

Personal and professional development of students



# Personal and professional development of students

*A handbook for educators*

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# Introduction

In a rapidly changing world marked by increasing uncertainties, society needs individuals who can actively shape their future, develop innovative solutions, and adapt quickly. This requires these individuals to not only be equipped with knowledge and skills, but also the attitude to explore new avenues and take action in real-world situations. As a teacher or educational developer, you play an important role in shaping this new generation of students, but how can you do this in an effective, healthy and supportive way? How do we prepare students to step into the world not as passive participants, but as creative, emphatic, and critical thinkers and deliberate actors, individuals who question, innovate, and contribute meaningfully to society?

This is where education on the **personal and professional development (PPD)** of students comes into play. This book is the result of years of experience developing, teaching and assessing this specific type of education, resulting in the SCOPE approach.

## What is personal and professional development?

Whereas **personal development** is about the broader development of the student as an individual (Fleer, 2025), **professional development** encompasses the continuous acquisition of competencies—defined as an integration of knowledge, skills, abilities and behaviours—and is aimed at enhancing students' effectiveness in their current or future professional roles (Brewer, 2013; Chadha & Heng, 2024; Tuononen et al., 2022). These professional competencies equip students with the capacity to bring discipline-specific knowledge and skills into practice. They enable students to contribute meaningfully to organisations, businesses and society, and successfully deal with the complex challenges that they face (Osmani et al., 2019; Scott & Willison, 2021).

To date, an extensive body of literature exists on **professional development**. In this body, however, numerous terms are used to describe competencies that relate to professional development, including 'generic skills', 'soft skills', 'non-technical skills', 'life skills' and 'transferable skills' (Osmani et al., 2019; Tuononen et al., 2022). These terms refer to competencies that can be used in broader contexts and are applicable to a variety of jobs, industries and situations. They are not tied to a specific role or profession but can easily be 'transferred' from one context to another, as opposed to discipline-specific or technical skills that can only be used in specific contexts (Majid et al., 2019). In other words, transferable skills refer to skills that allow students to become adaptive learners equipped to navigate personal, social, and work-related challenges (Pellegrino & Hilton, 2012). In addition, authors have empha-

sised the need for competencies to contribute to sustainability or to deal with other complex challenges, called 'sustainability competencies' or 'transformational skills' (Bianchi et al., 2022; Cambridge University Press & Assessment, 2021; Inner Development Goals, 2021; Kioupi & Voulvoulis, 2022). The umbrella term 'professional development' covers this variety of terminology and frameworks. Examples of professional competencies underlying professional development are **self-management**, effective communication, team collaboration, cultural competencies, planning, time management and **critical reflection**.

*Strategic plan University of Groningen 2021-2026*

We aim to impart to our students the values, knowledge and skills that they need to become globally engaged citizens, able to address the contemporary challenges of science and society. To accomplish this, we teach them in an environment that focuses on personal development and ambition and that fosters their curiosity, creativity, flexibility, a critical mind, collaboration and an entrepreneurial spirit. This environment is inspired by leading researchers, highly-motivated teachers, and academic and societal issues in regional, national and international contexts. Success starts well before students enter our institution, which is why we start fostering academic and scientific sensitivity and literacy in primary and secondary schools. Our efforts continue after graduation in the ways we empower our graduates to adopt life-long development.

The concept of **professional development** is related to, but distinct from, **personal development**. To us, the main difference lies in their focus: while personal development emphasises overall self-development (emotional, mental, and social), professional development is work-oriented, aiming to enhance job-related skills and behaviours. Both share a common goal in fostering self-knowledge and supporting lifelong learning. In addition, some competencies contribute to both professional and personal development, while others do not. For example, active listening and empathy are valuable for leaders and managers but also enrich daily interactions, whereas formal presentation skills are primarily applied in professional contexts. Given the formal educational environment in which we operate, the emphasis is often placed on professional development rather than personal development, even though true professional development stems from paying attention to personal development in education.

A core component of our **SCOPE** approach to **personal and professional development** in education involves students reflecting, in a structured way, on who they are as individuals and how they interact with the world around them (including their study environment and future

professional environment). That is why we promote PPD education as a method through which we support students in both their personal and professional development.

## The purpose of this handbook

Whether you are building a PPD learning line from scratch, redesigning an existing course, or simply looking for ways to incorporate more PPD content into your teaching, this handbook might be suitable. As a teacher or an educational developer, you might consider **personal and professional development** too important to reduce to a checklist of competencies or a collection of isolated activities. You might be on the lookout for a coherent approach—defined by a shared vision, developed together with colleagues, students, and program leaders—which translates that vision into concrete, meaningful education. While numerous **competency frameworks** (e.g. [Inner Development Goals](#)) outline the skills needed for students to learn, they often lack a clear, pedagogical translation into concrete teaching practices. Education must move beyond abstract lists of competencies and instead design intentional, reflective learning experiences that help students develop and apply these skills and attitudes in meaningful ways. PPD education, according to the **SCOPE** approach, can provide the missing link.

That is exactly what this handbook offers. Drawing on the evidence-informed work that we executed within a medical faculty and that is designed to be applicable across educational contexts, we provide a practical pathway that connects vision, theory, and pedagogy to the classroom. Throughout this handbook, you will find concrete examples of educational activities that should not simply be copied into the curriculum but instead be treated as a source of inspiration from which to design your own PPD approach—one that fits your program, your students, and your context.

This handbook remains a work in progress. Over time, we will write more relevant chapters and adapt current chapters to stay up to date with current ideas about PPD, **reflection** and education.

## Why do we need Personal and Professional Development education in curricula?

We argue that PPD education is important to support the individual development of a student both as a person and as a professional. However, there are more arguments as to why we would advocate for PPD to have a more explicit role in curricula. Indeed, there are two main reasons for why we believe PPD is important to consider as a topic in education. Each reason will be briefly introduced and elaborated on in the sections that follow.

First of all, PPD education is important in the context of **student well-being**. Competencies

related to PPD education, such as **reflection** skills and **self-management**, have been associated with improved well-being and academic achievement (Akpur, 2020; Ghanizadeh, 2017). Therefore, PPD education may generate short-term benefits for student well-being as well as long-term benefits, considering that students develop competencies to manage their well-being both in the short and long run.

It is great that students are thinking about what kind of dental hygienist they want to be; this way, they can consciously shape a sustainable career as dental hygienist.  
(Teacher Dental Hygiene)

Second, both the work field and society in general appeal for the development of professional competencies among students (Bianchi et al., 2022; Kioupi & Vouloulis, 2022, p. 406; Pellegrino & Hilton, 2012). Due to changes in jobs, the organisation of tasks, and a growing recognition of the need to develop non-technical skills, an emphasis on students' **professional development** has emerged. For instance, reviews of job advertisements showed that these postings always included a repertoire of required professional competencies (Osmani et al., 2019; Tan & Laswad, 2018). From a societal perspective, there is a demand for students with competencies that are much needed to face complex global challenges, such as climate change, violent conflicts and health inequalities (Bianchi et al., 2022, 2022; Kioupi & Vouloulis, 2022). Examples of these competencies are perspective taking and dealing with uncertainty. On their website, the Inner Development Goals (2021) initiative points out that 'we urgently need to increase our collective abilities to face and work effectively with complex challenges' in order for a sustainable world to thrive.

PPD education helped identify what truly was essential for me, what part of this essence I can contribute with in my work, and how my job needs to fulfill them. Getting to know myself in a professional context helped me understand much more about how well I fit into my profession, where I can improve and what core **values** need to be present in my professional role. (Master student Clinical and Psychosocial Epidemiology)

## Supporting student development and well-being

In recent years, there has been a rise in attention for the well-being of students. Students themselves have expressed concerns about their ability to cope with the stressors of student life, as well as their career prospects and preparedness for diverse and rapidly changing professional environments (Cruess et al., 2016; Silveira et al., 2019). Their well-being and **personal and professional development** are closely linked to the gap between who they are and who they aspire or feel they ought to be (Self-Discrepancy Theory; Higgins, 1987). When

this discrepancy is large or remains unresolved, it can lead to **stress**, anxiety, and lower self-esteem (Joseph et al., 2017). Reflecting on these gaps and translating them into purposeful action can help ease this distress. Education on PPD offers the space and support for such reflections, contributing to **self-awareness** and **self-regulation** (Locke & Latham, 2002).

### *The impact of student well-being*

Perhaps you have noticed in your classes that students are struggling with their mental health. A recent national study by the Trimbos Institute (Rijksinstituut voor Volksgezondheid en Milieu, RIVM, 2025a)—which is consistent with international research—indicates that many students in Dutch higher education experience symptoms of anxiety, depression, or performance pressure. Students at the University of Groningen show similar patterns, with local data confirming high levels of **stress** and mental health concerns (RIVM, 2025b). The national Trimbos report also highlights that more than half of students feel they lack effective coping strategies to manage their stress. Within the academic context, this is concerning given that poor mental health is closely linked to negative academic outcomes, including lower academic performance (RIVM, 2025a) and an increased risk of dropping out of university (e.g., Klinkenberg & Kappe, 2025).

The impact of **student well-being** also extends into the long term. According to the World Health Organisation (2024) depression and anxiety lead to around 12 billion lost working days annually, costing roughly US\$ 1 trillion (~€900 billion) in lost productivity. In the Netherlands, psychological complaints—particularly burnouts—are the main cause of long-term absenteeism (RIVM, 2024). Given current labour shortages and the societal costs of mental health-related absenteeism, it will benefit both students and the labour market if students learn how to understand themselves and their environment, and how to navigate between the two without losing sight of their own needs (Fleer, 2025).

