social workers (De Bruijn et al., 2012; Verkenningcommissie Hoger Social Agogisch Onderwijs, 2014; Witte, 2015). A PI is the understanding of how an individual perceives themselves in their work and how they relate to the profession to which they belong (Kelchtermans, 2009). The PI of social workers can be further strengthened which would allow them to better cope with the four crucial competences, and assist with positioning themselves appropriately in relation to other professional groups (De Bruijn et al., 2012; Verkenningcommissie Hoger Social Agogisch Onderwijs, 2014). A PI develops throughout an entire career (Beauchamp & Thomas, 2009; Kwakman & Schilder, 2005), however awareness of the necessity to develop this, and also becoming competent in exercising it, begins during the student's education (Beauchamp & Thomas, 2009; Witte, 2015). Although the importance of training social work students to become professionals with a strong PI has been noted in practice, research on this remains very limited (Levy, Ben Shlomo, & Itzhaky, 2014; Marín, Tur, & Challinor, 2018; Moorhead, Bell, & Bowles, 2016; Pullen Sansfaçon & Crête, 2016; Shlomo, Levy, & Itzhaky, 2012; Whitaker & Reimer, 2017).

The 'Academie Mens en Maatschappij' ('Academy of People and Society'), at Saxion University of Applied Sciences in the Netherlands, wants its social work students to develop a stronger PI. This would allow them to move more smoothly through all of the potential working conditions they may encounter, stand for the profession they represent, and reflect on the way in which their profession is developing and how they relate to it at an individual level. Students aim to achieve this PI through improving their knowledge and experience in reflection-based tasks. An internal study exploring the quality of reflection showed that areas of Saxion's education focusing on reflection could be improved in the

following areas: vision, methodology and implementation (Mittendorff, Donk, & Gellevij, 2012). Additionally, social work students, in the Netherlands, appeared to have insufficient reflection skills upon completing their study program (Witte, 2015).

Saxion opts for the use of technology for improving reflective education, as they expect that fewer classroom obligations will become normalized in higher education. In their view, technology offers the possibility to provide more student-driven education instead of teacher-driven education. They want to increase the feasibility, attractiveness and organization of education and, subsequently, management sees a major role for blended learning in this. It is interesting to investigate whether online learning could also play a role in enhancing PI or reflection skills; and what the added value could be from using persuasive technology (PT), given the added value it has within eHealth (Kelders, Kok, Ossebaard, & Van Gemert-Pijnen, 2012; Van Gemert-Pijnen, Kelders, Beerlage - De Jong, & Oinas - Kukkonen, 2018).

This dissertation seeks to explore ways for improving reflective education in the context of the social worker's evolving profession, using PT as a means of enhancing PI.

Research into the formation of a person's PI stems from theories coined by Erikson (1963) and Marcia (1966). They described that the development of the PI is intertwined with the development of someone's personal identity. Though, little research has been done which establishes effective ways for students to develop a strong PI within higher education (Mann, Gordon, & MacLeod, 2009; Trede, Macklin, & Bridges, 2012). The narrative reflection method which has been aimed at the students' narratives to attempt to strengthen the PI of students, and seems promising in doing so, has mainly been investigated qualitatively (Lanas & Kelchtermans, 2015; Lengelle, Meijers, Poell, & Post, 2014; Lengelle, Meijers, Poell, & Post, 2013; Mann et al., 2009; Moenandar & Huisman, 2019; Roberts, 2019).

Although there doesn't seem to be sufficient evidence that indicates a proven effective method, much is unknown about which factors may influence the development of PI (Crocetti, Sica, Schwartz, Serafini, & Meeus, 2013; Kuijpers, Meijers, & Gundy, 2010; Meijers & Kuijpers, 2014; Trede et al., 2012). It provokes the following questions: Which resources, or PI statuses, support students in developing a strong PI? To what extent do students reflect on their PI and distinguish various components in their PI? And at what level do students reflect when they review their PI?

Dissertation aims

This dissertation aims to find solutions to the above questions. The main objectives of this thesis are to develop and implement a blended learning course in critical reflection, and

to investigate the added value of autobiographical reflexivity and PT in order to benefit PI development and critical reflection skills in social work students.

This general introduction will briefly address the five concepts that are central to the thesis: PI as central outcome, critical reflection, autobiographical reflexivity, PT and participatory design. Subsequently, an overview will be provided of the five articles that form the basis for this thesis. Here, the three phases of this research will also be discussed, namely orientation, design and implementation.

Professional identity as central outcome

As previously mentioned, a PI is a person's understanding of how they see themselves in their work and how they relate to the profession to which they belong. This view is constantly interacting with their environment and the perception they have of themselves (Kelchtermans, 2009). Professionals with a strong PI know what they are capable of and what they stand for (Schilder, 2013); they experience self-confidence (Kelchtermans, 2009; Ryan & Carmichael, 2016; Schilder, 2013), are less likely to burn out (Edwards & Dirette, 2010) and are less likely to look for another job (Sabanciogullari & Dogan, 2015). In addition, they experience a synthesis of their (future) PI and their (future) 'self' (Meijers & Kuijpers, 2014). Higher education settings are likely to gain more benefits from students who have a strong PI. These students feel more connected to their study program and their future professional group, thereby increasing their academic achievements (Jensen & Jetten, 2015). Furthermore, students who have a strong PI stimulate proactive behaviors and increase their learning motivations; they explore in more depth future possibilities and paths that they can take, and have stronger confidence in their career choice (Meijers & Kuijpers, 2014).

The formation of a PI can be seen as a dynamic development. Exploration and commitment are aligned with the personal values and norms with those of the professional group which someone wants, or may, belong to (Crocetti et al., 2013; Sims, 2011; Trede et al., 2012). Based on Erikson's theory, Marcia (1966) indicated that developing a PI by entering into a reciprocal relationship with society has to be done in such a way that someone will still experience their authentic self. In line with this theory, recent research has shown that recognizing who one is helps with the development of a PI (Friesen & Besley, 2013), and that a strong personal identity helps the individual establish a strong PI too (Paterson, Higgs, Wilcox, & Villeneuve, 2002). Based on Lawler's theory of identity formation, Trede et al. (2012) outlined the formation of a PI using three steps. The first step for novice professionals to develop a PI is through acquiring knowledge, skills and determining the norms of their future professional group. Subsequently, the second step builds on the first by altering the professional's identity and forming the starting PI. The third step is to join the profession and identify with the profession. The latter means that their identity is

expanded through a PI. What remains unclear in this theory, and in research, is what it takes to begin this first step. For example, why is this process faster for one student than for another student? What is the identity characteristic of the students who go through this process faster than other students? What resources does this student have and use? Much is still unknown in this area. Researchers have indicated that there is a scarcity of articles examining the development of PI in higher education (Trede et al., 2012). Moreover, there is little quantitative research that focuses on social work students and the formation of their PI. What is known, however, comes from a research group from Israel where 160 social work students took part in a study (Levy et al., 2014; Shlomo et al., 2012). Three factors appeared to have a direct relationship with the PI in the social work students, namely: the student's satisfaction with supervision, personal values (Levy et al., 2014; Shlomo et al., 2012) and empathy (Levy et al., 2014). In the 2012 analysis, social values, self-discrimination and empathic involvement only contributed to the development of PI in relation to the degree of satisfaction that they had with their supervision (Shlomo et al., 2012). When reviewing step 2 of the PI formation process, by Trede et al. (2012), it provokes the question to what extent are the students' identity changes through the formation of a PI? And how can one influence the PI of a student? How can higher education support students going through this PI formation process? Which teaching method can ensure that students go through these three steps most smoothly?

Critical reflection

To strengthen a student's PI, reflection is an important method exploited in higher education (Adams, Ari, Cleaves, & Gong, 2019; Graham, 2017; Kelchtermans, 2009; Trede et al., 2012; Vloet, Jacobs, & Veugeliers, 2012). Higher education establishments strive to educate their students to become critically reflective professionals. Critical reflection means that students are aware of their professional actions, can explain and achieve deeper meaning, and make better decisions in future situations (Alsina et al., 2017; Graham, 2017; Mann et al., 2009). Critically reflective professionals are professionals who can review their actions across various perspectives (Alsina et al., 2017; Wald, Borkan, Taylor, Anthony, & Reis, 2012) and examine their underlying values, norms and (pre) judgments (Alsina et al., 2017; Graham, 2017). The global standard for social work education specifies that study programs must train their students to become critically self-reflective professionals (Sewpaul & Jones, 2005). During this critical reflection process, an individual and the collective actions of social workers are analyzed from the perspective of public opinion, politics or governmental policy (Kloppenburger et al., 2018). Social work students themselves indicated that critical reflection not only leads to a stronger PI, but also an increase in self-awareness and the ability to transform theory into practice (Whitaker & Reimer, 2017). Four levels of reflection can be distinguished in reflective education, from descriptive writing, to descriptive reflection, general reflection and critical reflection (Alsina et al., 2017; Kember, McKay, Sinclair, & Kam Yuet Wong, 2008; Mann et al., 2009). Interesting to

investigate is the current level of reflection on which students in higher education reflect in relation to their PI, and how the critical reflection process can be further utilized in combination with autobiographical reflexivity.

Autobiographical reflexivity

Reflexivity is central in narrative methods; students reflect on their identity through multiple layers and perspectives and explore how this effects their PI, while comparing the past, present and future (Dickinson, Fowler, & Griffiths, 2020; Layen, 2015; Lengelle & Meijers, 2014; Lim, 2011; Miehl & Moffatt, 2000; Spector-Mersel, 2016). Reflexivity enhances someone's (internal) dialogue with themselves, and others, so that written and/or oral dialogue is of added value to someone's PI (Evans, 1998; Kelchtermans, 2009; Lengelle, Meijers, & Hughes, 2016; Miehl & Moffatt, 2000). The writing process is dialogic in nature; when someone writes, there is a tendency to focus on a reader or (fictional) audience, or even to engage in an imaginary conversation with oneself or others. Secondly, the words speak back; when one reads their written story, they become an observer in the construction of their own story (Lengelle, 2012). As shown in the section on PI, the student's personal characteristics are important for forming a strong PI (Levy et al., 2014; Shlomo et al., 2012). Methods of reflexivity that attempt to train students with a strong PI through the premise of their identity are narrative methods, such as storytelling, narrative career counselling, career writing, Life Story Reflection and autobiographical writing (Kelchtermans, 2008; Layen, 2015; Lengelle et al., 2016; Lengelle et al., 2013; Moenandar & Huisman, 2019; Spector-Mersel, 2016). Creating a life story through narrative methods is seen by many as an important way to construct a (professional) identity. It is perceived as a permanent process in which the meaning of past events and experiences is shaped, changed and, again, merged as a whole through life choices (Fox & Videmšek, 2019; Lengelle et al., 2016; Lim, 2011; Spector-Mersel, 2016; Westerhof & Bohlmeijer, 2014).

Spector-Mersel (2016) shows how reflexivity can add value to reflection: *'Insights emerged in reflection in or on action regarding a student's feelings toward a single-mother client might be far more enlightening if combined with a life-story-based comprehension concerning his or her implicit assumptions about women's development'* (p. 12). Critical reflection is therefore more focused on reflecting on an event in the present, whereby the different (professional) identity layers of a person, within a specific situation, are not broadly analyzed. In this thesis, autobiographical reflection and autobiographical reflexivity are used as terms to indicate reflexivity.

In current research literature, the importance of linking interrelationships between identity conceptualizations from adolescence to adulthood is evident (Crocetti et al., 2013). However, a review of students in their late adolescence exploring how their lives have been so far, and the reconstruction of their (professional) identity, through narrative

interventions has not received much attention in the scientific literature. Narrative methods can lead to a stronger PI and support, and encourage, the student to reflect critically (Lengelle et al., 2013, 2014; Lim, 2011; Moenandar & Huisman, 2019; Roberts, 2019; Spector-Mersel, 2016). Though, most of these studies are theoretical or qualitative in nature, or do not target social work students.

Although the relationship between self-reflection and self-understanding has long been assumed, this has only been scientifically proven more recently. Research conducted by Stein and Grant (2014) has demonstrated this evidence, and also indicated that dysfunctional behaviors and thoughts can disrupt this relationship in students. When designing a narrative method for students in higher education, it must avoid only investigating negative events that have been experienced by students, and should not continuously analyze why the negative events occurred in the first place and how bad they were (Lengelle, Luken, & Meijers, 2016; Stein & Grant, 2014).

Persuasive Technology (PT)

In recent years, research has focused on the way in which students can remain motivated and involved when using an online module within a blended learning course (Bliuc, Goodyear, & Ellis, 2007; De George-Walker & Keeffe, 2010; López-Pérez, Pérez-López, & Rodríguez-Ariza, 2011; López-Pérez, Pérez-López, Rodríguez-Ariza, & Argente-Linares, 2013). One way to increase students' motivation and involvement is through the use of PT. PT enables digital resources to influence behavior and attitudes. Interaction with an online module, and/or with a professional, is an important aspect within web-based interventions and can be stimulated through PT (Behringer et al., 2013; Kelders et al., 2012; Oinas-Kukkonen & Harjuma, 2009). The Persuasive Systems Design-model (PSD-model) by Oinas-Kukkonen and Harjuma (2009) classifies technology according to the persuasive functions it can fulfill in the following categories: support in the primary task, support in dialogue, social support and credibility support. This includes communication between the teacher and student (computer-mediation combination), as well as communication via a computer-controlled resource (computer-human combination) where human interaction is simulated. Table 1, 'Persuasive Systems Design- model', illustrates the techniques mentioned by Oinas-Kukkonen and Harjuma (2009) that can be used in each of the categories. Persuasive techniques are already widely used within eLearning and eHealth settings and although initial results in education are promising, little is actually known about their use and influence in education (Behringer et al., 2013). Within this PhD research, it is expected that PT will increase the students' motivation, and thus increase the effect of the reflection process. This could then lead to a strengthened PI in the student population.

Table 1 ‘Persuasive Systems Design-model’ (Oinas- Kukkonen & Harjumaa, 2009)

Persuasive Systems Design-model			
Primary task support	Dialogue support	Credibility support	Social support
reduction, tunneling, tailoring, personalization, self- monitoring, simulation, rehearsal	praise, rewards, reminders, suggestions, similarity, liking, social role	trustworthiness, expertise, surface credibility, real-world feel, authority, third- party, verifiability	social learning, social comparison, normative influence, social facilitation, cooperation, competition, recognition

Participatory design

In a participatory design, various disciplines come together to design an ICT product, where their specific knowledge and experience can be included and so that their individual needs regarding this product can be considered (Ruland, Starren, & Vatne, 2008; Sanders & Stappers, 2008; Simonsen & Hertzum, 2012). The following disciplines may be considered in education: policy officers, educationalists, instructional designers, teachers and professionals within the field. End users in education are the students. Involving end users when developing a blended learning course increases student motivation and engagement, as the students’ goals can then be met by the course (Kelders et al., 2012; Van Velsen, 2011). As there is extensive diversity across disciplines, the implementation of a participatory design encourages negotiation and the search for a shared consensus to bridge any conflicting interests (Booker & Goldman, 2016).

By using an iterative approach to a participatory design, it becomes possible to discuss and evaluate choices from a previous iteration and, where necessary, change these choices. There are two ways to develop and evaluate the technology: initial design and real use evaluation (Simonsen & Hertzum, 2012). Forms of initial design include low fidelity prototypes (e.g. paper based); computer-stimulations; mock-ups; working prototypes; wizard-of-Oz prototypes; demonstrating the system. Forms of real use evaluation are observation or evaluation in an artificial environment like a laboratory; and observation or evaluation in a real life setting (Van Velsen, 2011). Both experts and end users can then be involved in the evaluation process.

OUTLINE DISSERTATION

This doctoral research comprises of a design phase, using a participatory design, where the emphasis is on the design of a blended learning course; and an implementation phase, where the blended learning course is executed. Prior to this, there was an orientation phase. The three phases, all of which contain an evaluation, are discussed below and are visualized in Table 2.

Table 2 Three phases: Orientation, design and implementation

Orientation and evaluation	<ul style="list-style-type: none"> • Orientation and experimenting with autobiographical reflexivity in higher education <ul style="list-style-type: none"> - six classes with 4th year students - self reported evaluations students • 2012 - 2015
Participatory design and evaluation	<ul style="list-style-type: none"> • Participatory design: design of Course Professional Identity based on: <ul style="list-style-type: none"> - initial design: workgroup - article 1 - real use evaluation: evaluation prototype Course - 4th year students - article 2 • 2015 - 2016
Implementation and evaluation	<ul style="list-style-type: none"> • Implementation Course Professional Identity - autobiographical reflexivity in a blended learning course with persuasive technology <ul style="list-style-type: none"> - 2nd year Social Work students - construct of PI reflection reports (article 3); construct of PI questionnaires (article 4); RCT (article 5) • 2016 - 2018

Phase 1: Orientation and evaluation

This doctoral research was preceded by an orientation phase in which the doctoral candidate, in the role of teacher and developer, worked in collaboration with colleague Frank Wijering to apply autobiographical reflexivity when teaching the students. The method ‘*The stories we lived by*’ (Bohlmeijer & Westerhof, 2010; Korte, Bohlmeijer, Cappeliez, Smit, & Westerhof, 2012) was used which focuses on autobiographical reflexivity. This method, originally developed for older people to reflect on their lives to reduce depressive symptoms at an early stage, has been proven effective. In addition, research has indicated that this intervention has been effective in reducing anxiety symptoms and in enhancing positive mental health (Korte et al., 2012). However, there appears to be insufficient literature about this method in terms of education and young adults. Since this method is based on accepting the past and finding benefits associated with past experiences, people are subsequently encouraged to exploit these previous strengths in future situations. When students reflect positively on their past and become confident and optimistic about the future, this results in a Balanced Time Perspective which is associated with enhanced well-being (Boniwell, Osin, Linley, & Ivanchenko, 2010; Webster, 2011).

Throughout Saxion’s lessons (via the Minor Spirit, a module which covers spirituality, religion and the art of living), the specified method ‘*The stories we lived by*’ was taught using a book format (Bohlmeijer & Westerhof, 2010). This phase lasted three years, and the two teachers lectured 12 classes with 16 students each per class using a parallel process. There were seven Face-To-Face-Classes, and after each class the students would write

about parts of their lives and subsequently reflect. This was inspired by Bohlmeijer and Westerhof's (2010) method.

Every six months the course was evaluated with the students. The majority of students indicated that the course strengthened their PI (Engelbertink, 2015a). These evaluations further suggested the opposite of rumination: students recognised their strengths from the past and began to look at the future with more confidence. Additionally, the social work students found the course particularly useful when it was utilised earlier in their studies. Knowing this information, Phase 2 Design and Phase 3 Implementation were able to start (Table 2).

Phase 2: Participatory design and evaluation

Chapters 2 and 3 describe the design phase of this thesis.

Chapter 2 describes the design of the blended learning course which specifically focuses on autobiographical reflexivity in second year social work students, using a participatory design and PT. Several forms of initial design were used (Van Velsen, 2011). During this design phase, it was recognised that the course should be made suitable for a target group of second year social work students. This was due to the tone and approach used when exploring a sample of elderly people with mild depression, as this would not be considered appropriate for the target group of students. In addition, the main objective of the course within this research was to assist students in strengthening their PI. This goal differs from the original method used by Bohlmeijer and Westerhof (2010). From Saxion's need to innovate education via technological means, this inspired the idea to develop a blended learning module with PT.

Chapter 3 describes the real use evaluation (Van Velsen, 2011) of the former blended learning course with the end users (fourth years students). These students received the blended course as part of their regular curriculum. With this data, the blended learning course could be improved so that it would benefit the implementation of the course in Phase 3 of the research.

Phase 3: Implementation and evaluation

Chapters 4, 5 and 6 describe the outcomes of the implementation phase. Chapters 4 and 5 focus on the construction of PI based on various research methods, and chapter 6 focuses on the way in which PI and various resources develop during an academic year.

In chapter 4, the way in which students reflect on five components (self-image, self-esteem, task perception, job motivation and future perspective) of PI is explored. The aim of the study was to determine the extent to which students reflect on these five components

and the reflective level that they do this at. 25 reflection stories from Spanish and Dutch students, across five different study programs, have been qualitatively analyzed and quantitatively evaluated. This has provided more insight into the identifying and self-evaluating PI components in the student population.

The aim of chapter 5 is to gain insight into how the PI of social work students is related to the processes ‘commitment’ and ‘exploration’, and the related PI statuses. In addition, it examines how the resources, related to student PI development, relate to this PI. In this cross-sectional study, 382 social work students (Bachelor level) completed a questionnaire.

The fifth and final study is described in chapter 6. The added value of autobiographical reflexivity and PT, in comparison to critical reflection alone, is examined in the blended learning course. The main outcome measure was PI. A randomized control trial was carried out with three measurement points (baseline, post-course, follow-up) and three conditions: critical reflection; critical reflection and autobiographical reflexivity; critical reflection and autobiographical reflexivity with the use of PT. The study examined effectiveness (questionnaires, reflection reports), evaluations (focus groups) and persuasiveness (questionnaires) among 187 Bachelor social work students.

This dissertation has been completed by means of an overall conclusion on the main results and, on that basis, presents a conceptual model about the possible development of a PI in students in higher education settings. Further, weaknesses within the thesis are discussed and recommendations for further research are made.

2

Participatory Design of Persuasive Technology in a Blended Learning Course: a qualitative study

Engelbertink, M.M.J., Kelders, S.M., Woudt - Mittendorff, K.M. & Westerhof, G.J. (2020). Participatory Design of Persuasive Technology in a Blended Learning Course: a qualitative study. *Education and Information Technologies*, 25, 4115- 4138.

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ABSTRACT

Whereas blended learning can deliver several benefits to students in higher education, their achievement depends on how exactly it is designed. A participatory design is recommendable to try to meet the needs of all stakeholders. The Persuasive System Design-model can be used to motivate students during the online part of the course. In the design there has to be an optimal blend between the different parts of the course. A participatory design is used to design a blended learning course of autobiographical reflection for second year social work students. The blended course was developed in six meetings with a working group, including all stakeholders (students, teachers, instructional designers, educational experts and professionals). Almost all techniques of the first three categories of the PSD-model were used in the design of the blended course. None of the techniques of the fourth category 'Social Support' of the PSD-model were used, mostly because they touch on the personal process of autobiographical reflection. It was considered helpful for teachers to have a protocol that assists them in blending the different parts and this in turn could stimulate students to be engaged in the different parts of the blended learning course. In this study, we found that the participatory design approach may lead to an engaging blended learning course that encourages the use of persuasive technology with an optimal focus on content, target group, context and ethical aspects of the blended course. We suggest adding a new fifth category 'Blended Learning Support'.

INTRODUCTION

Blended learning is a trend within higher education. It involves the use of Face-to-Face Classes (FTFC) supplemented with online learning technology where this can be used synchronously or asynchronously (Garrison & Kanuka, 2004; Kiviniemi, 2014; Lam, 2014; López-Pérez, Pérez-López, & Rodríguez-Ariza, 2011). In this article we focus on asynchronous application of blended learning. Blended learning combines the benefits of FTFC and eLearning in order to create a motivating, as well as efficient, learning environment (De Jong, Savin-Baden, Cunningham, & Verstegen, 2014; Lam, 2014; Søraker, 2015; Uğur, Akkoyunlu, & Kurbanoglu, 2011; Vo, Zhu, & Diep, 2017). Although blended learning challenges the self-regulation skills of students (Monk et al., 2020), blended learning might have two promising advantages: it provides a blended learning approach which students prefer, and it can lead to better learning outcomes.

Students have expressed eminently positive views regarding blended learning and that they prefer it to traditional lessons alone (Kiviniemi, 2014; López-Pérez et al., 2011; Rovai & Jordan, 2004; Uğur et al., 2011). Online courses allow the students to gather knowledge at their own pace, with time to clarify any difficulties they have experienced in later FTFC (Kiviniemi, 2014; Lowell Bishop & Verleger, 2013). An additional benefit of FTFC to an online course is the social interaction it provides (Uğur et al., 2011). Teachers are able to motivate their students in blended learning, in turn resulting in lower dropout rates in comparison to eLearning (López-Pérez et al., 2011).

Moreover, blended learning seems to offer an effective and efficient learning environment, eliciting greater learning outcomes (De Jong et al., 2014; Garrison & Kanuka, 2004; Kiviniemi, 2014; López-Pérez, Pérez-López, Rodríguez-Ariza, & Argente-Linares, 2013). Regarding learning outcomes, some studies say that blended learning exceeds the traditional FTFC approach (Bernard et al., 2014; Kiviniemi, 2014; López-Pérez et al., 2011; Vo et al., 2017). The latter three studies indicate that due to blended learning the involvement of students is being increased, that the students' learning process is being improved because of the online activities and that students are spending more hours on learning, and these factors together have a positive effect on their course grades. On the other hand, Monk et al. (2020) indicate that students' grades do not increase through blended learning, other factors such as the grade for the test before and gender (in favor of men) were found to have an effect. From the many questions that still exist to arrive at a good analysis of all the active factors within blended learning, Keengwe and Kang (2013) indicates that much research is still needed that combines traditional conceptual frameworks with qualitative research. Teachers play an important role in the design and implementation of online learning environments to ensure students fully benefit from the potential advantages of blended learning (McNaught, Lam, & Cheng, 2012; Santa-Rosa, 2012). Schneider and

Preckel (2017) conducted a systematic review of meta-analyses on factors associated with achievement in higher education. The most important factor illustrated, that is under the control of teachers, was the amount of time and effort put in to preparing and designing the course, which related to the specific learning goals, content and student population. This is particularly key in blended learning, as designing and implementing an engaging blended learning environment is a rather complex task, with many factors potentially being overlooked (Bernard et al., 2014; Ma, Han, Yang, & Cheng, 2015). There is no ‘one size fits all’ solution; the design ‘depends on [the] content and learning objectives, [as well as the] target group of participants and available facilities’ (De Jong et al. 2014, p. 287). Although blended learning has several benefits to students in higher education, its efficiency predominately depends on the exact design of a blended learning course. This paper discusses the design of a blended learning course in a participatory design that involves various stakeholders (such as students, teachers, educational experts and ICT specialists). In this way, we hope to fulfill the needs of all stakeholders. We analyze the use of persuasive technology (PT) to create a blended learning environment that motivates students, further examining how different elements of the course can be blended in an optimal way.

Persuasive technology

It is indisputable that students need to engage with an online environment to be able to make optimal use of its content (Bernard et al., 2014; Henrie, Halverson, & Graham, 2015; Ma et al., 2015; Santa-Rosa, 2012; Van Gemert-Pijnen, Kelders, & Bohlmeijer, 2014). However, student engagement can be difficult with multiple factors potentially impeding engagement in blended learning (Holley & Oliver, 2010). PT is technology that can be used for instance in an online course to strengthen, change or influence the individual’s behavior and attitudes avoiding use of coercion or deception (Fogg, 2003; Oinas-Kukkonen & Harjumaa, 2009). It is often used in areas of blended healthcare, which are found online, encouraging clients to engage with their treatment (Kelders, Kulyk, Gemert-Pijnen, & Oinas-Kukkonen, 2015; Oinas-Kukkonen & Harjumaa, 2009). PT additionally has potential within the educational field, aiding students’ engagement with their learning. However, its use is still relatively new in this field (Behringer et al., 2013; Burri Gram-Hansen & Ryberg, 2013; Devincenzi, Kwecko, Toledo, & Mota, 2017; Fogg, 2003; Mintz & Aagaard, 2012; Ng, Bakri, & Rahman, 2016).

The Persuasive Systems Design - model (PSD - model) can be used to develop an engaging blended learning environment (Oinas-Kukkonen & Harjumaa, 2009). This PSD - model includes four technological support categories: primary task support; dialogue support; system credibility support; and social support (see Table 1). In total, these categories contain 28 different techniques which increase persuasiveness. An example of a technique used in the ‘primary task support’ category was personalization, as the computer may

speak to the student stating their name. In the ‘dialogue support’ category it may generate rewards, where students are provided with symbols - such as a star, medal, thumb – as an act of encouragement upon completing part of an online module. The ‘system credibility support’ category has a real-world feel to it, in that students receive information about the author of the course. This can facilitate a sense of reassurance and comfort for the students that there is a legitimate person behind the course. Finally, a technique used in the ‘social support’ category was social comparison. This would allow students, for example, to view the other student’s progress online. However, to use PT appropriately and successfully in a blended course online, the designers must be fully aware of the context, the content and the ethical aspects (Burri Gram-Hansen & Ryberg, 2013; Oinas- Kukkonen & Harjumaa, 2009). Our design approach will be further discussed in the following paragraph, addressing and gaining a more detailed understanding of these factors.

Table 1 Persuasive Systems Design-model (Oinas- Kukkonen & Harjumaa, 2009)

Persuasive Systems Design- model			
Primary Task Support	Dialogue Support	Credibility Support	Social Support
Reduction, Tunneling, Tailoring, Personalization, Self- monitoring, Simulation, Rehearsal.	Praise, Rewards, Reminders, Suggestion, Similarity, Liking, Social role	Trustworthiness, Expertise, Surface credibility, Real- world feel, Authority, Third- party, Verifiability	Social learning, Social comparison, Normative influence, Social facilitation, Cooperation, Competition, Recognition

Participatory design

An approach that may assist in creating an engaging blended learning environment, with the appropriate use of PT, is a participatory design. A participatory design is a specific form of human-centered design, and an interdisciplinary approach used to develop ICT products that try to fulfill the needs of all participants (Bratteteig & Wagner, 2016; Ruland, Starren, & Vatne, 2008; Sanders & Stappers, 2008; Simonsen & Hertzum, 2012). Research has shown that human-centered designs have demonstrated a positive effect on both user satisfaction as well as fulfilling the user’s values and needs (Bano & Zowghi, 2015; Van Gemert-Pijnen et al., 2011).

Participatory design implies that different stakeholders, including designers, researchers, teachers and students, are partners within the design process. Due to the different stakeholders, a participatory design therefore has the character of negotiating, mediating and seeking consensus to reach a decision (Booker & Goldman, 2016). Several authors have advocated involving end users in a participatory design within the educational field for several reasons: to enhance partnership and equality among all participants (Booker & Goldman, 2016; Bovill, 2014); to use expertise and learn about the experience of students

(Blau & Shamir-Inbal, 2018; Könings & McKenney, 2017; Santa-Rosa 2012) and teachers (Cha & Ahn, 2019); to support students in their learning of participatory design practices (Frauenberger, Good, Fitzpatrick, & Iversen, 2015); and to develop feasible materials and activities to optimize the implementation in the specific educational field (Blau & Shamir-Inbal, 2018; Cober, Tan, Slotta, So, & Könings, 2015; Song & Oh, 2016). As a result of a participatory design, it can demonstrate improved engagement by different participants (Blau & Shamir-Inbal, 2018; Bovill, 2014; Cober et al., 2015) and overall improvement of student performance (Bovill, 2014).

RESEARCH QUESTIONS

In short, a participatory design of a blended course may contribute to the fulfillment of the needs of students, teachers and other stakeholders. PT may be an element that contributes to the engagement of students. In the long term, the combination of a participatory design and PT techniques may lead to a successful implementation of the blended learning course, possibly enhancing the motivation of students and their learning outcomes. The context of this blended learning course is an autobiographical reflection, used to strengthen the professional identity of social work students (Bachelor's degree), which will be explained in the setting of our method section.

Two research questions will be addressed in this design study:

1. Which of the PT techniques of all four categories of the PSD - model are suitable to apply in the online element of the blended learning method of autobiographical reflection for second-year social work students?
2. What are the needs of students and teachers according to the stakeholders to achieve an optimal blend between the FTFC and the online element of the course?

METHOD

Design

Based on a participatory design approach, six meetings with the working group, made up of stakeholders (see the participants section), were held in which the design of the blended course was discussed. Each meeting took approximately two hours and the meetings took place over a period of six months. The number of meetings was determined based on the content, as we wanted to discuss several subjects in an iterative process, and on the available time before the lessons would commence where the course would be tested. The online part of the course was designed by the first author and an instructional

designer using Articulate Storyline, which is an interactive eLearning software. The time investment by the first author amounted to three days per week over a period of four months and to three hours per week for the instructional designer.

Setting

The study took place in the School of Social Work of Saxion, University of Applied Sciences. The School of Social Work decided to develop a course, named 'Autobiographical reflection', for second-year social work students which would contribute to the development of their professional identity. Earlier experiences, which were positive overall, using a similar course for fourth-year students of different educational programs inspired this study's aims. That course was part of a minor degree, which focused on exploring philosophical questions on a personal and professional level (Engelbertink, 2015a). The course consisted of FTFC, peer groups and homework with the use of the self-help book 'The Stories We Live By' (Bohlmeijer & Westerhof, 2010). This method was developed for middle-aged and older people to review their life, in order to alleviate symptoms of depression and increase a feeling of well-being. The method has proven to be effective for middle-age and older people in both a face-to-face and online setting (Korte et al., 2012; Lamers, Bohlmeijer, Korte, & Westerhof, 2015; Westerhof, Lamers, Postel, & Bohlmeijer, 2017). After seven FTFC of one-and-a-half hours each, the students came together independently in peer groups (also for one-and-a-half hours) to interview each other discussing the topics that were included in their homework. This way, the students supported one another in the transition from FTFC to the homework element of the course. In order to ensure a high standard of autobiography, a time investment of two hours per week was requested to be spent on the online course. Additionally, there were also students on the course who spent four hours doing their weekly homework.