### *The role of educational institutions*

Concerns about **student well-being** have already prompted universities to broaden their focus from ‘study success’ to ‘student success’. Student success is not only about graduating efficiently; it also includes the overall development of the individual student—academic, personal, and social (Rijksuniversiteit Groningen, RUG, 2021; Universiteiten van Nederland, 2022). Most definitions of (student) well-being focus on finding a balance between the positive and negative parts of (student) life. Handling ups and downs, dealing with **stress**, and building your skills are personal and constantly changing processes, which partly happen within the (higher) education context. Moreover, well-being is not just about mental health—it also includes physical and social aspects. When students experience positive well-being, it shows

in their resilience, their personal and professional growth, and their achievements (Rijksuniversiteit Groningen, n.d.; Universiteiten van Nederland, 2022).

Nationally (Landelijk Kader Studentenwelzijn; RIVM, 2023) and within our university (i.e. the University of Groningen), attention for PPD is recognised as essential for student well-being. The Action Plan on Student Well-being (Rijksuniversiteit Groningen, 2024) states the following on page 10:

Personal development is crucial for students throughout their academic journey, enabling them to grow personally and professionally while preparing for post-graduation careers. Stimulating personal growth and social responsibility is a core responsibility of higher education institutions, as mandated by law (WHW 1.3.5). Consequently, educational programmes must assist students in becoming resilient, well-rounded professionals capable of navigating the complexities of modern society and managing stress effectively.

Some educational approaches focus directly on supporting **student well-being**. For example, reflecting on one's personal **values** can help students cope with **stress** by fostering **meaning-making** (Chmiel & Kroplewski, 2025). In particular, educational institutions often focus on themes such as **stress management** and study-life balance.

#### *Examples of educational approaches focusing on supporting student well-being*

##### Students...

- Reflect on personal **values** and goals to identify what truly matters to them and reduce the gap between expectations and reality.
- Develop time management and study-life balance skills, such as creating realistic schedules or setting aside time for personal 'recharge'.
- Apply insights from positive psychology by, for example, recognising and using their character strengths to boost resilience, motivation, and well-being.
- Practice mindfulness or relaxation techniques to notice **stress** signals early and respond consciously.
- Increase awareness of thought patterns and self-talk around stress.
- Identify and challenge limiting beliefs that may hold them back.

In some instances, these themes are offered as one-off activities based on different theoretical perspectives and teaching approaches. For students, this might come across as unfavourable.

miliar or disconnected, especially if these activities are not aligned with the rest of their curriculum. This highlights the importance of a coherent learning line, as these initiatives are often experienced as separate from the curriculum rather than integrated into it. In our **SCOPE** approach, we find it important to align activities related to PPD with students' needs and the educational vision of the curriculum.

We experienced different types of activities; I liked the theories and the different tools we learned to manage our stress. I feel like I learnt a lot about myself and my stress. The things I learned I can and do use in my daily life. Taking this course has helped my stress management and my overall well-being. (Bachelor student Dentistry about a course on well-being and stress management)

## Conclusion

Even if education does not explicitly target well-being, paying attention to any part of PPD—students understanding themselves, their context, and how they act within it—can help reduce discrepancies or ease the impact of this distress. Teaching students how to navigate a context that may or may not align with who they are and who they want to be enables them to feel more confident, improve their well-being, and perform better.

## Preparation for 'the world out there'

The ambition of our educational institutions is to equip individuals with the necessary skills, knowledge and attitude to act in the world beyond education. However, we observe two phenomena in society that make us reflect on how well we currently prepare our students for the world after formal education. Whereas the first phenomenon is related to the **skills gap** as experienced by the labour market and graduates, the second phenomenon revolves around the so-called **polycrisis**. Both these phenomena will be described below, after which we will explain why and how PPD education can play a role in navigating these phenomena.

Today's students are, amongst others, the engineers, policy makers, and healthcare providers of the future. In essence, their time spent in education prepares them to deal with the challenges they will face as future professionals. For decades, however, educational institutes seem to have failed in delivering graduates with the competencies required for **the world out there**. This phenomenon is called the **skills gap**. Both the labour market (IsHak et al., 2009; 2013; Frajerman et al., 2019) and society at large (Cruess et al., 2015; Frank et al., 2014) have repeatedly asked for graduates with strong professional competencies such as **self-management**, effective communication, perspective-taking and reflexive capacity (European Commission, 2024, p. 257). Nonetheless, many graduates do not reach the required

level after entering the labour market (IsHak et al., 2009; Wald, 2015). Additionally, students themselves have expressed concerns about their career prospects and preparedness for diverse and rapidly changing professional environments (Cruess et al., 2016; Silveira et al., 2019). This skills gap means that there is an urgent need—felt by both the world out there and the graduates themselves—to align the taught skills in class with the skills necessary in the future. This also implies that we should critically reflect on our own role as educational institutes; what do we prepare our students for, and how do we do this?

PPD education helped me in the process revolving around the question ‘who do I want to be?’, both as a future doctor and simply as a person in general. (Bachelor student Medicine)

It [the professional skills training] somehow boost my confidence and my understandings both regarding the course and the way people think. (Bachelor student International Business)

Next to this **skills gap**, there is another pressing phenomenon on the rise. Today’s society is facing multiple challenges on a larger scale, such as climate change, the rise of generative AI, or challenges related to (public) health (Bianchi et al., 2022; Kioupi & Voulvoulis, 2022). These challenges are interlinked and referred to as the **polycrisis**. The challenges are also reflected in the United Nations **Sustainable Development Goals (SDG)**, a framework that you might be familiar with. The world outside education is not a static universe that we can fully prepare students for by simply teaching them the right knowledge and skills; on the contrary, **the world out there** is filled with dynamics that are continuously changing and moving. In preparing students for this outside world, we need to take these dynamics and characteristics into account.

### *The focus of education when preparing students for the world out there*

These two phenomena raise the question of how to pay attention to these issues in educational contexts. The different challenges that present themselves within the **polycrisis** are sometimes referred to as ‘complex challenges’ or ‘**wicked challenges**’ (Hanstedt, 2018). This refers to the many different actors and factors that are involved in that challenge and make it therefore difficult to grasp. Sometimes a comparison is made with a bowl of spaghetti, it is difficult to distinguish the different strands of spaghetti individually as they are intertwined with other strands and ingredients. The parallel in complex challenges is that the challenge (the dish) can not only be understood from one perspective (one ingredient), but needs to be looked at as a whole.

A common trend to introduce students to these challenges is to integrate the SDGs into the curriculum. For example, the Faculty of Spatial Sciences at the University of Groningen has linked all its courses to the different SDGs ([see](#)). Additionally, different courses let students

work on societal challenges in **interdisciplinary** teams, with the aim of introducing students to working on complex challenges. However, as students only have limited time to work on the complex challenge, which is indeed complex, priorities will depend on the learning outcomes of the course. This means that sometimes, in an attempt to grasp the complexity, the challenge is reduced to an assignment that can be executed in the given time frame, and students are expected to work on a smaller part of the challenge. However, as the main characteristic of these **wicked problems** is complexity, this restriction means that students will not be fully exposed to it. In education, therefore, we should not 'ignore' this aspect in teaching students how to deal with complex challenges but instead expose them to and teach them how to navigate these challenges. When designing education, we should continuously remind ourselves not to take away the opportunity for students to practice navigating complexity by leaving the complexity out. Instead, we should let students hone the right skills and attitudes necessary for navigating complexity. This is where education on PPD comes into play.

Different frameworks exist that provide an overview of skills (see box below) necessary for being prepared for the labour market after education. Additionally, the work field can demand certain skills from students that are not always taught through their formal curriculum. The need for training students to develop skills related to navigating **the world out there**—combined with the **skills gap** as noticed by the work field—makes it urgent to reflect on what we actually want to teach. Within **SCOPE**, we believe that taught skills should not be offered as a set of individual skills that can be checked off. Instead, we are convinced that stimulating a curious attitude, combined with teaching the skills required for this, can offer students the experience of actually learning what it takes to navigate in situations in the real world. Therefore, we need to teach our students to expand their mindset and introduce them to how they, as individuals, can navigate these different perspectives on challenges. Moreover, we need to teach skills such as perspective-taking and dealing with uncertainty that support this navigation process (read more on specific examples of skills in the next chapters).

#### *Examples of competency frameworks for future professionals*

- [The Framework for 21st century Learning](#)
- [Inner Development Guide 2025 with descriptions.pdf](#)
- [The Cambridge Life Competencies](#)
- [UNESCO Skills for the Future](#)
- [OECD Learning Compass 2030](#)

## *What does this mean for educational institutes?*

Acknowledging the **skills gap** and the complexities that present themselves in society influences the way we educate our future professionals. We need education where students have the opportunity to practice navigating the ‘wickedness’ and the skills required for life after education in a safe space. Granted, different educational formats are on the rise (e.g. Challenge Based Learning, **Interdisciplinary** courses, **Placebased Learning**, Real-life Learning Environments), but we need to stay attentive to the pitfall of the curtailment of complexity. We are convinced that we should not steal opportunities from students, but instead make use of the characteristic of complexity, expose our students to it, and pay attention to the central question that helps students navigate this characteristic: how to position myself towards something or someone else?

## *The central question: How to position yourself towards another?*

As the previous section has described, the educational institutes prepare students for their role as professionals in the society of tomorrow. As **the world out there** is dynamic and forever changing, however, we do not teach students to act in ways that will help them function in today’s world; instead, we encourage them to develop a curious attitude that will help the professionals of the future shape tomorrow’s society—and the days after.

This brings us to the most important question: how can we as teachers and educational developers contribute to the development of an attitude that supports students in navigating **the world out there**? We believe that there are multiple approaches and that PPD plays a crucial part. As demonstrated in the other chapters, the underlying question is one of **positionality**: how do I (X) relate to another (Y)? This implies, however, that you are aware of what X and Y denote, and that you are curious to understand how they relate to each other (considering the relevant context). In the box below, we have included three examples to illustrate this central question.

### *Examples of positionality*

- A medical student has her second clinical rotation at the emergency department. She sees an 89-year-old woman with severe shortness of breath. The supervisor decides to proceed with a treatment plan that is quite invasive for the patient because ‘we need to act first’ (the Y). When the student is providing the

patient with more oxygen, the patient asks her whether all of this is really necessary at her age. The student feels a clear tension between the medical possibilities and the patient's wishes and quality of life and asks herself what she would have done in this situation (the X). Afterwards, she discusses the situation with her supervisor, and together they explore the following question: should we do everything we can to extend someone's life, or should we focus on improving the quality of life?

- In the Honours BSc Skills course, students are asked to find something that challenges them (the Y). With their own challenge in mind, they will explore their perspective on this challenge together with peers (the X). Why is this a challenge for the individual (i.e. how does the individual relate to Y)? Their assignment is to find someone with a different perspective. This exploration brings differences between their perspective and the perspective of the other to the surface. That means that their own perspective (X) becomes more explicit. Questions can be asked about how their perspective was shaped—not only to increase the knowledge of X but also to stimulate **reflection** on their attitude towards the challenge when other perspectives are introduced. These include: Does this say something about your profession? Is this part of your culture? Was this part of your upbringing? This reflective exercise encourages thinking about how you (X) relate to the challenge (Y), and it can even be extended to how X is related to other perspectives on Y.
- A student from Biology in an **interdisciplinary**, challenge-based program is collaborating with peers on a challenge related to the improvement of sleep in a local hospital (the Y). The student is aware of different theories on how a lack of sleep influences a person's health. Together with the team, the student tries to formulate a problem statement, but they struggle. When they ask for feedback on the problem statement from the stakeholders in the challenge, they realise that their approach was very medical (the X). The student comes to the conclusion that patients in the local hospital often stay there for one or two nights, while the literature that they used claimed consequences of a long-term lack of sleep, not one or two nights. They learned that their initial literature search was influenced by their perspective (X) on the topic (Y), and in collaboration with the stakeholders they became more aware of how their perspective is just one of many. With these insights, they realised that in navigating interdisciplinary challenges, they should be on the lookout for other perspectives as well.

In the examples in the box, the students should not only learn about Y and how to deal with or 'solve' it, but they are also encouraged to investigate to what degree their perception and perspective influence how they act. After exploring what they bring to the situation (X) and their

task at hand (Y), they can start to think about how they should navigate their assignment. And perhaps, in collaboration with others, they discover that there are more perspectives (Z) to explore.

## Conclusion

All in all, if we want to prepare students, in a healthy way, for the **'world out there'** after education by exposing them to the complexity of that world, we should teach them how to navigate between what they bring, and what the context brings. Teaching the skills and attitude around this central question can be challenging. With this book, we aim to give you a new perspective and present tools on how to approach this for students in your education system, with a specific focus on PPD.

## The structure of this handbook

This handbook is developed in stages. In the first stage, we will focus on the first three chapters: The theoretical background, reflection as a core component of PPD and the pedagogical approach that we developed.

- [Theoretical background](#)

This chapter examines the key theories underpinning our approach, including **Professional Identity Formation**, the aims of education (including **socialisation** and **subjectification**), and **boundary crossing**. Each theory is introduced with a clear summary, followed by its practical application in educational settings.

- [Reflection as a core component of PPD](#)

Here, we explore the role of **reflection** in PPD, addressing its functions, definitions, and significance in (higher) education. The chapter also highlights reflection as a social learning process, providing insights into how it can be taught, assessed, and integrated into teaching practices.

- [A pedagogical approach for reflection on PPD](#)

This chapter presents the **SCOPE pedagogical approach**, a structured approach to embedding **reflection** on PPD in education. It outlines seven steps (from Step 1 to Step 7) to guide students through the reflective process, along with enabling factors such as teacher training,

curriculum integration, and **interdisciplinary** collaboration. The chapter concludes with considerations for assessing the skill of reflection and PPD.

In subsequent stages, the handbook will expand to include chapters on teacher professionalisation and concrete examples of PPD in practice, offering further inspiration for educators.

## The centre of expertise behind this handbook: SCOPE

The authors of this book are all part of **SCOPE**. As this book summarises our experiences and our approach, the following section will briefly shine light on our own journey.

The origins of **SCOPE** trace back to 2015, when two developments converged. On the one hand, we were asked to design leadership education for medical students at the University of Groningen. At the same time, concerns about **student well-being**—such as rising **stress** levels and pressure to perform—were becoming increasingly visible. In exploring these themes, we came to a key realisation: leadership and well-being are not separate domains, but both expressions of a broader developmental process. At their core lies a shared question—how do students develop as individuals and as future professionals?

This insight led to the establishment of **SCOPE** as an expertise centre for **personal development**. From the beginning, our ambition was to create a place where knowledge, research, and educational practice come together, and where **personal and professional development** are addressed in a coherent and systematic way. Although rooted in medical education, we believed this approach to be relevant across disciplines. SCOPE was therefore designed as more than an educational initiative. It became a breeding ground for expertise, where educators, researchers, and practitioners collaborate to strengthen how PPD is understood and taught.

From the moment **SCOPE** was established, our work has evolved along two closely interconnected lines. First, we develop and deliver education in close collaboration with academic programmes. Our teaching is research-driven and embedded in a continuous learning pathway, in which students are encouraged to cultivate an open, curious, and reflective attitude. Through workshops and courses on topics such as values and stress management, students not only gain insight into themselves, but also learn evidence-based methods to support their ongoing PPD—during their studies and throughout their careers. These educational activities are continuously refined through evaluation, **reflection**, and new insights.

Second, we conduct and integrate research on PPD education. Drawing on academic literature, educational practice, and **interdisciplinary** perspectives, we have developed a theoretical framework that informs both our teaching and our broader narrative. Central to this framework is the idea that PPD is an ongoing process, in which **reflection**, identity formation, and interaction with one's environment play a crucial role.

By combining education and research, **SCOPE** aims to contribute to the development of students who are not only knowledgeable and skilled, but also reflective, resilient, and able

to navigate complexity in both their personal and professional lives. Ultimately, our goal is to support students in becoming healthy, engaged professionals who continue to learn and develop throughout their careers. This integrated perspective forms the foundation of SCOPE—and of the ideas presented in this book. Our team consist of the following people, also all 8 the authors of this handbook:



*Photo taken by  
Ronald Zijlstra.  
From left to right:  
Hedwig Boer,  
Maleah Knevel,  
Floor Velthuis,  
Miranda  
Trippenzee, Joke  
Fleer, Salome  
Scholtens, Jorrit  
Waslander,  
Margreet Smit*

# The theoretical principles underlying the SCOPE approach

When we started with the development of our PPD education, a few theoretical principles were dominating the scholarly discussions. Some were helpful within the medical context where they originated, but had their limitations when we extended our work to other educational disciplines. This prompted a wider investigation into other theoretical principles, in order to create a coherent and complementary approach to PPD. Some principles originate in medical education research (e.g. **Professional Identity Formation** or PIF), others in educational sciences (e.g. **subjectification**, boundary crossing theory). Moreover, some describe processes (**socialisation**, PIF), whereas others refer to aims of education (subjectification) or learning mechanisms (**boundary crossing**).

In this chapter, we will briefly summarise the various theoretical principles underlying the **SCOPE** approach and share our experiences and considerations when applying them to our educational practices. Understanding these principles clarifies why the SCOPE approach is structured the way it is, and helps the reader understand how the principles connect to the practical methods (e.g. knowledge clips or educational materials) that can be found throughout the handbook. Further readings will be suggested for those looking for more theoretical grounding.

## Professional Identity Formation

In the domain of medical education, the importance of a student's professional identity formation is widely acknowledged. **PIF** describes the process that students undergo as they develop from laypersons into professionals (Cruess et al., 2015). More specifically, it emphasises that becoming a professional involves more than just mastering knowledge and skills—it also includes internalising the **values**, attitudes, and behaviours that define a profession. By the time students complete their education, they should be ready to step into their profession's **Community of Practice** (CoP), not only as competent practitioners, but also as individuals who embody the **professional identity** of that particular CoP.

The development of a **professional identity** is a dynamic and personal experience. Remaining within the original context of this concept, each medical student enters their educational program with a unique background, personal motivations, and individual characteristics. Throughout their training, their development is influenced by the educational environment, the role models they encounter, their practical experiences, and their own aspirations. For educators and curriculum developers, understanding and actively supporting this process is crucial.

It ensures that students do not only simply learn what to do, but they also become able to think, act, and feel as medical professionals (Cruess et al., 2015).

Importantly, while knowledge and skills are often taught explicitly —through clear learning objectives, textbooks, lectures, and hands-on training—the development of a **professional identity** is largely shaped through **socialisation** within the professional community. In the next paragraph, we will dive deeper into this concept of socialisation, which is connected to Biesta's philosophy of education.

When using **PIF** for developing our **PPD** education, the concept turned out to be especially useful within educational domains that have a strong and recognisable **CoP**. As our team started to be involved in educational disciplines outside of the medical field, we noticed that PIF is less useful within educational programs that have less clearly identifiable CoPs. To illustrate, we have included an exercise conducted with medical students below. The same exercise is more difficult to integrate into curricula where the professional context is less clearly defined and internships (and exposure to the CoP) are not included. The concept of **boundary crossing** proved to be a valuable addition to this PIF framework for less clearly identifiable CoPs, which will be explained below.

#### *Exercise: Reflecting on symbols*

**Aim of the exercise:** Reflect on the current PIF process that students are in.

Short explanation of the exercise: Students bring a symbol of their current clinical rotation internship department to class as homework. The symbol should represent an idea that says something about (the culture of) the department. What is communicated to them through these symbols? They can interpret the symbols very broadly; it could, for example, be an object such as a lunch table, a written slogan (e.g. 'Samen. Beter. UMCG'), or a logo of a research project. In class, we will then reflect on the symbols that students brought by questioning the following:

- What is being conveyed by this symbol (i.e. which **values**/norms/beliefs/behaviour etc.)?
- Do the student's peers recognise this meaning behind the symbol?
- How does the student relate to what is being conveyed by the symbol? How does it relate to the development of their **professional identity**?