This initial course was the starting point for the current study. A new blended course was developed based on three core elements. The first constituted new technological developments in the educational field. Saxion started to endorse the vision that ICT can have a key function in organizing personal and adaptable education (Bleumink, 2016). The online course 'The Stories We Live By' (Westerhof et al., 2017), based on the book with the same name (Bohlmeijer & Westerhof, 2010), was used in the initial course and was the foundation for the new online element of the course for students. Secondly, the original intervention was primarily aimed at decreasing symptoms of depression in middle-aged and older people. However, it was not tailored to the target group 'students'. Thus, the new course had to be written from the perspective of second-year social work students and needed to have a professional aim that aligned with their phase of education (awareness and reinforcement of the professional identity of social work students) (Engelbertink, 2015b). Thirdly, students found it difficult to put in the time and effort to complete their homework. Students had to write their autobiography which took them, on average,

approximately 2 h per week over a course of 6 weeks. At times, some students would forget to do their homework and some wrote their autobiography after the course, meaning they were unable to actively participate during the FTFC. Moreover, some students worked on their homework for only half an hour per week, thus preventing the high quality of work that teachers expected. Social work teachers expressed, from their own experiences with the students, that second years were less likely to be motivated to do their homework than fourth-year students. To facilitate students' motivation to complete their homework and autobiographies over a weekly two-hour period, the online module must be interactive and encouraging. PT could support students in completing their homework in an effective and cooperative way.

Participants

The working group of stakeholders (N=17) consisted of (former) students, teachers, ICT specialists, educational experts, and social workers. All participants were female, with the exception of two male teachers. The students were recruited via an email from their career supervisor. In this e-mail, students were asked if they were interested in participating in the development of a blended learning course dealing with autobiographical reflection. There was no financial compensation for the students to participate. The students therefore made use of their free time in their curriculum and were rewarded with a course credit. A former student who participated was asked to do so by the first author, since she had participated in the first author's lesson on autobiographical reflection and had a positive, critical attitude towards the method. The social workers were recruited from the network by the first author on the basis of their knowledge about reflection by social work interns. The teachers were also recruited by the first author due to their experience in teaching autobiographical reflection. In addition, she specifically asked a male teacher in order to achieve a more balanced male to female ratio. The educational experts and the IT specialists were professionals affiliated with the academy where the research took place. In case this was needed, their manager gave the professionals consent to participate. The researcher (first author) coordinated the working group and kept minutes of each of the six meetings.

Below is an overview of the characteristics of the participants:

- 4 second-year Bachelor students in social work. Age: 19, 19, 20, and 21 years.
- 1 former student who participated in the earlier course in the Minor. Bachelor degree. Age: 25.
- 2 teachers who taught the previous course in the Minor, Master degree and Bachelor degree. Age: 41 and 50.
- 2 teachers second-year social work. Bachelor degree and Master degree. Age: 37 and 58.
- 2 ICT specialists (one Instructional Designer and one policy officer ICT). Both Master degrees. Age: 26 and 37.

- 1 developer part-time education. Master degree. Age: 55.
- 2 educational experts. Both Master degrees. Age: 49 and 55.
- 3 social workers (specialism: secondary school education; youth revalidation; coaching professionals). All Bachelor degrees. Age: 35, 43 and 59.

Materials

Table 2 presents an overview of the content from the six meetings, stating their aims and working methods. During the first meeting participants were informed about PT and autobiographical reflection. The participants made two SWOT analyses (Strengths, Weaknesses, Opportunities, Threats): one about using PT in the online part of the blended course, and the other regarding applying autobiographical reflection to second-year social work students. The participants wrote their comments on several sticky notes. All sticky notes were mounted on a flipchart and then discussed.

Table 2 Content of the participatory working group

Meeting	Aim	Working method
1	Having the interest and engagement of the participants to a blended learning course autobiographical reflection with the use of PT. Insights in the SWOT's of the blended course.	SWOT analyze of adapting PT in online part SWOT analyze of applying autobiographical reflection by second year social work students.
2	Determine the goals, rewriting the texts and testing paper based prototype (content, including screenshots)	Testing paper based prototype
3	Determine the PT	Description PT
4	Testing working prototype (content, lay-out)	Testing working prototype
5	Testing working prototype (PT, blended learning)	Testing working prototype
6	Testing final prototype behind the computer (content, lay-out, PT and blended learning)	Testing final prototype

During the second meeting, the minutes of meeting 1 were evaluated and adjusted where necessary. Next, the goals of the course 'autobiographical reflection' for second-year social work students were determined. Lastly, the participants read the text from the online version of the course 'The Stories We Live By' (Westerhof et al., 2017). The first author made a paper-based prototype based on the existing online course. The working group members then gave input and feedback on the text and the screenshots. The four second-year social work students rewrote the text after session 2, which accommodated the wishes of the working group in making it suitable for the target group of students, with the goal of developing their professional identity, e.g. language, appropriate student examples, and length of the text of each theme.

For the third meeting, the first author made a description of the 28 techniques of the PSD - model and how each technique could be applied in the online section. See Table 3 to Table 6 in the results section for the descriptions of the various techniques as submitted to the working group. The participants discussed the techniques and then communicated any input and feedback in pairs.

In the fourth and fifth meeting, the working group tested a working prototype of the online aspect of the course on a computer. These prototypes were developed through the working group's input during previous meetings. The feedback on the prototype was given on paper by the participants in pairs or individually. They focused on: 1) content; 2) layout; 3) PT; 4) blended learning (how the online element can align with the FTFC).

During the final meeting with the working group, participants tested the final prototype with the complete user interface in pairs or individually. The prototype was distributed by Articulate Storyline throughout the Learning Management System Blackboard, and published to access through a web browser. Therefore, the users were led to a new webpage where the online element was displayed. All of the data entered by the students would be stored in the browser for 90 days, and then erased. The working group members tested the prototype and made comments on any mistakes that caught their attention. Similar to meetings four and five, they focused on: 1) content; 2) layout; 3) PT; 4) blended learning. Additionally, they answered some prespecified questions. Exemplar questions included: What do you think of the number of assignments (content); What do you think of the colors? (layout); What do you think of the icons that can be seen (star, thumb, medal, etc.) (PT); How can the teachers connect the lessons to the online module? (blended learning).

Procedure

In each meeting, an alternative date was set for respondents who were unable to attend the initial meeting. The first author chaired all of the meetings and coordinated the design of the course. An instructional designer and the first author created and altered the technical design of online aspects of the course using Articulate Storyline. It should be noted that this instructional designer was not part of the working group due to a staff change. -

Data analysis

The first two meetings were audio recorded. Minutes were noted and at the following meeting presented to the working group to check, giving the group an opportunity to communicate their feedback expressing their opinions or views. Throughout the other four meetings, the participants gave written feedback on several of the working prototypes in pairs or individually. The minutes and written feedback were analyzed and subsequently used to design the online element by the first author and the instructional designer. For this study, the minutes and written feedback were coded on the basis of four topics: course

content, lay-out, PT and blended learning. Coding was done both deductively (based on the topics above, and on pre-specified questions), as well as inductively (categorizing the explanations of the members of the working group). The minutes were used to keep track of the improvements that were desired and to see if the wishes of all stakeholders could be granted and if wishes were not contradicted during the meetings. Summaries of the coding are presented in the results.

RESULTS

Before we present the results, stating the preferences of the working group regarding the various PT techniques (research question 1) and blended learning (research question 2), first we shall briefly discuss the content and lay-out of the online course, as this partially determined the choice of which technique was used. As mentioned before, the content was tailored, with the course being rewritten, in order to develop the social work students' professional identities.

Content and lay-out

The first step that the working group took involved formulating a SWOT analysis, which applied autobiographical reflection to second-year social work students. The SWOT analysis identified the autobiographical reflection's potential, but also highlighted the need for support during the course for both students and teachers. Participants considered it very important that confidentiality was guaranteed while the students wrote their autobiography online.

During the second meeting, the working group read the text from the online version of the course, which contained six themes. Each theme of the course involved a writing part, where students were asked to express any positive and negative thoughts and memories they had experienced in their life, including factors related to their identity. Additionally, in the reflection task, students evaluated their (difficult) memories. In general, the working group found the assignments well-suited and relevant for students, with some adjustments being made in the reflection aspect of the course. The working group also found it desirable that the text was written from the living and experiential world of the students. With the written feedback from the working group members after the second meeting, the four second-year students rewrote the text of the six themes. This editing required adjustments in language, and examples from students' lives; these will not be described in detail to keep this paper succinct. The final editing was implemented by the first author.

During the final three meetings, the working group made suggestions for the lay-out, including alterations to: the shape and size of the rewards, the icons, the use of color, the

font, the text frames and the pictures. The participants found the photo of the existing online course depressing, since it was a black and white picture of a bare mountain landscape, leading to the choice of a more neutral image which was more relatable to the goal of the course (writing and reflecting). In appendix 1, several screenshots are included to give an impression of what the lay-out looked like in the online element of the blended course.

PT techniques

During the first meeting, the working group formulated a SWOT analysis to apply PT within the context of the blended learning course's autobiographical reflection. By using PT, the working group predicted that second-year social work students would become motivated and that the techniques could shape personalized learning, so that students received customized process guidance. The techniques were expected to prevent individuals from dropping out while writing their autobiography, to fit the world of young people and to establish a connection with fellow students. The challenges identified by the participants in the working group were on learning attitudes (resistance of students against digital working, PT becoming a 'habit', diminishing intrinsic motivation of students) and costs (developing the course was expensive and time-consuming). The participants wondered whether the course would be sufficiently personalized given the diversity of students.

In order to minimize these challenges, the working group expressed their belief in the importance of technology in serving as a supporting element of the FTFC, and never becoming a goal in itself. It should always be the student's responsibility for writing their autobiography. The working group did not want extrinsic motivation to disrupt intrinsic motivation. The techniques of the PSD - model should be applied in such a way that the external stimuli reinforce the content (and not just determine the motivation of the student). Students and ICT specialists saw more opportunities to apply PT, expressing a higher need for it, than teachers and professionals. Students and ICT specialists furthermore had more experience with previous online courses compared to teachers and professionals, so were able to bring this experience to the workgroup. As an example, one of the second-year students indicated that she had followed an online course in the previous year in which she could see exactly how far she was in the course due to a progress bar. She found this factor a highly motivational aspect of the course.

During the third meeting, the working group gave feedback on the description of the PT techniques and how they could be used in the online course (see Tables 3, 4, 5 and 6).

The working group considered all of the techniques from the first category 'primary task support' as encouraging and motivating for the students. Consequently, each technique was applied in the online element of the blended course, except for an aspect

of the ‘personalization’ technique, where students could design part of the online course themselves. Due to limitations elicited by the software used, this could not be implemented. Table 3 displays an overview of the working group’s preferences of PT and the choices that were made for the design of the prototype.

Table 3 Primary Task Support and design prototype

1. Primary Task Support		Preferences Working Group	Design Prototype
Reduction	Dividing assignments into themes.	Motivating	Applied
	Guiding students step-by-step through the assignments.	Motivating	Applied
Tunnelling	Students can’t go on with the next theme if they did not finish the previous one.	Motivating	Applied
Tailoring	Students can choose from assignments or information. Applied: choosing information.	Motivating	Applied
	Computer speaks to students with their own name.	Motivating	Applied
Personalisation	Students can design the online course by themselves, for example, choosing their own background photo, adding a motto.	Motivating	Not applied <i>due to the software</i>
Self-monitoring	Students can see their own progress.	Motivating	Applied
Simulation	Students are reminded during the assignments what these can give them.	Motivating	Applied
Rehearsal	Methods or techniques come back repeatedly.	Motivating	Applied

The techniques from the second category ‘dialogue support’ were also considered as motivational for students (see Table 4). However, the working group stressed that the techniques ‘praise’ and ‘rewards’ must be used to an appropriate extent, to prevent a learning environment that is dominated by extrinsic motivation. There was doubt among some teachers and professionals whether the right level of praise and reward could be found within the design. By repeatedly showing and discussing the applications of the praise and reward techniques, most participants agreed on the right frequency. ‘Reminders’ were applied in order to prompt students to complete their homework on a weekly basis. The students were reminded via email from their teacher to finish their homework for that week. The Articulate Storyline software does not provide the possibility to communicate between users. Due to this software limitation, the ‘social role’ technique was unable to be implemented, despite the members of the working group finding this technique motivating.

Table 4 Dialogue Support and design prototype

2. Dialogue Support		Opinion Working Group	Design Prototype
Praise	Students receive digital rewards such as compliments, digital awards or applause.	Motivating <i>well dosed</i>	Applied <i>well dosed</i>
Rewards	Students see pictures/symbols, like a star, medal, thumb when they complete a part of the online module.	Motivating <i>well dosed</i>	Applied <i>well dosed</i>
Reminders	Students receive reminders for making online assignments.	Motivating	Applied
Suggestions	Students can read tips for making the assignments.	Motivating	Applied
Similarity	Students can read example stories from former students.	Motivating	Applied
Liking	The lay-out is attractive.	Motivating	Applied
Social role	Students can communicate online with fellow students and teachers.	Motivating	Not applied <i>due to the software</i>

With the exception of one, all of the other techniques within the third category ‘System Credibility Support’ of the PSD - model were further considered motivating for the students (see Table 5). As the online element of the blended course was based on an evidence-based method and further developed by the working group, it would be provided in Blackboard. Therefore, ‘surface credibility’, ‘real-world feel’ and ‘authority’ should be guaranteed according to the working group. The working group stated that ‘third-party endorsements’ were a neutral technique that would not contribute directly to the students’ motivation. The working group argued that students were not susceptible to this. However, in the colophon of the online course, it was mentioned that the method was based on Bohlmeijer and Westerhof’s (2010) book.

Table 5 System Credibility Support and design prototype

3. System Credibility Support		Opinion Working Group	Design Prototype
Trustworthiness	The online course exudes reliability and credibility.	Motivating	Applied
Expertise	The online course exudes expertise and professionalism.	Motivating	Applied
Surface credibility	The online course must look competent and good at first sight. E.g. information about privacy policy.	Motivating	Applied
Real-world feel	Information about the author and developer of the method / online course gives the feeling that there is a real world behind the method.	Motivating	Applied
Authority	Is the method /online module associated with a quality mark? Are there national requirements about the method / online module?	Motivating	Applied
Third-party endorsements	Is information about the method / online module available via external sources (other websites or other teaching methods)? Controllable? Is the method embedded in another method? Does it link with other methods?	Neutral	Applied
Verifiability	The sources that the online course uses can be checked.	Motivating	Applied

In contrast to the other three categories of the PSD - model, the working group had a more differentiated view of the techniques in the fourth category 'Social Support' (see Table 6). Based on a democratic process, the working group decided that they did not want to apply the techniques 'social comparison', 'normative influence', 'social facilitation' and 'competition', due to the personal process that students went through when they reflected in their autobiography. These techniques would stimulate a competitive group process, which would be undesirable, according to the professionals in the working group. Some of the students and ICT specialists did notice opportunities in which they could apply these techniques, which would aid stimulation in the students, in the online element of the course. However, the majority of the working group stated that autobiographical reflection was an individual process, and the quality of the process must be a central factor. Social learning and recognition were two techniques used within the 'social support' category that could be used via the online course, according to the working group. Nonetheless, as mentioned before, the Articulate Storyline software did not provide the possibility for communication between its users, resulting in the social learning technique not being implemented. Further, the working group did not want to use the technique of recognition publicly (for example: selecting the 'student of the week' on the basis of who completed their homework on time, see Oinas-Kukkonen and Harjumaa (2009)). They preferred to add fictive examples of stories by students who achieved the behaviour. This made recognition comparable to the application of the technique 'similarity' (Category Dialogue Support), resulting in recognition being abandoned by the working group. Lastly, the working group considered the technique 'cooperation' as motivating, and through evaluation figured that it would be used best within peer groups as part of the blended course. In these groups, peers collaborated with one another via interviews regarding their life stories in preparation for the online course. This technique was not implemented within the online element of the course; however, it was used within the peer group. Thus, strictly speaking this cannot be described as 'persuasive technology'. Several PT techniques which were applied in the online course are displayed via screenshots in appendix 1.

Table 6 Social Support and design prototype

4. Social Support		Opinion Working Group	Design Prototype
Social learning	Students gain insight into what the online course delivers to others (what has it brought them in their development?).	Motivating	Not applied <i>due to the software</i>
Social comparison	Students can view the progress of other students online.	Not motivating	Not applied
Normative influence	Use peer pressure to change behaviour. Show a graph of students who have completed their homework every week or completely (disadvantage if the majority did not make the assignment, the student thinks: oh they have not finished it yet).	Not motivating	Not applied
Social facilitation	Receive online feedback from fellow students and teachers.	Not motivating	Not applied
Cooperation	Collaborate with fellow students in the online course.	Motivating	Not applied <i>But facilitated in peer group</i>
Competition	In addition to natural drive to work together, people also have a natural drive to compete with each other. You can compete per class or per subgroup who fully completed the homework in the time that precedes it.	Demotivating	Not applied
Recognition	Example stories of students who have also achieved the behaviour. E.g. by reading <i>fictive or anonymous</i> quotes from students who have also completed the teaching method (both focused on autobiographical reflection and focused on persuasive technology).	Motivating <i>If it is not public</i>	Not applied

Blended learning

The working group discussed how the three parts (the FTFC, the peer group and the online element) of the blended learning course could merge in order to strengthen one another. During meetings 5 and 6 with the working group, the participants stated that it was important that teachers followed a protocol assisting them in combining the three factors. According to the working group, the protocol should be as follows: within the FTFC (except for the first lesson) the lecturer would start their discussion regarding the previous week's homework. The students were also able to share their homework output with time being allocated for questions to be asked. After each theme was evaluated online, there was a request given that students were to bring (some of) their assignments to the FTFC. At one particular FTFC, the students were required to bring a specific assignment to be discussed. This assignment dealt with several of the components associated with the students' professional identity. As this subject was related to the professionalism of students, it was decided that the assignment would be discussed at the FTFC. According to the teachers, at FTFC meetings it was considered essential that students shared their homework, as it would facilitate more efficient learning by analyzing and evaluating each other's autobiographic reflections. When teachers demonstrated an interest in each

student's homework assignment, it provided them with encouragement and motivation to continue working on their homework each week. Similarly, according to the students of the working group, when their teacher did not discuss their homework with them, it resulted in students feeling unmotivated. Secondly, it was important that the students' experiences within their peer group were discussed. The students were motivated by their teacher to reflect on the discussions that took place during the peer group meeting, and what the added value was. Thirdly, the following week's theme, homework assignment (including when the peer group would meet), as well as encouragement from the teachers were discussed. This protocol in turn ensured an optimized blended learning process, argued by the working group. Although advantages were evident when the students expressed their life stories to one another, the working group wanted to ensure student confidentiality. Therefore, the students were able to choose if, or what, they wanted to share about their lives with their fellow peers and teachers at the FTFC meetings. After the sixth working group meeting, the first author wrote a manual for the teachers based on the discussions of the working group. It contained instructions which were specific to each lesson, the integration of each peer groups' experiences, and their written autobiographies (which emerged from the online module) with the FTFC.

CONCLUSION AND DISCUSSION

This study used a participatory design approach to develop a blended learning course that attempts to fulfill the needs of all stakeholders, by using appropriate Persuasive Technology (PT) to motivate students and that is trying to achieve an optimal blend between the different parts of the blended learning course.

In order to answer the first research question – “which of the PT techniques of all four categories of the PSD -model are suitable to apply in the online element of the blended learning method of autobiographical reflection for second-year social work students?” – it became evident that almost all of the techniques which were related to the first three categories of the PSD - model were considered suitable to apply to the design of the blended learning course. However, an interesting finding was that techniques, such as ‘rewards’ and ‘praise’ (both in category ‘Dialogue Support’), should be used appropriately to stimulate the intrinsic learning process according to the working group. The participatory design approach contributed to finding the appropriate frequency of each of the techniques through its iterative process. None of the techniques from the fourth category, ‘Social Support’, of the PSD - model were used. The working group expressed the importance that students were able to complete and reflect on their work at their own pace, avoiding stressful deadlines. Several of the techniques from the ‘Social Support’ category (‘social comparison’, ‘normative influence’, ‘social facilitation’ and ‘competition’)

were not implemented, as they were found to be in conflict with the personal nature of the autobiographic reflection process. The specific process which was used in order to reflect each student's life story was characterized by Spector-Mersel (2016) as a process of temporal distance and a holistic view towards life experiences. This was in sync with the working group's view that students must take time to write their own story without any interference from their fellow students.

The second research question was: "What are the needs of students and teachers according to the stakeholders to achieve an optimal blend between the FTFC and the online element of the course?". The working group stated it was vital to pay attention to the reciprocated fusion of the blended learning module's components. This meant that students had to focus when undertaking the online course, and pay attention in the FTFC and in peer group meetings. The study demonstrated that teachers having a protocol that assisted them in merging the different elements may help facilitate student's motivation to become engaged in the online course, with their peer groups, and in the FTFC. In sum, the teacher and fellow students could motivate the students to do their homework and PT can possibly ensure that students remain motivated while doing homework.

Czerkowski and Lyman (2016) stated that motivating students in online learning environments is a relatively new challenge in the educational field. We found that the PSD - model (Oinas- Kukkonen & Harjumaa, 2009) is a useful model for developing a rich online learning course which could motivate students, according to all stakeholders. This study further demonstrated that the PSD - model was a highly practical tool for both teachers as well as instructional designers, supporting the design process at a detailed level and providing guidance on how PT techniques may be applied within online learning.

We believe it is possible for the PSD - model to be integrated in to various existing instructional design models, specifically during the design phase, such as in the ADDIE model (Branch, 2009), and the E-learning Engagement Design framework of Czerkowski and Lyman (2016). The description of the 28 techniques, as shown in Tables 3 – 6, can be presented to the course designers. Our descriptions of the various techniques were specific to the autobiographical course, however, with minor adaptations, it would be possible for these to be implemented in other types of educational courses too.

When a blended learning module is designed using PT, then it is recommended that the PSD - model is extended introducing a fifth category named 'Blended Learning Support'. Adding this category will ensure that conscious attention is paid to the optimal merging of the various components throughout the design process within the blended learning module. Based on our findings, two distinct techniques were established: 'role of the teacher' and 'online course versus FTFC'. We can define '*Role of the teacher*' through

various definitions, including: ‘At the beginning of the FTFC, the teacher returns to the assignments made’ and/or ‘The teacher ensures there is sufficient coordination between the FTFC and the online course. E.g. the teacher prepares the students for the online course, such as demonstrating to them where they can find the online course and explaining some assignments’ and/or ‘The role of the teacher is written in a protocol’. Further, ‘*Online course versus FTFC*’ can be interpreted as: ‘Interaction with the FTFC must be sufficiently stimulated within the online course. E.g. indicating that students have to take their homework to FTFC’.

Because the working group showed a great deal of diversity in the type of training with various experiences with blended education, it was not always easy to reach one shared opinion. Our results illustrated that the participatory design was able to encourage equal partnership between all of the stakeholders and multiple allocated time slots were made available for evaluation discussions, both of which benefitted the design of the course. We were able to use and learn from the experiences from each of the stakeholders, as suggested by Bovill (2014). The students, teachers and social workers felt engaged within the working group, thus stimulating the development of educational materials. Students produced a surprisingly high standard of work and insight into their prior experiences with other online modules. The instructional designers also displayed their work experience with other online modules, adding more in-depth knowledge about possible technological features. The expertise of the field’s teachers and social workers further guaranteed it was possible to meet the didactic goals. Therefore, participatory design helped with focusing the content, the target group and the intrinsic motivation of the students when choices were made regarding how to use PT. To quote Burri Gram-Hansen and Ryberg (2013), we believe that our methodology allowed us to achieve ‘an appropriate and adaptive balance between the technology and the context in which [it] is applied’ (p. 29).

LIMITATIONS AND FURTHER RESEARCH

The working group consisted of 17 participants. In order to be more effective and to be able to organize a meeting where it was possible for all participants to be present, we would recommend establishing a smaller working group, e.g. with a maximum of 10 participants. Based on our experience, the ideal composition of a working group would be: three students, two lecturers, two professional field experts, an instructional designer and an educational policy maker and, optionally, a researcher. We expect that this would lead to the same substantive choices.

Despite our positive experiences with designing a blended learning course through the PSD - model, we must be careful when interpreting our findings, as it only involves

the design of one course. More research is needed and should be analyzed regarding the application of the PSD - model in higher education, such as on courses aimed at cognitive learning, or courses with a primary focus on collaborative learning. It would be interesting to determine whether the PSD - model would suggest using the same steps when undertaking the design of other blended learning courses.

The current design is part of a larger research project. In a subsequent study, we investigated the user's experience and adoption of PT, which clarify the extent to which students found the techniques motivational which were applied in the online element of the blended course (Engelbertink, Kelders, Woudt-Mittendorff, & Westerhof, 2020a). An RCT is then carried out to investigate which design of the blended learning course has the most effect. However, previous research has suggested that it is difficult to distinguish which people are likely to be motivated by specific PT strategies (Van Gemert-Pijnen et al., 2018). Therefore, a recommendation for future research is to investigate, for example, which type of students are motivated by online rewards and praises, as well as analyzing students who are lack motivation from the start or throughout the duration of the course. Furthermore, it would be interesting to study whether there is a difference in what students believe will motivate them, compared to the strategies implemented which actually motivate them throughout an online course. With this kind of information, the PT techniques can be facilitated in a more tailored manner avoiding causing any frustration, increasing the student's overall motivation.

Our choice to work with an existing ICT tool - 'Articulate Storyline' – to develop the online element of the course allowed the design process to be reasonably prompt (an external software developer was not needed nor relied upon). However, the online part of the blended course that we developed was a combination of what the stakeholders wished and what the technology (Articulate Storyline software) could offer. Throughout the development of designing the online course, there was a need for more advanced ICT tools. One factor which was absent was the opportunity for the user (student) to turn PT techniques (such as rewards, praise and interaction with fellow students) on or off, at the beginning of the online module. This would fulfill the working group's wish to offer personalized online courses to students, thus preventing the PT from impeding intrinsic motivation for some students.

To conclude, this study allowed us to gain further insight into the needs and wishes of the stakeholders concerning the use of PT techniques, giving us the opportunity to develop a blended learning course specifically for social work students involving these techniques. Thus, it can be argued that the combination of PT and a participatory design would be considered recommendable for designing a blended learning course for higher education students.

Appendix 1 'Screenshots online course'

Techniques shown in screenshot 1:

Category 1 Primary task support

1. Personalisation: the student fill in their name in the blue frame in the middle of the page. The computer speaks to the students with their own name during the online course. For example: 'Irene, in lesson 5, the teacher will look back with you on the homework of the theme Work and Care'. This comment shows also the blend between the online course and the FTFC.
2. Tunnelling: in the blue frame at the bottom right of the page you can read the instruction 'Continue reading' (in Dutch 'Ga verder'). This leads the student step by step in active form through the online course.

Category 2 Dialogue support

3. Praise: Bottom left on the page there is an audio symbol. Students get a applause when they finished the second theme.
4. In the upper right corner the students can click on the words Sources and Tips (in Dutch: Bronnen en Tips). In 'Word attachments' the student can read suggestions to make their homework on a weekly basis and in another document they get suggestions to reach more positive memories (Suggestions).

Category 3 System Credibility Support

5. Trustworthiness: In the upper left corner the logo of the institute
6. In the upper right corner the students can click on the words Sources and Tips (in Dutch: Bronnen en Tips). In 'Word attachments' the student can read about privacy policy (Surface credibility), there is some information about the authors of the method (Real-world feel), there is information about the original method of this course related to the online course (Third-party endorsements) and the sources that being used in the documents can be checked (Verifiability).

Screenshot 1

Techniques shown in screenshot 2:

Category 1 Primary task support

7. Reduction: the assignments are divided into themes (and the first four themes are divided into a writing part and a reflection part).
8. Tunnelling: Students can't go on with the next theme if they did not finish the previous one. An open or closed lock is shown that symbolizes access.
9. Self- monitoring: On the left there is a menu with an overview of all the content of the course. if the student has completed a theme, the text colour changes from black to grey.
10. Liking: The opinion of the students of the working group were decisive in the choices of the images.

Screenshot 2

Techniques shown in screenshot 3:

Category 1 Primary task support

11. Liking: The students can think about their professional development by means of a drag exercise.

Screenshot 3

The screenshot shows a digital interface for a learning activity. At the top, it says 'Uit je verhaal Thema 3' and 'Bronnen en Tips'. The main question is '12 b. Welk component van professionele identiteit is bij jou het sterkst ontwikkeld? (sleep je antwoord in het open vakje)'. Below the question is a large empty box for the answer. To the right of this box is a list of five components: 'zelfbeeld', 'zelfvertrouwen', 'taakopvatting', 'werkmotivatie', and 'toekomstperspectief'. A yellow arrow points from 'zelfvertrouwen' to the empty answer box. At the bottom, there is a navigation bar with a speaker icon, a '< VORIGE' button, and a 'VOLGENDE >' button. The text 'Thema 3 werk en zorg vraag 12b - 18' is also visible at the bottom right.

Techniques shown in screenshot 4:

Category 2 Dialogue support

12. Rewards: Students see pictures/symbols, like a star, medal, thumb when they complete a part of the online module. The symbols sometimes are shown in a short animation of 30 seconds.

Screenshot 4

3

Evaluating the value of persuasive technology and the role of teachers in a blended learning course for social work students

Engelbertink, M.M.J., Kelders, S.M., Woudt - Mittendorff, K.M. & Westerhof, G.J. (2020). Evaluating the value of persuasive technology and the role of teachers in a blended learning course for social work students. *Social Work Education, The International Journal*, 4 (3), 333-349.

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ABSTRACT

Introduction In this study, a blended learning course, designed using a participatory design approach and Persuasive Technology (PT), was evaluated by students and teachers. The use of a participatory design and PT may help facilitate a blended learning course that motivates students and supports teachers in this relatively new field.

Method Students received the blended course as part of their regular curriculum. Subsequently, interviews with students ($N = 10$) and teachers ($N = 3$), as well as a survey among students ($N = 35$) were held to evaluate the blended course.

Results Most of the PT which was implemented motivated the students to participate in the online course. The techniques suggestions, similarity, reduction, self-monitoring and tunneling seemed to specifically motivate students. According to the students, their teachers sufficiently integrated the online course with the Face to Face Classes. Teachers stated that they stimulated intrinsic motivation, supported students to complete their tasks and facilitated the blended learning process (integrating the different elements of a blended learning course).

Discussion/Conclusion The use of PT motivated students. Teachers played a crucial role in merging different aspects of the blended learning course. Future challenges would be the implementation of social support online.

INTRODUCTION

Blended learning, a current trend within higher education, can be defined as the integration of Face-to-Face-Classes (FTFC) combined with online activities used asynchronous (Garrison & Kanuka, 2004; López-Pérez et al., 2013). With the increasing possibilities of technology, blended learning has initiated didactic changes from teacher-driven to student-driven, increasing the possibility that students may become more active while learning online and also interacting more frequently with their teacher and fellow students online (De Jong et al., 2014; Poon, 2013). Due to the blended learning method, students can take advantage from both the benefits of FTFC and online learning. Within FTFC, there is social interaction (Uğur et al., 2011) and students can be guided by their teacher in forming their opinion (Todd et al., 2017). Whereas online learning offers a standardized learning environment regardless of the qualities of a particular teacher and the student can learn at any time, whereby the student can navigate back-and-forth to the learning content (Todd et al., 2017). Moreover blended learning offers a lot of potential in higher education, in that it allows students to learn at their own pace, in turn achieving better overall learning outcomes (Kiviniemi, 2014; Lowell Bishop & Verleger, 2013), and delivering an effective and well-organized learning environment (Garrison & Kanuka, 2004; Kiviniemi, 2014; Schneider & Preckel, 2017; Spanjers et al., 2015). The review of Bernard et al. (2014) confirms an increase in student achievement with blended learning compared to solely FTFC or solely distance learning methods. Additionally, the review by Todd et al. (2017), specifically focused on ethical courses, shows that blended learning method is preferable compared to the other methods due to the possibilities of adequately offering instructional and process-based content. Despite these promising results, it is a challenge to create a blended learning environment that engages and motivates students, as research has shown that one of the factors associated with students is that, at times, their self-regulation abilities may be insufficient (Bernard et al., 2014; Broadbent, 2017; Czerkowski & Lyman, 2016; Schneider & Preckel, 2017). Motivation is seen as a necessary, but not sufficient, precondition for engagement (Appleton, Christenson, & Furlong, 2008). In the present study, the term 'motivation' was used stating that students have a *'desire or willingness to do something; [or demonstrate] enthusiasm'* (English Oxford Online Dictionary). With the emergence of blended learning and online learning, the educational developer has been given the opportunity to use technology in order to keep students engaged and motivated throughout the learning process (Maple, Jarrott, & Kuyini, 2013). However, it is important to ask: How can technology be used to motivate students to work in an online course of blended learning? In this study, we attempt to answer this through evaluating a blended learning course for social work students who made use of Persuasive Technology (PT) (see next paragraph). This research attempts to fill a gap in research associated with blended learning within the social work domain (Ayala, 2009; Maple et al., 2013).

Teachers and designers want the students to follow the course as intended, providing them with the best learning opportunities possible. Technology itself is able to contribute to this (Kelders, Kok, Ossebaard, & Van Gemert-Pijnen, 2012). PT is the use of technology in eLearning or blended learning to positively influence the behaviors and attitudes of students, without using coercion, to increase the chances that students would follow an online course or intervention in the desired way (Oinas- Kukkonen & Harjumaa, 2009; Van Gemert-Pijnen et al., 2018). The aim of PT is thus to stimulate the interactivity and involvement of users (Oinas- Kukkonen & Harjumaa, 2009). Examples of PT are self-monitoring where the (computer) system shows the user the status of his current actions or knowledge and praise where the (computer) system gives the user feedback about his tasks via symbols, pictures or words (Oinas- Kukkonen & Harjumaa, 2009). The Persuasive Systems Design-model (PSD- model) is a model designed by Oinas- Kukkonen and Harjumaa (2009) to categorize various persuasive techniques. According to the PSD-model, there are four categories of PT that can support users, in this case students, following a blended course. The categories included: Primary Task Support; Dialogue Support; System Credibility Support; and Social Support (Table 1). Each category comprised a number of techniques that could be implemented in various ways in the online course, thus meeting the needs for support within the target group.