The second concern we ran into had to do with what educationalist and philosopher Gert Biesta describes as the 'three aims of education'. According to Biesta, there should be a bal-

ance between **qualification**, **socialisation** and **subjectification** (Biesta, 2020). When strong emphasis is placed on qualifying students for their future career—and thus on socialising them to become part of their **CoP**—we risk overlooking the aim of subjectification, which is about fostering autonomous, responsible, and reflective individuals. In turn, this can result in the three aims of education being out of balance. In the next paragraphs, we will dive deeper into Biesta's work.

#### *Further readings*

Cruess, R. L., Cruess, S. R., Boudreau, J. D., Snell, L., & Steinert, Y. (2015). A schematic representation of the professional identity formation and socialization of medical students and residents: A guide for medical educators. [\*Academic Medicine\*, 90\(6\)](#), 718–725.

## What are the aims of education?

Biesta proposes that all education has to cover three domains or purposes: **qualification**, **socialisation** and **subjectification** (Biesta, 2020). The first, qualification, is about making sure that education leads to the acquisition of knowledge and skills relevant for the student (e.g. how to perform a profession). In the second domain, socialisation, education introduces students to relevant aspects of the society or groups they belong to. This can, for example, include learning about the norms and **values** that define the culture students grow up in, or learning about beliefs that are dominant within the group of professionals they relate to. The third purpose, subjectification, states that education should also focus on the development of the student as a **subject**. This is about reminding students that they are a subject (not a mere object) with autonomy, can develop as a unique person, and have the freedom to make choices in how to behave (Fleer et al., 2025). Biesta argues that when these three domains are well balanced, education can be successful.

## Socialisation

The process of **socialisation** is not restricted to education alone; indeed, it happens continuously throughout someone's life. As individuals, we are all part of social systems: different

groups, cultures and societies. Think, for example, about a family, a sports team or a department at work. Each of these social systems has its own characteristics, habits, **values**, norms, and beliefs that we transfer to new members through socialisation. Socialisation is defined by the Oxford English Dictionary as ‘the process by which a person learns to function within a particular society or group by internalising its values and norms’. Elias (2001) defines it as ‘the translation and internalisation of norms, beliefs, so it becomes a second nature’. We define socialisation as the process by which someone learns to function in a new social system by internalising the norms, values, and other relevant practices of this specific group. Often, this happens by observing what others do within a social system, how they act and behave as role models. Within education, this socialisation process is sometimes referred to as the ‘**hidden curriculum**’ (see Deep Dive below for an explanation).

*Examples of areas in which one's socialisation processes can become apparent*

- **Norms/behaviour.** Implicit or explicit ‘agreements’ on how people in one group (should) behave. Examples are how people dress, which language is appropriate (e.g. do you address teachers with their first name or not) or the visibility of hierarchy (e.g. when the students are supposed to listen and the teacher speaks).
- **Values.** Specific values that people find important (either implicit or explicit). Examples of values include professionalism, integrity, or respect.
- **Beliefs.** Certain ‘beliefs’ that people have might be mentioned explicitly or are reflected in certain sayings. Examples are: ‘Learning is supposed to be hard’ or ‘We can change bigger things in the world’ or ‘I have to be the best’.
- **Ontology and epistemology.** What is the nature of knowledge and how do we shine light on that knowledge? Examples of positions are (post-)positivism, interpretivism, constructivism, or pragmatism]

Successful socialisation within a group has several benefits. First, because socialisation indicates what is expected of an individual, it can provide a sense of belonging for members of that group. Second, as socialisation is the main mechanism in professional identity formation, it helps students form this professional identity successfully, especially when a strong CoP is in place (Cruess et al., 2015). Third, socialisation helps to create structure and stability within the group as members understand what is expected of them, ultimately leading to greater predictability and efficiency (e.g. within a team).

On the other hand, socialisation can also have negative consequences. Disruptive and dysfunctional thoughts, norms, beliefs and behaviours, for instance, can be transferred via social-

isation as well. For example, if there is a strong belief within a group that commitment/work ethic is demonstrated by staying later at the office than your supervisor, you might adopt this belief and stay longer, even though this is not the way you want to behave.

In education, therefore, this means that we need to focus on questions such as 'What does it mean to be part of a **CoP**?', or 'Which **values**, norms and skills are common in the CoP'? In curricula, these questions are often (implicitly) covered in many courses alongside specific **PPD** activities. In our PPD education, we often touch upon these aspects as a starting point for students to reflect on.

### *Deep dive: Hidden curriculum*

The **hidden curriculum** is an implicit curriculum that expresses and represents attitudes, knowledge, and behaviours that are conveyed or communicated without intent. It is conveyed indirectly by words and actions within the educational setting (Hafferty, 1998). The difference between **socialisation** and hidden curriculum, therefore, is the setting: While socialisation happens in every social context in life, the hidden curriculum is something that is present only within the educational setting.

The **hidden curriculum** plays a significant role in shaping students' professional identities because it influences their understanding of what it means to be a professional in their field. For example, in medical education, students may learn about the importance of hierarchy and teamwork not through formal lectures but through their interactions with faculty, residents, and peers in clinical settings. They observe and internalise the behaviours, attitudes, and **values** that are modelled by those around them, often without explicit discussion or **reflection**.

One of the challenges of the **hidden curriculum** is that it can reinforce both positive and negative norms and behaviours. On the one hand, it can help students develop a sense of belonging and an understanding of the professional culture they are entering. On the other hand, it can also perpetuate harmful or outdated practices such as biases, inequalities, or unethical behaviours. For instance, if students observe that certain groups are consistently marginalised or that unprofessional behaviour is tolerated, they may come to see these practices as normal or acceptable.

For educators and curriculum developers, it is crucial to be aware of the **hidden curriculum** and to actively work to align it with the explicit goals of **professional identity formation**. This can involve creating opportunities for **reflection** and discus-

sion on the implicit messages that students receive, as well as modelling and reinforcing positive behaviours and values.



*One or more interactive elements has been excluded from this version of the text.*

You can view them online here: <https://opentextbooks.rug.nl/professionaldevelopmentofstudents/?p=5#oembed-1>

We often use this knowledge clip to inform students, during a workshop or as homework before a session.

## Subjectification

Besides **qualification** and **socialisation**, **subjectification** has been introduced as another aim of education (Biesta, 2020). Subjectification represents ‘a broad pedagogical principle that aims to foster discussions and contemplation about the existential dimensions of education’ (Biesta, 2010, p.19; Friso et al., 2026). Subjectification is about reminding students that they are a **subject** striving towards autonomy, the development of uniqueness and the freedom to make choices in how to behave (Fleer et al., 2025; Friso et al., 2026). However, this description still does not fully capture what Biesta meant by the educational domain of subjectification, and notions about the difficulties for teachers to apply the principle to their teachings exist in scholarly discussions (Friso et al., 2026).

While developing our PPD education, further operationalizing **subjectification** was useful. We came to see subjectification as a **critical reflection** on **socialisation** processes that students find themselves in. Additionally, ‘subjectification is a process whereby students become more autonomous and independent in their thinking and acting rather than adapting, as individuals, to the group’s collective **identity**’ (Biesta, 2010, as referenced in Hesen et al., 2022). Education that focuses on subjectification, therefore, encourages students to develop and get to know themselves, pushing them to continuously develop their personal identity and relate that to all that they learn in their education. This also means that students are not mere objects undergoing the socialisation process as described in the **PIF**-process, but **subjects** who play an active role in their socialisation. This requires a certain responsibility—students can or even must play an active role in their own **professional and personal development**. This is also where making room for subjectification can help reduce the negative consequences of socialisation. By reserving space in our PPD education for **reflection** on what has

been conveyed in an educational/work-related context, students will become more aware of their socialisation process and, as a result, make more deliberate decisions. This will not necessarily solve the negative consequences of socialisation within the context of the learners, however. Rather, it is about increasing awareness and exploring how the learner wants to relate to this behaviour in light of their own development and who they want to become as a professional.



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You can view them online here: <https://opentextbooks.rug.nl/professionaldevelopmentofstudents/?p=5#oembed-2>

Within education, this means that we ask questions to learners such as ‘What do I want to do with all that I have learned?’ and ‘How do I relate to the **socialisation** processes I am in?’ In most of **SCOPE**’s developed educational material for medical students, the focus is on the balance between what happens in the educational domain of socialisation and that of **subjectification**. In other words, it is about a balance between designing PPD education so that the student has an opportunity to adapt to the professional group they want to belong to, and providing space for students to develop their own **identity** within a professional context. The Values workshop is a good example of how we put this into practice.

#### *Example of workshop set-up: Core values*

In the Core values workshop for medicine students, we focus on the topic of **values**. Values—deeply held beliefs that guide behavior and decision-making—are explored by students across life domains—leisure, relationships, personal growth/health, and work/study—recognizing their influence on decisions and supporting personal-professional **identity** integration.

By the end of the workshop, learners will be able to:

1. Select their core values.
2. Compare different interpretations of the same value.
3. Explain how behavior relates to values.

4. Compare personal values with values of the medical context.
5. Connect behavior to values of the medical context.

As you can see in the learning goals, attention is given to both identifying personal core values, as well as values that are, to them, related to the medical context. By making room for comparing those two, room is created for **critical reflection** on socialization: What, of all that is transferred to me in the medical context, suits me and what choices do I want to make?

A paper on the evaluation of this workshop, including all needed materials to provide the workshop, can be found in [MedEdportal](#).

#### *Further reading*

Biesta, G. J. (2020). Risking ourselves in education: Qualification, socialization, and subjectification revisited. [Educational Theory](#), 70(1), 89–104.