Table 1 Persuasive Systems Design-model (Oinas- Kukkonen & Harjumaa, 2009)

Persuasive Systems Design- model			
Primary Task Support	Dialogue Support	Credibility Support	Social Support
Reduction, Tunneling, Tailoring, Personalization, Self-monitoring, Simulation, Rehearsal.	Praise, Rewards, Reminders, Suggestion, Similarity, Liking, Social role	Trustworthiness, Expertise, Surface credibility, Real-world feel, Authority, Third-party, Verifiability	Social learning, Social comparison, Normative influence, Social facilitation, Cooperation, Competition, Recognition

Although its use is relatively new, PT has been successfully applied within eHealth applications (Van Gemert-Pijnen et al., 2018). However, within the education field PT is used less, though its potential has been recognized (Burri Gram-Hansen & Ryberg, 2013; Mintz & Aagaard, 2012). Moreover, although PT is only mentioned sparingly in this context, techniques that are classified as PT have already been used in education. Maple et al. (2013), for example, used various Primary Task Support techniques associated with the PSD-model in order to engage their students, without using these terms. They trained their students in a structured way through online tasks (tunneling), appointed important milestones in participation of the online course to reduce frustration or delay as much as possible (reduction) and further, encouraged the students to develop their own learning style (tailoring). Finally, adding quizzes to the online part of blended learning can be referred to as the self-monitoring PT because the answers to the quizzes given by

the computer give students feedback on their current level of knowledge. Adding quizzes, tests and self-assessments positively influences the effectiveness and attractiveness of blended learning (Spanjers et al., 2015).

In addition to the focus on the role of technology, the responsibility of the teacher in engaging and motivating students in a blended learning course is recognized as vital (Engelbertink, Kelders, Woudt-Mittendorff, & Westerhof, under review; Maarop & Embi, 2016). New competences were expected from teachers which were associated with different aspects of the blended learning course (Campbell, Davis, Phelan, & Hanley, 2018; Czerkowski & Lyman, 2016; Maarop & Embi, 2016). The review of Maarop and Embi (2016) indicated that teachers found it difficult to maintain the right balance between the time they spent on the online course and the FTFC, that they lacked pedagogical and technical skills, and experienced more stress due to the increased workload. In order to reflect on the teachers' attitudes and working methods, it was vital that teachers were trained during the implementation of blended learning courses. The need to be familiar with technology as an instructor and to have enough time to solve technological problems were confirmed as vital in a recent study in the field of social work by Hafford-Letchfield, Dayananda and Collins (2018).

Aim of the study

The course was developed using a participatory design. In a participatory design, designers, stakeholders and future users work together in a design process with the aim of, among other things, increasing support among stakeholders, increasing usability and engagement of users (Bratteteig & Wagner, 2016; Simonsen & Hertzum, 2012; Steen, 2013), which has also been an advocated approach for designing educational materials (Könings, Seidel, & Van Merriënboer, 2014). For the details of the current design, see Engelbertink et al. (under review). With the next phase being to analyze the course in real life among students and teachers to assess whether it came across as previously anticipated. The aim of the current study is to evaluate the added value brought by PT and the role in which the teacher played in the blended learning course. The research questions are: RQ1. To what extent in the online course did students evaluate persuasive techniques as motivating? And according to the students, which persuasive techniques could be further added to the existing online course to increase their motivation? and RQ2. How did the students and teachers evaluate the blending of the online and face-to-face components of the course and which improvements do they recommend?

METHOD

Design

Interviews and an online survey were conducted with the students. Both methods focused on the students' experiences with the course which incorporated PT, their preferences on additional PT related to a redesign of the course (RQ1) and the way in which blended learning was established (RQ2). Additionally, interviews with teachers were held that focused on the way that elements of the course were blended in practice (RQ2).

Setting

The blended learning course in this study was developed in a previous study (Engelbertink et al., under review) using a participatory design with 17 stakeholders (students, teachers, professionals, policymakers, instructional designers) at the School of Social Work at a University of Applied Sciences (UAS) in the East of the Netherlands. During six meetings with all stakeholders, the blended learning course was developed and improved in an iterative process. The stakeholders were able to provide feedback and propose new features from their own experience with online modules. The assumption was that a participatory design could lead to a blended learning course that is motivating according to all stakeholders and the used PT could stimulate the students while using the online part of the blended learning course (Engelbertink et al., under review). During the design process the stakeholders decided which techniques were used to design the blended learning course. During the development of the online part of the course it became clear which PT could not be implemented due to technical limitations of the software used. In sum, a lot of the techniques from the first three categories of the PSD-model were used (Table 3, 4 and 5). The category Social Support did not fit with the content of the course (autobiographical reflection) because according to the majority of stakeholders, these techniques could disrupt the autobiographical writing process because of the competitive and group dynamic processes that are not desirable at the start of this individual reflection task (Engelbertink et al., under review). In the current evaluation of the course the students were asked to what extent the used PT motivated them and whether they would find some of the not used PT desirable in a redesign (see the section Materials and Table 3 to 6). With the results of this evaluation, the next phase of the design process is started, namely a redesign of the blended learning course. The redesign of the course falls outside the scope of this article.

The aim of the blended course, evaluated in the current study, was to strengthen the professional identity of students by writing, and reflecting on their autobiography. The blended course is structured as follows. The students followed seven FTFC and after each class they met with a peer group of three other students. In these peer groups, the students interviewed each other asking questions based on their autobiographical writing within

the online course. The peer group meetings were not pre-scheduled. After the peer group meeting, the students were expected to complete their online homework. The homework consisted of six themes relating to the autobiographical reflection method which was provided in the online course. The course was piloted in this study for 3rd and 4th year students whose minor focused on exploring philosophical questions on a personal and professional level. The blended learning course was taught by experienced teachers (N=3), each with 16 students in their class (N=48). These teachers have experience in teaching autobiographical reflection and integrating FTFC, peer groups and homework assignments, but they have no experience in integrating FTFC with an online course (blended learning). The teachers received a teacher's manual and a protocol on how they could optimally blend the different elements of the blended course (FTFC, peer groups and the online course). The students were rewarded with course credits made up of 84 study hours. For students to achieve these credits, their teacher had to receive the students' autobiography on paper or by email, two weeks after completing the FTFC. The teacher then marked the autobiography as 'accomplished' or 'not accomplished'.

Interviews

Participants

Ten undergraduate students who enrolled on the blended course (eight women and two men) participated in the interviews. In general, they had received little to no blended learning courses within their curriculum. The students had not previously followed an online course with PT either. This was also the first time that they had participated in a course based on autobiographical reflection. The students were from four different branches of studies (seven from social work, one from nursing, one from creative arts and technology, and one from psychology). Their mean age was 22.9 (min. age 21 – max. 25).

The three teachers who taught the blended course (one woman and two men) also participated in the interviews. As mentioned before, these teachers had no prior experience with blended learning, however they were used to having students complete homework in preparation for a lesson. The male respondent was 51 years old and had a bachelor's degree. The other two respondents were both 42 years old and both had a master's degree.

Materials

The student participants were asked to match 23 cards each with one persuasive technique from three options: motivating, neutral, or not motivating. The cards represented 22 of the 28 PT techniques associated with the PSD-model. Appendix 1 provides an overview of the PT and the statements that were used during the interviews. Some cards combined two similar techniques, whereas other techniques were formulated by different statements on two separate cards. The statements related to the first four categories answered RQ1,

with a fifth category, blended learning, being facilitated to answer RQ2. When a student marked a statement as 'not motivating', they were asked what it was about the technique that made them feel this way. Not all of the techniques were applied within the blended course. Regarding these techniques, students were asked if they thought that it would be possible for the techniques to be considered as motivational if they were to be applied in a redesign of the course.

The interviews with the three teachers were semi-structured and focused on the following two topics: content of the online course and blended learning. The results produced in the interviews were used for answering RQ2. Some exemplar questions were: what do you think of the online course? (content); to what extent did you discuss the online assignments in your lessons? (blended learning); to what extent do you want to communicate with students via the online course? (blended learning); what are possible improvements for the online course? (content).

Procedure

The interviews were conducted with the students, who were in pairs, by three fourth year bachelor students studying social work, and the first author. The first author was the initial interviewer of the first six interviews with students which assisted in supporting the students and enhanced their interview skills. The other four interviews with the respondents were conducted independently by the fourth year students. The fourth year students then interviewed the teachers in pairs, without the presence of the first author which helped stimulate the openness of the teachers, as the first author was a colleague of theirs. The interviews lasted approximately one hour and were all audio recorded.

Data analysis

The interviews were all verbatim transcribed. The coding scheme contained themes and subthemes constructed deductively by the statements and their prescribed answers (motivating, neutral, not motivating). The coding scheme contained also subthemes constructed inductively by analyzing the students' explanations behind their answers (Hofste, Boshoven, & Munsterhuis, 2016).

Survey

Participants

Bachelor students ($N = 48$) who followed the blended course, were invited to complete the survey. Of the 48 students approached, 35 (73%) completed the survey (only the surveys that were fully completed have been included). Five participants were male (14%), with the remaining 30 being female (86%). This corresponded to the male / female ratio throughout the entire program. The mean age was 23.2 years ($SD = 1.9$). 30 students (83%) followed a

social work study, and six (17%) participants followed another study program at this UAS, among which nursing, psychology and creative arts and technology

Materials

The questionnaire included: one question about the technical operation of the online course; 19 statements about the evaluation of the PT used in the online course; 13 statements about any desired improvements of the PT in the online course; seven statements about the role of the teacher, including the way different elements of the blended course were integrated; and their opinion about the added value of the peer groups. Appendix 1 provides an overview of the PT and the statements that were used throughout the survey. Regarding the design of the interviews, the statements associated with the first four categories were used for answering RQ1, and statements in the fifth category, blended learning, answered RQ2. According to the development group, the PT from the third category, System Credibility Support, was required as a precondition for the online course. These were techniques that did not motivate the students as highly, though were necessary as a precondition for enabling their ability to follow the content properly (Engelbertink et al., under review). For this reason, within the third category participants were able to answer each statement with 'agree' versus 'disagree', rather than using the terms 'motivating' versus 'not motivating'. In an iterative process, the statements that were used during the survey were improved on the basis of the results produced in the interviews. Often, more statements on a particular PT strategy were used to gain a more complete understanding of the student's preferences during the survey. For example, for the technique 'reminders' different statements were formulated which were associated with alerting the student controlled by the used learning management system Blackboard, the teacher or through a WhatsApp group.

Procedure

Qualtrics, a tool to design an online survey, was used. The first author visited a lecture which covered all three classes during which the students filled out the survey. Any students who were absent were invited to complete the survey by email.

Data analysis

SPSS was used to descriptively analyze the data.

RESULTS

Before discussing the results of the two research questions, we first review the general experiences that students have mentioned.

General experiences

Table 2 presents the results of the students' general experiences upon completion of the survey. Overall, the students expressed that they were satisfied with the blended learning course and that they found the procedure used within the online element of the course clear. The alternation between theory, tips, examples, images and questions was sufficient. These results were similar to the opinions expressed by the students who were interviewed too. As a student remarked: *'I thought it was a nice course in the sense that there was a good variation between questions and information, not that you were answering questions all the time. But you also got some input in between about how you could think about it. I found that very pleasant.'*

Table 2 General experiences survey (N = 35)

Statements	TA ¹	A	N	D	TD	NO
Clear operation online course	23	48	20	8	0	0
Alternation between theory, tips, examples, images and questions was sufficient	11	69	20	0	0	0

Legend: TA = totally agree, A = agree, N = neutral, D = disagree, TD = totally disagree, NO = no opinion.

¹ results in %

A question asked in the survey which queried whether the blended course contributed to the development of the students' (professional) identity demonstrated that 66% of the students answered 'yes', 17% answered 'no' and 17% answered 'I do not know'. When students indicated that the components of blended learning course had contributed, they were then asked to state the extent that this was the case. On average, they indicated that FTFC contributed 37% overall, writing their autobiography as 34%, conversations with family, loved ones and friends as 19%, and their peer groups contributed only 7%.

RQ1 Evaluation PT techniques

Table 3 presents the results of the category Primary Task Support. According to the survey, more than half of the students found the following techniques motivating: reduction, tunneling (guided step-by-step) and self-monitoring. These results were similar to the opinions stated in the student interviews. A majority of the students did not feel motivated by the requirement to complete a theme before being able to start the next theme (second application of tunneling). A particularly apathetic technique was rehearsal, the students argued. The PT that were able to motivate more than half of the students in an improved

version of the course were tailoring and simulation. The students stated in the interviews that tailoring made the course more personal and that they found it motivating when they were able to choose a reflection method that fitted well with their autobiography. The students further described it as motivating when they were reminded of what the assignments were able to offer them in terms of professional identity development (simulation).

Table 3 Results Category Primary Task Support

Primary Task Support		Evaluation (results in %)								
		Interviews (N = 10)				Survey (N = 35)				
		M	N	NM	DM	M	N	NM	DM	NO
Reduction	Divide assignments	80	20	0	0	63	34	0	0	3
Tunneling	Guided step by step	70	20	10	0	54	34	9	3	0
	Cannot go to next theme	40	20	40	0	14	20	43	14	9
Tailoring	<i>Choose assignments¹</i>	80	20	0	0	63	14	11	3	9
	<i>Choose methods¹</i>	-	-	-	-	69	17	3	0	11
Personalisation	Computer speaks to me	50	40	10	0	46	46	6	0	3
	<i>Design the course²</i>	50	40	10	0	34	37	14	6	9
Self-monitoring	See my own progress	80	20	0	0	62	29	0	6	3
Simulation	<i>What offer assignments¹</i>	50	30	10	0	54	31	9	0	6
Rehearsal	Methods are repeated	40	50	10	0	29	31	17	17	6

Legend: M = Motivating, N = Neutral, NM = Not motivating, DM = Demotivating, NO = No opinion.

- = not asked during the interview.

¹ The italicized statements relate to the techniques that were not applied in the online module. The students were asked whether they would find these desirable in a redesign.

² This technique is not applied due to limited possibilities of the software.

Table 4 presents the results of the Dialogue Support category. According to the survey, the techniques in which over half of the students found motivating were suggestions (tips for making the assignments) and similarity (reading example stories from other students). These results were, again, similar to the opinions elicited during the students' interviews. Throughout the interviews, students expressed that these techniques gave them a sense of clarity as well as guidance. Due to technical limitations of the ICT tool Articulate Storyline, which was used to design the online course, it was not possible to implement the techniques reminders and social role. Therefore the students were asked how motivating they would find both techniques in a new course design: reminders sent by Blackboard or teachers or fellow students and communicate with fellow students in Blackboard and communicate with teachers in Blackboard (social role). The results of the survey show that students prefer both techniques related to their teachers than to their fellow students. Further, the survey found that most of the students described the PT rewards,

pictures (praise) and applause (praise) as neutral. The students found rewards, like written compliments including ‘well done’, less motivating in comparison to praise techniques (pictures with thumbs up or a star/ medal/ hearing applause). However, three of the six students stated in their interview that they did not find praise or rewards particularly motivating. One student described the techniques as ‘childish’ and another called them ‘disgusting’. They expressed that they preferred to receive the compliments personally.

Table 4 Results Category Dialogue Support

Dialogue Support		Evaluation (results in %)								
		Interviews (N = 10)				Survey (N = 35)				
		M	N	NM	DM	M	N	NM	DM	NO
Praise	Rewards (e.g. compliments)	10	30	30	30	23	43	17	11	6
Rewards	Pictures (e.g. star, thumb)	See previous technique praise				17	51	20	6	6
	Applause					3	46	17	6	29
Reminders	<i>Sent by Blackboard¹</i>	30	60	10	0	40	26	11	17	6
	<i>Sent by teacher¹</i>					46	20	14	14	6
	<i>Sent by fellow students¹</i>					17	29	17	23	14
Sugges-tions	Tips	80	20	0	0	83	17	0	0	0
Similarity	Example stories	80	20	0	0	83	14	3	0	0
Liking	Attractive lay out	50	50	0	0	23	60	6	0	11
Social role	<i>Communicate with fellow students in BB¹</i>	30	50	20	0	26	31	26	9	9
	<i>Communicate with teachers in BB¹</i>					40	34	17	0	9

Legend: M = Motivating, N = Neutral, NM = Not motivating, DM = Demotivating, NO = No opinion.

¹ The italicized statements related to the techniques that were not applied in the online module. The students were asked whether they would find these desirable in a redesign.

² In the redesign this technique is not applied due to limited possibilities of the software.

According to most of the students during the survey and interviews, the online course sustained the category System Credibility Support (Table 5). Most of the students found the course trustworthy and stated that it exuded expertise and professionalism.

Table 5 Results Category System Credibility Support

System Credibility Support		Evaluation (results in %)									
		Interviews (N = 10)				Survey (N = 35)					
		M	N	NM	DM	T	A	N	D	TD	NO
Trust-worthiness	Reliability and credibility	60	40	0	0	17	37	29	14	0	3
Expertise	Expertise and professionalism	60	30	10	0	11	34	34	20	0	3
Verifiability	Verify sources	20	60	20	0	0	34	37	0	0	29

Legend: M = Motivating, N = Neutral, NM = Not motivating, DM = Demotivating, TA = totally disagree, A = agree, N = neutral, D = disagree, TD = totally disagree, NO = No opinion

Table 6 presents the students' opinions corresponding with the possible application of the techniques within the Social Support category. Equal results were produced across the three answers (motivating, neutral, not motivating). Therefore, we can say that the opinions of the students were all dissimilar to each other, and also in comparison to the other categories. The technique that the students preferred most, according to the interviews and survey, was social facilitation (for the application: get online feedback on a specific development of the teacher, 46%). Generally, the following techniques do not motivate or even demotivate the students who participated in the survey: social learning (34%); social comparison (48%); social facilitation (for the application: receive online feedback from students, 44%); cooperation (40%). Among the five students who found social learning and comparison not motivating, expressed in the interview process, they emphasized that writing your autobiography is a personal process and that they needed sufficient time and energy to write their own story. The exchanges throughout the FTFC were specifically used to gain an insight into one another's learning processes. Students also explained that they did not always want other students to read their life stories, due to confidentiality. Furthermore, students were anxious of competition and pressure when they were able to evaluate how far others were with their homework (social comparison). As we have seen in the techniques reminders and social role, they in turn motivated the students most when the technique social facilitation was performed by the teacher instead of by a fellow student. The interviews produced results stating that most students were motivated by social learning, if this will be applied in a redesign (Table 6). As a student remarked: *'If you see what added value others have experienced, then you also start thinking for yourself what this means for you.'*

Table 6 Results Category Social Support

Social Support		Evaluation (results in %)									
		Interviews (N = 10)					Survey (N = 35)				
		M	N	NM	DM		M	N	NM	DM	NO
Social learning	<i>Learning of others learning process¹</i>	40	30	30	0		29	34	31	3	3
Social comparison	<i>View progress of others¹</i>	10	30	50	0		23	23	31	17	6
Social facilitation	<i>Online feedback from students¹</i>	40	40	20	0		29	26	31	11	3
	<i>Online feedback from teachers¹</i>						46	29	20	3	3
Cooperation	<i>Collaborate with fellow students¹</i>	30	30	40	0		31	26	34	6	3

Legend: M = Motivating, N = Neutral, NM = Not motivating, DM = Demotivating, NO = No opinion.

¹ The italicized statements related to the techniques that were not applied in the online module. The students were asked whether they would find these desirable in a redesign.

RQ2 Evaluation role of the teacher

Table 7 presents the results of blended learning and the role of the teacher. The survey indicated that the online course was well integrated in relation to the FTFC by the teachers. Most of the students who took part in the survey agreed that the teacher sufficiently addressed the amount of effort that the students made in the online course, and the teacher ensured there was appropriate coordination between the classroom lessons and the online course. During the interviews, five of the ten students mentioned that their teacher encouraged them to work on the online course by mentioning it throughout the FTFC. One stated: *'You just know that during the lessons you will also be asked for it. (...) Yes actually, you are supported by that because it just comes back every lesson'*. Some of them stated that they felt this lead to a more in-depth learning process. Four students indicated that their incentive to complete the online assignments came mainly from themselves. Three students also argued that the assignment was their own responsibility and that they did not require any stimulus from a lecturer. According to five students, teachers could explain the assignment in more detail and further, could return substantively to the assignment in the next lesson.

Table 7 Results Blended learning Support

Blended Learning Support		Evaluation (results in %)									
		Interviews (N = 10)				Survey (N = 35)					
		M	N	NM	DM	T	A	N	D	TD	NO
Role of the teacher (T)	T returned to elaboration students ¹	60 ¹	10	20	0	26	37	23	11	3	0
	T coordinated FTFC and online					26	46	11	14	3	0
	T motivated student to complete online course					20	31	26	23	0	0
	T motivated peer groups	-	-	-	-	11	20	14	37	9	9
Blended learning course	FTFC, coaching and online course well-tailored	-	-	-	-	14	40	29	17	0	0
	Peer group was of added value	-	-	-	-	11	6	14	26	29	14
Online interven-tion	Within online course interaction with FTFC	-	-	-	-	11	37	14	31	0	6

Legend: M = Motivating, N = Neutral, NM = Not motivating, NO = No opinion, TA = totally disagree, A = agree, N = neutral, D = disagree, TD = totally disagree, - = not asked during the interview.

¹ During the interview this statement has been submitted: the teacher returns to the assignments made

Subsequently, the teachers were asked what they did to motivate the students to complete their online assignments. Three didactic techniques were implemented: stimulating intrinsic motivation (asking: what did you learn?); supporting students on the task (asking them how far they are on the task at the beginning of the FTFC); and facilitating the blended learning (emphasize that keeping up with the online theme, parallel with the FTFC, offers an advantage in the learning process). A teacher indicated: *'I said in class, the assignments, did you finish them? How did that work for you? So the main thing is to emphasize the content. I hope that they become intrinsically motivated to actually do their homework.'* Two of the three teachers followed the protocol each week to achieve the optimal blend between FTFC and the online course. The other lecturer, who did not follow the protocol exactly, indicated that he encouraged the students only *'a limited amount'* to follow the online course. He did not ask about their experiences with the homework at the start of each lesson, as the protocol had indicated to do so, as an attempt to encourage the students. However, throughout each lesson, he broached the content themes, explaining what the online course brought him personally. He encouraged them to only express something about their homework if they felt the need to do so, and to use their initiative when making this decision.

The results produced by the students (in interviews and in the survey) and by the teachers emphasized that the protocol had been sufficiently followed by the teachers regarding the integration between FTFC and the online course. However, the protocol did not seem to be followed by the teachers when encouraging the peer groups to come together. Almost half of the students did not feel that their teacher motivated them to come together in the peer group post-FTFC. During the survey, in relation to peer group activities, most of the students answered that they did not interview one another about their life stories. During the interviews, five out of ten students stated that they did not feel a need to come together in the peer group, as they had already discussed the topic of the lesson in an alternative environment (with friends and family or in FTFC). Some students indicated that they did not know each other well enough to feel comfortable with sharing their life story within their peer group: *'So I would have to tell my personal story in a coaching group in which I do not know anyone. And that just felt crazy for me'*. The teachers seemed to agree with this explanation, however they characterized it also as the students demonstrating a lack of listening skills: *'So if you are in such a coaching group and there is not enough attention; you do not get together with each other to create the conditions for telling'*. A more practical reason for not meeting with their peer group, according to one teacher and two students, was associated with time restrictions due to the tight schedule between lessons and tasks in other lessons.

DISCUSSION AND CONCLUSION

First, we answered the first part of RQ1: To what extent in the online course did students evaluate PT as motivating? The course contained PT from three out of the four categories in the PSD-model: Primary Task Support, Dialogue Support and System Credibility Support based on a participatory design process (Engelbertink et al., under review). Overall, the PT techniques which were used were described by the students as motivating to a high degree. The techniques that were most motivating for the students were reduction, tunneling, self-monitoring (in Primary Task Support), and suggestions and similarity (in Dialogue Support). A focus on the primary task (Lehto & Oinas-kukkonen, 2011) and dialogue support has often been found to occur within online eHealth interventions (Kelders et al., 2012) and the techniques of these categories are most frequently reported as motivated in eHealth (Asbjørnsen et al., 2019). Interestingly, a different application of the strategy tunneling was deemed as demotivating by a majority of students, indicating attention should not only be paid to which techniques to use, but also *how* they should be used. Furthermore, according to most of the students the online course sustained the category System Credibility Support.

The second part of RQ1: And according to the students, which PT could be further added to the existing online course to increase their motivation? can be answered as follows. The students indicated that the following PT was sufficient to motivate them in an improved version of the course: tailoring and simulation (in Primary Task Support), reminders and social role (communicate online with their teachers in Blackboard) (in Dialogue Support). The techniques within the fourth category, Social Support, did not strongly contribute to the students' motivation, thus it would not be beneficial to include them in a redesign of the course. Regarding the technique social comparison, the students were apprehensive about pressure and competition, which was in line with the motivation of the stakeholders not to include this technique (Engelbertink et al., under review). The potential risks of negative emotions produced by this technique were recognized by Suls, Martin and Wheeler (2002). Besides this, students preferred to receive feedback from their teachers instead of feedback from fellow students (social facilitation) due to confidentiality. This preference for receiving online feedback from a professional, rather than a peer, is also a strong finding in eHealth research among adults (Westerhof et al., 2017). Research in the educational field also showed that students (young adults and adults) prefer feedback from their teacher instead of their peers. Additionally, the group of adults do want feedback from their peers but then supplemented with feedback from the teacher (Motlagh, 2015). It could be that students feel worried that fellow students may not be able to give them appropriate feedback on their written autobiography. This may especially be a challenge if they only read a specific part of the autobiography, as students may be unable to read the life story of a fellow student from a holistic perspective. Though, in the light of research by Bluck and Levine (1998): Can fellow-students guide their peers to '*broaden and redefine the view of the self*' (p. 201)?

We now turn to answering RQ2: "To what extent did the students and teachers find the course components optimally blended by the teachers and which improvements do they recommend?". Overall, the students found the course to be blended adequately by the teachers, however improvements could be made by the teachers by ensuring they follow the protocol on a weekly basis: The teacher started the beginning of each FTFC by returning to the homework assignments which in turn motivated the students to do their homework and initiated the possibility of adding more depth to their assignments. Moreover, the end of each FTFC would prepare students for the next homework assignment. Additionally, teachers used different techniques suitable for supporting the students to do their homework, thereby enhancing academic engagement (Appleton et al., 2008). The teachers stimulated intrinsic motivation, as they supported students to complete their tasks, and stimulated the blended learning process (integrating the different elements of a blended learning course). The present study showed that teachers must be aware of the crucial role that they play in integrating the different elements of the course (merging the FTFC and the peer groups with the online course). The peer-groups seemed to be less integrated in

the blended course. This may have been related to the reservations that students had on learning from peers in this particular context, yet it also demonstrates the important role played by the teacher. Teachers motivated students to a lesser extent to organize peer group meetings which may have diminished the perceived value of these groups for the students themselves. Schneider and Preckel (2017) indicated that small improvements could be made by teachers which would increase student performance. Among other things, they mentioned ensuring strong attendance in each class, clarity of the course objectives and indicating the student's responsibility in the course. Similar to Schneider and Preckel (2017), the skills that some of the teachers displayed in this study were instigated by minor improvements in instruction: encouraging students to do their homework by requesting it at the start of the lesson, and actively encouraging students to sit together in their peer groups. Research on eHealth has shown that the power of reminders is a highly contributory factor (Kelders et al., 2012) and sending an online reminder from an instructor in the education field can be seen as promoting engagement (Martin & Bolliger, 2018). Since most students looked at this in a positive or neutral way, sending reminders online via a learning management system or by email from the teacher could act as a motivating tool for stimulating the blended learning process. Additionally, our recommendation is to experiment with sending reminders within blended learning courses in social work education. However of course it is important to find a balance in student learning process between student independence and teacher support. So if sending reminders is desirable for students and these reminders can be implemented by a learning management system such as Blackboard or Canvas or via a mail system then that is worth trying.

In the introduction it was mentioned that motivation is an underlying aspect of student engagement (Appleton et al., 2008). Student engagement is often seen as consisting of behavioral (the participation), cognitive (contemplation and willingness to make the effort), emotional (positive and negative reactions) and academic engagement (homework completion, time on task) (Appleton et al., 2008; Fredricks, Blumenfeld, & Paris, 2004). Students provided explanations in the interview process regarding their level of motivation that could be linked to the various forms of engagement. The students additionally mentioned that they did not know each other well enough to come together in a peer group. This explanation suggests a lack of behavioral engagement. The PT suggestions and similarity gave students clarity and guidance which could be seen as supporting self-regulation; a part of cognitive engagement (Appleton et al., 2008). The PT social learning could also enhance cognitive engagement, as students mentioned that reading about the learning process of others made them think about what it means to be themselves. One third of the interviewed students expressed that praise and reward techniques evoked strong negative emotions, referring to a lack of emotional engagement. The PT social comparison did not motivate students to work on the online course (academic engagement), as they were afraid of competition, creating unnecessary pressure. The PT

social facilitation could potentially increase academic engagement, since almost half of the students found it motivating to receive feedback from teachers. In conclusion, PT and blended learning seem to impact the different components of engagement. Future research could take advantage of this finding, and use PT and blended learning to specifically alter certain aspects of engagement. Moreover, asking open questions about motivation provided insight into various forms of engagement which could encourage teachers to initiate a conversation related to this topic.

LIMITATIONS AND FUTURE RESEARCH

An unexpected result produced during the course was related to a technical aspect of the ICT tool used. 'Articulate Storyline' was incapable of storing the students' autobiographical reflections in the web browser. Despite our extensive testing using different browsers, it did not work as it was expected to. Therefore, after a complaint by a student who lost her reflections and had to start again, the researchers immediately decided to advise the students to answer the questions from the online course in a separate text document. This was stated via an announcement on Blackboard. However, on day 3 of the course, the teachers had to explain this several times to students which was distracting for both teachers as well as the students.

In this study, we were able to investigate experiences with PT and evaluate the merging of different elements in the blended learning course. This research was limited to the opinion of students and teachers, as we did not measure learning outcomes or use learning analytics. The results encourage us to follow the path we have taken, in turn ensuring we implement the blended course into the second year social work students' curriculum. We developed a redesign of the blended learning course using the evaluation data to optimally motivate students. Further research using a Randomized Controlled Trial among our students will yield more insight into the engagement and motivation of the students using the course, its effectiveness and the role of PT in this respect. Further research should also be facilitated to evaluate whether students appreciate online communication (including feedback) from teachers more so than online communication with fellow students. Additionally, whether fellow students are able to provide meaningful feedback on their peers' autobiographic stories. Gaining feedback and (online) collaboration with teachers and peers can be motivating according to research and from some student's points of view (Bernard et al., 2014), though they may need some training (Maarop & Embi, 2016). Follow up studies could investigate how to design social support in a blended learning course when the content of the course concerns an individual and privacy sensitive learning processes.

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Appendix 1 Statements Interview and Survey

Statements	Category Primary Task Support
Reduction	I: Divide assignments into themes / levels S: Assignments were divided into themes. I found this...
Tunneling	I: I am guided step-by-step through the assignments S: I was guided step-by-step through assignments. I found this... I: I can't go on with the next theme if I did not finish the previous one S: I could not go on with the next theme if I did not finish the previous one. I found this...
Tailoring	I: I can choose from assignments / information that suit me best S1: Two assignments are shown and I can choose which assignment I execute. If this is applied, I find that... S2: As a result of a meaningful event, I can choose which method I will use to work it out (for example: 'the rule of six' or 'exception and strength'). If this is applied, I find that...
Personalization	I: Computer speaks to me with my own name S: Computer spoke to me with my own name. I found this... I: Design your online module yourself S: Design your online course by yourself, for example, choosing your own background photo, adding a motto. If this is applied, I find that....
Self-monitoring	I: I can see my own progress S: I could see my own progress through the left menu. I found this...
Simulation	I: I'm reminded during the assignments what these can give me S: During the assignments, I'm reminded what these can offer me in terms of professional identity development. If this is applied, I find that....
Rehearsal	I: Methods or techniques come back repeatedly S: Methods or techniques repeatedly came back as 'identity memories' and 'rule of six'. I found this...
Statements	Category Dialogue Support
Praise	I: I receive digital rewards such as compliments, digital awards or applause S: I got digital rewards like compliments like 'well done'. I found this...
Rewards	I: See the previous technique praise S: I saw pictures, among other things, a star, medal, thumb as a part was completed. I found this... S: I heard applause after theme 2. I found this...

Reminders	I: Receive reminders for making online assignments S1: Receive a weekly reminder for making online assignments sent by Blackboard. If this is applied then I find that.... S2: Receive a weekly reminder for making online assignments by e-mail from the teacher. If this is applied, I find that.... S3: Receive reminders for making the online assignments through a WhatsApp group with fellow students. If this is applied, I find that...
Suggestions	I: Tips for making the assignments S1: There were suggestions for making the assignments. I found this...
Similarity	I: Example stories from other students S: There were sample stories from other students. I found this...
Liking	I: The layout is attractive S: I found the layout...
Social role	I: Communicate online with fellow students and teachers S1: Communicate online with fellow students in Blackboard. If this is applied, I find that.... S2: Communicate online with teachers in Blackboard. If this is applied, I find that....
Statements	Category System credibility support
Trust-worthiness	I & S: The online course exudes reliability and credibility
Expertise	I & S: The course exudes expertise and professionalism
Verifiability	I: The sources that the course uses can be checked S: I could verify the resources that were used within the online course
Statements	Category Social support
Social learning	I: Gain insight into what the online course delivers to others S: Gain insight into what the online course delivers to others (what has it brought them in their development?). If this is applied, I find that....
Social comparison	I: View the progress of other students online S: To be able to view the progress (concerning how far other students are) of others online. If this is applied, I find that....
Social facilitation	I: Receive online feedback from fellow students and teachers S1: Receive online feedback from students on a specific elaboration of my autobiography. If this is applied, I find that.... S2: Receive online feedback from the teacher on a specific elaboration. If this is applied, I find that....
Cooperation	I: Collaborate with fellow students in the online course S: Working together with fellow students in the online course. If this is applied, I find that....

Statements	Category Blended learning
Role of the teacher	<p>I: The teacher returns to the assignments made</p> <p>S1: The teacher came back sufficiently to the elaborations that were made in the online course by the student.</p> <p>S2: The teacher ensured sufficient coordination between the classroom lessons and the online course.</p> <p>S3: The teacher motivated the student to complete the online course.</p> <p>S4 The teacher motivated the subgroups to came together in the peer group</p>
Blended learning course	<p>S1: The classroom lessons, the coaching and the online course are well tailored.</p> <p>S2: The peer group was of added value</p>
Online course	<p>S: Within the online course, interaction with the classroom lessons was sufficiently stimulated.</p>

I = Interview

S = Survey

4

The reflection level and the construction of professional identity of university students

Engelbertink, M.M.J., Colomer, J., Kelders, S.M., Alsina, Á., Woudt-Mittendorff, K.M., Ayllón, S. & Westerhof, G.J. (2020). The reflection level and the construction of the professional identity of university students. *Reflective Practices*, 22 (1), 73-85.

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ABSTRACT

To strengthen students' professional identity (PI), it is vital to give reflection a central place in higher education. The aim of this study is to determine the extent to which students reflect on five components of PI (self-image, self-esteem, task perception, job motivation and future perspective) and at what reflection level. Twenty-five reflection narratives from Spanish and Dutch students from five different study programmes were qualitatively analysed and quantitatively evaluated to find out about students' identifying and self-assessing PI components. The results indicate that PI components were clearly recognizable in the reflection reports and could be classified using one of the four levels of reflection with high inter-rater reliability. About 40% of the students achieved the critical reflection level on one or more PI components. Reflecting on the five components of PI, with the aim of achieving the level of critical reflection, can be a useful guide for students.

INTRODUCTION

In today's complex and dynamic labour market, professionals can position and profile themselves in terms of achieving a professional identity (PI), shaped in time and space in different contexts (Trede et al., 2012). A main objective of higher education is to train students to become professionals with an individualized, but socially contextualized PI (Trede et al., 2012).

In this study, we assume that PI is a complex construct that is deeply rooted in personal and individual concepts (Ryan & Carmichael, 2016). A well-developed PI can improve students' confidence in their decision to work in the profession, it increases their self-awareness about the way in which they act professionally, and it reinforces their commitment to the profession which can lead to professional success (Hanna et al., 2019; Kelchtermans, 2009; Ryan & Carmichael, 2016). In addition to this individual component, a strong PI means that professionals are connected to their professional group and the society. It deals with an understanding of disciplinary knowledge, acquisition of professional skills and commitment to the professional group (Crocetti et al., 2013; Ryan & Carmichael, 2016). To develop this social component of PI, students must master the values and norms of their profession (Trede et al., 2012). Many researchers are concerned about how students can develop a strong PI, but much is still unclear as to how this can be enhanced (Trede et al., 2012).

One skill that is essential for the development of PI is reflection (Körkkö, Kyrö-Ämmälä, & Turunen, 2016; Trede et al., 2012). Reflection connects new experiences with existing knowledge and skills in relation to the student's profession. This can give meaning to their experiences and lead to insights regarding their PI (Alsina, Ayllón, & Colomer, 2019). It is therefore vital to promote programmes that foster ethical and reflective professional practices (Trede et al., 2012). The assessment of reflections can be categorized at four levels: descriptive writing, descriptive reflection, reflection and critical reflection (Alsina et al., 2017; Kember, McKay, Sinclair, & Kam Yuet Wong, 2008). At the description level, students do not show that they are thinking about alternative professional actions, the possible consequences of their professional conduct or the added value of taking a different perspective. The students reflect on issues without proving understanding of the concept or theory that underlies the issue. By contrast, critical reflective students make value judgements, specifies ideas and focuses on hypotheses about the context and the profession, and implement new action plans and substantiated learning goals (Alsina et al., 2017). Reflection can be seen as a means to strengthen PI, with students being encouraged to reflect at a *critical* level in order to transform their perception of professional development. It is therefore interesting to study to what extent students succeed in reaching the level of critical reflection.

There are multiple studies that examine the level of reflection of students. Körkkö et al. (2016) analysed 13 student portfolios, written over the 4–5 years of their studies. At the start of the study programme, these trainee teachers mainly reflected on themselves and had limited understanding of their profession. Later on, they were better able to compare theory and link it to practice, and knew how to ask critical questions, although some students still remained stuck at the descriptive reflection level. This observation is in line with other studies (Gadbury-Amyot, Godley, & Nelson Jr., 2019; Roberts & Stark, 2008; Whitaker & Reimer, 2017). The quantitative study by Roberts and Stark (2008) among medical students showed that, on average, students did not grow in their self-reflection or insight. Whitaker and Reimer (2017) found that, of 161 social work students, only 15% described all four categories that the researchers had defined as critical reflection: description + analysis + confrontation + reconstruction. Students rarely formulated alternatives to existing policy when this was actually warranted; consequently, the emancipatory goal of reflection was not achieved. Gadbury-Amyot et al. (2019) operationalized critical reflection using five skills, corresponding to five levels of reflection: reporting, responding, relationship, reasoning and reconstructing. Their research also showed that only 15% of dental students achieved level 4, and only one student (out of 102) achieved level 5. Lastly, Alsina et al. (2019) analysed narratives from fourth-year pre-service teachers. They came to the conclusion that the professional developmental process cannot be pre-planned and that critical reflection emerges when students are aware of professional instruction, through inter- and intrapersonal inquiry, through argumentation or by transforming the professional knowledge and their own situation.

Although this research is sometimes difficult to compare due to various operationalizations of reflection levels, it can be said that few students seem to achieve the critical level of reflection. Furthermore, as mentioned above, reflection can be seen as a means of strengthening the PI of students. Thus, it is useful and necessary to investigate how students reflect on their PI. For this, it is needed to have a clear operationalization of PI and discuss what is known so far about students' reflection on several components of PI.

Professional Identity

Based on teachers' career stories, Kelchtermans (2009) distinguished five components that together form a PI: self-image, self-esteem, task perception, job motivation and future perspective. These components are often investigated in quantitative research and seen as an important part of PI (Hanna et al., 2019). Below it is discussed, what these components entail and how they have been examined in the few qualitative studies that do exist.

Self-image comprises the way in which professionals regard themselves: using their own perception as a basis, but also being influenced by how others regard them (Kelchtermans, 2009). Sutherland, Howard and Markauskaite (2010) distinguished various steps in the

development of a self-image: first developing your own self-image, then being seen by others as a starting professional and then developing professional sub-identities that later become a whole. They showed that first year postgraduate students of a Master of Teaching Program made initial attempts to establish a self-image of themselves as teachers. Lanas and Kelchtermans (2015) focused on the content of the reflection process in narrative essays: students in teacher training viewed their development of a professional teacher as a growth in personality, rather than a growth in skills.

The second component of PI is self-esteem (Kelchtermans, 2009). This component addresses the question ‘how well do I do my job?’ related to emotions: ‘do I feel that I can handle this job?’ This deals with how a professional values his professional actions; as with self-image, this is partly determined by how others regard them. However, the feedback from others is always filtered and reinterpreted, and the professional chooses whose opinion he deems important (Kelchtermans, 2009). Paterson, Higgs, Wilcox and Villeneuve (2002) analysed 35 portfolios of final-year occupational therapy students and discovered that confidence, as part of the core identity of becoming a professional, emerged as the third most frequently mentioned theme (out of a total of 17).

The third component, task perception, indicates what professionals consider to be their tasks and duties. It includes moral considerations and the values and norms of professionals, which may clash with their formal responsibilities (Kelchtermans, 2009). Related skills are: negotiating, navigating, persuading and managing working conditions. Kunhunny and Salmon (2017) showed that clinical research nurses need more clarity in what their roles should be. Kelchtermans (2009) indicates that a lack of clarity about the role can confuse a professional’s feeling that he is doing a good job.

The fourth component – job motivation – examines the reasons for choosing a certain profession, continuing in it or stopping it. Job motivation can increase or decrease during a career, depending on various internal or external factors (Kelchtermans, 2009). In an interview study, social work students specified that their personal values provided the motivation for them to choose a master of social work. It also motivated them that their personal identity corresponded to the acquired PI (Osteen, 2011).

Finally, the fifth component – future perspective – comprises how professionals see themselves in the coming years and how they feel about it (Kelchtermans, 2009). How they look back on their past and forward to the future varies from moment to moment, and therefore this component typifies the dynamic character of an identity (Kelchtermans, 2009). Some teacher trainees will reflect more on their current student role, while others will prefer to consider their future role as teachers without taking their current identities into account (Marín et al., 2018).

The previous studies each used a different research method such as interviewing, portfolio analysis, reflection reports or narrative essays. Yet they all show that the identity of the students is often the starting point for reflecting on their PI. So, theory shows that the five components of Kelchtermans (2009) are important in gaining greater insight into the construction of PI. However, there is a lack of research focusing on the reflection level of students when they consider the different PI components. What we do know is that when it comes to self-image, first-year postgraduate students do not reflect on the highest reflection level (Sutherland et al., 2010). The current research examines students' level of reflection on the five PI components and focuses on the operationalization of the level of reflection. The latter as an addition to the existing operationalization (Kember et al., 2008). These aspects have not been analysed jointly. The insights will enable improvement of reflection education and research (Trede et al., 2012).

Research questions

RQ1. How can reflection levels be distinguished in the components of PI in general?

RQ2. To what extent and at which reflection level do students of several educational programmes reflect on the five components of PI?

METHOD

Design

Reflection reports are analysed to qualitatively answer RQ1 and quantitatively answer RQ2. Most study programs involved the Rubric for Narrative Reflection Assessment (NARRA rubric) as a reflection tool (Alsina et al., 2017). This rubric invites the student to reflect on a meaningful situation in four parts: the current situation (including the value judgments and emotions of the student); the previous views that the student has acquired; an inquiring process; and transformation.

Context and participants

In order to ensure that the scope was as broad as possible, we decided to include students of different educational programmes, in different study years, with different reflection methods and of different countries. Specifically, the research took place at two universities. Four courses participated from a university in the north east of Spain: bachelor degree courses in biology (Bio), preschool and primary education (PPE), physical education (PhysEd) and mathematics teacher education (MathEd). From a university of applied sciences in the east of the Netherlands, a social work (SW) course participated. Due to the size of the reflection reports (mean 3.5 pages; range 2 – 10), we performed the analysis on 25 reflection reports. Table 1 shows the context and characteristics of the students

whose reflection reports were analysed. From each participating educational programme, reflection reports were selected randomly from the participating classes regardless of gender or grade obtained (convenience sampling). Only in the case of the Bio and SW program, the gender balance is representative of the entire research population.

Table 1 Context and characteristics

Education	Study year	Number of reports (total N = 25) and gender	Number of lessons	Worked with NARRA	Worked with 5 components of PI	Assessment (reflection report)
Bio	4 th year	N = 5 4 female	One- to- one and collective tutorials, 4 in total	No	No	Formative
PPE	4 th year	N = 3 3 female	8 lessons, each of 1.5 hours	Yes	No	Formative
MathEd	2 nd year	N = 3 3 female	8 lessons, each of 1.5 hours	Yes	No	Formative
PhysEd	4 th year	N = 4 3 female	8 lessons, each of 2 hours	Yes	Yes	Formative
SW	2 nd year	N = 10 8 female	8 lessons, each of 1.5 hours	Yes	Yes	Summative

Notes: Bio = biology, PPE = preschool and primary education, MathEd = mathematics teacher education, PhysEd = physical education, SW = social work. NARRA = Narrative Reflection Assessment rubric.

Content of reflection method

Fourth-year Bio students were given an assignment to foster the development of transversal professional competences (Colomer, Vila, Salvadó, & Casellas, 2013). Students' reflective narratives focused on the compilation of a competence portfolio. Didactic support was given by a tutor.

The curriculum contained a Reflective Practice Seminar for the students of PPE and MathEd. This seminar was designed to achieve the critical reflection level. The contents of the seminar were aligned with elements of the NARRA rubric (Alsina et al., 2017).

The fourth-year pre-service teachers of PhysEd were taught in collaborative and reflective methods (respectively six seminars and two seminars). During outclass activities, each pre-service student participated actively in an experimental pre-service teachers' group, and the group as a whole came up with nine cooperative activities to be implemented with primary school pupils.. They constructed their narratives using both the written and

the oral communications of the components of PI (Kelchtermans, 2009) and the NARRA rubric (Alsina et al., 2017, 2019).

The Dutch social work students were given eight reflection lessons. Four lessons were devoted to autobiographical reflection, using the method ‘Tell your story’ (Engelbertink, Wijering, Bohlmeijer, & Westerhof, 2019) and four lessons were devoted to critical reflection.. The students received written explanations and depending on the teacher, also oral explanations of the PI components (Kelchtermans, 2009).

Procedure

All students could voluntarily consent to having their reflection reports used in our research. Each report was anonymized, so that only the gender and the study course were included as characteristics. Fictional names were assigned to the reflection reports.

Data analysis

Each reflection report was analysed on the extent to which the student reflected on one or more components of PI. The assessors (the first and second author) used the description of the five components of PI from Kelchtermans (2009). All fragments that responded to one of the PI components were classified on one of the four reflection levels. To assess the level of reflection for the five components, the assessors drew up the following qualification, based on Kember et al. (2008) and Alsina et al. (2017):

- Non-related: The student doesn’t mention the PI component or the content of reflection is not related to this PI component.
- Descriptive writing: The student formulates the PI component and determines it as his focus of reflection.
- Descriptive reflection: The student reframes the PI to fit it into his previous knowledge.
- Reflection: The student evaluates different alternatives and integrates them into new settings and revised perspectives about his professionalism according to the PI component.
- Critical reflection: The student transforms his ongoing professionalism into new social, cultural and political reflections according to the PI component.

Analysis was performed in three rounds. In round 1, three reflection reports (two from Spain and one from the Netherlands) were translated into English by the two assessors and also scored by them. The inter-rater reliability was measured using Krippendorff (2011) (Table 2). Then the two researchers discussed each other’s scores and reached consensus on what each student’s reflection level was for each component of PI. They consulted their own research team to coordinate further. The inter-rater reliability was ‘substantial’ for self-esteem and job motivation and ‘almost perfect agreement’ for self-image and future

perspective. For the task perception component it was only ‘moderate’: extra attention was devoted to coordinating the assessment of this component. For round 2, seven new reports were analysed and coded (three Spanish and four Dutch). The inter-rater reliability was again measured, and was ‘substantial’ to ‘almost perfect agreement’ for all five components (Table 2). Just as in round 1, the scores were discussed afterwards and the researchers reached a consensus. In the third round, the first two authors scored the reflection reports that belonged to their own country (ten Spanish and five Dutch reports), based on the experiences of rounds 1 and 2.

Table 2 Inter-rater reliability score (Krippendorff’s alpha)

	Round 1	Round 2
Self-image	1.0	1.0
Self-esteem	.78	.95
Task perception	.44	.71
Job motivation	.73	1.0
Future perspective	1.0	.86

RESULTS

RQ1 Four reflection levels

In this section, we report on how the four reflection levels can be characterized in the components of PI in general (RQ1). Appendix 1 contains quotes from the reflection reports that correspond to the four levels discussed below (due to the size of the quotes, it only include the quotes of two PI components). At the *descriptive writing* level, students become aware of the PI component, and this is straightforwardly described. The description remains at the level of one-liners and factual summaries, and no questions are asked that would reveal a visible learning process. For example: ‘*And, finally, I would like to highlight that the placement has helped me think about my future and to trace out the path I would like to follow*’ (8 Bio, future perspective).

At the *descriptive reflection* level, students reframe the PI component to square with their previous knowledge. Student fit the component to what others think or how others behave. They also formulate their own opinion and try to explore this opinion. However, this process is not very inquisitive, and the learning process is not described. For example: ‘*This is the most rewarding work I have ever done. This is very important to me because then you know what you are actually doing*’ (4 SW, job motivation). This student formulates an insight, but does not delve any deeper to analyse his thoughts, feelings or actions.

At the *reflection* level, students evaluate different alternatives and integrate them into new settings and revised perspectives about their professionalism. They look back on an event, formulate different alternatives and indicate what they have learned from the event and formulated desired future desirable behaviour. There is often reflection on the team dynamic, on the values and standards that students had, and on the extent to which these correspond to the organization. At this level emotions are not only described (I felt proud) or analysed briefly (I often feel insecure in large groups) but the emotions are linked to thinking and acting, but also broadened to the professional group (social workers have an increased risk of developing burnout). Students might also wonder whether the learning outcome fits their desired PI. At this level, they will also indicate what this component might look like for the entire professional group – e.g. how a professional generally grows or what the world would look like if all professionals set this goal. For example: *‘...A good teacher is one who innovates and aims to improve their educational practice on the basis of a realistic training paradigm; in other words, a person who understands learning as the link between learned experiences and theoretical knowledge. They are not satisfied with merely watching, but instead aim to contrast their observations without losing sight of theory....’* (9 PPE, task perception).

Finally, we look at the *critical reflection* level and at the extent to which this is mirrored in the various PI components. Students will compare their investigative process with that which is contained in a professional code and theory. They will look to the past and at how they have developed their PI. Including the development that a team or professional group has undergone. Furthermore, students will indicate more concretely and in more detail how their thinking, feeling (emotions) and behaviour have changed and how this has affected one of the PI components. Students are aware of their emotions and how this can influenced their actions and they have multiple strategies to deal with these emotions, exploring the relational level in addition to the interpersonal level. During the analysis, it was noticed that in view of all four reflection levels, the reflection on emotions could be improved because it is often missing in the reflection reports. Additional, students will describe how they will improve their future actions. The progression to new social, cultural and political reflections is central. For example: *‘...The research-action seminar, too, has helped me a lot, for example: before, when something did not work, I withdrew it for some time and after a few months I put it back. Now I have changed, I am generating more questions. Why does not it work? What could I do?’* (18 MathEd, self- esteem).

RQ2 The five components of PI and the reflection level

In this section, the results of RQ2 are presented (“To what extent and at which reflection level do students of several educational programmes reflect on the five components of PI?”). Table 3 shows the number of fragments that relate to one of the components and their reflection level. If the student did not reflect upon a certain component, it is scored

as ‘not related’. Otherwise, it is scored on one of the four reflection levels. Each report has therefore been assessed on all five components. On the PI components of self-image, self-esteem and task perception, students generally reflected at level 3 ‘reflection’. Regarding job motivation and future perspective, students mainly reflected at the level of ‘descriptive reflection’. In addition, the components that were reflected on most often were task perception (92%) and self-esteem (84%).

Table 3 The five components of PI and the reflection level

	Not related	Descriptive writing	Descriptive reflection	Reflection	Critical reflection	Total components
Self-image	11 (44%)	1	2	9	2	14 (56%)
Self-esteem	4 (16%)	4	6	9	2	21 (84%)
Task perception	2 (8%)	3	4	9	7	23 (92%)
Job motivation	8 (32%)	6	9	1	1	17 (68%)
Future perspective	7 (28%)	2	9	3	4	18 (72%)

The average reflection level of the student’s report is then calculated in the following manner. For example, a student has reflected on three components. Each component was scored on one of the four levels of reflection (for example: task definition level 1, self-confidence at level 3 and work motivation at level 3) and the average level was calculated across components (in this example $7:3 = 2.3$, so an average level just above reflection level 2). Taking their reports as a whole, the majority of the students (60%) reflected at the third reflection level. Only one student (4%) achieved an average of the fourth critical reflection level (Table 4).

Finally, we have analysed the results from Table 3 per student and his specific study program (see Appendix 2). Results show that 10 out of the 25 students (40%) reach the level of critical reflection on at least one of the five components of PI. One of those ten students reached critical reflection on three components; four students on two components; and the remaining five students on one component.

Table 4 Number of components and average level

Study programme (N)	Number of reflection reports divided by level				Average number of components of PI in reflection reports
	Level 1 Descriptive writing	Level 2 Descriptive reflection	Level 3 Reflection	Level 4 Critical reflection	
Bio (5)	1	1	3	0	3.0
PPE (3)	0	0	3	0	3.3
MathEd (3)	1	2	0	0	4.0
PhysEd (4)	0	2	1	1	3.3
SW (10)	0	2	8	0	4.3
Total 25	2 (8%)	7 (28%)	15 (60%)	1 (4%)	3.7

Notes: Bio = biology, PPE = preschool and primary education, MathEd = mathematics teacher education, PhysEd = physical education, SW = social work.

DISCUSSION AND CONCLUSIONS

Until now, little is known about whether (and how) students reflect on various components of PI, and at what level this occurs. Our results might provide a more precise direction than before in developing the necessary strong PI for students in higher education. Regarding RQ1, it was possible to distinguish four levels of reflection with a large degree of interrater reliability for each of the five components. With each component divided over the four levels of reflection (Appendix 1), it was possible to describe in detailed each level of reflection, thus providing greater insight (see result section). This could help teachers enhance the reflection level of their students and can be seen as an addition to Kember et al. (2008). Furthermore, reflecting on emotions might be the key in achieving critical reflection (Zembylas, 2014). We noticed that reflecting on the level of reflection and critical reflection goes hand in hand with reflecting on emotions. Professional choices are influenced by emotional attachment, and relationships are associated with the experience of (contradictory) emotions (Zembylas, 2014). Moreover, reflection on emotions takes place in an introspective way regarding relational, social and political aspects (Kelchtermans, 2009; Zembylas, 2014). We advise to build reflection education per study year, to gradually improve the students' critical reflection level combined with the five components of PI. The starting point for reflection should always be a meaningful emotional experience of the students themselves (Alsina et al., 2017) and explicit attention is paid to the already acquired qualities of the students.

As for RQ2, our study shows that on average students reflected on three components (i.e. self-image, self-esteem, task perception) at the level of 'reflection' (level 3); and on average on two components (i.e. job motivation and future perspective) at the level of 'descriptive

reflection' (level 2). 40% of our students showed that they could reflect on one or more PI components at the highest critical level of reflection, but only one student reflected at the highest level for all PI components. In contrast to other research, these findings suggest that students did not remain stuck at the descriptive reflection level (Gadbury-Amyot et al., 2019; Krkk et al., 2016; Roberts & Stark, 2008; Whitaker & Reimer, 2017). This suggests that distinguishing between PI components gives a more fine-grained picture of the reflection skills of students. It might not be necessary to reflect on all components in one reflection report and to reflect on all components at the highest level. For example, in a report a student may refer to procedural rules that apply in the workplace on the task perception component (descriptive writing), but in the same report reflect on the level of critical reflection regarding the components self-confidence and job motivation.

LIMITATIONS AND FUTURE RESEARCH

Our research provides guidance on how teachers can shape reflection education with the support of five components of PI in which four levels of reflection can be clearly distinguished. However, this study is exploratory in nature. Follow-up research might focus on larger numbers of reflection reports, so that a more detailed analysis can be made that looks at factors such as: study programme, assessment, teaching style, gender and age. The question raised by this research is the influence of the different courses on the reflection on the various PI components. Although there were many similarities in the reflection lessons of the five study programs (table 1), there were also some differences such as the use of the five components of PI. Consistency in this would have increased the validity and reliability of our results and is recommended for future research. In addition, the type of study could also play a role in the way in which students reflected. For example, biology students may interact less with people on a daily basis than the other students. This may have brought about limitations on reflecting on the self-image. More research is needed to gain insight into this. We recommend longitudinal research to investigate how students develop in the level of reflection. Through this study we have attempted to demonstrate that reflecting on the five PI components, with the aim of achieving the level of critical reflection, can be a useful guide for students in raising awareness and developing their PI.

Appendix 1 Different reflection levels two PI components

Component 2 Self-esteem

Reflection level	Quote
Descriptive	Only when I previously organize the activity, I carry it out, and as a result, I come to project myself as a future teacher. That's when I feel more satisfied (11 PhysEd).
Descriptive reflection	While I initially felt unsure about doing my placement in Cape Verde, now, after the stay, I think I feel confident about doing my final degree project anywhere in the world (2 Bio).
Reflection	I also started to doubt whether I had made the right decision by... (...) These were all questions I asked myself and in the end it became a vicious circle in my head that I could not get out of. (...) When I look back, my decision still feels right (22 SW).
Critical reflection	During this year I realized, that the realization of the reflexive practice seminar has given me many new apprentices. I could see that before I worked, my performance was more practical and now I see that it is necessary to reflect on what I am doing and contrast it with the theory. The research-action seminar, too, has helped me a lot, for example: before, when something did not work, I withdrew it for some time and after a few months I put it back. Now I have changed, I am generating more questions. Why does not it work? What could I do? (18 MathEd)

Component 5 Future Perspective

Reflection level	Quote
Descriptive	And, finally, I would like to highlight that the placement has helped me think about my future and to trace out the path I would like to follow (8 Bio).
Descriptive reflection	In the future I would probably follow my colleague's advice in situations like this. See the student and his behavior separately (22 SW).
Reflection	The aspects I think should be strengthened to face my future as a teacher are some of the following: to find more resources that are effective when dealing with the group- class (...); to become more communicative (...) - To learn more about the methodologies and techniques of teaching and evaluation (20 MathEd).
Critical reflection	It is with this kind of practice, based more on active methodologies, where I, the teacher, can see myself as a future teacher: I mean when we ask what percentage of professional practice should be active, reactive and maybe reflexive. I think that including a critical reflexive component on our own activity can help improve the activities and strategies developed on a day-to-day basis at school. I imagine that, in schools, decisions like this are often taken collectively by staff. But being able to have training in this really does help (3 PPE).

Appendix 2

Distribution of fragments related to reflection levels of students (N = 25)

	Not related	Descriptive	Descriptive reflection	Reflection	Critical reflection
Self-image	2-3-6-7-8-13-14-16-17-18-19	15	11-25	1-4-10-12-20-21-22-23-24	5-9
Self-esteem	4-9-10-17	6-11-19-23	2-3-5-12-15-20	1-7-8-14-16-21-22-24-25	13-18
Task perception	16-19	12-17-18	1-2-20-24	3-6-8-11-14-21-22-23-25	4-5-7-9-10-13-15
Job motivation	8-9-12-13-14-15-23-25	3-6-7-10-17-19	1-4-11-16-18-20-21-22-24	5	2
Future perspective	1-10-12-14-16-17-25	6-8	2-5-9-11-18-19-21-22-23	7-20-24	3-4-13-15
Total of unique students	19 (76%)	12 (48%)	18 (72%)	18 (72%)	10 (40%)
BIO PPE PhysEd MathEd SW					

5

The professional identity of social work students: a cross- sectional study

Engelbertink, M.M.J., Kelders, S.M., Woudt - Mittendorff, K.M. & Westerhof, G.J.. The professional identity of social work students: a cross-sectional study. *Submitted*

ABSTRACT

Introduction Due to changes in working roles, there is an increasing need for a strong professional identity (PI) among professionals.

Methods To gain more insight into how education can enhance the PI of students, the concept of PI has been carefully analyzed and related to different PI processes and some resources. Data was collected in a survey from 382 social work students.

Results & Conclusions PI was positively related to identification of commitment, affirmation and practices, and negatively to in-depth exploration and reconsideration of commitment. Students with the 'moratorium' status displayed the weakest PI. Reminiscence, reflection, learning motivation, internal locus of control and well-being (resources) were positively associated with PI. A regression model showed that four processes (negatively in-depth exploration and reconsideration of commitment; positively identification of commitment and affirmation) and three resources (reflection, internal locus of control and well-being) significantly predicted PI. Opportunities to strengthen students' PI through reflection education are discussed.

INTRODUCTION

Due to a rapidly changing and complex labor market, professional work roles in (health) care are growing in density and multitude (Caza & Creary, 2016; Kuijpers & Meijers, 2011; Pullen Sansfaçon & Crête, 2016; Trede et al., 2012). Professional work roles are influenced by economic cycles and a withdrawing government. For example, the role of Dutch care professionals changes from taking care of clients to arranging care for clients in close cooperation with informal caregivers (Kloppenburger et al., 2018). Furthermore, borders between professions have faded: for example, between the work roles of nurses and midwives (Caza & Creary, 2016) and between nurses and social workers (Sims, 2011). Additionally, the population is increasingly aging worldwide. It is estimated that by 2050 one in five people will be 60 years of age or older compared to one in eight in 2017. This will affect employment and (health) care in general (United Nations, 2017), but also the roles of professionals in health care (Kloppenburger et al., 2018). Lastly, due to upcoming technology, as part of the fourth industrial revolution, teachers have to educate their students for jobs which are yet unknown, making life-long learning the norm in the future (Stoyanov, Hoogveld, & Kirschner, 2010; World Economic Forum, 2016).

To cope with these complex and rapidly changing work roles where professional identities (PI) are in flux (Pullen Sansfaçon & Crête, 2016; Sims, 2011; Trede et al., 2012), universities must prepare graduates to develop a PI in a way in which they are ready for future practice (Trede et al., 2012). Professionals have a strong PI if they know who they are as a professional, have confidence and have the skills to practice their profession (Schilder, 2013). It is important for students to develop a strong PI to enable them to be pro-active within their profession, to use their network optimally and explore work opportunities, to feel more confident about their career choice and to be motivated to learn (Meijers & Kuijpers, 2014). Moreover, a strong PI seems to be related to self-confidence and self-awareness that benefits professional behavior (Kelchtermans, 2009; Ryan & Carmichael, 2016).

The development of a PI starts before students begin their studies, as identity development goes hand in hand with PI (Adams, Hean, Sturgis, & Macleod Clark, 2006; Marcia, 1966; Trede et al., 2012), so a strong identity is thus an important starting point within PI development (Adams et al., 2006; Moenandar & Huisman, 2019). PI consists of two dimensions: a social and a personal dimension (Mancini, Caricati, Panari, & Tonarelli, 2015; Sims, 2011). The social dimension refers to perceptions and expectations of others with regard to the functioning of professionals, while the personal dimension relates to the perceptions and expectations of the professionals themselves. Literature describes two different, yet related tasks, to achieve a PI. Professionals need to internalize values and norms, professional roles and knowledge from a group of professionals to develop a

social identity (Trede et al., 2012), while also considering ‘*how their personal traits, habits, talents, and limitations affect (and are affected by) their professional work*’ (Hutchinson & Tracey, 2015, p.528). Starting professionals will begin a process in which their personal life experiences interact with norms and values, professional roles and knowledge of the profession. In sum, they must become familiar with this blending of social identity and personal identity (Levy et al., 2014; Pullen Sansfaçon & Crête, 2016).

Marcia’s Ego Identity Status model showed that identity is developed in various areas, including work, religion and politics and shows the underlying process of PI formation (Marcia, 1966). This model distinguishes two processes of Erikson’s Identity Formation Concept that are still widely used in PI studies, namely the extent of (career) exploration and commitment (Crocetti et al., 2013; Kroger, Martinussen, & Marcia, 2010; Mancini et al., 2015; Marcia, 1966). ‘*Exploration refers to the active questioning and weighing of various identity alternatives before making decisions about the values, beliefs, and goals that one will pursue. Commitment involves making a relatively firm choice about an identity domain and engaging in significant activities geared toward the implementation of that choice*’ (Crocetti, Sica, Schwartz, Serafini, & Meeus, 2013, p.2). Crocetti, Rubini, and Meeus (2008) added a third process - reconsideration of commitment – to emphasize the iterative process of PI development. This process refers to the comparison of current commitments with substitute commitments, as the current ones are no longer suitable to their career.

By combining the three processes of PI (in-depth exploration, identification with commitment and reconsideration of commitment), five PI statuses emerge (Crocetti, Schwartz, Fermani, & Meeus, 2010; Crocetti et al., 2013; Mancini et al., 2015) (Table 1). Ideally, after a period of exploration, an individual will commit to a professional group. This in turn is referred to as the ‘achievement’ status. The second status is ‘foreclosed’, where young people’s values, norms and professional choices align with their parents, or important others, without orienting themselves. Young people are in a ‘diffuse’ PI status when they do not explore different (professional) identity alternatives (low in-depth exploration), and when they are yet to commit themselves to a PI domain (low identification with commitment), subsequently scoring low on reconsideration of commitment. On the other hand, young people who strongly explore (high on in-depth exploration), compare their current commitments with substitute commitments (high on reconsideration of commitment) and have not yet committed themselves (low on identification with commitment) are in a ‘moratorium’ status. Finally, when students are in between ‘achievement’ and ‘moratorium’, it can be described that they are in the status ‘searching moratorium’. These students explore their current secure commitments to their profession to investigate possible revisions to present commitments. They score high on in-depth exploration, identification with commitment and reconsideration of commitment.

To place more emphasis on the formation of PI, Mancini et al. (2015) expanded the framework by subsequently adding a fourth and fifth process: affirmation and practices (Table 1). Affirmation represents the importance that is attached to the professional group to which someone belongs, and the degree to which they are proud to be part of this professional group. This process acts on an affective level. The fifth and final process - practices - examines the extent to which someone seeks information at a behavioral level and finds information regarding the practice of the profession and future work within it (Mancini et al., 2015). Combining these two processes with the other statuses, Mancini argues that students with the statuses 'achievement' and 'foreclosure' are likely to score high on affirmation and practices. However, students with the 'diffuse' and 'moratorium' statuses are more likely to score low on these fourth and fifth processes. Students holding the status 'searching moratorium' will probably score medium on affirmation and practices (Mancini et al., 2015). In sum, the processes affirmation and practices seem to demonstrate further elaboration concerning the degree of commitment that students display in regard to their future profession rather than a further differentiation between the five statuses.