## Boundary crossing

Our work at **SCOPE** originated in a medical education context. When our PPD education was integrated into more **inter-** and **transdisciplinary** programs, however, we stumbled upon the limitations of the theories addressed in the previous section. The main reason for that was that the **CoP**, a central aspect of **PIF**, is less explicit in these other contexts: within inter- and transdisciplinary programs, there is not always a clearly defined Community of Practice that holds specific norms, behaviours and beliefs that students get socialised in. However, these different educational contexts turned out to be valuable environments for students to learn how to become active **subjects** in their education, connecting to the concept of **subjectification**. The theory of **boundary crossing** provided us with a useful perspective on how to make use of this context in ways that stimulate students to become active subjects in their learning. In this section, therefore, we will dive into the basic concepts of this theory that we have used in designing the PPD education. In turn, these concepts will provide a lens through which we, and students themselves, can learn about the contexts we are exposed to.

An important note to make when reading about the theory of **boundary crossing** is that the **boundaries** refer to the distinction between ‘what is part of me’ and ‘what is not (yet) part

of me' (Akkerman & Bakker, 2011). Boundaries in this context do not refer to transgressive behaviour. Here, we will briefly explain this theory and the concepts of 'boundaries', 'boundary experiences', 'boundary crossing' and 'learning mechanisms'.

## Boundaries and boundary experiences

In the theory of **boundary crossing**, **boundaries** can be seen as socio-cultural differences leading to 'discontinuation in action or interaction' (Akkerman & Bakker, 2011). An example of a boundary can be the moment that a student is hesitant about speaking up during their first clinical rotation, as they are used to being perceived as a student watching from the sidelines rather than 'the clinician'. This brief moment of disruption (i.e. the discontinuation of action) might be experienced by the student as hesitation or insecurity, and this internal experience can be referred to as the **boundary experience**. Often, these boundary experiences present themselves before the boundary that has caused it can even be explained.

**Boundaries** can take place at different 'levels'. The example above can be seen as an intrapersonal boundary, as there is a difference between the roles the student can take on (being a student on the sidelines versus a clinician in training). Other levels are interpersonal (boundaries between individuals) and institutional (boundaries between institutional structures). More about these 'levels' you can find in the example box below.

### *Examples of boundaries on different levels within one educational context*

The intrapersonal level refers to the boundary as a result of different roles the individual might take on. An example is a student who has an introverted character but is asked to show 'proactive' behaviour in class. Here, the 'discontinuity' refers to the dilemma of what behaviour is 'right'—staying close to your own character or showing a type of behaviour the environment expects from you.

An interpersonal boundary refers to the differences in personalities between the two individuals. An example is the difference between students who want to start with their assignment immediately and others who are more activated when the deadline approaches. Here, the boundary is a result of personal differences.

Institutional boundaries refer to boundaries that are a result of differences between systems. An example is the difficulty in finding a Learning Management

Platform when two educational institutes collaborate. This 'hindering' is a result of the way the two different institutes are organised.

Within education, these **boundaries** happen all the time; they can be perceived as a starting point for learning by reflecting on them. Often, these boundaries are resolved without the individual even becoming aware of what caused them. Indeed, students experience '**boundary experiences**' all the time, without being aware of what the boundary was that elicited the experience in the first place. In our education, we ask students to explicitly reflect on these boundary experiences as a starting point of the **reflection** process. Reflecting on 'what is part of me', and 'what is not (yet) part of me', stimulates students to make their starting point explicit, to become curious as to why a 'discontinuation of action or interaction happened' and to make active choices in how to act. If you want to pay attention to **subjectification** in your education, these 'boundaries' can encourage students to be active **subjects**. In our education, therefore, it is essential that these moments of reflection are built into the curriculum and learning activities. As you will read [in the following chapter](#), reflection is a central learning mechanism of the SCOPE approach.

## Boundary crossing

While a boundary can be perceived as an opportunity to learn, **boundary crossing** is an essential step in proceeding towards change. Boundary crossing is defined as the 'continuation of action or interaction' (notice the absence of the prefix 'dis-'). Here, the initial **boundary experience** (that follows from the boundary) will dissolve and create space for restoring the (inter)action. This is not always a self-evident process. On the one hand, it helps to understand where the boundary stems from. For example, if you are an intern and you perform a task independently for the first time, you know that this is the goal of the internship. Each time you try something for the first time it might create some tension, but as the internship functions as a space where students can practise new behaviours, this boundary is crossed quickly. However, when a boundary is rooted in aspects that are not directly related to the learning outcomes, it can be challenging to bring this to the surface. For instance, when there is an interpersonal boundary (for example, when there is a disagreement between a proactive student and a more timid student on whether to go out and interview people on the streets) it might be that the conversation will be about the quality of the assignment. However, it might also be that the boundary is more related to personality differences, rather than what the right approach is. In this case, it is not only sufficient to understand where the boundary stems from, but also to be able to externalise it and discuss this situation with each other. In this example, students might reach the 'continuation of action' sooner if they have a discussion

on a meta-level rather than a discussion on the 'right' approach to the assignment. However, being able to do so requires students to stop, observe the situation, and act as active **subjects**. Practising to observe and cross **boundaries** contributes to a fruitful learning environment.

I am more aware of the fact that I look with a specific lens to the world, and that, parallel to mine, other realities exist. Because of this realization, I've gained much more patience and respect for other opinions than before. (Bachelor student minor Expeditie het Gezonde Noorden)

In education, therefore, we want to teach students not to perceive **boundaries** as hindering factors but as opportunities to learn. What do we need to move away from this emotional experience (i.e. **boundary experience**) and towards constructive (inter)action (i.e. **boundary crossing**)? What can one do to go from being stuck to making active decisions? Actively investigating the boundary with a curious and reflective attitude can make aspects of this boundary explicit that would otherwise have remained implicit. Within our education, we aim to reserve time during learning activities to ask students about the boundaries they have encountered, how they acted afterwards and what made them act in this way. To understand how learning from these boundaries takes place, Akkerman and Bakker (2011) have reviewed the literature and found four distinct mechanisms of learning. The term 'learning', however, was used in a broad sense; it is more than just gaining knowledge. Indeed, the term also refers to identity development, a change of practices, or new understandings. Extensively exploring these learning mechanism concepts is beyond the scope of this chapter. However, you can find a brief summary in the Deep Dive below if you are interested in learning more.

#### *Deep dive: Learning mechanisms of boundary crossing theory*

In this box, we briefly describe the learning mechanisms of **boundary crossing** to help you understand how you can use boundaries to support the learning process. For each learning mechanism, we show an example. When reading about these mechanisms, please keep the following aspects in mind:

1. In the theory of boundary crossing, learning is seen as a process that involves multiple perspectives. This is in line with **subjectification**, where the learner is perceived as an 'actor' and not just a mere 'object' that needs to absorb the knowledge of the teacher. Therefore, the learning mechanisms need to be seen as dialogical, where the learner has a role in the dialogue.

2. These learning mechanisms were named with the goal of classifying them into four categories. Please note that just perceiving the name can be misleading, so make sure you understand how the learning mechanism works. For example, one learning mechanism is called 'Reflection' but holds a different meaning than the act of 'reflection' as a self-investigative process (as discussed in Chapter 2.1).
3. Even though there seems to be a hierarchical sequence in how the learning mechanisms are presented, we have to keep in mind that there is no sequence in the Learning Mechanisms. Transformation, therefore, is not always the 'best' outcome; the best outcome is fully dependent on what the situation requires. For example, when medicine students and nursing students follow an **interprofessional** program, they do not have to transform into one new group (learning mechanism transformation). In this example, the learning outcome coordination or reflection would be more suitable (again, depending on the learning outcome).
4. Note that the learning mechanisms are often described in terms of 'practices'. You can perceive this as 'how one group does things'. Remember the different levels? On an intrapersonal level you can also replace the word 'practice' with '**identity**', as this is often about different roles within one person.

**Identification** – this refers to coming to know what the diverse practices are about in relation to one another.

Example situation: A student follows a minor program from another discipline. When writing the final assignment with her group, she notices that she disagrees with her peers about how long the introduction should be. In that moment, she realises how different academic disciplines have different standards for writing introductions.

**Coordination** – this refers to creating cooperative and routinised exchanges between practices.

Example situation: During her internship, a nursing student stumbles upon a situation where she had planned to shower and dress a patient, but the patient is too tired because she just came back from the physiotherapist. The student realises that this way of working can be altered and lets her supervisor and the physiotherapist know to make sure the care activities are better aligned.

**Reflection** – this is about expanding one's perspective on the practices.

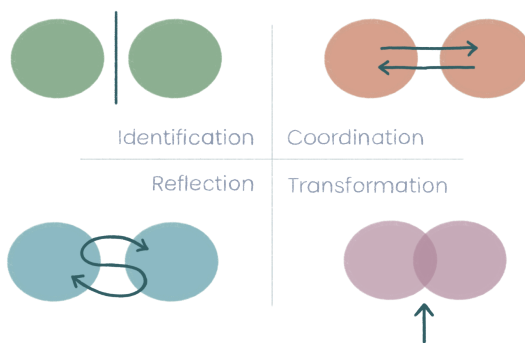
Example situation: During his internship, a business administration student finds out that the company is not always working with the models that he learned during

his lectures. This makes the student reflect on the use of theory in practice and the purpose of learning these theories in his education program.

**Transformation** – this is more about co-developing (new) practices.

Example situation: A student from applied psychology has the ambition to become a clinical psychologist, but she has to complete three internships in three different fields. During her last internship in the field of coaching, she realised that she likes the topic more than she thought. Based on this experience, she expands her ideas about her future profession to include the field of coaching.

Different boundaries ask for different outcomes, and these learning mechanisms can help shine a light on how to guide your students in the boundary crossing process. A visual cue such as the figure below can perhaps help you to grasp these learning mechanisms better.



*Learning mechanisms of boundary crossing theory. Illustration by Floor Velthuis.*

*Further readings*

Akkerman, S. F., & Bakker, A. (2011). Boundary crossing and boundary objects. *Review of Educational Research*, 81, 132-169.

## Conclusion

This chapter has discussed the different theoretical principles that underlie the **SCOPE** approach. These principles and theories help to explain PPD and show how to encourage students to become active **subjects** in their own learning processes. Throughout this book, we will refer back to these principles.

All that you have read in this chapter, we teach students as well. We believe that explaining how certain processes work provides the tools for students to also reflect on them. A question such as 'What is conveyed to you through **socialisation** in this department and how does that relate to your **identity**?' can prove more fruitful than 'Reflect on your experiences in this department'.

With the concepts of **PIF**, socialisation, **subjectification** and **boundary crossing** in mind, we can now move towards thinking about how to actually design educational activities and programmes that reach PPD learning goals. For that, we will first need to explore the central learning mechanism of PPD education: **(critical) reflection**. After that, we will explain our **pedagogical approach** using seven steps to develop and improve PPD education.

# Reflection as a core component of PPD

In this chapter, we describe the need for students and teachers to develop their **critical reflection** competencies as a vital part of PPD. We provide definitions of reflection and explore different aspects of teaching and assessing the action. Additionally, we will share some observations on teaching and learning reflection based on our own experiences and the academic literature. In the next chapters, models and tools for teaching reflection and the practical steps for implementing PPD and critical reflection into your own teaching practices are included.

## Understanding the functions of reflection

To understand the importance of students' development of reflection skills within the context of PPD, it is helpful to take a step back and consider the different uses of reflection in higher education. Reflection is used in many forms and for many purposes in education, which can obscure what is meant by 'reflection' and why it matters. Although the different uses of reflection are strongly interrelated, distinguishing between them helps to clarify both the educational value of and challenges involved in teaching and assessing reflection.

First, the capacity for **critical reflection** should be understood as an essential competency for higher education graduates, alongside discipline-specific knowledge and (research) skills (De Déa Roglio, 2009; Mackay & Tymon, 2014; Moon, 2004; Perusso et al., 2020; Veine et al., 2019). From this perspective, reflection is important in its own right. As academic education has roots in classical philosophy, students are expected to develop metacognitive capacities that will enable them to examine, question, and analyse their own thinking, assumptions, and reasoning. Critical reflection, therefore, constitutes a core academic habit of mind rather than merely a supportive learning activity.

Second, **critical reflection** plays a crucial role in learning processes more broadly, particularly in the development of competencies. This role is not limited to professional competencies but applies to competency development in general. For example, students in teacher education programmes engage extensively in reflective activities to connect theory and practice and evaluate their learning processes (Pultorak, 2010). For this reason, reflection is frequently embedded in courses and programmes that focus on competency development, often as a means for students to monitor and evaluate their own learning.

Third, the capacity for **critical reflection** is indispensable for cultivating personal and professional competencies and supports students' professional development, contributing to

the formation of well-rounded, adaptable, and ethically aware professionals (Hedberg, 2017; Mackay & Tymon, 2014; Moon, 2004; Veine et al., 2019). Moreover, reflection underpins key professional capacities such as critical thinking, perspective-taking, intercultural and interdisciplinary collaboration, and the ability to deal with complexity and uncertainty (Moon, 2004; Veine et al., 2019).

Fourth, as stated and explained in the introduction, reflective competencies have been associated with improved well-being and academic achievement (Akpur, 2020; Ghanizadeh, 2017).

Finally, related to the processes of **socialisation** and **subjectification**, **critical reflection** enables students to become aware of not only the **values**, norms, and assumptions they have internalised from their social and educational contexts, but also their own emerging perspectives. Through reflection, students gain insight into where they currently stand and where they wish to go. This awareness supports goal setting, self-direction, and the monitoring of PPD, thereby fostering an orientation towards lifelong learning (Feest & Iwugo, 2015; Perusso et al., 2020; Roessger, 2014; Tuononen et al., 2022).

It is important to realise that, beyond long-term career outcomes, the capacity to reflect may also have short-term benefits for students during their studies, as it has been associated with **self-management** skills and improved academic achievement (Ghanizadeh, 2017; Xu et al., 2023).

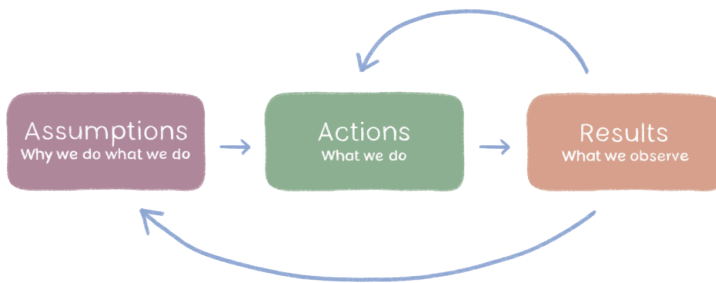
## Defining reflection and critical reflection

Before we explain the current role of reflection within education and how reflection can support PPD education, we will elaborate on what we mean by reflection and **critical reflection**. In short, reflection is defined as the conscious examination of experiences, thoughts, and ways of doing things (Cunliffe, 2016; Korthagen & Vasalos, 2005). Critical reflection, on the other hand, is the careful examination of the beliefs, assumptions, and convictions underlying these experiences, thoughts, and ways of doing (Korthagen & Vasalos, 2005; Moon, 2004). Critical reflection allows us to frame and reframe internal and external experiences with openness and flexibility (Moon, 2004). In other words, it enables us to make sense of what we experience, (de)construct meaning (framing), and critically review, reinterpret, or change our existing interpretations or meanings (reframing), based on the experiences that we encounter.

In the work of Argyris (1991) and Schön (1983), this cycle (framing–reframing) has been called ‘**double-loop learning**’ as opposed to ‘single-loop learning’, where assumptions and beliefs are not explored. Single-loop learning refers to a form of individual learning in which a person detects a mismatch between intended and actual outcomes and adjusts their behaviour accordingly, without questioning the underlying assumptions, goals, or **values** that guide that behaviour (Routine Problem Solving; see Korthagen & Vasalos, 2005). In short, sin-

gle-loop learning improves performance within an existing framework, whereas double-loop learning interrogates and potentially transforms the framework itself (see Figure below).

*Single versus  
double loop  
learning.  
Illustration by  
Floor Velthuis.*



During profound reflection, students challenge their practices, thoughts, and assumptions by considering different perspectives—such as their own experiences, the views of others, or relevant theory—thereby arriving at new insights and understandings (Mezirow & Taylor, 2009; Schön, 1983). This process is also referred to as **transformative learning**.



An interactive H5P element has been excluded from this version of the text. You can view it online here:

<https://opentextbooks.rug.nl/professionaldevelopmentofstudents/?p=178#h5p-3>

## Critical reflection as a competency

Building on this definition, we see (critical) **reflection** as a skill or a competency that can be taught, trained, and developed. It is not a trait that individuals are born with. Developing reflective competencies and a reflective mindset is not a passive process; rather, it requires structured training, assessment, and feedback to be cultivated effectively (Trimasse, 2025).

Reflection, therefore, does not just happen by itself. Moreover, a lack of theoretical basis in reflection and practical skills has been shown to be an obstacle for learning reflection (Butani et al., 2017; Chan & Lee, 2021).

## Critical reflection in higher education

Despite the widely acknowledged importance of **reflection**, **(critical) reflection** receives limited and often superficial attention in contemporary higher education programmes. While critical reflection is frequently presented as a desirable learning outcome, it is rarely treated in practice as an independent learning objective and almost never embedded systematically within curricula. Instead, reflection is often used as an assessment tool to gauge other competencies or monitor students' development. For example, this can be done by adding a reflection report to an assignment and asking students to reflect on their experiences. The danger in this is that students may see reflection as just another box they need to check, potentially turning them into '**reflective zombies**'. This term was introduced by De la Croix and Veen in 2018 and represents students who go through all the steps of reflection without actually reflecting. Even though these 'reflective zombies' produce neat reflection reports that meet all expectations, their reflections remain empty, superficial, and do not affect them internally (De la Croix & Veen, 2018).

Another problem is that teachers may (unconsciously) assume that students already possess the capacity to reflect and that students can use this capacity to reflect upon and evaluate the level of their skills, for instance their skills to collaborate in a team or presentation skills. **Reflection** as a competency is often not taught, practised, and assessed, but reduced to a single written reflection assignment that is submitted and graded. This leaves little opportunity for dialogue, feedback, or meaning-making, even though this dialogical interaction is essential as it allows for gaining insight, deepens the reflection, and supports students' learning.

I think reflection through writing doesn't mean anything whereas if given a chance to speak it's like consulting and actually reflect on something (Master student Business Administration)

When **reflection** is incorporated into teaching, it often remains fairly superficial in our experience, rather than reaching a deeper, perspective-challenging level that encourages students to critically examine the beliefs and assumptions shaping their thoughts, actions, and experiences. This situation is problematic, as the development of professional competencies depends on an adequate level of **critical reflection**. Moreover, this superficial reflection aimed at evaluating a wide range of other skills may give rise to a negative connotation of reflection as an educational practice (Chan & Lee, 2021; De la Croix & Veen, 2018). Additionally, stu-

dents frequently express resistance to reflection tasks, perceiving them as unclear, artificial, or merely instrumental. This may further diminish their initiative and motivation to engage in reflective learning and hinder the development of a reflective attitude that is essential for the educational aim of **subjectification** and **PPD**. Moreover, students who are not accustomed to reflective practice or dialogical reflection may fail to recognise reflective questions as part of academic inquiry and may experience discomfort when confronted with them. In some cases, reflection is framed as therapy or coaching, considered a private matter rather than an academic exercise. When teachers pose probing or reflective questions, students may respond with remarks such as ‘This is not a therapy session’.

## Reflection as a social learning process

Dialogues and a social context have been shown to foster deeper **reflection** (Ghamoushi, 2025; Marshall et al., 2022; Hill & West, 2020). Badger (2010) has highlighted the value of interaction and dialogue in the context of oral examination of the development of students’ reflective capacities. According to students and teachers, a dialogue approach is engaging, allowing learners to effectively demonstrate their reflective skills in a format that resonates with their preferences. In particular, they value the interactive and personal setting as well as the opportunity to receive feedback or to clarify themselves. Furthermore, written assessment hinders opportunities for probing and dialogue, thereby limiting teachers’ capacity to evaluate students’ reflective abilities and facilitate further reflective development (Badger, 2010; Chan & Lee, 2021; Feest & Iwugo, 2015).