Table 1 Five processes combined in five PI statuses (Crocetti et al., 2013; Mancini et al., 2015)

(Professional) Identity status	In-depth exploration	Identification with commitment	Reconsi- deration of commitment	Affirmation	Practices
Achievement	High	High	Low	High	High
Foreclosure	Low	Medium	Low	High	High
Diffusion	Low	Low	Low	Low	Low
Moratorium	Medium	Low	High	Low	Low
Searching moratorium	High	High	High	Medium	Medium

Only if the concept of PI has been carefully operationalized, analyzed and related to other student behaviors, is it possible to gain a more precise insight into how higher education can enhance the PI of students (Trede et al., 2012). A systematic review (Trede et al., 2012) demonstrated that there was a shortage of studies investigating PI and its relationship with student behaviors. When focusing on the field of social work, this lack of knowledge is even more prominent (Levy et al., 2014; Pullen Sansfaçon & Crête, 2016; Shlomo et al., 2012). Therefore, the following research questions are formulated: How is the strength of PI of social work students related to the PI processes of commitment and exploration and to different PI statuses?; which resources are related to the formation of the PI of students?; and which processes and resources are uniquely related to the strength of social work students' PI? Below, we explain our hypotheses which have been drawn up on the basis of the theory.

Hypothesis 1 PI and the PI processes. First, we focus on the state of PI within our sample (social work students). A study among students from various courses in the health and social domain indicates that, in relative terms, at the beginning of their course social work students have the least developed PI, in comparison to students of health courses, such as physiotherapy and midwifery (Adams et al., 2006). Meijers and Kuijpers' (2014) study analyzing 4820 Dutch students from 11 different bachelor's programs illustrates that these students, just like the latter social work students, have a weakly developed PI. Possible differences in PI with regard to the health and social work domain are not discussed within the study however. Therefore, in line with the literature, we expect to find that social work students, indeed, have a weakly developed PI (H1a).

From the theory we expect that commitment implies a strong PI (Crocetti et al., 2013; Mancini et al., 2015). As mentioned before the processes of PI related to commitment appear to be: identification with commitment, affirmation and practices. Thus, our hypothesis is that these three processes will positively correlate with a stronger PI (H1b). The other two processes of PI are related to exploration: in-depth exploration and reconsideration of commitment. As mentioned earlier, the process of exploration and sometimes reconsideration of current commitments are needed to determine which professional group someone belongs to (Crocetti et al., 2010, 2013; Mancini et al., 2015). Hence, we can assume that students with a stronger PI explore and reconsider their commitments less, as they have already undergone this identification process. Hypothesis 1c therefore states a negative relationship of in-depth exploration and reconsideration of commitment with PI.

Hypothesis 2 PI statuses. We are interested in which PI status our respondents belong to and will allocate them according to the classification of the five PI statuses (Table 1). Additionally, we are interested in the relationship between PI and the five PI statuses. Previous research (Crocetti et al., 2013; Mancini et al., 2015) found that students with the PI statuses 'achievement' and 'foreclosure' developed a more stable identity in comparison to the other three PI statuses. These two statuses characterize themselves with medium to high scores on 'commitment' and low scores on 'reconsideration of commitment'. Crocetti et al. (2013, p.10) therefore conclude that *'commitment is the key element that provides a sense of structure, harmony, and control'*. These researchers also found that the PI statuses 'diffuse' and 'moratorium' were not related to positive identity functions. Based on previous literature, we expect to find a stronger PI among students who have the PI status 'achievement' or 'foreclosure' compared to the PI statuses 'diffuse' and 'moratorium' (H2), as these statuses illustrate low scores on identification with commitment.

Hypothesis 3 PI and possible resources. In order to relate PI to other student behavior, we identified resources that might be related to the formation of PI according to previous

research. In this study, we focus on the following possible resources: reminiscence, reflection, learning motivation, internal locus of control and well-being.

Reminiscence. Reminiscence can be described as the process of (un)consciously recalling memories from the past (Westerhof & Bohlmeijer, 2014). Reminiscence allows one to revisit one's past where the formation of identity, as well as the beginning of the PI's formation process, have already begun (Adams et al., 2006). Among older adults, reminiscence can contribute to ego integrity, well-being and (re)define identity, especially during periods when changes take place in life (Westerhof & Bohlmeijer, 2014). We expect to find a positive relationship between reminiscence and PI (H3a), as students may be more aware of the steps they have taken in the past, therefore benefitting the current steps they are taking to strengthen their PI going forward. To our knowledge, our research is the first quantitative study to investigate the relation between reminiscence and the PI of students.

Reflection. Reflection can be seen as a process in which a person becomes aware of a certain experience, beginning to understand it, in turn learning from it resulting in future development (Lengelle et al., 2016). With the help of reflection, meaning can be given to previous and current experiences that shape PI. Reflection is a vital skill students should implement to strengthen their PI (Trede et al., 2012). An explanation for the relationship between reflection and PI is that students who reflect in a suitable way might have a clearer idea of how their personality or goals fit their career, in turn possibly motivating them to strengthen their PI (Korthagen & Vasalos, 2005). A second explanation is that students with a strong PI feel more comfortable reflecting, thus doing this more productively (Lengelle et al., 2016). Therefore, we hypothesize that there will be a positive relationship between reflection and PI (H3b).

Learning motivation. Learning motivation may fuel the formation process of PI. A positive relationship between PI and learning motivation has been demonstrated by Meijers, Kuijpers and Gundy (2013) who conducted research under prevocational and secondary vocational students. Their results demonstrated that adolescents (12-19 years old) with a strong PI were more motivated within their studies and chose learning tasks that fit their competences and motivation. Study behaviors were described by students as proactive. So, our hypothesis is that there will be a positive relationship between learning motivation and PI (H3c).

Internal locus of control. In addition, the degree of internal locus of control may influence the formation of PI. The degree of internal locus of control indicates whether people attribute the cause of success or failure to personal efforts (internal locus of control) or to external factors (external locus of control). A strong internal locus of control is positively related to PI (Meijers et al., 2013) and in line with this, internal locus of control is vital in

developing career competencies (Kuijpers & Meijers, 2011). Based on previous research, we expect a positive link between internal locus of control and PI (H3d).

Well-being. Well-being is a broad factor that seems to contribute to a strong PI. Different studies found a positive relationship between identity and well-being (Ryff, 2013; Schwartz, Luyckx, & Vignoles, 2010). Based on the current literature, we hypothesize that a positive relation exists between well-being and PI (H3e).

4. PI, processes and resources. The different resources might be mutually related to each other, like reminiscence and well-being (Westerhof & Bohlmeijer, 2014). Similarly, resources might also be related to identity processes, like commitment and well-being (Crocetti et al., 2013; Meeus, 2011). In order to gain more in-depth knowledge regarding the unique contribution of various processes and resources within PI, a multiple regression analysis will be performed. Our hypothesis 4 is that, despite possible relations between processes and resources, each of them will have a unique relation to PI.

METHOD

Sample

382 second year social work students participated in the current study. Their mean age was 21.0 (min. age 17 – max. 30, SD 2.3) and 80% were female. Students were recruited from a Dutch University of Applied Sciences in the East of The Netherlands. There were two cohorts of participants. The first cohort was from study year 2016 – 2017, consisting of two samples of social work students. One sample being only Dutch social work students, and the other consisting of Dutch and German students following a social work program, called 'Euregional', with a focus of working in the border region between the Netherlands and Germany. The second cohort consisted of one sample from 2017 – 2018, who were purely Dutch social work students.

Procedures

All participants were personally invited by the first author to complete the survey on their mobile device or laptop during their professional development classes. The researcher added one of the students to her contact list on her mobile phone. This student was then requested to send the survey link to the students within the classes' WhatsApp group. This meant that any absent students were also able to complete the survey. The researcher remained in the classroom whilst the surveys were being completed to allow any questions regarding the survey to be answered. After three days, the researcher contacted her main point of contact via WhatsApp to send a reminder in the classes' WhatsApp group. The average response rate was 84%. All data was collected via Qualtrics. Student participation

was voluntary, informed consent was provided and data was processed anonymously. The study was approved by the Ethical Committee of the University of Twente.

Measures

Professional Identity

To measure overall PI, the Career Identity scale (Kuijpers & Meijers, 2009) was used. This scale focuses on the conviction and feeling that the future PI suits the individual. The 2016 version of this scale was used and retrieved from Kuijpers, and includes ten items with a response scale ranging from 1 = Strongly disagree to 4 = Strongly agree. Sample items are: “My heart goes out to the work that I want to do later”. And: “I have discovered what kind of work really suits me”. Cronbach’s alpha was .83.

To measure the processes and statuses of PI, the five-dimensional Professional Identity Status Questionnaire (PISQ-5d) (Mancini et al., 2015) was used to assess the five PI processes, as well as classifying the students in the five identity statuses. A Dutch translation has been made in consultation with the Italian authors. The items were translated to Dutch and then back into English, to gain a Dutch version that is equivalent to the English one. The PISQ-5d includes 20 items: ten items with a response scale ranging from 1 = Not at all to 5 = Very much, and ten items from 1 = Never to 5 = All the time. There are five subscales (in-depth exploration, identification with commitment, reconsideration of commitment, affirmation, and practices) with each subscale containing four items. As suggested in Mancini et al.’s (2015) article, item 17 in the subscale ‘in-depth exploration’ has been updated to fit a more cognitive focus than a social comparison focus. In collaboration with the authors of the scale, a new item was developed: “Do you think about what other people think or say about social workers?”. Other sample items include: “Does thinking of yourself as a social worker make you feel self-confident?” (identification with commitment); “Do you ever think that choosing a different profession would make your life more interesting?” (reconsideration of commitment); “Are you looking forward to becoming a social worker?” (affirmation); “Do you ever seek information about the different job options that a degree in social work may offer?” (practices). Respectively, Cronbach’s alphas were .46, .73, .83, .76, .64.

To classify students in the five statuses, the scores on the three subscales (In-depth exploration, Identification of commitment, Reconsideration of commitment) were divided in high and low based on the median in our sample. Next, the combination of scores as indicated in Table 2 was used for the classification. It is likely that respondents with the ‘foreclosed’ status are more likely to score higher rather than lower on ‘identification of commitment’ and those with the ‘moratorium’ status being likely to score higher rather than lower on ‘in-depth exploration’.

Reminiscence

Reminiscence was measured using the Identity scale of the Reminiscence Functions Scale (RFS) (Webster, 1997). This subscale examines the degree of life reflection to strengthen current identity formation. Going forward, this will be referred to as reminiscence. It includes six items, with a response scale ranging from 1 = Never to 6 = Very often. Every item begins with: 'When I look back on my life it is...'. A sample item is: "When I look back on my life it is ... because memories from my past help me determine who I am today". Cronbach's alpha was .81.

Reflection

Reflection was measured using the Career Reflection scale (Kuijpers, Meijers & Gundy, 2011). This focuses on reflective behavior in regard to career. The version used was from 2016 and was retrieved from Kuijpers. It includes ten items, with a response scale ranging from 1 = Strongly disagree to 4 = Strongly agree. Sample items are: "If something goes well at school, I think about what my talent is" and: "I find out which work would suit my talents". Cronbach's alpha was .82.

Learning motivation

Learning motivation was measured using a scale by Kuijpers and Meijers (2009). This scale contains ten items that investigate the student's learning motivation and their actual behavior during learning. The response scale ranges from 1 = Strongly disagree to 4 = Strongly agree. Sample items are: "At this course, I can easily keep my attention on my studies" and: "I work hard at this course". Cronbach's alpha was .81.

Internal locus of control

Internal locus of control was measured using a scale by Kuijpers and Meijers (2009) which measures the extent to which someone feels they have a grip on their own career. This scale includes six items, with a response scale ranging from 1 = Strongly disagree to 4 = Strongly agree. A sample item is: "By working hard, I can later become what I want". Cronbach's alpha was .76.

Well-being

The Mental Health Continuum-Short Form (MHC-SF) (Lamers et al., 2011) was used to measure the degree of a person's well-being. There are 14 items. Every item begins with "In the past month, how often did you feel...". The response scale ranges from 1 = Never to 6 = Every day. Sample items are: "...that you were happy" and "...that you had warm and trusting relationships with others". Cronbach's alpha was .88.

Analyses

SPSS24 was used to process the data. First, we calculated the means of the different subscales to test hypothesis 1a. Second, to test the hypotheses 1b, 1c and 3a through 3e, the correlations between PI, the processes of PI and the resources of PI were calculated using Pearson correlation coefficients. Third, a one-way ANOVA with a post hoc (Bonferroni) was performed to investigate differences, therefore testing hypothesis 2. Finally, a hierarchical multiple linear regression was used to explore the unique predictors of a strong PI (H4). PI was used as a dependent variable. In the first step, the three fundamental processes were entered as independent variables (identification with commitment, reconsideration of commitment and in-depth exploration). In the second step, the other two processes (affirmation and practices) were entered, and finally in the third step, the resources of PI (reminiscence, reflection, learning motivation, internal locus of control and well-being) were entered.

Table 2 Classification five PI statuses

(Professional) Identity status	In-depth exploration	Identification with commitment	Reconsideration of commitment
Achievement	High	High	Low
Foreclosure	Low	High*	Low
Diffusion	Low	Low	Low
Moratorium	High*	Low	High
Searching moratorium	High	High	High

* Originally the score 'medium' belonged to this PI status

RESULTS

PI

Our first hypothesis (H1a) that social work students have a weakly developed PI can be confirmed when analyzing the frequency distribution of Career Identity. The mean score is 2.7 (SD .50), just above the midpoint of 2.5 on a scale from 1 through 4 (Table 3), thus confirming the hypothesis.

Table 3 Means (sub)scales

Scale /subscale	Total sample N = 382
PI	2.7 (.50)
In-depth exploration	3.0 (.65)
Identification with commitment	3.6 (.64)
Reconsideration of commitment	2.1 (.80)
Affirmation	4.0 (.61)
Practices	2.6 (.69)
Identity Reminiscence (RFS)	4.4 (.71)
Career Reflection	2.8 (.48)
Learning Motivation	2.8 (.47)
Intern locus of control	3.1 (.50)
Well-being	4.0 (.78)

PI and its five processes

The correlation coefficients of all variables are presented in Table 4. There are significant positive relations of PI with the three processes: identification with commitment, affirmation and practices, thus confirming H1b. Table 4 displays two negative correlations of PI with the two PI processes: in-depth exploration and reconsideration with commitment which confirm H1c.

Table 4 Correlations Total sample N = 382

(Sub)scale	1	2	3	4	5	6	7	8	9	10	11
1. PI	-	-.23**	.49**	-.47**	.57**	.18**	.17**	.28**	.30**	.29**	.40**
2. <i>In-depth exploration</i>		-	.01	.27**	-.10	.22**	.13*	.24**	.02	.04	-.03
3. <i>Identification with commitment</i>			-	-.40**	.64**	.18**	.31**	.36**	.28**	.15**	.23**
4. <i>Reconsideration of commitment</i>				-	-.62**	-.06	-.10	-.02	-.32**	-.05	-.19**
5. <i>Affirmation</i>					-	.24**	.21**	.24**	.30**	.09	.28**
6. <i>Practices</i>						-	.14**	.22**	.26**	.05	.12*
7. Identity reminiscence (RFS)							-	.47**	.20**	.09	.22**
8. Career reflection								-	.09	.27**	.32**
9. Learning motivation									-	.18**	.16**
10. Internal locus of control										-	.28**
11. Well-being											-

*p < .05; **p < .01 (Pearson's correlation coefficient)

PI and the five statuses

Based on the classification from Table 2, there are 287 students who belong to one of the five PI statuses (so 95 students did not fit into one of these PI statuses). Table 5 presents the differences in overall PI according to the PI status (one-way ANOVA). Findings showed significant differences between the PI and the five PI statuses. Additionally, a post hoc test (Bonferroni) was performed to examine differences between the five PI statuses (Table 5). Findings showed significant differences in PI between the five PI statuses. The overall PI scores for the four PI statuses 'achievement', 'foreclosure', 'diffusion' and 'search moratorium' were significantly higher than those for the 'moratorium' status (all $p < .01$). In addition, the PI status 'foreclosure' showed a significantly higher PI score than the PI status 'diffusion' ($p < .01$). However, this difference does not show the PI status 'achieved' compared to 'diffusion'. Therefore we must reject hypothesis H2 with regard to the outcome around the 'diffusion' status but not with regard to the outcome of the 'moratorium' status. It also appears that the PI statuses 'achieved' and 'foreclosure' have a significantly higher PI score than the status 'search moratorium' (respectively $p < .05$ and $p < .01$). Finally, it appears that the status 'foreclosure' scores significantly higher on PI than the status 'diffusion' ($p < .01$).

Table 5 Means scores and standard deviations in overall PI by PI status N =287

Scale	Mean (SD)					F (4,282); p value
	Achievement N = 61	Foreclosure N = 60	Diffusion N = 47	Moratorium N = 73	Search Moratorium N = 46	
PI	3.0 (.41)	3.1 (.38)	2.8 (.38)	2.3 (.44)	2.7 (.51)	31.66; .00

PI and resources

There are significant positive relationships between both reminiscence and reflection and overall PI. The more students reminisce and reflect, the stronger their PI, therefore we can accept H3a and H3b (Table 4). There is a significant positive relation between learning motivation and overall PI. Students who are more motivated to learn have a stronger PI, which confirms H3c. Table 4 displays that there is a significant positive relation between internal locus of control and overall PI. Dedicating the cause of success or failure to personal efforts seems related to a stronger PI, thus we can accept H3d. Moreover, there is a significant positive relationship between well-being and overall PI. Students with a higher well-being have a stronger PI and therefore we can also accept H3e.

PI, processes and resources

As Table 4 shows, the processes appear to be interdependent, as well as the resources and as the processes with the resources. To investigate whether there is a unique contribution from each process and resource on PI, a regression analysis is performed. The hierarchical multiple linear regression analyses of overall PI showed that all three models were significant (all $p < .01$). The first step contained the three fundamental processes of PI as dependent variables, namely: in-depth exploration, identification with commitment and reconsideration of commitment. The adjusted R Square of this first model is .35. All three processes significantly added to the model: in-depth exploration ($\beta = -.16$; $p < .01$), identification with commitment ($\beta = .38$; $p < .01$), reconsideration of commitment ($\beta = -.28$; $p < .01$). As a second step the other two processes of PI (affirmation and practices) were added and the adjusted R Square increased significantly to .40. All five variables added significantly to this second model: in-depth exploration ($\beta = -.19$; $p < .01$), identification with commitment ($\beta = .22$; $p < .01$), reconsideration of commitment ($\beta = -.14$; $p < .01$), affirmation ($\beta = .30$; $p < .01$), practices ($\beta = .10$; $p < .05$). Finally, as a third step the resources of PI (reminiscence, reflection, learning motivation, internal locus of control and well-being) were added. The adjusted R Square raised significantly to .48. The seven variables which significantly added to the model are: in-depth exploration ($\beta = -.21$; $p < .01$), identification with commitment ($\beta = .15$; $p < .01$), reconsideration of commitment ($\beta = -.14$; $p < .01$), affirmation ($\beta = .26$; $p < .01$), reflection ($\beta = .11$; $p < .05$), internal locus of control ($\beta = .15$; $p < .01$), well-being ($\beta = .18$; $p < .01$). The variables practices ($\beta = .06$), reminiscence ($\beta = -.04$) and learning motivation ($\beta = .06$) did not add significantly to this model.

DISCUSSION AND CONCLUSION

This study assessed how the overall PI of social work students is related to underlying processes of the construction of PI and possible resources. Most hypothesis were confirmed. First, social work students appear to have a weak PI. Furthermore, overall PI was positively related to the processes 'identification of commitment', 'affirmation' and 'practices', and negatively to the processes 'in-depth exploration' and 'reconsideration of commitment'. However, contrary to our hypothesis, only students with the 'moratorium' status and not those with a 'diffuse' status demonstrated a weaker PI in comparison to the other four PI statuses. According to our hypotheses, all resources were positively related to overall PI. Therefore, students who 'reminisce' and 'reflect' more, who have more 'learning motivation', 'internal locus of control' and 'well-being' have a stronger overall PI. The hierarchical regression model showed that four processes (In-depth exploration and Reconsideration of commitment; Identification of commitment and Affirmation) and

three resources (reflection, internal locus of control and well-being) have unique relations to overall PI whereas the process of 'practices' and the resources 'reminiscence' and 'learning motivation' do not.

The weak PI of social work students is in line with other research among social work students (K. Adams, Hean, et al., 2006) and among other students in general (Meijers & Kuijpers, 2014). It would be interesting to look longitudinally to what extent the development of PI differs per student related to their study program. The relatively high number of students with the PI status 'moratorium' in the current study is striking and further strengthens the finding that the PI of the studied social work students is less developed. However, according to the meta-analysis of Kroger et al. (2010), the status of 'moratorium' is likely to change to the 'achievement' status, which indicates that these students might still be in the middle of the process of forming a strong PI. Our study confirms that the PI status 'moratorium' is not related to a strong PI, which aligns with Crocetti et al.'s (2013) results; although in their research the 'diffuse' status also scored low on several identity functions, which was not replicated in our study. On the other hand Crocetti et al. (2013) distinguished an education identity domain and the poorest identity profile in this domain was the moratorium domain. It would be interesting to do longitudinal research into the possible shifts of identity status among students during their studies.

In sum, this study showed relations of reflection, reminiscence, learning motivation, internal locus of control, and well-being with a stronger PI. Reflection, internal locus of control, and well-being had unique relationships with PI in the regression analysis. These findings have implications for educational programs that want to promote their students' PI. For education, especially the role of 'reflection', 'reminiscence' and 'learning motivation' on the formation of PI are important. Research shows that reflection can increase learning motivation (Fullana et al., 2016; Turner & Beddoes, 2007) and reminiscence in the form of storytelling contributes to the intrinsic learning motivation of students (Moenandar & Huisman, 2019). Interesting is that in our research 'reflection', 'reminiscence' and 'learning motivation' are related to a stronger PI, 'reflection' and 'reminiscence' are related to each other, but 'reflection' and 'learning motivation' do not. Additionally, the regression analysis displayed that related to those three resources, only 'reflection' contributed significantly to PI. The question that then arises is how to implement reflection and reminiscence to increase the learning motivation and the PI of students. As previously mentioned, storytelling can contribute to learning motivation as a form of reminiscence (Moenandar & Huisman, 2019). Additionally, supervision, personal values and empathy contribute to the PI of social work students (Levy et al., 2014). However, previous research has shown that self-reflection does not always lead to a higher well-being of students (Lengelle et al., 2016; Stein & Grant, 2014). Stein and Grant's (2014) research indicates that the relationship

between self-reflection and subjective well-being runs through the moderator self-insight. So the way in which self-reflection is used in education must be carefully addressed. Subsequent to this, Lengelle et al. (2016, p.103) described how people can maximize the benefit of reflection: *“Essentially, if a person is psychologically healthy, confident, open, in control, not expecting too much of reflection, and not too focused on him- or herself, then productive forms of reflection are likely to occur”*. It is fairly possible that social work students meet these characteristics, and therefore show positive relationships between PI and the resources ‘well-being’, ‘reflection’ and ‘reminiscence’. Our findings suggest that attention should be paid in education to strengthen students’ PI through different forms of reflection. Reflective education already occupies a prominent place in the higher education curriculum (Trede et al., 2012), whereby reminiscence could be implemented as a new part of reflective education to enhance self-insight and a PI.

This study has its limitations. First, the reliability of the subscale ‘in-depth exploration’ (Mancini et al., 2015) is low, potentially affecting our results of the found correlations and PI statuses, but since there were no unexpected results with regard to the processes and resources, the impact seems marginal. This subscale should be adjusted if it is to be of service in future research. Second, this study showed a relation of several identity processes and resources with PI, also in the regression analysis. However, from this cross-sectional study we cannot say anything about causality and it is therefore possible that the PI influences the processes and resources or vice versa. ‘Identity’ is considered a permanent dynamic process of “self-construction” (Trede et al., 2012), although the development of an identity might be less dynamic than previously assumed, and may follow a specific order (Meeus, 2011). It is therefore essential to investigate longitudinally what precisely the role of exploration is in the formation of a (professional) identity, and to what extent the formation of PI proceeds in a more dynamic or fixed order. Nonetheless, this study confirms that different processes and resources are related to a stronger PI of students whereby commitment is a key component of having a strong PI.

6

The added value of autobiographical reflexivity with persuasive technology for professional identities of Social Work students: A randomized controlled trial

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ABSTRACT

The added value of autobiographical reflexivity and persuasive technology (PT) compared to critical reflection was examined in a blended learning course. The main outcome measure was achieving a professional identity (PI). A Randomized Control Trial (RCT) was carried out with three measurement points (baseline, post-course, follow-up) and had three conditions: critical reflection; critical reflection and autobiographical reflexivity; critical reflection and autobiographical reflexivity integrated with PT. The study examined effectiveness (questionnaires, reflection reports), evaluations (focus groups) and persuasiveness (questionnaires) amongst 187 Dutch Bachelor Social Work students. There were no significant interaction effects between time and condition, however participants in all conditions improved significantly over time in their PI, choice certainty, social well-being and were stable in learning motivation, career reflection, drop-out threat, reminiscence, internal locus of control, emotional well-being and psychological well-being. Analysis of the reflection level through reflection reports showed no differences (critical reflection versus critical reflection combined with autobiographical reflexivity). The autobiographical reflexivity conditions showed more affective and cognitive involvement than critical reflection alone. The use of PT did not seem to have any effect. Autobiographical reflexivity combined with critical reflection appeared to be an equivalent option that participants appreciated more than solely critical reflection.

INTRODUCTION

The development of professional identity (PI) has been extensively investigated in recent years, particularly in higher education contexts (Dickinson et al., 2020; Marín et al., 2018; Trede et al., 2012). Due to economic, societal, interprofessional and technological developments as well as labor market changes, (future) professionals will have to adapt in their professional role more frequently than previously before (Engelbertink, Kelders, Woudt- Mittendorff, & Westerhof, under review). Professionals with a strong PI know what they stand for in their work: they are aware of their competences (Schilder, 2013), are confident in their work (Kelchtermans, 2009; Ryan & Carmichael, 2016; Schilder, 2013) and have the belief and feeling that their (future) PI suits their 'self' (Meijers & Kuijpers, 2014). As PI development is thus important for students in higher education, this also goes for Social Work students. Social Work students with a strong PI demonstrate a significant relationship with commitment to their future profession, with the feeling of belonging to a professional group, and with strategies of information seeking about (future) work (Engelbertink et al., under review). Additionally, students with a strong PI are more motivated to learn, proactive in their profession, use their network and have confidence in their career choice (Meijers & Kuijpers, 2014). Research shows that Social Work students (Adams, Hean, Sturgis, & Clark, 2006; Engelbertink et al., under review), and students in general, have a low PI (Meijers & Kuijpers, 2014). Therefore, universities must support their students to achieve a stronger PI (Trede et al., 2012). Though, there is little insight in which method is most suitable to achieve this. This study assesses the added value of autobiographical reflexivity and persuasive technology within a blended learning course for critical reflection among Social Work students.

The review of Trede et al. (2012) shows that most studies find practical learning to be the most critical factor in strengthening students' PI whereas the curriculum of a university and its learning context are not seen as all-determining. Additionally, the personal factors of students have most influence on the reinforcement of PI, in particular developing student agency, self-image and self-confidence. Levy, Ben Shlomo and Itzhaky's (2014) research among Social Work students also found evidence that students' personal sources are related to PI and shows that student satisfaction with their supervision is the most important direct factor in strengthening the PI. Within supervision, an integration takes place between learning in practice and theoretical learning at university whereby use is made of critical reflection (Graham, 2017). In Trede et al.'s review (2012) it becomes clear that critical reflection is an important method to support students in strengthening their PI. Most critical reflection studies focus on writing about current functioning (Trede et al., 2012; Whitaker & Reimer, 2017). Critical reflection has been shown to empower professionals, as well as encouraging them to broaden and deepen their methods of work through reflection of their current actions across various perspectives (Alsina et al., 2017;

Körkkö et al., 2016). In previous studies, students have reported that critical reflection reinforces their PI (Whitaker & Reimer, 2017).

A relatively new development in research in higher education is the use of autobiographical methods, such as: storytelling, narrative career counselling, Life Story Reflection and autobiographical reflection where reflecting on the past, present and future is intertwined (Lengelle & Meijers, 2014; Marín et al., 2018; Moenandar & Huisman, 2019; Spector-Mersel, 2016). The latter sources all argue for narrative methods based on professional experiences and theoretical reflections. These reflection methods relate to the student's past aiding them in becoming aware of their identity (Friesen & Besley, 2013), in turn contributing to their PI development. This integrates their identity with their future PI (Adams et al., 2006; Lanas & Kelchtermans, 2015). Relevant reflection processes students enter through narrative autobiographical reflection are characterized by writing, thinking through an internal dialogue, taking distance, reformulating, wondering and creating new perspectives, stories and renewing their sense of identity and PI (Lengelle & Meijers, 2014; Roberts, 2019). Additionally, the story or reconstruction of the student's PI is reformulated through exchange with other students (Lengelle & Meijers, 2014; Moenandar & Huisman, 2019). Inspired by Bakhtin's theory, Miehl and Moffatt (2000) argue that it is beneficial for, for example, Social Workers to be able to reconstruct their selves across various encounters with others. Empathy being a key component. The (re)construction of the PI throughout the career is based on *reflexivity*: Empathizing with another person also changes one's own self because the other person adds something to our own perspective of reality and the self. Therefore, we must distinguish reflection from reflexivity: Reflection is concerned with reflecting on an event in the near past or present, whereas reflexivity means reflecting on multiple layers and perspectives of one's self (Dickinson et al., 2020; Lengelle & Meijers, 2014; Miehl & Moffatt, 2000; Spector-Mersel, 2016). Exposure to several events from the past help to uncover the deeper layers to one's 'self'. Students are *reflecting* via a critical reflection process, and during autobiographical reflection they are concerned with *reflexivity*. This research therefore emphasizes autobiographical reflexivity.

So what is known so far from research on the added value of autobiographical narrative interventions? In an explorative qualitative study, Lengelle, Meijers, Poell and Post (2013) concluded - with some caution - that 16 students who followed a two-day creative writing course at the beginning and at the end of their internship were more vulnerable, wrote more about (positive and negative) emotions, and explored their choices and wishes more than the 19 students who did not receive a writing task. Furthermore, the students in the experimental group seemed to engage in a more creative way, allowing them to reflect on their careers on a positive emotional and cognitive level compared to the control group. Though, this was not numerically significant (Lengelle, Meijers, Poell, & Post, 2014). In another study, Roberts (2019) concluded from an analysis of more than 500 reflective

reports, and additional focus groups with students and instructors, that autobiographical writing stimulated students to reflect more deeply on their life experiences and could better interpret the meaning of this experience than students without autobiographical writing assignments. The method appeared particularly supportive for critical reflection, and personal and professional growth.

However, existing studies have not employed strong experimental designs that allow to conclude whether autobiographical reflexivity contributes more to PI development than critical reflection. The current research therefore uses a Randomized Control Trial (RCT) to assess the added value of autobiographical reflexivity on the PI. The aim of the research is to demonstrate the added value of autobiographical reflexivity (with persuasive technology (PT)) for the PI development of Social Work students. The main research question of this study is:

RQ1. Is autobiographical reflexivity in combination with critical reflection more effective in stimulating PI development of Social Work students than critical reflection alone?

There are several resources which might influence the PI of beginning professionals, including learning motivation, career reflection, choice certainty, drop out threat, reminiscence skills, internal locus of control, and well-being (Engelbertink et al., under review; Kuijpers, Meijers, & Gundy, 2010; Meijers & Kuijpers, 2014). Therefore, we were interested in assessing whether autobiographical reflexivity also contributes to these resources:

RQ2. Is autobiographical reflexivity in combination with critical reflection more effective in stimulating resources for PI development of Social Work students than critical reflection alone?

Furthermore, it was interesting to explore whether the level of reflection that students achieved after the course depended on their reflection method:

RQ3. Do students who receive autobiographical reflexivity in combination with critical reflection have a higher level of reflection than students who received critical reflection alone?

The current research used blended learning methods for critical reflection and autobiographical reflexivity. Engagement with an online learning environment, as part of a blended method, is important in order for students to work in a way as developed by a teacher (Bernard et al., 2014; Engelbertink et al., 2020b). To increase student engagement, persuasive technology (PT) can be used in an online intervention. PT are techniques

that influence people's behavior in a positive way without coercion or deception (Oinas-Kukkonen & Harjumaa, 2009). The blended learning course for autobiographical reflexivity was developed in an earlier participatory design with a focus on PT to motivate students in the online part of the reflection course (Engelbertink et al., 2020b). PT could help motivate and engage students during the online part of a blended learning course without interference of teachers (Engelbertink et al., 2020b; Kelders et al., 2012; Oinas-Kukkonen & Harjumaa, 2009). PT may support students in their academic assignments, for example by guiding them with step-by-step instructions through materials in a personalized way (PT tunneling combined with personalization), or through receiving encouraging messages when partial assignments have been completed (PT praise). In an evaluation study, students reported that they were indeed motivated by most PT strategies, as they received support for their assignments via their computer in dialog form (Engelbertink et al., 2020a). However, little quantitative research is currently available regarding the effects of PT on perceived persuasiveness and involvement in an educational setting (Engelbertink et al., 2020b, 2020a).

RQ4: Does the use of PT increase experienced persuasiveness in Social Work students during a blended learning course for critical reflection and autobiographical reflexivity, in comparison to a blended learning course for critical reflection and autobiographical reflexivity without the use of PT?

RQ5: Does the use of PT increase personal involvement in Social Work students during a blended learning course for critical reflection and autobiographical reflexivity, in comparison to blended learning courses for critical reflection and/or autobiographical reflexivity without the use of PT?

Finally, we were interested in the experiences of teachers and students. Here, we explored the added value of the critical reflection lessons and the autobiographical reflexivity in the development of the students' PI.

RQ6: What are the experiences of teachers and students regarding the influence of critical reflection and autobiographical reflexivity on the development of student's PI and their involvement during the lessons?