## Conclusion

As discussed in the previous section, we see **critical reflection** as an essential goal and learning mechanism in a student’s PPD. Critical reflection can be taught and learned, but it requires attention and time. The following section, therefore, will introduce the pedagogical principles developed by **SCOPE**, which can help to effectively implement and design education for students that will enable them to critically reflect on their PPD.

# A pedagogical approach for reflection on PPD

To implement **reflection** into your own teaching practices, **SCOPE** has constructed a pedagogical approach that consists of seven steps. These steps can be used as guidelines for developing or improving education that invites students to critically reflect on their **PPD**. You can be flexible in using these steps by, for example, combining steps three and four. Consistently adhering to and repeating the principles of these six steps in your educational practices, however, has one significant advantage: it will enable students to gradually internalise the reflective process, fostering a reflective attitude towards their PPD. In the following section, we will explain these six pedagogical steps. Afterwards, we will describe the (curricular) conditions that facilitate the implementation of this approach. In following parts of the book, exercises that we use in our education are provided as examples.

## Step 1: Provide a brief knowledge base and a rationale

In order to engage students in a teaching activity, they will first need a theoretical basis and understand its relevance. Knowing the rationale behind **PPD** gives students the necessary tools to reflect on their PPD and supports their learning (Clement et al., 2023). Indeed, students need to know what **critical reflection** is, how it works, and why the action is an essential competency in their PPD. We therefore suggest making PPD and reflection explicit and provide instructions on these activities.

In addition, it may be helpful to provide a reflective model for students who are not so familiar with **reflection**. This will help them understand what the elements of reflection are and how the process works. Several reflection models exist, such as those by Gibbs (1988), Korthagen and Vasalos (2005) and Rolfe et al. (2001). We prefer reflection models that explicitly mention a step for analysis to encourage students to explore their experiences and analyse their beliefs and assumptions.

*Gibbs reflection cycle (1988).  
Illustration by  
Floor Velthuis.*



## Step 2: Provide students with an experience ('experience')

The first step in creating **critical reflection** educational practices on PPD is to offer students **experiential exercises** (experiences) that elicit thoughts, feelings, and/or physical sensations that have the quality to foster critical reflection. Theorists agree that an experiential exercise needs to have an 'interruptive quality', include a 'disorientating dilemma', or contain a 'surprise'. In other words, a situation needs to be created where there is no immediately apparent response based on past experiences or knowledge, pushing students to experience some kind of friction. Friction can mean that students feel (a little) uncomfortable, confused, frustrated, or confronted. This friction can be the starting point for critical reflection because it challenges students to question their beliefs, assumptions, or previous ways of knowing. However, the experience should also engage students. Engagement is vital because only when students are engaged learning can occur. An engaging experience should not only have an interruptive quality, but also build on students' prior knowledge and experiences (i.e. continuity). If the experience is too far-fetched, students will not be able to connect what they encounter to what they already know.

So, when you want to invite students to critically reflect, starting with an experience increases the chance that students will actually do so. There are many kinds of experiences that you can use. First of all, you can make use of the experiences students have had outside the classroom. For example, they can examine the experiences they had during an internship or interviews for a project. In terms of **boundary crossing**, you could say that any '**boundary experience**' can be used as input for this first step. As a teacher, you can use these experiences as a starting point for **critical reflection** on PPD. You can, for example, ask about the professional behaviour they observed during their internship (**socialisation**), which **values** or assumptions they think underpin that behaviour, and how they relate to that themselves (**subjectification**). How, for example, do those attitudes, values and assumptions fit in with the student's own **professional identity**?

Another possibility is to create an experience in the classroom. We interpret 'an experience' quite broadly. For instance, it can be a more cognitive experience where students use a table-size foamboard with 49 **values** on it as a conversation starter to reflect on their own values and those of their fellow students (see Figure below), or a visualisation exercise where students try to imagine they are experiencing the situation that they are visualising. You could also make use of methods of the arts, such as art-based learning (Lutters, 2020). We also discovered that the method of **systemic constellations**—which is often used to gain insight into organisational and team relations—is useful for increasing students' awareness of the implicit knowledge that is conveyed through **socialisation** (Scholtens et al., 2023).

Make sure that the educational practices will encourage students to engage in **reflection** and that you guide them through this process. The content should be personally relevant for students, and the teaching methods that are used should make students genuinely curious and motivated to explore themselves and their experiences.

Board containing  
49 values.  
Designed by Floor  
Velthuis.

|                 |                |                  |             |               |                 |                |
|-----------------|----------------|------------------|-------------|---------------|-----------------|----------------|
| Optimism        | Tolerance      | Certainty        | Stability   | Pleasure      | Helpfulness     | Sustainability |
| Optimism        | Tolerance      | Certainty        | Stability   | Pleasure      | Helpfulness     | Sustainability |
| Trustworthiness | Simplicity     | Trust            | Equivalence | Uniqueness    | Personal growth | Obedience      |
| Trustworthiness | Simplicity     | Trust            | Equivalence | Uniqueness    | Personal growth | Obedience      |
| Discipline      | Openness       | Honesty/Fairness | Responsible | Modesty       | Gratitude       | Solidarity     |
| Discipline      | Openness       | Honesty/Fairness | Responsible | Modesty       | Gratitude       | Solidarity     |
| Engagement      | Beauty         | Patience         | Kindness    | Justice       | Respect         | Safety         |
| Engagement      | Beauty         | Patience         | Kindness    | Justice       | Respect         | Safety         |
| Dedication      | Love           | Integrity        | Humor       | Determination | Loyalty         | Autonomy       |
| Dedication      | Love           | Integrity        | Humor       | Determination | Loyalty         | Autonomy       |
| Flexibility     | Meaningfulness | Compassion       | Quality     | Clarity       | Peace           | Freedom        |
| Flexibility     | Meaningfulness | Compassion       | Quality     | Clarity       | Peace           | Freedom        |
| Independence    | Balance        | Attention        | Expertise   | Carefulness   | Vitality        | Connection     |
| Independence    | Balance        | Attention        | Expertise   | Carefulness   | Vitality        | Connection     |

### Step 3: Let students observe ('observe')

The second step is to guide students through their observations of the experience. Kolb (1984) introduced the term **reflective observation** to refer to one's own experiences: What did I observe? What was I aware of? What does this experience mean to me? Through reflective observation, students become aware of their personal responses to the experience of Step 1. These responses can take the form of thoughts (e.g. ideas, judgments, deep-rooted beliefs, or assumptions), physical sensations (e.g. tension, energy, pain, or comfort), and feelings (e.g. happy, sad, angry, or afraid). A deep awareness of these intuitive reactions is a necessary first step in achieving authentic **reflection** on oneself and one's development. It generally takes time to become aware of such responses, so it is vital not to rush through this step.

As a teacher, you guide your students through this step. This can be done in multiple ways. One way is to guide students through the **experiential exercise** by asking specific questions that make students more aware of their intuitive responses. For example, by making use of pauses (a moment of silence) in a visualisation exercise (a direct experience in the classroom) where you ask, 'What are you experiencing now?' or 'Are there any thoughts, feelings,

or physical sensations that you can notice?’ In addition, when you make use of experiences that took place outside the classroom, you can help students become aware of their intuitive responses to those experiences as well. For example, when students are drawing a **rich picture** of a specific situation, you might ask them to include the thoughts and feelings that they had in that specific moment.

I have learned to look at myself and others in a different way. I have started paying more attention to my senses and how I feel in certain situations. I have also learned that you can occasionally try to zoom out to observe the whole picture from a distance. (Bachelor student Medicine)

## Step 4: Let students externalise their reflections for themselves ('externalise')

In the third step, students externalise their personal and intuitive responses so that they can observe them from a distance. An effective way of letting students externalise these responses is by asking them to give voice to their **reflection** through speech or writing (Mäkelä & Löytönen, 2017), which often happens within education. However, other means to externalise reflection are equally as valuable but less often used, such as making rich pictures, a collage, making music, or writing a poem. Externalising a reflection through such materialisation (i.e. creating or developing something new in a materialised form) is generally considered a bit challenging at first (Mäkelä & Löytönen, 2017; Sandlin et al., 2011), because students are not used to it. In our experience, however, students eventually always find a medium for their externalisation. By not providing a checklist or rubric, and by allowing a more open-ended approach to reflection, students are encouraged to genuinely engage with the material. This process of materialising their reflections makes it less likely that students will give responses they believe are socially expected, which leads to richer reflections.

I still keep the notebook with the reflections of the SCOPE workshops. The workshops helped me so much; they provided an opportunity for me to pause and reflect on who I am and what I want to become away from the distractions of daily homework/work. For me, this type of self-reflection has always been difficult because I always just go with what feels comfortable. (Research master student Clinical and Psychosocial Epidemiology)



*Materialisation of a student. Photo by Floor Velthuis.*

An additional benefit of materialisation is that it will likely result in reflection-in-action (Schön, 1991), meaning that the process of creating something can stimulate additional **reflection** and thus deepen the reflective experience. For example, when students make a collage about what they learned regarding their PPD, they choose images intuitively. As students pick images and see the collage come together, however, reflective thoughts about what the images say about their PPD might form. The picture above provides examples of materialisations made by second-year medical students. The created product is an expression of their search for answers to a personal question that they investigated during one of our courses. These questions are formulated by the student themselves or introduced by the teacher and often relate to the student's **professional development** (e.g. 'What does it mean to be a medical doctor?'). The end results, such as the example above, reflect their endeavour to find a balance between their own perspective and what is conveyed through **socialisation**.