METHOD

Design

The purpose of our study was to use a RCT using three parallel groups within a blended learning course offering: (A) Critical reflection; (B₁) Critical reflection in combination with autobiographical reflexivity; (B₂) Critical reflection in combination with autobiographical reflection with the use of PT in the online part of the course. There were three measurement points where students completed online questionnaires. These were baseline in January (after three lessons of critical reflection, but before the autobiographical reflection started, at the time, as the conditions then started to vary); post-course in May (when the course was finished); and at follow-up at the end in June (7 weeks after the course ended. At this point, all reflection lessons in that study year were finished). In addition, at the time of the post-course, grades from the students' reflection reports were collected and focus groups were held. A total of 17 classes were randomly assigned to each of the two main conditions ('critical reflection condition A' versus 'critical reflection in combination with autobiographical reflection'), and the second condition B was also randomly divided into two subgroups ('B₁' and 'B₂'). This was a so-called nested sample (see Table 1). Within the article, it will be indicated whether it concerns main condition B (both B₁ and B₂) or each of the nested conditions B₁ or B₂.

There were 14 teachers who taught the 17 participating classes. There were three teachers who taught two classes within the same condition: one in condition A, one in condition B₁ and one in condition B₂. Teachers first indicated whether they wanted to give the critical reflection course or the one combined with autobiographical reflection. 2 out of 11 teachers were randomly allocated to condition A, as excessive interest in teaching the combined course was communicated. The remaining nine teachers were randomly allocated to condition B₁ and B₂ for the combined course. All teachers were female, except one male teacher for condition A. All were qualified teachers with a Master's or Bachelor's degree and with work experience in the field of Social Work. They had additionally all worked for the Social Work program for at least four years. On a voluntary basis, the teachers were asked to attend a two-hour workshop on critical reflection. The teachers in condition B₁ and B₂ were also able to join a two-hour workshop on autobiographical reflection. The workshop was offered several times and had a 70% attendance rate. To stimulate as much unity as possible in the lessons, the first author made corresponding PowerPoints for each lesson per main condition (condition A and condition B). These PowerPoints were made available to students in their Learning Management System (Blackboard) and linked to their condition.

Table 1 Overview of study conditions

Condition	Groups (N)	Lesson structure	Formative assignments	Summative assessment
A	8 (99)	8 lessons in critical reflection	4 online assignments in critical reflection	Written reflection report (rubric NARRA ¹)
B ₁	4 (56)	4 lessons in critical reflection and 4 lessons in autobiographical reflection	4 online assignments in autobiographical reflection	Written reflection report (rubric NARRA ¹)
B ₂	5 (64)	4 lessons in critical reflection and 4 lessons in autobiographical reflection	4 online assignments in autobiographical reflection with PT	Written reflection report (rubric NARRA ¹)

¹based on the Dutch translation of the Rubric for Narrative Reflection Assessment (NARRA) (Alsina et al., 2017)

Procedure

Students were unaware of the three conditions and followed the obligatory course their teacher was allocated to as a regular part of the academic program. The students do an internship during this course period, which makes it possible for the students to choose a meaningful experience from their internship on which to reflect. The course is led by their study career counselor, who teaches them throughout the academic year. Because of this natural integration of the research, it is not expected that the three conditions will be perceived as completely different by the students if they discuss the lessons with each other. The teacher supports them during the lessons to the moment when they have to hand in their reflection report. In terms of content, receiving four lessons of critical reflection was considered enough for students to be capable of writing their reflection report. Students in condition B were therefore not considered to be disadvantaged. It was explained to students that a study was being conducted on their professional development and would be investigated at three timepoints across the academic year. During each part of the data collection (questionnaires, reflection report grades linked to the questionnaires, and focus groups), students independently decided whether or not to participate. Permission from the ethics committee was granted for this study.

Questionnaires

During the first and second measurement points, students completed the questionnaires online during their reflection lessons in the presence of the first author. For the third measurement, the first author sent the 17 contacts from each class a link to the questionnaires. These contacts then forwarded the questionnaires to the classes' WhatsApp group. Students could collect a gift from their teacher as a reward for participating.

Reflection reports

During the post-course measurement, permission was requested from the students to

include their reflection report's grade within this study. The grade that could be obtained was between 0 and 10. The teacher only assessed reflection reports of students in their own class(es). To guarantee anonymity, an administrator documented the grades on the basis of student matriculation numbers received from the first author. Only those grades were included, as students could rewrite their report acknowledging suggestions from teacher feedback if undergoing a re-sit.

Focus groups

Student participants for the focus groups were recruited on a voluntary basis by the first author visiting classes. The teachers of the focus groups were also recruited by the first author on a voluntary basis via e-mail. Three focus groups were held at the post-course measurement. During the three focus groups, the first author was the moderator while a fellow researcher took minutes and monitored the time. Respondents provided consent, with each focus group lasting between 45 and 60 minutes and was a one-off. Based on the minutes, a report was produced that reflected the experiences of the respondents. The reports were submitted to the respondents for approval.

Intervention

All conditions

All three conditions started with three lessons of critical reflection and additionally ended with critical reflection in the eighth lesson. In teaching critical reflection, the Rubric for Narrative Reflection Assessment (NARRA) was implemented (Alsina et al., 2019; Alsina et al., 2017) where students were encouraged to reflect on a meaningful situation at a critical reflection level. This rubric was used throughout the lessons and as a summative assessment (Table 1). The students wrote out a meaningful situation; they then reflected on a micro, meso and national level. Other elements included reflecting on value judgments, emotions and in the Dutch version a link was made with their PI according to Kelchtermans' theory (2009). In accordance with the latter theory, they were asked to reflect on the following five PI components: self-image; self-esteem; job motivation; task perception; and future perspective. The NARRA built on the reflection cycle of Korthagen, yet added reflection on previous experiences, including the student's autobiography (Alsina et al., 2017). There was more reflection than reflexivity because students reflected on a specific current event; whereas reflection or reminiscence on identity development in dialogue with others received little attention.

Condition A

Condition A received four additional critical reflection lessons (Table 1). The eight critical reflection lessons were linked to four online reflection assignments. The students'

internships and behavior in their first and current second academic year were central: the student's work motivation, their own actions in internships, reflection on Social Work organizations and at a macro level; and their internship goals. The four online assignments were placed in Blackboard.

Condition B

Condition B received four additional autobiographical reflection lessons (Table 1). The autobiographical reflexivity intervention '*Tell your Story*' (Engelbertink et al., 2019) was based on the method '*The stories we lived by*' (Korte et al., 2012; Westerhof, Bohlmeijer, & McAdams, 2017), and used autobiographical reflexivity with the aim of strengthening the PI of students. '*The stories we lived by*' was found to be effective in the face-to-face variant - though it had a different target group, namely elderly people with mild depressive symptoms (Korte et al., 2012). However, in the study where the online variant was offered to older adults with mild depression, it became recommended to choose a blended variant in the future due to its lack of effectiveness (Westerhof et al., 2017). Using a blended variant, participants could write down their memories at their preferred pace, and then in face-to-face meetings they could more deeply reflect on their meaningful memories. In the current intervention, students wrote their autobiography from three online modules using various themes. The themes covered early years, adolescence, work and care, love and friendships, and there was an optional fourth online module on the art of living and grief. During the fifth and final online module, students were supported in discovering some of the core themes that infiltrated through their life themes uncovering a deeper layer of meaning. Similar to critical reflection, the students were encouraged to examine their experiences through perspective changes, as well as reflecting on Kelchtermans' five components of PI. The five online modules were placed in Blackboard.

Parallel to the four compulsory online modules, the students discussed their written assignments in class with their fellow students and teacher. Here, they could reflect more deeply on their meaningful memories. Through the empathic listening process, the view of their own 'self' could increase, making them aware of their identity and PI across different perspectives and through the connection between past, present and future. Reflexivity was central.

Supplement to condition B₂

The online homework assignments of condition B₂ were designed with PT (Table 1). The PT used were based on the Persuasive Systems Design (PSD) model (Oinas-Kukkonen & Harjumaa, 2009). Use was mainly made of technology that supported the student in carrying out this task which promoted dialogue between human and computer, and promoted the credibility of the method. An example of a support task used within the online course was that students could choose from different assignments and were then

guided step-by-step through each. If the student was exploring their PI well by completing an assignment, then the computer would express messages of encouragement, making this an example of dialogue between the human and computer. Almost no use of technology has been made that promotes cooperation between students. For a detailed description of the used PT and the pilot evaluation of the online modules, refer to our other studies (Engelbertink et al., 2020b, 2020a).

Participants

The study included a total of 244 Dutch second year Social Work students from the academic year 2017 to 2018. They studied at Saxion University of Applied Sciences in the east of the Netherlands at Bachelor level. A class of students who resat the previous year did not participate in the study; they had already taken the reflection classes previously. One class had eight students (condition B₂), while the other classes each contained 12 to 17 students (Table 2).

Descriptive analyses showed no significant differences in gender and age between the three conditions. More women than men participated across all of the conditions, with the mean age being 21 years (min. age 17 – max. 30; SD=2.3). By post-course, 23 students had stopped or delayed their studies.

A multivariate ANOVA showed that the baseline measurements of the primary and secondary outcome measures did not differ significantly across the three conditions (for PI: $F(2, 184) = 0.23$; $p = .795$). Therefore, randomization succeeded.

Table 2. Descriptive statistics per measurement point and condition

	t0	t1	t2
Condition A, 8 classes			
N (%)	87 (46%)	70 (42%)	35 (47%)
Gender	75 (86%) female	61 (87%) female	31(89%) female
Condition B₁, 4 classes			
N (%)	46 (25%)	42 (26%)	19 (25%)
Gender	41 (89%) female	37 (88%) female	16 (84%) female
Condition B₂, 5 classes			
N (%)	54 (29%)	53 (32%)	21 (28%)
Gender	43 (80%) female	41 (77%) female	18 (76%) female
Total, 17 classes			
N (% response)	187* (77%)	165** (75%)	75** (34%)
Gender	159 (85%) female 28 (15%) male	139 (84%) female 26 (16%) male	65 (87%) female 10 (13%) male

*response of the initial 244 participants; **response of the 221 participants after the drop-out.

Of the 164 students at the post-course measurement, 145 agreed to link their reflection report grade to their completed questionnaires. Of these students, 116 were graded in the first assessment (condition A: 41 students; condition B: 75 students).

Regarding the three focus groups, three female teachers (one from condition A and two from condition B), three students (condition A: two females, one male) and another three students (condition B: two females, one male) participated. The participating students from condition A had the same teacher, but were from two different classes. The participating students in condition B had lessons from three different teachers, so were from three separate classes.

Instruments

Questionnaires

The primary outcome of the RCT was PI, as measured with the *Career Identity* scale (Kuijpers & Meijers, 2009; 10 items, 4-point scale). The 2016 version of this scale was used and retrieved from Kuijpers. The scale has a response scale ranging from 1 = Strongly disagree to 4 = Strongly agree. A sample item is: “I have discovered what kind of work really suits me”. Cronbach’s alpha was respectively .85; .82; .88. Secondary outcomes were learning motivation, career reflection, certainty of choice, drop-out threat, reminiscence, internal locus of control, and well-being. Learning motivation was measured using the *Learning Motivation* scale (Kuijpers & Meijers, 2009; 10 items; 4-point scale). The response scale ranges from 1 = Strongly disagree to 4 = Strongly agree. A sample item is: “At this course, I can easily keep my attention on my studies”. Career reflection was measured using the Career Reflection scale (Meijers, Kuijpers, & Gundy, 2013; 10 items; 4-point scale). A response scale ranging from 1 = Strongly disagree to 4 = Strongly agree was used. A sample item is: “If something goes well at school, I think about what my talent is”. Certainty of choice was measured using Kuijpers & Meijers’ (2009) scale (5 items; 6-point scale). All items run from negative to affirmative. Starting with “certainly not” or “not at all” up to various affirmative response scales such as “yes, very much” or “yes, certainly”. An example item is: “Is this study program completely your choice?” The higher the score for choice certainty, the more confident the student feels about his choice of study. The drop-out threat was also measured using Kuijpers and Meijers’ (2009) scale (4 items; 4-point scale). A response scale ranging from 1 = Strongly disagree to 4 = Strongly agree was used. A sample item is: “I am going to quit this study program”. The higher the score on this scale, the higher the chance that the student will want to quit the study program. The *Identity* part of the Reminiscence Functions Scale (RFS) (Webster, 1993; 6 items; 6-point scale) measured reminiscence. A response scale ranging from 1 = Never to 6 = Very often was used. Every item begins with: ‘When I look back on my life it is...’. A sample item is: “When I look back on my life it is ... because memories from my past

help me determine who I am today”. The Internal locus of control was measured using Kuijpers and Meijers’ (2009) scale (6 items; 4-point scale). The response scale ranges from 1 = Strongly disagree to 4 = Strongly agree. A sample item is: “By working hard, I can later become what I want”. The *Mental Health Continuum-Short Form* (MHC-SF) (Lamers et al., 2011) measured well-being, dividing it into three subscales: *emotional* (3 items), *social* (6 items) and *psychological* (5 items). Every item begins with “In the past month, how often did you feel...”. The response scale ranges from 1 = Never to 6 = Every day. A sample item is: “In the past month, how often did you feel...that you had warm and trusting relationships with others”. At all three measurement points within this study each scale had adequate-to-good reliability (Cronbach alpha scores ranged from .70 to .89).

The persuasiveness of the blended learning course coupled with the students’ involvement, due to the PT used, was measured using two scales. Persuasiveness was measured at post-course using the Perceived Persuasiveness Questionnaire (PPQ) (Lehto, Oinas-Kukkonen, & Drozd, 2012; 15 items divided into five subscales: *task* (3 items), *dialogue* (4 items), *reliability* (4 items), *social support* (1 item) and *perceived persuasiveness* (3 items); 7-point scale). The response scale ranges from 1. Completely disagree to 7. Completely agree. Sample items are: “The online module stimulated me” (subscale dialogue) and “The online module influenced me” (subscale perceived persuasiveness). Cronbach’s alpha was .92 for the total scale. An additional subscale within the PPQ - *effort* (3 items) – was not included in the total scale, due to its low reliability. Personal involvement was additionally measured at post-course, and follow-up, with the Personal Involvement Inventory (PII) (Zaichkowsky, 1994; subscales Affective Involvement and Cognitive Involvement both 5 items; 7-point scale). Every item begins with “The Professional Development course in periods 2 and 3 (the lessons and the four homework assignments) was for me...”. The answers were presented on a seven-point scale with a negative description of a word on one side and a positive expression of that word on the other side. No further words were given to the scale options 2 to 6. An example of an Affective Involvement item is: boring versus interesting and an example of a Cognitive Involvement item is: not important versus important. Cronbach’s alpha was respectively .89 and .91 for Affective Involvement and .86 and .93 for Cognitive Involvement.

Reflection reports

Previously mentioned, the NARRA rubric was used during the lessons and as a summative assessment to encourage the students to reflect at a critical reflection level.

Focus groups

A script was followed as part of the focus groups. The focus group concentrated on answering two main questions: How was the course experienced?; What improvements are needed? These related to three main areas: face-to-face lessons, online homework and

the NARRA rubric. Teachers spoke from their own experience and indicated how they predicted the students experienced the courses.

Data analysis

Univariate descriptive statistics (percentages, means, and standard deviations) were used to describe the group of participants. Bivariate statistics (chi-square, t-test, analysis of variance (ANOVA)) provided insight into differences between the conditions at the start of the course.

RQ1 and RQ2

To answer RQ1 and RQ2, the two main conditions (A versus B) were compared to one another using the questionnaires for the primary and secondary outcomes across time (effectiveness). To analyze the effects of the intervention, a mixed model analysis (using the unstructured covariance) was carried out using correlated residuals for the repeated measure 'time' (baseline, post-course, and follow-up) within the random effect for 'subject'. We specified two fixed factors: condition (critical reflection versus autobiographical reflection) and time (baseline, post-course, and follow-up measurement), as well as their interactions.

RQ3

To answer RQ3, the two main conditions (A versus B) were compared based on the student's grade in their summative assessment reflection report based on the NARRA. An independent *t*-test was applied to calculate the differences between the two conditions with respect to their reflection report grade.

RQ4

RQ4 was answered by comparing the two autobiographical reflexivity courses (B_1 without PT versus B_2 with PT) with one another on their perceived persuasiveness at the time of the post-course. A *t*-test was applied to determine any perceived differences in persuasiveness between condition B_1 and B_2 at the time of the post-course.

RQ5

RQ5 was answered by comparing the three conditions with each other on the personal involvement questionnaire (post-course and follow-up). To calculate the effects of the intervention for involvement, two ANOVAs were carried out at the post-course and follow-up measurement.

RQ6

The first author was the interviewer, using a second researcher for minute-taking. Based on these minutes, a report was produced that reflected the respondents' experiences. The

minutes were then submitted to the respondents for approval. A content analysis was performed based on the minutes taken which explored positive experiences, negative experiences and points for improvement suggested by the respondents. During the analysis, a fourth theme 'reflection on education in general' was added.

RESULTS

RQ1 and RQ2: Effectiveness of PI and factors

Table 3 displays the results of the mixed models for the primary outcome (PI) and the secondary outcomes. For PI, there was no significant interaction effect between condition and time. However, there was a significant effect over time across all conditions; PI had improved between baseline and follow-up.

Furthermore, there were no significant interaction effects between condition and time for all of the secondary outcomes. For choice certainty and social well-being, there was a significant effect over time. Across all conditions, the choice certainty was higher at the post-course and follow-up measurement compared to baseline. Across all conditions, social well-being had improved at the follow-up measurement compared to baseline.

When examining reminiscence, there was a significant main effect of condition. The students of main condition B scored significantly higher on reminiscence than students from main condition A.

RQ3: Reflection level

The analysis of the reflection level through reflection reports showed no differences in grades between the two main conditions (condition A: mean = 5.9, SD = 1.6; condition B: mean = 6.0, SD = 1.6, $t(114) = -0.235$, $p = .815$). These grades corresponded to reflection level 3, 'reflection', in association with the NARRA rubric.

Table 3 Primary and secondary outcomes two conditions (Estimated Marginal Means)

Variable (range)	Baseline		Post-course		Follow-up		Cohen's <i>d</i> at follow-up	Condition	Time	Condition x Time
	Mean	SE	Mean	SE	Mean	SE				
PI	2.7	.06	2.8	.05	2.8	.07	.23	F (1, 215.8) = 0.3	F (2, 101.7) = 6.1**	F (2, 101.7) = 1.2
	2.7	.05	2.8	.05	2.9	.07				
Learning motivation	2.9	.05	2.7	.06	2.7	.07	.26	F (1, 211.2) = 2.1	F (2, 105.1) = 2.0	F (2, 105.1) = 0.7
	2.7	.05	2.7	.05	2.6	.06				
Career reflection	2.8	.05	2.8	.05	2.8	.06	.27	F (1, 217.7) = 1.9	F (2, 99.2) = .05	F (2, 99.2) = 0.5
	2.9	.05	2.9	.04	2.9	.06				
Choice certainty	4.7	.09	4.7	.10	4.8	.10	.16	F (1, 208.8) = .05	F (2, 110.6) = 3.3*	F (2, 110.6) = 0.8
	4.6	.08	4.8	.09	4.9	.10				
Drop out threat	1.3	.04	1.2	.05	1.2	.06	.00	F (1, 148.7) = 1.2	F (2, 94.3) = 1.3	F (2, 94.3) = 0.3
	1.2	.04	1.2	.04	1.2	.05				
Reminiscence	4.4	.07	4.4	.08	4.3	.11	.63	F (1, 194.3) = 4.1*	F (2, 102.2) = 1.2	F (2, 102.2) = 1.5
	4.5	.07	4.5	.07	4.7	.10				
Int locus of control	3.1	.05	3.1	.06	3.0	.07	.00	F (1, 203.7) = .02	F (2, 103.5) = 3.0	F (2, 103.5) = 0.2
	3.1	.05	3.1	.05	3.0	.07				
Emot well-being	4.4	.10	4.4	.10	4.1	.15	.24	F (1, 199.9) = .04	F (2, 103.9) = .87	F (2, 103.9) = 1.2
	4.3	.09	4.3	.09	4.3	.13				
Soc well-being	3.3	.09	3.5	.10	3.4	.12	.14	F (1, 208.3) = 0.1	F (2, 105.5) = 5.0**	F (2, 105.5) = 1.3
	3.2	.08	3.4	.09	3.5	.11				
Psych well-being	4.2	.10	4.3	.10	4.1	.13	.13	F (1, 202.6) = 0.1	F (2, 107.2) = .35	F (2, 107.2) = 1.2
	4.1	.09	4.1	.08	4.2	.12				

¹A = critical reflection B = critical reflection plus autobiographical reflection

*p < .05; ** p < .01

RQ4: Persuasiveness

The analyses of perceived persuasiveness between condition B₁ and B₂ at the time of the post-course showed no significant differences across all five subscales (Table 4).

Table 4 Persuasiveness nested conditions

	Condition B ₁	Condition B ₂	T-Test		
	Mean (Std.)	Mean (Std.)	T	df	Sig. (2-sd)
Task	4.67 (1.14)	4.79 (1.14)	-.388	58	.699
Dialogue	4.37 (1.05)	4.42 (.98)	-.172	58	.864
Reliability	4.84 (.96)	4.64 (.84)	.768	58	.445
Social support	4.34 (.85)	4.51 (1.03)	-.660	58	.512
Perceived persuasiveness	4.40 (1.12)	4.63 (1.06)	-.761	58	.450

RQ5: Involvement

Table 5 displays the results from the ANOVAs for affective and cognitive involvement. At post-course, the students in the nested conditions B₁ and B₂ scored significantly higher on affective and cognitive involvement than students from condition A. Affective involvement: $F(2, 163) = 9.76$, $p < .01^{**}$. Cognitive involvement: $F(2, 161) = 10.05$, $p < .01^{**}$. Post hoc comparisons using the Bonferroni test indicated that the mean score of condition B₁ and B₂ differed significantly from the mean score of condition A. The mean score of condition B₁ did not differ significantly from the mean score of condition B₂. At follow-up, the differences between the three conditions had disappeared for affective and cognitive involvement.

Table 5 Personal Involvement Inventory (PII) three conditions (ANOVA)

Variable (range)	Condition ¹	Post-course		Follow-up	
		Mean	SD	Mean	SD
PII Affective	A	3.4	.87	3.8	1.2
	B ₁	4.1 ^{**}	.96	4.5	1.0
	B ₂	3.9 ^{**}	.81	4.1	1.2
PII Cognitive	A	4.1	1.1	4.3	1.3
	B ₁	5.1 ^{**}	1.0	5.1	1.0
	B ₂	4.6 [*]	1.0	4.4	1.2

^{*} $p < .05$; ^{**} $p < .01$

RQ6: Focus groups

Results related to two questions (Appendix 1). Question 1 was: “How was the course experienced?” Students of main condition A experienced difficulty using the rubric and did not find the blended learning course useful. One student did not display a link between identity and PI. The three students stated it would be useful to have a course which runs from first year through to fourth year, with each year expanding on the previous year. The focus group provided students with more insight into the possibilities of reflection through the rubric and indicated that they found this useful.

The students from main condition B were generally satisfied with the blended learning course. They all had a positive experience using the online modules with autobiographical reflexivity, as they had gained insights about their own values and standards. One student expressed that they found it to be informative to discuss personal matters in the classroom; the need for this was shared among all three students. However, the classroom atmosphere did not always feel safe for sharing personal experiences. Although the rubric was seen as educational, the students found the language too complicated. Additionally, when using the rubric, more attention was given to the criteria as opposed to the reflected experience itself.

The teachers (from main conditions A and B) indicated that most of the students had worked hard on the online homework assignments, and that the rubric was useful for learning to critically reflect because it taught the students to reflect across various perspectives. Condition B stimulated the intrinsic motivation of students as the online module started with their own ‘self’. During the classes, the homework stimulated thorough discussions and questions, as well as promoting socializing throughout classes. This condition encouraged critical reflection and the rubric was described as complete and useful. Despite the rubric, students continued to find it difficult to reflect.

Question 2 was: “What improvements are needed?” All respondents (students and teachers) indicated that main condition B was preferred to teach students to reflect critically with respect to main condition A (Appendix 1). The reasoning provided by the respondents was that students showed more involvement in the autobiographical reflexivity as it started with themselves; the themes were inviting to reflect on and they connected identity with the PI. According to the students and teachers from main condition B, the online modules did not require any adjustments. The students from main condition B indicated that the course was helpful to learn to reflect critically, but in particular the face-to-face lessons about the rubric could be adapted to gain more in-depth critical learning reflection. The respondents from all three focus groups indicated that talking in subgroups about their own life experiences and/or internships would help in learning to critically reflect. Input could come from the online modules in which autobiographical reflexivity is central. A

requirement for talking in subgroups, or providing each other with feedback, would be for students to already understand what reflection is, what it is for and how to question one another. More attention to continuous reflection on the learning pathway during the first and second year of the program is needed. According to all respondents from each of the focus groups, it would be better if the rubric was written in simpler terms with a reduction in the number of sub-criteria.

CONCLUSION AND DISCUSSION

The aim of this study was to assess the added value of autobiographical reflexivity (with PT) for the development of PI within a group of Social Work students. The results displayed no clear differences between the conditions ‘critical reflection’ versus ‘critical reflection’ when combined with autobiographical reflexivity in relation to the outcomes in PI, the factors and the achieved reflection level. However, there was more affective and cognitive involvement (shown both in the questionnaire and in the focus groups) when students followed a blended learning module for critical reflection which incorporated autobiographical reflexivity. The focus groups showed that due to autobiographical reflexivity, students had more intrinsic motivation for online homework; there was enhanced discussion and questions throughout the lessons; and students were more interested in each other thus learnt more about one another’s lives.

Regardless of the conditions, the RCT demonstrated similar changes namely growth in PI, choice certainty and social well-being and stability in the following sources: learning motivation; career reflection; drop-out threat; reminiscence; internal locus of control; emotional well-being and psychological well-being. Previous studies have suggested the importance of narrative interventions, but are yet study their effectiveness (Lengelle et al., 2014; Lengelle et al., 2013; Moenandar & Huisman, 2019; Roberts, 2019; Spector-Mersel, 2016). In this study, improvements were shown in PI, security of choice and social well-being similar to the improvements in the condition with critical reflection alone. Autobiographical reflectivity seemed as effective as ‘regular’ critical reflection. However, as there was no control condition without reflection classes, we could not distinguish between the changes in PI; choice security and social well-being being related to reflective education or whether these were changes that regularly occurred in second year Social Work students. There were many indications that reflection had an important influence on the development of PI (Austin, Gilkison, & Clemons, 2020; Engelbertink et al., under review; Kuijpers & Meijers, 2011; Trede et al., 2012), though some resources also played a role as learning motivation, internal locus of control and student well-being were positively related to a strong PI (Engelbertink et al., under review). Additionally, students from prevocational and secondary vocational education had shown that internal locus

of control, learning motivation and PI were linked (Meijers et al., 2013). Conversely, although internal locus of control played an important role in the development of career competences in higher education, reflective dialogue between teacher and student was even more influential (Kuijpers & Meijers, 2011). Therefore, reflection certainly seemed to play a critical role in developing students' PI with previously mentioned studies showing a correlation between the various factors and PI. Within this RCT, these relationships were not found across all factors. Perhaps the resources acted as moderating variables within the relationship between reflection and PI: students holding more resources may display deeper development in reflection skills and their PI. More longitudinal research is needed to know how students' PI can be strengthened, and how reflection and each of the resources can contribute to this.

Corresponding with other qualitative research on narrative teaching methods, autobiographical reflexivity seemed to help students in critical reflection (Lengelle & Meijers, 2014; Roberts, 2019). This was demonstrated in this study, as students were more affectively and cognitively involved, more intrinsically motivated, and more active in class discussions. Increased student involvement in narrative interventions had already been recognized in qualitative studies (e.g. Moussa-Inaty, 2015); our study confirmed this both qualitatively and quantitatively. Moenandar and Huisman (2019) found that narrative teaching methods could increase intrinsic motivation; this study also confirmed this finding. Furthermore, the power of narrative methods during face-to-face classes may lie in the conversations that students had in response to each other's autobiographies, as these provoked interest for both the students and teachers. An explanation for this may be that these encounters act in addition to the 'self' (Miehls & Moffatt, 2000). The conversations could also lead to an increase in critical reflection by broadening the student's perspective (Körkkö et al., 2016). This study demonstrated the advantages of combining reflection with autobiographical reflexivity, having been previously advocated and theorized by Graham (2017) and Spector-Mersel (2016). The method used within this study allowed students to think about the way in which they have included their own 'self' in their professional actions. Through this, they made choices across various perspectives at a micro and national level (such as clients, colleagues, organizational interest and professional codes). Our results give a new impulse to reflection education for Social Work students. By adding autobiographical reflexivity, due to the high cognitive and affective involvement, it may be possible to create more depth while reflecting on meaningful experiences that students have during their internship. Autobiographical reflexivity makes it possible to integrate a student's identity and their PI.

In this study, the added value of PT did not increase persuasiveness among students. In line with this, increased involvement did not appear to be due to the PT used, but to the autobiographical element instead. Thus, it does not seem necessary to use PT when

designing an online module. An explanation for the lack of effect could be that the content of this online module was already interesting and provoking enough, making persuasiveness less necessary to motivate students to work independently. Lastly, the differences between the two modules may have been minimal as the research was conducted in a 'real life' context. Nevertheless, the use of PT within higher education offers the potential to make an online module attractive and persuasive, provided that the PT is appropriately tailored to the content of the module (Engelbertink et al., 2020b, 2020a; Kelders et al., 2012).

LIMITATIONS AND FUTURE RESEARCH

The present findings should be considered in light of some limitations. Although we can be satisfied with the response from the first two measurements, the third measurement is less satisfying. Unlike the other two measurements, measurement three was taken after an individual assessment instead of during a lesson. This made it more difficult to stimulate students, despite there being a reward offered as an incentive. It would therefore be recommended to take each measurement during a lesson in favor of the response. As compensation for possible low responses, we used mixed methods in this study which provided insight into the research questions from various perspectives. The focus groups provided useful insight into how students and teachers experienced the blended learning course. However, there was a limited number of focus groups, and one student focus group (condition A) had three students from two classes; all of which had the same teacher. The teacher may have had an influence on the students' experiences in regard to the critical reflection method. It would have been beneficial for the research if the focus group had three students each with a different teacher.

Conducting a RCT in an academic setting was not an easy task as contamination can occur. During one focus group, it appeared that these students had heard from other students about the reflection themes used within their group. Neither the researcher nor the participating teachers were aware of this and did not receive any resistance or demotivation from students. The information exchange may have taken place after the series of lessons. There was no evidence that the results were impacted based on this.

Another limitation within this study was that no usability research had been conducted into the possible influence or added value of the PT. The design of the blended learning course was set up in a participatory design (Engelbertink et al., 2020b) and was evaluated among students and teachers (Engelbertink et al., 2020a). The design had been adjusted based on these results and was used for this research. During this research, it would have been beneficial if we had watched students in an observation room and questioned them in an usability study (using two versions: with *and* without PT). This could have provided

more detailed information about their preferences regarding the use of each PT technique. In this setting, the differences between online modules, using PT and not using PT, could therefore be made larger.

We think that discovering someone's personal identity provides more depth in the development of a PI. Students may find out better what their motives are in their profession and this will give students more direction in their future working life. This could be further investigated. Follow-up research can examine to what extent there is better quality in the content of the reflection or with a different scope when students make use of autobiographical reflexivity as opposed to critical reflection alone. In short, Social Work students and teachers appreciated the blended course with critical reflection combined with autobiographical reflexivity more than critical reflection alone. Students were more affectively and cognitively involved. Further, there were no significant differences between the conditions, so critical reflection combined with autobiographical reflexivity appeared to be an equivalent option to stimulate the critical reflection level of students and to strengthen student PI.

Appendix 1 Content analysis focus groups

Focus groups	Topic	Positive	Negative	Improvements
Students main condition A (N = 3)	FTF lessons	An example report was helpful (2)	No proper execution (3) Lacked a link between personal and professional side (1) Difficult to give each other feedback while you did not know what reflecting was (1)	Lessons should be more about learning to reflect instead of the online homework assignments (3) Wish to reflect in groups on a self-introduced situation / internship (1) More variety in class (1) Simpler language (3)
	Online homework	-	Add nothing (1) Learned little (2)	Reflect on broader life themes (3)
	NARRA rubric	-	The NARRA was leading too much as if this were the only correct way (2) There was too much focus on the NARRA instead of the student's actions (1)	Need for multiple theoretical reflection models that fit NARRA (1) Simpler language (3) More clarity about the usefulness of the NARRA (3)
	Reflection education	-	From the first year, information about reflection levels is missing (1)	From the first year more attention to reflection education (3)
Students main condition B (N = 3)	FTF lessons	The atmosphere in the classroom was good and it was nice to share personal things, you learned a lot from that (1)	Busy sharing your autobiography but not thinking together about how to reflect critically (2) More depth could have been achieved by focusing more on online modules (1) It does not feel good if only the teacher keeps asking questions about your autobiography, it is nice when students are also involved (1) The atmosphere in the classroom prevented the student from sharing things in the group (1)	It is better to share personal matters in small subgroups (3)
	Online homework (autobiographical reflexivity)	Positive experiences (3) Defining your points of view and your past helped to reflect critically (1) It provided insight into the past, but has not done much with it (1) It gave insights but he already had these insights because he already reflects a lot (1)	-	-
	NARRA rubric	Very educational (1)	The large number of assessment criteria framed the "natural" reflection process (3)	Need for more information about the NARRA during lessons, so that more attention was paid to critical reflection, the rubric and the report (2) Simpler language is needed (3)
	Reflection education	-	-	Autobiographical reflexivity should be prior to lessons on NARRA (3)

Teachers main conditions A (N = 1) B (N = 2)	FTF lessons	During class the students worked on their reflection report (condition A) (1) The homework led to nice discussions and questions during class (condition B) (2) Interest from students for each other due to homework (condition B) (1)	The content and structure of the lessons was too monotonous and sometimes did not fit the group (condition A) (1) Some themes students experienced as too personal to share with the group (condition B) (1)	A mix of autobiographical reflexivity and critical reflection is preferable because it is more interesting with broader theme's and activate students (3) The lessons should be more interactive, more varied with documentaries, videos, guest speakers (3) A safer atmosphere in the classroom so that students dare to share more (3)
	Online homework	Students seemed to be working seriously on the assignments (condition A) (1) The online modules were the most enjoyable for students, they worked independently (condition B) (1) The students show intrinsic motivation for online modules, because it started with themselves, some are proud of the result (condition B) (2)	The homework could not always be provided with substantive feedback from the teacher (due to time) and fellow student (homework was not always done) (condition A) (1) Creative assignment is not carried out by anyone (condition B) (2)	Autobiographical reflexivity adds more than the online NARRA assignments (3) Autobiography of the students as part of their portfolio (1)
	NARRA rubric	Useful rubric, stimulates: critical reflection; to see difference between levels; to take different perspective (3) Complete rubric (3)	Despite the rubric, students continue to find it difficult to reflect (3) It takes a while to find out how other reflection models fit into the NARRA (2) Students with low grades had often not been in class either (condition A, 1)	Attention remains necessary on how to work with students and the rubric (3) Simpler language (3) Teachers think that students can show more about themselves in the report (3)
	Reflection education	The lesson plan and power points were provided (condition A and B) (3)	Reflection lessons every two weeks makes students forget the previous lesson more quickly (3)	Autobiographical reflexivity should be prior to lessons on NARRA (3)

7

Summary and General Discussion

This dissertation presented research which explored the developmental process of building a strong professional identity (PI) in a sample of social work students. It facilitated a critical reflection blended learning course combined with autobiographical reflexivity and persuasive technology (PT). Developing a strong PI is important for social workers as their profession is subject to significant changes, namely: economic, societal, interprofessional and technological developments as well as labor market changes. Professionals who have a strong PI are clear in what they stand for, the competences they possess and are confident in their professional work (Kelchtermans, 2009; Ryan & Carmichael, 2016; Schilder, 2013). A strong PI is related to a self-aware, explorative and committed student (Jensen & Jetten, 2015; Mancini et al., 2015; Meijers & Kuijpers, 2014) and also to a self-aware, explorative and committed professional (Edwards & Dirette, 2010; Kelchtermans, 2009; Ryan & Carmichael, 2016; Sabanciogullari & Dogan, 2015; Schilder, 2013). This thesis aimed to develop and implement a critical reflection blended learning course, while simultaneously investigating the value that autobiographical reflexivity and PT can add, benefitting PI development and critical reflection skills in social work students.

In this final chapter, the results of the five studies will be summarized initially. This will be then be followed by a conceptual model which illustrates the possible development of a strong PI of students in higher education. This model was based on the key findings from this thesis. Finally, some methodological considerations based on this thesis, as a whole, will be provided. Suggestions for future research and a short overview of implications for practice are given.

Summary of the studies

Phase 1: Orientation and evaluation

The doctoral research was preceded by an orientation phase in which the doctoral candidate, whose role was as a teacher and a co-developer, worked on PI formation in students through autobiographical reflexivity, according to the method *'The stories we lived by'* (Bohlmeijer & Westerhof, 2010; Korte et al., 2012). This phase was further explained in 'Chapter 1 General Introduction' and falls outside the scope of the dissertation.

Phase 2: Participatory design and evaluation

Phase 2 focused on the design of the blended learning course 'autobiographical reflexivity' with the use of PT. Based on the four categories ('primary task support', 'dialogue support', 'credibility support' and 'social support') in the Persuasive System Design model (PSD-model) (Oinas-Kukkonen & Harjumaa, 2009), this determined which PTs were used. Additionally, the use of the blended learning course was evaluated in a pilot study among third and fourth year students and their teachers. Chapter 2 addressed two questions: (1) Which of the PT techniques of all four categories of the PSD – model are suitable to

apply in the online element of the blended learning course of autobiographical reflection for second-year social work students? (2) What are the needs of students and teachers, according to the stakeholders, to achieve an optimal blend between the Face-To-Face-Classes (FTFC) and the online element of the course? In addition, chapter 3 examined to what extent did the students evaluate the PT used in the online course as motivating; and which of the persuasive techniques in the PSD-model could be integrated into the existing online course to increase their motivation? Building on this, it examined how students and teachers evaluated the blending of the online and face-to-face components of the course and any subsequent improvements that they would recommend.

The results displayed in chapters 2 and 3 showed that the PSD-model was helpful in designing the blended learning course, however it became clear that experience of the technique used depended on how it was applied. Within this research this referred to a technique described as ‘tunneling’; this was used in two ways, according to the students: one as being motivating (*guiding students step-by-step through the assignments*) and the other as being demotivating (*students can’t go on with the next theme if they did not finish the previous one*). The motivation a technique evokes will depended on the target group and the content of the education. This indicated that it will therefore always be necessary to consider which form of a PT is most desirable, and suitable, to use. In addition, the software used determined whether a technique could be used. The ambitions, wishes and needs were, at times, greater than the software could handle. Furthermore, it turned out that most of the techniques from the fourth category, ‘social support’, did not integrate well with the content and character of the autobiographical reflexivity component, according to all of those involved.

Both our design study and our evaluation study showed that certain techniques appeared to be most impactful. However, simultaneously, it appeared that the integration of these components in the blended learning course also required attention. Particular attention was given to the techniques which promoted this integration, and this has subsequently been placed under a new fifth category named ‘blended learning support’. It was recommended that this category was added to the existing PSD-model (Oinas- Kukkonen & Harjumaa, 2009). The following two persuasive techniques have been placed under this category: ‘role of the teacher’ and ‘online course versus FTFC’. These techniques could be performed in a variety of ways, with an example of the first technique mentioned being: ‘At the beginning of the FTFC, the teacher returns to the assignments made’. For the second technique an example was: ‘Interaction with the FTFC must be sufficiently stimulated within the online course, e.g. indicating that students have to take their homework to FTFC’. Due to its participatory design, the blended learning course was designed with significant focus on content, target group, context and ethical aspects. It was found that this ultimately engaged students more.

Phase 3: Implementation and evaluation

In this third and final phase of the thesis, research was conducted into the construction of PI in higher education students, the implementation of the blended learning course and its evaluation. In chapter 4 we first examined how reflection levels could be distinguished throughout the components of PI. This was achieved by means of analyzing 25 reflection reports from Spanish and Dutch students, across five different study programs. And secondly to what extent, and at which reflection level, did these students reflect on each of the five components associated with PI (Kelchtermans, 2009). The following four reflection levels were utilized in the analysis: 1. descriptive writing; 2. descriptive reflection; 3. reflection; and 4. critical reflection (Alsina et al., 2017; Kember et al., 2008). Our research indicated that the construction of the PI in higher education students could be traced back to the five PI components (Kelchtermans, 2009): self-image, self-confidence, task perception, job motivation and future perspective, which resulted in a better understanding of the PI development process. It also appeared that the reflections from the students on the five PI components could be classified under one of the four levels of reflection, and that 40% of the students achieved the critical reflection level while reflecting on one of the five PI components. There was emphasis on the importance of strengthening PI in students by reflecting on the five PI components; we highlighted the potential that this may have in terms of training professionals to critically reflect.

In chapter 5, five possible PI statuses (achievement, foreclosure, diffusion, moratorium and searching moratorium) in students were studied which were related to five PI processes (in-depth exploration, identification with commitment, reconsideration of commitment, affirmation and practices). Three research questions were reviewed: 1. How is the strength of PI in social work students related to the PI processes ‘commitment’ and ‘exploration’ and to different PI statuses?; 2. Which resources are related to the formation of the PI of students?; and 3. Which processes and resources are uniquely related to the strength of social work students’ PI? In a cross sectional study, data was collected using a survey which gathered responses from social work students (N =382) from two cohorts. This research showed that commitment has an important relation to the development of a strong PI and that overall second year students have a weak PI. It is of scientific and practical importance to understand that three sources (reflection, internal locus of control and well-being) had a significant relationship with a stronger PI. Corresponding with the aim of this thesis, we argued that reflection could be of added value in the development of a strong PI in higher education students, studying social work specifically.

Chapter 6 examined the added value of autobiographical reflexivity and PT in a blended learning course compared to critical reflection alone. Achieving a stronger PI among social work students was the main goal. A Randomized Control Trial (RCT) was performed with three conditions (critical reflection; critical reflection and

autobiographical reflexivity; critical reflection and autobiographical reflexivity integrated with PT) and three measurement timepoints (baseline, post-course, follow-up). The study examined effectiveness (questionnaires, reflection reports), evaluations (focus groups) and persuasiveness (questionnaires) among 187 Bachelor Social Work students. The main conclusion from this research was that the addition of autobiographical reflexivity to reflection lessons in higher education lead to the same development in PI, and level of reflection as education only using critical reflection. Additionally, the students were more invested in their learning, both cognitively and affectively. In short: autobiographical reflexivity combined with critical reflection appeared to be an equivalent option that participants appreciated more than critical reflection alone.

Conceptual model ‘Developmental tasks for a strong professional identity’

To summarize our findings on a conceptual level, we have created a conceptual model (see ‘Developmental tasks of a strong professional identity’ in Table 1 and Figure 1). This model describes the developmental tasks that must be sufficiently fulfilled by individuals in order to eventually develop a strong PI. This conceptual model was based on the results found in this thesis and on the basis of theory. It consists of six developmental tasks and their associated subtasks (see Table 1). Figure 1 shows the model schematically. The six tasks can be viewed as ‘lifelong tasks’ that will always be in motion which constantly influence the identity formation process; all of the tasks build on the previously formed identity and PI. Nature versus nature will of course play a role in this, as everyone will have previous dispositions making them unique. As this is a continuously evolving process, it will never really be fully ‘complete’. This perception of how developmental tasks continuously influence each other can be found in Erikson’s epigenetic theory (Schachter & Galliher, 2018; Syed, 2017). Accordingly, our model can also be seen as an epigenetic model. If someone had insufficiently worked on a specific developmental task, they could still continue to the next developmental task; however in this situation, it may become more difficult to endure or ‘fulfil’ this subsequent task. Additionally, the individual may have a conscious or unconscious lack of appropriate knowledge, attitude or skill to properly undergo the next developmental task. When developing a PI, ‘sufficient’ effort must be put into each task in order to proceed to the next. Every developmental task remains a lifelong task that deserves attention through new private and professional life events, and that must be critically reflected on to maintain, obtain or reclaim a strong PI.

Through critical reflection, deeper meaning can be provided to the person’s (professional) identity and the professional behaviour. This can be achieved through nuance, looking from multiple perspectives and being aware of distinct emotions in relation to emotions and behaviour expressed by others (Engelbertink, et al., 2020). This conceptual model is

based on the narrative theory; it assumes that individuals construct their identity through more or less coherent and meaningful stories that we tell ourselves and others. During higher education, this constructed identity can therefore also be continually refined or reconstructed through stories using a narrative methodology, such as autobiographical reflexivity (Fivush, Habermas, Waters, & Zaman, 2011; Krkk et al., 2016; Moenandar & Huisman, 2019; Spector-Mersel, 2016; Westerhof & Bohlmeijer, 2014). The (re)construction of identity is, according to the narrative theory, a process that arises in relation to others, where we speak of the co-construction of (professional) identity formation (Meijers & Lengelle, 2012).

Figure 1 Conceptual model ‘Developmental tasks for a strong professional identity’

In short, this conceptual epigenetic model is based on a dynamic and flexible co-construction of someone’s PI that requires lifelong refining in a narrative and critically reflective way, and is simultaneously intertwined with identity development. Furthermore, the PI process below is influenced by historical, sociological and cultural factors (Rodrigues & Mogarro, 2019) (Figure 1). Students in higher education are the target group for this conceptual model. Although, when referring to empirical studies, research that was extracted mainly focused on students from care and social work programs.

Understanding the formation of a strong PI has been a challenge that has occupied scientists and professionals for centuries. This model is conceptual in nature and, in our opinion, is the first elaborated epigenetic model which explores the formation of a strong PI. However, it will have to be further developed in the future.

Table 1. Conceptual model ‘Developmental tasks for a strong professional identity’

Lifelong developmental tasks	Subtasks
1. Identity formation	Get to know their self through dialogue with their inner self and with others In-depth exploration of possible commitments and the ability to commit to various identity domains Continuity: a sense of connectedness to commitments Distinctiveness: the ability to recognize differences between themselves and others Form a narrative identity: develop a coherent life story and a systematic construction of identity
2. Forming ideas about a future PI	Study a future profession: the profession itself and the PI of people within this profession Integrate and mirror the profession’s PI onto the individual’s own identity Choose an education program
3. Acquiring the knowledge, skills, attitude and etiquette of the future professional group ¹	Acquire knowledge of the profession Acquire skills used in the profession Acquire a professional attitude and conform to the future professional group Apply to the profession’s standards The ability to (critically) reflect on their own identity and their (future) PI (with regard to the five PI components: self-esteem, self-image, task perception, job motivation, future perspective and use of autobiographical reflexivity)
4. Identity changes and the PI begins to develop ¹	In-depth exploration of possible commitments and the ability to commit to various PI domains
5. Expanding the identity with a PI ¹ and strengthening the PI	The ability to explore in-depth and commit to their own PI The ability to (critically) reflect on their own identity and their (future) PI (with regard to the five PI components: self-esteem, self-image, task perception, job motivation, future perspective and use of autobiographical reflexivity) Feel the need and the responsibility to continually strengthen their PI throughout their entire career Engage with a professional community
6. The collective PI changes with the addition of an individual PI.	Add new knowledge into the collective PI of the profession Add new skills into the collective PI of the profession Add a new manner of professional attitude into the collective PI of the profession Add new standards to the profession

¹This task is based on the aspects of developing a PI of Trede, Macklin and Bridges (2012)

The conceptual model will now be described as if an adolescent was going through the process of developing a PI for the first time. However, as mentioned, the six developmental tasks remain important throughout a person’s life and may never be fully completed. These are lifelong developmental tasks to keep thinking, reading, and writing about. Discussion with others is also encouraged. The underlying subtasks are shown in italics and cannot be completed one by one.

1. Identity formation

This first lifelong developmental task involves the individual to become aware of their identities in order to shape them. Shaping an identity takes place through the process of exploration and commitment (Crocetti et al., 2013; Marcia, 1966; Meeus, 2011). Adolescents make choices as to whether or not they want to belong in various identity domains, such as friendship, education, religion, hobbies, sport clubs, romantic relationships and work. Prior to these choices, they orient themselves to a greater or lesser extent and with or without the help of others as to what choice best suits them. The first subtask is subsequently: *get to know their self through dialogue with their inner self and with others*. Adolescents may experience a negotiation process as to what they want through internal dialogue with themselves and through external dialogue with peers. The second subtask is: *in-depth exploration of possible commitments and the ability to commit to various identity domains*. A variety of identity statuses arise from the process of (in-depth) exploration and (reconsideration of) commitment, namely: achievement, foreclosure, diffusion, moratorium and searching moratorium (Crocetti et al., 2013; Marcia, 1966; Meeus, 2011). Previous research indicates that if adolescents know themselves well, they ultimately have the ability to explore in more depth and are able to commit to numerous identity domains. Reconsideration of commitment is related to stress and instability in identity formation (Crocetti et al., 2013; Schwartz et al., 2011). The next developmental subtask is: *continuity: a sense of connectedness to commitments*. A sense of continuity is generated when adolescents feel strongly connected to their commitments and in turn integrate these into their identity. It provides confidence and guidance in life and therefore it is an important characteristic of a strong identity (Van Doeselaar, Klimstra, Denissen, & Meeus, 2019).

Adolescents develop the ability to answer the question: “who are you?”. In relation to this question, it becomes clear that identity formation is a lifelong task that occupies people throughout the whole duration of their lives. Through new life events and reflection, new insight and perspective is developed; this continually influences how the question is answered. Van Doeselaar et al. (2019) emphasized that this is a process where people need others in order to answer this question. Building on this, the next subtask is: *distinctiveness: the ability to recognize differences between themselves and others*. Distinctiveness is the process that individuals undergo where they get to know themselves and perceive differences between themselves and others, in terms of personal characteristics (Van Doeselaar et al., 2019). Adolescents learn about, among other things, their self-image and their self-confidence. Through this, it becomes clear as to how the individual should describe their ‘self’ in relation to others and the society in which they live (Kelchtermans, 2009). In addition to distinctiveness, Trede et al. (2012) described, based on Lawler’s theory, that after identifying the differences and similarities between the ‘self’ and ‘others’, individuals also become aware of who they can identify with. Here

there is also a realization that they may belong to different or more than one subcategory of person. The fifth subtask is: *form a narrative identity: develop a coherent life story and a systematic construction of identity*. Narrative theory assumes that adolescents are capable of developing a coherent life story and should be able to construct their identity systematically (Meeus, 2011).

Several resources support this overall initial task in the developmental process: experiencing a high sense of continuity (Van Doeselaar et al., 2019); a high level of distinctiveness (Van Doeselaar et al., 2019); having an ‘achievement’ identity style (*in-depth exploration of possible commitments and the ability to commit to various identity domains*) (Crocetti et al., 2013); living in a warm family (Meeus, 2011); performing well in school (Meeus, 2011); age (the older, the better) (Crocetti et al., 2013; Meeus, 2011); and gender also influences identity formation. It has been suggested that being a woman is related to a stronger identity (Crocetti et al., 2013).

The formation of this identity process can take place through a method of (critical) reflection, in which persons explore the possible commitments they are able to make. Based on the results mentioned in chapter 4, and through examining the average adolescent, the corresponding reflection level could be ‘descriptive writing’ (Alsina et al., 2017; Engelbertink et al., 2020; Kember et al., 2008). At this level, adolescents are aware of the influence that their environment has on their behavior. They can subsequently describe their behavior and possibly start to describe their competencies associated with this behavior (Korthagen & Vasalos, 2005).

2. Forming ideas about the future profession

The second developmental task associated with the formation of a PI is that young adults learn more about the professions they are interested in. The first subtask is: *study a future profession: the profession itself and the PI of people within this profession*. Adolescents who have the identity status ‘foreclosure’ make an earlier commitment to a career choice, sometimes as early as 14 years old with little exploration. Whereas for adolescents with the identity status ‘achievement’, exploration across various study programs happens more frequently before finally committing to one, as seen in chapter 5 (Engelbertink et al., under review). When adolescents start their education program, they already have (pre) judgments and experiences, and/or have formed an opinion about their profession and its professionals. The formation of the PI therefore starts before entering higher education; the individual already has ideas about how the professionals of their future profession think, feel or act in certain professional situations, and from which (legal) framework the profession operates (Adams et al., 2006; Alsina et al., 2017; Engelbertink et al., 2020; Kelchtermans, 2008, 2009; Lanas & Kelchtermans, 2015; Lim, 2011; Rodrigues & Mogarro, 2019; Spector-Mersel, 2016).

Subsequently, adolescents who are about to choose an education program should consider how their identity fits with this possible future PI. In doing so, they can then think about whether this profession is, or is not, suitable for them. That brings us to the next subtask: *integrate and mirror the profession's PI onto the individual's own identity*. Questions that adolescents can ask themselves are: To what extent do the values and norms of the future profession match with my own values and norms? To what extent does my identity fit in with this possible future PI? To what extent does this profession change my identity in a positive sense?

On the basis of autobiographical reflections from studies involving English teachers, Lim (2011) distinguished six domains of unique views and experiences that students bring to a study program:

1. The resistance they feel about the profession; 2. Views on what a teacher should be like; 3. The confidence and meaningfulness in becoming a good professional; 4. Goals and aspirations to become a good professional; 5. How the profession should be practiced; 6. Previous experiences that led them to choosing this profession. In this second developmental task of this conceptual model, we recognize that it is important for adolescents to have a realistic picture of what the profession entails, to link this to their self-image and identity and to have the confidence to become a good professional.

Adolescents can be supported by their secondary school in this career choice, where dialogue with a focus on the future is an important resource (Kuijpers et al., 2010). Another possible resource, which may support this developmental task and its subtasks, could be having a broad understanding of the future profession with the intention and confidence to enter this profession. Some students choose to follow a summer course, at the start of their studies, where they are able to orient themselves towards the formation of a PI linked to their identity. An example of this would be a course that is tailored to students with a migration background and for those who are first generation students, which links back to the PI development process (Tavecchio, 2020).

Similar to the first developmental task, the process described above can happen through utilizing a (critical) reflection method, whereby the person mirrors the PI of the future professional group against their own identity formation, and reflects on whether this is a good match. In relation to Korthagen's and Vasalos' (2005) proposed levels of reflection, the adolescent should be able to describe their own competencies at this point and be somewhat aware of any areas which need to be improved. In line with this, and our results illustrated in chapter 4 (36% of the students reflect at level 1 or 2), level 2 of the descriptive reflection from the NARRA would appear to be appropriate here (Alsina et al., 2017; Engelbertink et al., 2020; Kember et al., 2008).

Adolescents who do not know themselves well, after going through the initial developmental task, will have more difficulty reflecting on the connection between their current identity and their potential future PI. However at some point, after adolescents have unconsciously or consciously completed the previous two subtasks, most adolescents will reach the last subtask, namely: *choose an education program*.

3. Acquiring the knowledge, skills, attitude and etiquette of the future professional group

The third developmental task for PI formation was based on a description by Trede et al. (2012). We started by establishing four subtasks to be completed by the students: *acquire knowledge of the profession; acquire skills of the profession; acquire a professional attitude and conform to the future professional group; apply to the profession's standards*. Together, these subtasks involve a process of building practical knowledge, acquiring skills and adopting a professional attitude. With this, the students then have appropriate knowledge about the professional theories as well as legal frameworks used within the profession, and the ability to estimate, determine and, ultimately, apply these standards to their future professional group (Beijaard, Meijer, & Verloop, 2004; Biesta, 2009; Levin, Roziner, & Savaya, 2020; Rodrigues & Mogarro, 2019; Trede et al., 2012).

This third developmental task goes hand in hand with the fourth developmental task (identity change and forming a PI) and begins at the start of the student's study program. In this task, there is a focus on what the study program should offer to support its students, in order to successfully complete this developmental task and its subtasks. It is important to ensure the study program has sufficient resources which offer support where integration can take place between theory and practice. The student then has the opportunity to gain practical experience, such as taking part in an internship and building a relationship with a trainer or supervisor (Levy et al., 2014; Mann et al., 2009; Rodrigues & Mogarro, 2019; Shlomo et al., 2012). The dialogue between the teacher, the student and other fellow students should be stimulating to prepare students to appropriately interpret and understand the professional world (Meijers & Kuijpers, 2014; Shlomo et al., 2012). Meijers and Kuijpers (2014) indicated that the dialogue, with a strong focus on future career, between teachers and students has vast influence on exploring and reflecting on the chosen career choice, compared to the students' personality traits alone. Although the latter is also important.

In higher education, (critical) reflection is one of the most important pillars to achieve a strong PI (Trede et al., 2012). The fifth subtask is: *the ability to (critically) reflect on their own identity and their own (future) PI*. A reflection instrument, based on four reflection levels, can support the student to achieve a higher reflection level, as suggested in chapter 4 (Alsina et al., 2019; Alsina et al., 2017; Kember et al., 2008; Wald et al., 2012). However, this should not be a checklist (De la Croix & Veen, 2018). When (critically)

reflecting on a meaningful moment, students can refer back to their autobiography, as described in chapter 6. Awareness of previous earlier identity development of students has also been indicated by other researchers as an important part of forming a PI (Lim, 2011; Rodrigues & Mogarro, 2019). To gain more depth into the autobiographical element of critical reflection, use can be made of ‘autobiographical reflexivity’ – this was mainly discussed in chapters 4 and 6. Autobiographical reflexivity could be a core task used between a student and their supervisor. Additionally, autobiographical reflexivity could be used as part of a reflection program to encourage students to become aware of their social self and surroundings, and the way in which these shape their identity and influence their PI formation (Engelbertink et al., 2020; Engelbertink, et al., under review; Spector-Mersel, 2016). Chapter 5 highlighted the importance of this, as it discussed the correlation between a strong PI and reminiscence and reflection; it showed that reflection has a direct relationship with PI (Engelbertink et al., under review). Chapter 6 showed that autobiographical reflexivity appeared to be a valuable addition to critical reflection lessons. Significantly higher cognitive and affective engagement was measured in the social work students compared to critical reflection alone (Engelbertink et al., under review.).

Expanding on the fifth subtask, the components of PI and autobiographical reflexivity will now be discussed: *the ability to (critically) reflect on their own identity and their own (future) PI (with regard to the five PI components: self-esteem, self-image, task perception, job motivation, future perspective and use of autobiographical reflexivity)*. Reflecting on the five components of Kelchtermans’ (2009) may contribute to making students aware of their PI as well as potentially strengthening it. In chapter 4, it emerged that these five components were recognized by students when they reflected on a meaningful experience; the student’s level of reflection could be determined through each individual component (Engelbertink et al., 2020). The process of forming a personal identity encourages individuals to start thinking about how they relate to others, society or the profession. Biesta (2009) calls this subjectification. Students should draw their own conclusions, gain their own insights and be able to shape their own world.

A student-centered approach utilizing a flexible curriculum and support of peers are essential resources that should be used in higher education settings, as they enhance positive emotions and subsequently stimulate the PI formation process (Rodrigues & Mogarro, 2019).

4. Identity changes and the professional identity begins to develop

As indicated in the previous step, identity change and the initial development of a PI go hand in hand with the previous developmental task (acquiring the knowledge, skills, attitude and etiquette of the future professional group). In this fourth developmental task, there is a focus on the student’s personal components and characteristics that can serve as

a resource for the development of a PI and acknowledging the third developmental task's main objective. In relation to identity development, chapter 5 showed that the five identity statuses can also be distinguished in the PI using the process of (in-depth) exploration and (reconsideration of) commitment, namely: achievement, foreclosure, diffusion, moratorium and searching moratorium (Engelbertink et al., under review; Mancini et al., 2015). Again, consistent with research into identity development, a negative relationship has been established between reconsideration of commitment and PI (Engelbertink et al., under review). The subtask that supports this fourth developmental task is: *the ability to explore in-depth and commit to various PI domains*. Chapter 5 highlighted five resources and one process that were significantly and positively linked to a strong PI: the ability to reminisce and reflect, learning motivation, an internal locus of control, well-being and the identity style 'achievement' (Engelbertink et al., under review). Sutherland, Howard and Markauskaite (2010) distinguished various steps in the development of a professional self-image (one of the five components of PI). These steps included initially developing your own self-image, then being viewed by others as a starting professional and, finally, developing professional sub-identities that later become a whole. This change in one's own view and mirroring this to others and then possibly adjusting his own view is also described by other authors. Meijers and Lengelle (2012) referred to this PI process as entering into an internal dialogue (with oneself) and external dialogue (with others). Students who possess the resources, that were found to be significant in chapter 5 (such as reminiscence and reflection), should be able to carry out this internal and external dialogue well, which in turn contributes to forming a PI. This research has provided more insight into important student resources. However, there is an insufficient amount of published research in this area. The science and education sector would benefit from more research into the personal components or characteristics of students in relation to the development of a PI.

5. Expanding the identity with a professional identity and strengthening the PI

This fifth task could be considered as being utilized most frequently throughout the person's lifetime compared to the other five developmental tasks. The student is likely to perform this developmental task towards the end of, or after they have finished, their study program and also throughout their career. The first subtask is: *the ability to explore in-depth and commit to their own PI*. Forming a strong PI involves a continuous process of in-depth exploration and (reconsideration of) commitment to the various aspects associated with being part of a particular profession. It is about finding a balance in personal values and norms and attuning these to those of the professional group (Caza & Creary, 2016; Meijers & Lengelle, 2012; Spector-Mersel, 2016). Following the previous task, the professional continues to develop their competencies and their PI through a critical reflection process, resulting in the professionals feeling attached to their PI. From reviewing chapter 4, similar to students, for a professional reflecting on the five PI components and using autobiographical reflexivity it can be assumed to be beneficial in terms of the development

of a strong PI. An earlier subtask from the third developmental task has been replicated, as it is arguably just as important in this development task: *the ability to (critically) reflect on their identity and their (future) PI (with regard to the five PI components: self-esteem, self-image, task perception, job motivation, future perspective and use of autobiographical reflexivity)*. The following subtask is: *feel the need and the responsibility to continually strengthening their PI throughout their entire career*. (Critically) reflective professionals are more likely to feel a sense of responsibility to want to develop themselves throughout their lives and thereby strengthen their PI.

The fourth and final subtask is: *engage with a professional community*. The students are now in a phase where they are gradually becoming part of their future professional group by reading more often about the professional group, attending study days and possibly participating in a public debate about the professional group. This process on a behavioral level is called 'practices', which was discussed in chapter 5. Gradually, they see themselves as part of this professional group. They may already feel like the starting professional and may also communicate this to others ('I am a social worker' or express that they are proud to be part of their future professional group). This latter process is referred to as 'affirmation', as discussed in chapter 5 where it showed a significant correlation with PI. In sum, once students identify with the profession, the PI is integrated into their identity (Trede et al., 2012).

6. The collective PI changes with the addition of individual PI

This final step explores the way in which an individual professional can also change or improve the collective PI of a profession. The collective PI of a professional group refers to the collective conception of the professional group in regard to the five aspects of PI (the collective self-image of the professional group, the collective self-confidence of the professional group, its overall task conception, the joint job motivation and finally the collective future perspective of this profession). Of course, there are different opinions and perspectives associated with this collective PI among citizens, the media and/or the professional group itself and its possible sub-disciplines. Each individual professional has a right, and a duty, to contribute to the development of the collective PI of the profession. Biesta (2009) indicated in the subjectification process that academic settings should provide students with space to encourage them to present their own ideas and initiatives. From our perspective, forming a PI is therefore not only about being introduced into the existing values and norms of the profession; the profession must be open to adding or changing its existing knowledge, skills, attitude and standards. This developmental task has four subtasks: *add new knowledge to the collective PI of the profession; add new skills into the collective PI of the profession; add a new manner of professional attitude into the collective PI of the profession; add new standards to the profession*.

The professional group will therefore have to be open to, for example, a change in the collective task perception of a profession. For instance, discussions about blurring the boundaries between nurses and social workers; the responsibility of educators for educating versus teaching their pupils; discussions about whether or not to abolish psychiatric labels; and the way in which experiential experts should collaborate with professionals. Changing policy as the task perception of a professional group has an age-old tradition in social work. This so-called signal function can take place in a radical, critical and/or policy-based manner (Hermans, 2014). This collective PI is constantly evolving and affects the individual PI.

It was previously mentioned that commitment is a major component in forming a strong PI (Crocetti et al., 2013; Engelbertink et al., under review; Mancini et al., 2015; Waterman et al., 2013). It has recently become apparent that students with a macro perspective on the profession, and who have the desire to achieve social change through their profession, experience higher commitment to their studies than students who do not have this ambition (Freund, Cohen, Blit-Cohen, & Dehan, 2017). Critical reflection helps to provide a macro perspective on the profession. Therefore critical reflection may possibly contribute to enhancing overall commitment to the profession, as students begin to better understand the importance and scope of their profession.

Finally, it is important that the professional group itself considers the context where it wants to teach its students and which PI is best suited to do so. In the third developmental task within this conceptual model, the professional group will not only have to ask which competencies it wants to impart on its students, but also needs to consider (Vloet, Jacobs, & Veugeliers, 2012, p.446): *“in what relational contexts does ‘good professionalism’ emerge? How can we recognize it, and how can we contribute to creating those contexts?”*. Upon reaching this sixth developmental task, there may be repercussions on the previous five developmental tasks. This conceptual model therefore reflects the dynamic character between professionals and their PI, the professional group and society.

As previously mentioned, our model is conceptual in nature and has to be further developed at a later date. What the implementation of this model should look like in practice is a question that will have to be determined across various academic contexts in the future.

Strengths and limitations

In this section, the study's strengths and limitations will be discussed in relation to the research method.

A strength in this thesis is that it was embedded in three phases (orientation, design and implementation). Within higher education, there is often no time, nor money, to design a

blended learning course using a participatory design with all of the stakeholders (students, teachers, instructional designers, educational experts and professionals). Utilizing the Saxion PhD grant, time and energy were invested in setting up this research phase. The blended learning course was subsequently evaluated via three sub-studies, using both qualitative and quantitative research methods which resulted in applicable insights. The measurements used in chapters 3, 5 and 6 related to the students' self-perception, making this a limitation. This is fairly insurmountable when researching factors such as PI, reflection, well-being and internal locus of control; however more research could be conducted based on the additional perception of internship supervisors and teachers, in regard to the outcome measures. In addition, it could have been beneficial to include the actual purpose of the online environment used by the students in this study, so that the effect of PT could be appropriately measured.

The thesis was carried out in a practical context which evoked advantages and disadvantages. An advantage was that the studies closely replicated real life, so therefore did not have an experimental character that was separate from practice and thus reality. A disadvantage was that we had to take various factors into consideration across all sub-studies, such as student drop outs or teachers who had limited time. The consequence is that some results are less generalizable and that some conclusions are less convincing.

The addition of PT in this thesis can be viewed as a strength, as the use of PT is currently not much used as a technology in education (Behringer et al., 2013; Engelbertink et al., 2020b, 2020a). The research covered in chapter 6 did not show that PT contributed to higher student involvement during their course; equally, however, it did not appear to hinder it either (Engelbertink et al., 2021). As previously mentioned, the research method used could have been a weakness, as far as PT is concerned, in terms of research. We had little insight into the actual use, experiences and impressions of the students, as it was quantitative research through student self-reports, that was conducted. A different research approach then applied in this thesis, such as a controlled observation of students who do and students who do not work with PT in an online module, could also provide more insight into the possible added value of PT. In addition, the question is whether PT would make students more adherent; for example through examining whether they completed their assignments more often, on time and/or spent longer on them. It would have been interesting if this data could have been included.

A critical factor in this thesis was that the existing PSD-model (Oinas- Kukkonen & Harjumaa, 2009) was facilitated which made use of PT in the blended learning course. During the design phase, the possible added value of all of the PTs used in this model, including target group, content, ethical considerations and software, were reviewed. One limitation was that the PSD-model was not specifically tailored to the educational

domain. However the fifth category which was added, focusing on blended learning, could therefore be considered an advantage within this thesis.

In a pilot study we were able to test and evaluate the online module in a sample of students and teachers. Although, a limitation of this research was that after the implementation of the blended learning module, no large scale evaluation took place. Only a few interviews were conducted with teachers and students to gain an idea of any desired improvements. A survey, or several focus groups, among the second year social work students may have provided fuller insight into the benefits experienced by students in regard to their PI and ability to reflect. This data could have been used to add some outcome measures to the second RCT that followed the subsequent year.

Another limitation within this thesis was that it was carried out within one study program. In order to generalize the results, it is now necessary to repeat the research across several (social work) programs. Logistically, and in terms of content, it is not easy to conduct research under comparable conditions across several social work courses. However, if an existing method is used, this would mean that a lot of material is already available in turn making it more organizationally feasible. Nowadays students have the option to choose for themselves which University of Applied Sciences they would like to pursue their degree at, particularly their minor. A minor is a specialist six-month curriculum that students follow in their 3rd or 4th year. Therefore, performing a RCT throughout a minor could be successful in terms of organization, content and logistics, so it is therefore recommended.

In one of the sub-studies, a qualitative analysis exploring the reflections from students from five different study programs, over two European countries, was conducted (see chapter 4). It was useful to observe the level of reflection from these students in order to understand how the five PI components (Kelchtermans, 2009) were used, unrelated to their education program. However, this sub-study was exploratory in design, making it advisable for follow-up research be conducted which repeats the study using a larger sample of students. It would be interesting to see whether the research results subsequently hold up.

Future research

In this section suggestions are provided which would benefit future research based on the main concepts from the thesis (professional identity, autobiographical reflexivity and persuasive technology).

Professional identity

This research demonstrated that PI is an important outcome measure which is related to numerous PI styles, processes and resources (see chapter 5). It is also clear that students

from different higher education programs reflect on their PI using the five components (see chapter 4). In addition, it has become known that social work students enhance their PI in the second year of their study; though the influence that education has on this remains unclear (see chapter 6). Our research showed that both conditions (critical reflection versus critical reflection combined with autobiographical reflexivity) were related to a growth in PI. More longitudinal research into the influence of education on the development of the PI in students would be suggested. Through doing so, it may then become clear how the PI proceeds throughout the students' duration of study and what any supported sources may be. A distinction can possibly be made between the influence that personality plays, the influence of utilizing reflective education, as well as the teacher's role.

This research, and the conceptual model discussed in this chapter, assume a dynamic development in the PI. However, there is doubt about the dynamic nature of PI development. Research by Canrinus et al. (2011), including a sample of teachers in different age groups, indicated that the way in which teachers experienced and developed their PI may be more character-bound and less dynamic than assumed. Cross-sectional research into the degree of commitment and character traits cautiously point to this possible relationship. Students who are extraverted, agreeable, conscientious and who have low levels of neuroticism also showed higher commitment to their studies (Luyckx, Soenens, and Goossens (2006) in: Meeus, 2011). The question that then arises is to what extent these character traits are also related to a strong PI. More longitudinal research into this is needed to generate further insight into the dynamic components used within the development of a strong PI. Depending on these insights, figure 1 of the conceptual model may need to be adjusted.

Research shows that PI development often takes place when social work students undergo an internship (Levy et al., 2014; Pullen Sansfaçon & Crête, 2016). Close cooperation with the internship supervisors can encourage and improve PI growth in students and, to a joint knowledge base, on the influence of autobiographical reflexivity. A suggestion for follow-up research would therefore be to investigate the way in which internship supervisors and teachers can work together to develop reflection skills in interns.

Autobiographical reflexivity

This research is one of the first studies to investigate the added value of autobiographical reflexivity through quantitative analysis. The findings indicated that student PI enhances during their second year of study. However, it is not certain that this is due to the blended learning courses that were offered in three conditions. Though, it is possible that autobiographical reflexivity contributed to different insights, behaviors or skills than were measured in the current research. Through discussion with some students, outside of the formal research methods, the course seemed to provide greater insight into how others feel, think and act which gives them, as future professionals, deeper insight into how people may

feel and behave. It would be encouraged to investigate this further, in order to generate a greater understanding of the benefits that autobiographical reflexivity can offer. Another outcome measure that could be investigated further would be the extent of positive thoughts. Reminiscence may lead to the formation of more positive stories about the self and the future (Korte, 2012). However, it is unclear whether this applies to students.

Additionally, it could also be interesting to study the influence of autobiographical reflexivity on an integrated time perspective in students. An integrated time perspective means that people look positively at the past, present and future; this is linked to one's well-being, self-esteem and happiness (Webster, 2011). The autobiographical reflexivity method 'Tell your story' was substantively designed to stimulate an integrated time perspective, which in turn would enhance well-being and simultaneously develop a stronger PI (Engelbertink et al., 2019). The correlation between reminiscence on PI appeared to be visible, however this correlation disappeared when performing the regression analysis (see chapter 5). Investigating the relationship between autobiographical reflexivity (including reminiscence), an integrated time perspective and PI would be useful to gain further insight and understanding.

Persuasive Technology

The researchers' and users' wishes were, at times, greater than what technology was able to fulfil. In future research, it would be interesting to collaborate with software developers at an earlier stage in the software design process, to communicate objectives and aspirations appropriate to the school setting with regard to PT. On the one hand, use of PT can really ensure that students are able to work with increased motivation towards a task, without the extrinsic stimuli overriding intrinsic stimuli. On the other hand, it is also desirable that students have the option to switch some techniques on and off. What would certainly be interesting would be the use of PT based on the student's personality. These techniques are currently used in customer service, where customers are approached according to their mood and personality (Dix, 2017). Again, various considerations can be made here. PT can be used to support the student adapt to their needs throughout the learning process. However, PT should not be used to approach students throughout their studies solely based on their personality profile, indicated in their first year of study.

Customization remains important: it takes a participatory design to understand whether a particular persuasive technique fits the content of the course, the target group, the context and the wishes and needs of all involved, while taking ethics into account (Engelbertink et al., 2020b). As this design process has to be determined for each course unit, it can be a time-consuming task that also involves high costs. Choices will have to be made and much can be learned from e-health applications (Van Gemert-Pijnen et al., 2018).

Implications for practice

The current thesis provides several implications for practice. The most important are summarized below:

- *Combine critical reflection with autobiographical reflexivity.* In higher education it is encouraged to combine autobiographical reflexivity with critical reflection, so that students are affectively and cognitively involved throughout the lesson. In doing so, the student becomes more self-aware, in terms of their identity, and subsequently leads to the PI formulation process beginning. The method ‘Tell your Story’ (Engelbertink, Wijering, Bohlmeijer, & Westerhof, 2019) would be the desirable method for accomplishing this. Since 2018 and 2019, Saxion’s social work study program has enriched the professional development element of the course using the method ‘Tell your Story’, making autobiographical reflexivity a permanent part of the curriculum. This method is also used in the Master’s program ‘Positive Psychology’ (University of Twente, The Netherlands). This indicates that the method can be widely used in higher education.
- *Include the five PI components in reflective education.* If students reflect on the five components (Kelchtermans, 2009) during their study program, insight is subsequently gained into the way in which their PI is structured and how their PI is developing. The students may become consciously aware of any patterns in their professional development, which were originally difficult to recognize. When students become aware of a recurring pattern, they are then able to give more systematic attention towards the reinforcement of their PI.
- *Integrate the four levels of critical reflection in education and involve the internship supervisors in this process.* The four levels of reflection (see chapter 4) can be interwoven in education throughout the training. Students are then supervised annually to achieve a higher reflection level than the previous year. Since students gain meaningful experiences during their internship, the internship supervisors should be involved in this reflective academic process. The reflection tool and rubric that we recommend in higher education is the Rubric for Narrative Reflection Assessment (NARRA) (Alsina et al., 2017; Engelbertink et al., 2020); meaningful experiences for students are central to this. The NARRA stimulates students to critically reflect and encourage the students to reflect on their identity development. In short, the NARRA can be supportive of both autobiographical reflexivity and critical reflection, and distinguishes the four levels of critical reflection.
- *Use the PSD-model with the five categories in higher education.* Higher education will continue to use online or blended education more frequently due to advances in technology, and possibly also because of the Covid-19 pandemic. This research has encouraged and introduced use of PT in higher education. During the design phase, the PSD-model (Oinas- Kukkonen & Harjumaa, 2009) provides guidance for developing an activating and motivating blended learning module.

- *Develop the conceptual model in a practical way in collaboration between secondary and higher education.* The model can now be expanded in terms of the responsibilities and tasks that lie at each level of the professional group, the organizational level, the teacher level and the student level. Practically speaking, in secondary education, for example, dialogue can be promoted between the teacher and their pupil to uncover the individual qualities and interests communicated by the student. More than is currently the case, secondary education may focus on achieving an integrated time perspective (Webster, 2011) to encourage students to apply their learning from the past in the present, while simultaneously learning how to influence their future. The latter could be achieved through making students aware of the future commitments that they, themselves, can influence and which increase their internal locus of control. In higher education, the ‘individual identity capital’ of students (Tavecchio, 2020) should be used more at the beginning of the study program. This may result in more attention being directed at training students, acknowledging the unique identities they bring with them.

CONCLUDING REMARKS

This thesis has demonstrated the significant role that higher education settings play in supporting their social work students’ PI development. Utilizing autobiographical reflexivity initially is best for starting this process, as this is related to strong affective and cognitive involvement from students. Other stakeholders involved, such as educationalists, professionals and teachers, also confirm the added value that autobiographical reflexivity brings in terms of forming a PI in a student population. The ability to commit to a profession seems to be the most important factor for developing a strong PI and therefore it should be a focus in higher education. Higher education can, through critical reflection education and its four levels, stimulate students to reflect on the five components of PI (self-image, self-esteem, task perception, job motivation and future perspective) in order to strengthen their PI. Students recognize these five components when they reflect on their PI and various reflection levels can be distinguished in their written reflection reports. It is clear the potential that PT can bring to promote higher student involvement in blended learning, and ultimately deserves increased attention in future research. Finally, it is important to additionally consider the contribution of the individual professional to the collective PI of their professional group. Through this, the professional group develops itself through signals and communication, received from the individual professionals about possible shortcomings and needs within the profession and the society as a whole.

8

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Summary in Dutch / Samenvatting

Hoofdstuk 1 is de algemene inleiding van dit proefschrift, waarin de aanleiding en de context van de verschillende studies worden beschreven. Het beroep van social workers verandert continu onder druk van een verschuivende politieke visie op de invulling van zorg en welzijn en vanwege afnemende overheidsmiddelen. Het zorgen voor cliënten maakt steeds meer plaats voor het regelen van zorg vóór cliënten. De professionals betreden eerstelijnsinstellingen met nieuwe rollen zoals participatiecoach, regisseur of coördinator, om ervoor te zorgen dat alle burgers kunnen deelnemen aan de samenleving en dat de betrokken organisaties verbinding kunnen maken en elkaar kunnen aanvullen. Daarnaast hebben social workers te maken met de bevolking die vergrijst, opkomende technologieën en moeten ze vaak werken op het snijvlak van andere beroepsgroepen zoals verpleegkundigen. Dit alles vraagt om het innemen van een heldere positie en het legitimeren ervan. Deze ontwikkelingen en de nieuwe rollen van de social workers beïnvloeden hun professionele identiteit en vraagt om professionals met een sterke professionele identiteit (PI). Een PI is hoe individuen zichzelf zien in hun werk en hoe ze zich verhouden tot de beroepsgroep waartoe ze behoren. Professionals met een sterke PI weten welke competenties ze hebben, waar ze voor staan en hebben vertrouwen dit waar te kunnen maken. Het bewust worden en het versterken van de PI van social workers lijkt al te kunnen beginnen op de social work opleiding door autobiografische reflexiviteit en kritische reflectie. Autobiografische reflexiviteit valt onder narratief werken en dit laatste kan volgens vele onderzoekers versterkend werken voor de ontwikkeling van een sterke PI en voor de kritische reflectievaardigheden. Echter, het onderzoek hiernaar is hoofdzakelijk theoretisch, kwalitatief van aard of het betreft andere doelgroepen dan social work studenten. Onderzoek laat wel zien dat de reflectievaardigheden van Nederlandse social work studenten momenteel ontoereikend is voor wat het beroep van hen vraagt.

Saxion wil de haalbaarheid, aantrekkelijkheid en organisatie van het onderwijs vergroten en ziet een grote rol weggelegd voor blended learning. Ze zijn geïnteresseerd in hoeverre online leren ook een rol zou kunnen spelen bij het vergroten van PI- of reflectievaardigheden en wat de meerwaarde zou kunnen zijn van het gebruik van persuasieve technologie (PT). PT is het gebruik van motiverende technieken bijvoorbeeld in een online cursus of interventie om het gedrag en de attitudes van een individu te versterken, te veranderen of te beïnvloeden, waarbij het gebruik van dwang of misleiding wordt vermeden. Binnen eHealth heeft PT zijn meerwaarde reeds laten zien.

De belangrijkste doelstellingen van dit proefschrift zijn het ontwikkelen en implementeren van een blended learning cursus in kritische reflectie, en het onderzoeken van de toegevoegde waarde van autobiografische reflexiviteit en PT ten behoeve van PI ontwikkeling en kritische reflectievaardigheden van social work studenten.

Het proefschrift omvat twee fases waar een oriëntatiefase aan vooraf is gegaan. Tijdens fase 1 de oriëntatiefase, heeft de promovenda in de rol als docent en medeontwikkelaar gewerkt aan het versterken van de PI van studenten door de methode ‘Op verhaal komen’. In fase 2 staat het ontwerp van de blended learning cursus ‘Uit je verhaal’, gebaseerd op de online versie van ‘Op verhaal komen’, centraal (deelstudie 1). De cursus beoogt de PI van tweedejaars social work studenten te versterken door kritische reflectie en autobiografische reflexiviteit. Het online gedeelte van de cursus bevat PT om de betrokkenheid van de studenten bij het leerproces te verhogen. De cursus is in deze fase ook als pilot uitgevoerd en geëvalueerd onder studenten en docenten (deelstudie 2). De derde en laatste fase staat in het teken van de constructie van PI van studenten en de implementatie van de blended learning cursus ‘Uit je verhaal’. De gehele cursus bestaat uit kritische reflectie en autobiografische reflexiviteit waarbij het online gedeelte PT bevat. De constructie van PI op basis van kwantitatieve en kwalitatieve onderzoeksmethoden is onderzocht in deelstudie 3 en 4. De manier waarop PI en verschillende hulpbronnen van studenten zich gedurende een studiejaar ontwikkelen gerelateerd aan de blended learning cursus is in de vijfde en laatste deelstudie onderzocht.

In **hoofdstuk 2** is het ontwerp van het online gedeelte van de blended learning cursus ‘Uit je verhaal’ beschreven. Hierbij is gebruik gemaakt van een participatorisch ontwerp. Diverse stakeholders zoals studenten, docenten, onderwijskundigen, instructional designers en social workers hebben in een iteratief proces gekeken welke van de persuasieve technieken geschikt zijn om in het online gedeelte van de blended learning cursus voor tweedejaars social work studenten toe te passen. Op basis van de vier categorieën (‘primaire taak ondersteuning’, ‘dialogoog ondersteuning’, ‘ondersteuning van de geloofwaardigheid’ en ‘sociale ondersteuning’) van het Persuasive Systems Design-model (PSD-model) zijn de technieken gekozen. Daarnaast is gekeken op welke wijze een afstemming gemaakt kan worden qua inhoud, tussen face-to-face lessen en de online module.

De bevindingen lieten zien dat de stakeholders de eerste drie categorieën motiverend vonden werken in de online module. Echter, de vierde categorie sociale ondersteuning paste volgens hen niet bij de aard en inhoud van het vak autobiografische reflexiviteit. Tijdens het ontwerpproces bleek dat ook de integratie van de face-to-face-lessen (FTFL) en de online cursus aandacht behoeft. Er werd aandacht besteed aan de technieken die deze integratie bevorderden, en deze is vervolgens onder een nieuwe vijfde categorie geplaatst, genaamd ‘blended learning support’. Aanbevolen werd om deze categorie toe te voegen aan het bestaande PSD-model. Onder deze categorie vallen de volgende twee persuasieve technieken: ‘rol van de docent’ en ‘online cursus versus FTFL’. Deze technieken kunnen op verschillende manieren worden uitgevoerd, waarbij een voorbeeld van de eerste genoemde techniek is: ‘Aan het begin van de FTFL komt de docent terug op de gemaakte opdrachten’. Een voorbeeld van de tweede techniek: ‘Interactie met de FTFL

moet voldoende gestimuleerd worden binnen de online cursus, bijvoorbeeld aangeven dat studenten hun huiswerk mee moeten nemen naar de FTFL. De gebruikte software bepaalde ook of een techniek kon worden gebruikt. De ambities, wensen en behoeften van de stakeholders waren soms groter dan de software aankon. Vanwege het participatieve ontwerp is de blended learning cursus ontworpen met een grote focus op inhoud van de leerstof, de beoogde doelgroep, de context en ethische aspecten. Volgens de stakeholders zou de ontworpen online cursus een hoge betrokkenheid moeten geven bij studenten.

Hoofdstuk 3 betreft de evaluatie van de blended learning-cursus ‘Uit je verhaal’ in een pilotstudie onder derde- en vierdejaarsstudenten en hun docenten. Er is onderzocht in hoeverre de studenten de PT die in de online cursus werd gebruikt als motiverend beoordeelden. Daarnaast is hen gevraagd welke van de persuasieve technieken van het PSD-model geïntegreerd kunnen worden in de bestaande online cursus om hun motivatie te vergroten. Tenslotte werd gevraagd aan studenten en docenten hoe ze de integratie van de online cursus en FTFL hadden ervaren.

Uit de resultaten blijkt dat over het algemeen de gebruikte PT als motiverend werd ervaren door de studenten. De evaluatie van de persuasieve techniek hangt af van hoe deze wordt toegepast. Binnen dit onderzoek was dit van toepassing op de techniek ‘tunneling’. Deze werd op twee manieren ervaren door de studenten: de ene toepassing als motiverend (studenten stap voor stap begeleiden door de opdrachten) en de andere toepassing als demotiverend (studenten kunnen niet verder met het volgende thema als het vorige thema niet afgemaakt is). De mate waarin een techniek als motiverend wordt ervaren zal afhangen van de doelgroep en de inhoud van het onderwijs. Dit geeft aan dat het daarom altijd nodig zal zijn om per onderwijsmodule te overwegen welke vorm van een PT het meest wenselijk en geschikt is om te gebruiken. De technieken die de studenten in een nieuwe versie van de cursus graag zouden zien zijn de volgende vier technieken: ‘toepassen op’ en ‘simulatie’ (in ‘primaire taak ondersteuning’), ‘reminders’ en ‘sociale rol’ (communiceren met hun docenten in Blackboard) (in ‘dialogue ondersteuning’). Verder blijkt dat de studenten de meeste technieken uit de vierde categorie, ‘sociale ondersteuning’ niet goed vonden passen bij de inhoud en het karakter van autobiografische reflexiviteit. Hun mening komt overeen met de mening van de stakeholders uit de eerste deelstudie. Over het algemeen vonden de studenten dat de FTFL en de online cursus adequaat werden geïntegreerd door de docenten, maar er konden verbeteringen worden aangebracht door de docenten middels het consequenter uitvoeren van het les protocol.

In de derde en laatste fase van het promotieonderzoek is onderzoek gedaan naar diverse constructies van PI bij studenten uit het hoger onderwijs, de implementatie van de blended learning cursus en de evaluatie daarvan. In **hoofdstuk 4** is onderzocht of en op welke wijze reflectieniveaus kunnen worden onderscheiden in het reflecteren van studenten op vijf

componenten van PI. Tevens is gekeken op welke wijze deze studenten reflecteerden op elk van de vijf PI componenten. Vanuit vijf verschillende opleidingen zijn 25 reflectieverslagen van Spaanse en Nederlandse studenten geanalyseerd. Bij de analyse zijn de volgende vier reflectieniveaus gehanteerd: 1. beschrijvend schrijven; 2. beschrijvende reflectie; 3. reflectie; en 4. kritische reflectie. Het onderzoek gaf aan dat de constructie van de PI bij de studenten terug te voeren was op de vijf PI-componenten: zelfbeeld, zelfvertrouwen, taakopvatting, werkmotivatie en toekomstperspectief, wat resulteerde in een beter inzicht in de ontwikkeling van een sterke PI. Ook bleek dat de reflecties van de studenten op de vijf PI componenten geclassificeerd konden worden onder een van de vier reflectieniveaus. Van de studenten bereikte 40% het kritische reflectieniveau tijdens het reflecteren op een van de vijf PI-componenten. De resultaten geven aan dat het versterken van PI bij studenten gestimuleerd kan worden door het reflecteren op de vijf PI-componenten. Daarnaast kan het reflecteren op de vijf PI componenten van meerwaarde zijn voor het bereiken van het kritische reflectieniveau.

In **hoofdstuk 5** zijn vijf mogelijke PI statussen (achievement, foreclosure, diffusion, moratorium and searching moratorium) van studenten gerelateerd aan vijf PI processen (in-depth exploration, identification with commitment, reconsideration of commitment, affirmation and practices). In deze cross-sectionele studie zijn gegevens verzameld met behulp van een enquête onder social work studenten (N = 382) afkomstig uit twee cohorten. Dit onderzoek toonde aan dat commitment een belangrijke relatie heeft met de ontwikkeling van een sterke PI en dat tweedejaars studenten over het algemeen een zwakke PI hebben. Drie bronnen (reflectie, interne locus of control en welzijn) tonen een significante samenhang met PI. Er is beargumenteerd dat reflectie van toegevoegde waarde zou kunnen zijn bij de ontwikkeling van een sterke PI bij studenten in het hoger onderwijs en met name voor social work studenten.

Hoofdstuk 6 beschrijft het onderzoek naar de meerwaarde van autobiografische reflexiviteit en PT in een blended learning cursus in kritisch reflecteren. Het bereiken van een sterke PI onder studenten social work was het belangrijkste doel. Een Randomized Control Trial (RCT) werd uitgevoerd met drie condities (kritische reflectie; kritische reflectie en autobiografische reflexiviteit; kritische reflectie en autobiografische reflexiviteit geïntegreerd met PT) en drie meetmomenten (voormeting, nameting, follow-up). In het onderzoek is gekeken naar effectiviteit (vragenlijsten, reflectieverslagen), evaluaties (focusgroepen) en persuasiviteit (vragenlijsten) onder 187 bachelor studenten Social Work. De belangrijkste conclusie van dit onderzoek was dat de toevoeging van autobiografische reflexiviteit aan het kritisch reflectie onderwijs leidt tot dezelfde ontwikkeling in PI en een vergelijkbaar reflectieniveau van studenten in vergelijking met onderwijs waarin alleen kritische reflectie werd onderwezen. Echter, de studenten toonden een significant hoger cognitieve als affectieve betrokkenheid indien autobiografische reflexiviteit werd

toegevoegd aan het kritische reflectie onderwijs. Kortom: autobiografische reflexiviteit gecombineerd met kritische reflectie bleek een gelijkwaardige optie die studenten meer waardeerden dan alleen kritische reflectie.

Hoofdstuk 7 bevat de discussie en algemene conclusie van het proefschrift. Het begint met de samenvatting van alle deelstudies. Om onze bevindingen op conceptueel niveau samen te vatten, is vervolgens een conceptueel model ontwikkeld (zie ‘Ontwikkelingstaken voor een sterke professionele identiteit’ in Figuur 1). Dit model beschrijft de ontwikkelingstaken die individuen zouden moeten vervullen gedurende hun hele leven, om een sterke PI te ontwikkelen. Dit conceptuele model is gebaseerd op de resultaten uit dit proefschrift en op basis van theorie. Het bestaat uit zes ontwikkelingstaken en bijbehorende sub-taken die besproken zijn in dit hoofdstuk. De zes taken kunnen worden gezien als ‘levenslange taken’ die altijd in beweging zullen zijn en die het proces van identiteitsvorming voortdurend beïnvloeden.

Figuur 1 Conceptueel model ‘Ontwikkelingstaken voor een sterke professionele identiteit’

Het volgende onderdeel van dit hoofdstuk beschrijft de sterktes en zwaktes van het proefschrift. Binnen het hoger onderwijs is vaak geen tijd en geld om een blended learning cursus te ontwerpen met een participatief ontwerp met alle stakeholders (studenten, docenten, onderwijsontwerpers, onderwijsexperts en professionals). Dankzij de Saxion-promotiebeurs heeft dit wel kunnen plaatsvinden. De blended learning cursus werd vervolgens geëvalueerd via drie deelonderzoeken, waarbij zowel kwalitatieve als kwantitatieve onderzoeksmethoden werden gebruikt, wat resulteerde in toepasbare inzichten voor wetenschap en praktijk. De metingen die in de hoofdstukken 3, 5 en 6

werden gebruikt, hadden betrekking op de zelfperceptie van de studenten waardoor dit een beperking is. Dit is tamelijk onoverkomelijk bij het onderzoeken van factoren als PI, reflectie, welzijn en interne locus of control; er zou echter meer onderzoek kunnen worden gedaan op basis van de perceptie van stagebegeleiders en docenten met betrekking tot de uitkomstmaten.

Het proefschrift werd uitgevoerd in een praktische context die voor- en nadelen opriep. Een voordeel was dat de onderzoeken de 'echte' onderwijssetting nauw nabootsten, dus geen experimenteel karakter hadden dat los stond van de praktijk en dus de werkelijkheid. Een nadeel was dat we bij alle deelonderzoeken rekening moesten houden met verschillende factoren, zoals uitval van studenten of docenten die beperkt tijd hadden. Het gevolg is dat sommige resultaten minder generaliseerbaar zijn en dat sommige conclusies minder overtuigend zijn.

De toevoeging van PT in dit proefschrift kan als een sterkte worden gezien, aangezien het gebruik van PT momenteel niet veel wordt gebruikt als technologie in het onderwijs. De meting van de invloed van PT via zelfperceptie van studenten is zoals eerder benoemd bij de andere uitkomstmaten een zwakte. Er was hierdoor weinig zicht op de daadwerkelijke invloed en indrukken van de studenten. Het is de vraag of PT studenten meer adherent maakte; middels 'big data' zou in vervolgonderzoek onderzocht kunnen worden of studenten hun huiswerkopdrachten vaker en/of eerder maakten en/of dat ze er meer tijd aan besteedden.

Na het bespreken van de sterktes en zwaktes zijn aanbevelingen gedaan voor toekomstig onderzoek gericht op de uitkomstmaten PI, autobiografische reflexiviteit en PT. Een van de aanbevelingen gericht op de PI is om in vervolgonderzoek een onderscheid te maken tussen de invloed van de persoonlijkheid van de student, de invloed van reflectie onderwijs en de rol van de docent. Dit onderzoek en het conceptuele model dat in hoofdstuk 7 wordt besproken, gaat uit van een dynamische ontwikkeling in de PI. Er bestaat echter twijfel over de dynamische aard van PI en mogelijk speelt het karakter (dat mogelijk minder dynamisch is dan PI) hierbij een rol. Het is mogelijk dat autobiografische reflexiviteit heeft bijgedragen aan andere inzichten, gedragingen of vaardigheden dan gemeten in het huidige onderzoek. In vervolgonderzoek zou gekeken kunnen worden naar de invloed van autobiografische reflexiviteit op de PI van studenten door het delen van elkaars levensloop, de mate waarin positieve gedachten worden gevormd bij studenten en de mate waarin een geïntegreerd tijdsperspectief gestimuleerd wordt. Wat betreft het gebruik van PT waren de wensen van de onderzoekers en de gebruikers soms groter dan wat de technologie kon vervullen. In toekomstig onderzoek zou het interessant zijn om samen te werken met softwareontwikkelaars in een eerder stadium van het softwareontwerpproces om doelstellingen en ambities te communiceren die passen bij de onderwijssetting met

betrekking tot PT. Enerzijds kan het gebruik van PT er voor zorgen dat studenten met verhoogde motivatie aan een taak kunnen werken, zonder dat de extrinsieke stimuli de intrinsieke stimuli overheersen. Aan de andere kant is het ook wenselijk dat studenten de mogelijkheid hebben om sommige technieken aan en uit te zetten. Wat zeker interessant zou zijn, is het gebruik van PT op basis van de persoonlijkheid van de student. Maatwerk blijft belangrijk: er is een participatief ontwerp voor nodig om te begrijpen of een bepaalde persuasieve techniek past bij de inhoud van de cursus, de doelgroep, de context en de wensen en behoeften van alle betrokkenen, rekening houdend met ethiek. Het zevende hoofdstuk is afgesloten met implicaties voor de praktijk. Samengevat zijn dit:

- combineer kritische reflectie met autobiografische reflectie;
- neem de vijf componenten van PI op in het kritisch reflectie onderwijs;
- gebruik het PSD -model bij het ontwerpen van een blended learning cursus;
- werk het conceptuele model uit in een praktisch model vanuit een samenwerking tussen middelbaar onderwijs en hoger onderwijs.

Concluderend kan gezegd worden dat dit proefschrift de belangrijke rol aan heeft getoond van het hoger onderwijs bij het ondersteunen van de PI ontwikkeling van studenten. In het tweede leerjaar kan gestart worden met autobiografische reflexiviteit in combinatie met kritische reflectie, aangezien dit verband houdt met een sterke affectieve en cognitieve betrokkenheid van studenten. Andere betrokken stakeholders, zoals onderwijskundigen, professionals en docenten, bevestigen ook de meerwaarde die autobiografische reflexiviteit met zich meebrengt voor het vormen van een PI in een studentenpopulatie. Het vermogen om zich te binden aan een beroep lijkt de belangrijkste factor te zijn voor het ontwikkelen van een sterke PI en daarom moet dit een aandachtspunt zijn in het hoger onderwijs. Het hoger onderwijs kan, door middel van het kritisch reflectie onderwijs en zijn vier niveaus, studenten stimuleren om na te denken over de vijf componenten van PI (zelfbeeld, zelfvertrouwen, taakopvatting, werk motivatie en toekomstperspectief) om hun PI te versterken. Studenten herkennen deze vijf componenten wanneer ze reflecteren op hun PI en verschillende reflectieniveaus kunnen worden onderscheiden in hun schriftelijke reflectieverslagen. Het is duidelijk welk potentieel PT kan brengen om een grotere betrokkenheid van studenten bij blended learning te bevorderen en dit verdient meer aandacht in toekomstig onderzoek. Ten slotte is het belangrijk om ook een bijdrage van de individuele professional aan de collectieve PI van hun beroepsgroep te stimuleren. Hierdoor ontwikkelt de beroepsgroep zich door de signalen van individuele professionals over de mogelijke tekortkomingen en behoeften binnen het beroep en de samenleving als geheel.

About the author/ Over de auteur

Monique Engelbertink (1972) studeerde aan de Katholieke Pabo, Edith Stein te Hengelo (1990-1994) voor leerkracht basisonderwijs en Montessori- onderwijs en studeerde gezinspedagogiek aan de Radboud Universiteit te Nijmegen (1994 - 1997). Ze werkte als vrijwilliger bij de Kindertelefoon in Nijmegen waar ze de kracht van het luisterend oor heeft ervaren. Na haar studie gezinspedagogiek werkte ze onder andere als orthopedagoog bij de afdeling Jeugd van Mediant Geestelijke Gezondheidszorg (Enschede) en als preventie medewerker bij Tactus, instelling voor verslavingszorg (Enschede). Bij de afdeling Preventie heeft ze onder andere de doe- en praatgroepen ontwikkeld en uitgevoerd voor kinderen van verslaafde ouders.

Met haar collega Rianca den Ouden en haar zus Irene Engelbertink heeft ze in 2004 het boek 'Het blijven toch je ouders, ervaringsverhalen van kinderen van verslaafde ouders' geschreven. Het luisteren naar het verhaal van deze twaalf jongeren gaf haar het inzicht dat het levensverhaal van deze jongeren het startpunt zou moeten zijn voor het opzetten en uitvoeren van interventies. Het zaadje van narratief werken is toen geplant. In 2014 hebben de drie auteurs enkele van de jongeren opnieuw opgezocht en geïnterviewd. Dit boek 'Het blijven toch je ouders. Tien jaar later' is online te lezen op de website van Monique (www.ervaringsverhalen.nl).

Vanaf 2001 is Monique als docent pedagogiek bij Saxion, Academie Mens en Maatschappij komen te werken. Naast haar onderwijswerkzaamheden is ze vanaf 2007 bij diverse lectoraten als onderzoeker gaan werken waarbij het zwaartepunt lag op het onderzoek in het GGZ- domein. Tijdens de lessen 'autobiografisch onderzoek' voor studenten van de minor Spirit kreeg het plantje narratief werken weer nieuwe energie en is het verder gegroeid. Ook het levensverhaal van studenten ligt aan de basis van de ontwikkeling van hun professionele identiteit en hun handelen en is relevant om te ont-dekken aan het begin van hun studie. Ze ervoer ook de nieuwe dimensie van het opschrijven.

Als zelfstandig ondernemer geeft Monique bij diverse client- en familieverenigingen autobiografische schrijfcursussen voor naasten van mensen met een psychische aandoening. De inzet van autobiografische reflexiviteit als middel om te komen tot een sterke professionele identiteit is vervolgens tot volle bloei gekomen tijdens het promotie onderzoek (Universiteit Twente, Story Lab en Saxion Lectoraat Innovatief en Effectief Onderwijs). Monique zal zich blijven inzetten voor autobiografische reflexiviteit zodat professionals leren om hun verleden, heden en toekomst te integreren en als voedingsbron te zien voor de vorming van hun professionele identiteit.

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