An insight I also gained through the materializations in the course is that we are often occupied with many things (these can be problems, discussions, actually anything), and because we are human—and therefore verbally oriented—we always try to put this into words, whereas words are not enough for many issues. By first formulating the question (essentially capturing it in words, which was a difficult problem for me) and then engaging with it in an artful way, you are actually investigating what truly lies behind that question. (Bachelor student Medicine)

## Step 5: Let students share their reflections ('share')

The fourth step is to let students share their **reflections** with their peers in a debriefing session. This can be done through, for example, presenting the materialisation or voicing reflections, after which fellow students can respond to these reflections. Sharing their reflections prevents individual students from becoming overly focused on themselves and their own perspective (De la Croix & Veen, 2018). Moreover, each student may construct different understandings of the same experience (Fenwick, 2001), which creates the opportunity for students to learn that many perspectives co-exist. Furthermore, hearing other reflections can help students to question their own perspectives and assumptions. This may result in them shifting or transforming their way of viewing the world, which is a reflective practice in itself (Mezirow, 1991). Moreover, it can be a valuable experience for students to realise that they are not alone in their experiences and that they can support each other (see also the Deep Dive on **common humanity** below). In our experience, students highly value this step of sharing with peers, which is why we always allocate considerable time for it.

### *Deep Dive: Common humanity*

#### **What is it?**

Common humanity is one of the three core components of self-compassion (Neff, 2003), alongside self-kindness and mindfulness. It goes beyond our relationship with ourselves, focusing on our connection to others and the world. It is the recognition that suffering, making mistakes, and imperfection are intrinsic to being human. Everyone will experience hardship, pain, frustration, and sorrow. Many things are beyond our control; life brings challenges we did not ask for, such as disappointment, abandonment, illness, loss, and death. Acknowledging this shared experience fosters a sense of connection, even in difficult times. Feeling connected helps prevent isolation and reminds us that these experiences are part of what it means to be human.

#### **Why is it relevant in education?**

While Western culture often emphasises individualism, much of our identity and well-being is rooted in relationships. In education, common humanity can strengthen understanding and empathy among students, helping them realise they are not alone in their struggles. It helps to overcome feelings of isolation and can be culti-

vated in educational settings through practices that highlight shared experiences and mutual support.

As a teacher, you have an important role in facilitating the sharing of **reflections** (e.g. through a debriefing session). There are multiple ways of having a debrief, but the first step is always to know what you want to get out of this 'Share' step (i.e. you should know the goal). This will determine the direction of the discussion. Examples of learning goals for a debriefing session are:

- Students become more aware of their own and other students' responses (e.g. thoughts, feelings, and physical sensations) to an experience.
- Students become more aware of the perspectives of others.
- Creating **common humanity** in the group
- Students become more aware of and reflect on their underlying assumptions

When the goal of the debrief is clear, you can start by asking students to share their reflections (see Step 3). As a teacher, you can ask follow-up questions so that the discussion among students will progress towards the goal of the debrief. For example, if your goal is that students become more aware of their responses to an experience, follow-up questions could be:

- 'You mentioned you experienced **stress**. How did you experience this? Did you, for example, experience something in your body or have a lot of thoughts or feelings?'

By engaging in this process, students can broaden their vocabulary, for example when describing their experiences with **stress**. For instance, if a student mentions feeling stressed, follow-up questions may help them articulate this more specifically, such as noting an increased heart rate or experiencing a flood of thoughts.

After you have asked about the direct experiences, the second step is to investigate the intuitive response to those experiences (e.g. is the student ignoring the experience, worrying about it, getting completely into it, opening up to it, etc.). This is important because students first need to be aware of their intuitive response (this can be a feeling, but also a thought pattern, belief, or an unconscious way of doing things) before they can reflect on it and possibly take action. For example, you can ask the following questions:

- 'So you felt tension in your body, what did you do with that tension? Did certain thoughts or feelings come to you?'
- 'When you noticed your mind was wandering, how did you deal with that?'
- 'When you did/said this, what thoughts/beliefs were behind it?'

If you want to read more on this topic, we wrote a [Substack piece](#) on it.

## Step 6: Broaden their perspective ('broaden')

After sharing, it is vital to connect the **reflections** to general principles and concepts (Step 0), previous experiences of students, or learning goals (Kolb, 1984). This broadens students' understanding of why it is important to have a reflective attitude towards their PPD.

An example of linking reflections to general principles and concepts is when students express that an exercise made them realise they are not alone in their experience, after which the teacher explains the concept of **common humanity**. To explain the underlying theoretical concepts that are linked to the experiences, the teacher can also provide knowledge clips, reading materials, and lectures. Within the tradition of experience-based learning, the link with the knowledge base and rationale comes after the experience. However, we sometimes prefer to show students a knowledge clip or let them read an article before or at the start of a class to introduce the theme of the workshop, get their thinking started, or simply get the relevance of a workshop across (also see Step 0). For instance, we start our workshop '**Values**' with a knowledge clip about [PPD](#) to help students understand why values are important to reflect on and how these values are part of both their **personal and professional development**.

You can also enrich the reflections by inviting students to relate the experience to their existing frames of reference or previous experiences. Examples of questions are:

- 'Have you encountered this thought or belief in other places, and if so, can you question it?'
- 'How does this experience relate to your previous experiences?'
- 'How does this experience relate to the concepts we have discussed?'

Finally, you can point out the link between the experience and the learning outcome of the exercise. For example, when the students state the learning outcome themselves (for example: 'So you noticed when you stayed with the sensation of discomfort in your body, without trying to get away from it, that you eventually came to terms with it. That is exactly what this exercise was about, to learn this skill'). This will allow teachers to lift the debriefing to a higher level by linking the students' input to the learning outcome or concept. It is important, however, to stay as close as possible to the experience of the student. What can help with this is using the student's own words, but only link them to the learning outcome if it is easy.

Steps 5 and 6 are both to be found in the debrief on an activity. These steps—that you as a teacher can follow for doing a reflective debrief—are based on the mindful inquiry that is followed in mindfulness training (Crane et al., 2015). Below you will find a manual that you can use as a teacher for doing a reflective debrief.

[Supervising a debrief](#)

## Step 7: Let students explore their freedom of choice through experimentation ('experiment')

In Step 6, students explore their freedom of choice in their own **PPD**. By doing so, they will ideally attain a sense of autonomy regarding this development. This means that they will be the ones deciding to what degree they want to go along with these aspects of their **socialisation** process. In that sense it could be a moment of **subjectification**, in which they feel they can make autonomous choices. Kolb (1984) calls this step 'active experimentation', which entails students asking themselves: 'What will I do differently next time? How will I apply the principle I just learned in other contexts?' Such questions help students understand that PPD does not happen without a conscious effort to learn from previous experiences or mistakes (Chiavaroli & Trumble, 2018). Active experimentation also supports the transfer of knowledge from one context to another, amplifying students' repertoire of practices. This refers to the last step of **double-loop learning**: 'taking action'.

Within our educational context, it is not always possible to let students develop a new behaviour, but it is always possible to have them think through its application. For example, in one of our workshops, we discuss the topic of coping with **stress** and let students formulate an 'if-then strategy' to help them think about alternative ways of responding to stress in the future (e.g. if my stomach hurts because I am stressed, I will take a break and talk to a friend about how I am feeling). However, when we do have the opportunity to see students multiple times, we make practising new behaviour part of the program, because we know from the scientific field of behavioural change how difficult it can be to move from having the intention to implement new behaviour to actually doing it (Armitage & Conner, 2001; Gollwitzer & Brandstätter, 1997). For example, we invite students to put their experiment into practice after the first session, and ask them to prepare the next session by reflecting on how their experiment went.

## Enabling factors in the teaching setting

In addition to the implementation of a teaching practice, there are specific curricular conditions that are conducive to the development of students' reflective attitudes towards their PPD (Chan & Lee, 2021; Marshall et al., 2022).

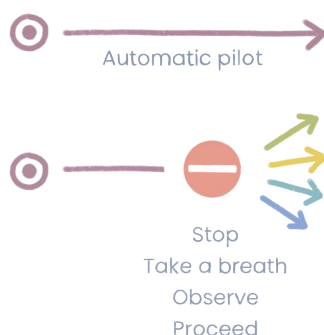
## Create a setting that enables students to slow down

As the process of **reflection** requires time, it is important to create a safe environment with

space and time to reflect. Students need time to work through all that they experience. Curricula and courses, therefore, need to give them the opportunity to slow down, even though this is contrary to the prevailing trend in contemporary education. According to Biesta (2020), this trend is characterised by a focus on 'fast and furious rather than slow and with a degree of patience'. Additionally, as teachers, we often have a lot to share in terms of content, so we tend to create overly full schedules that cause us to rush through activities, achieving the opposite effect of what we aim for. To create a sense of time and space, therefore, it is best to follow the adage 'less is more'. In addition, it can be valuable to organise teaching activities that take place outside the faculty building where students normally learn. This removes students from the context in which they could possibly be socialised, thereby making it easier to reflect.

What really helped was the open and safe space. Everyone, including the teacher, was very respectful, and that made it easy to open up. I felt comfortable sharing my thoughts; it felt like there wasn't a wrong answer. It allowed me to get to know myself better and hear about other students' personal experiences. (Bachelor student Den-tristry)

*Stopping the automatic pilot.  
Illustration by  
Floor Velthuis.*



## Train the teachers

There are several important elements to be considered regarding the teachers who are to

guide undergraduate students in the reflective practice as described in our pedagogical approach.

We have learned that being a teacher of reflective practice can be quite demanding, so we cannot expect teachers to take up this challenge and be successful right away. Indeed, the quality of the reflective practice depends not only on the quality of the experiential exercises used in an educational practice, but also on the competencies of the teacher (Brookfield, 2017; Chan & Lee, 2021). Teaching **reflection** requires skilled teachers who understand the process of reflection, probe, and ask reflective questions. Furthermore, reflective practices are not about the outcome but the process, which is opposite to more traditional ways of teaching where the transfer of knowledge is the central task of the teacher. Therefore, the main task of the teacher is to support and enhance the reflective process, which requires the skill to ask questions that elicit reflections and adhere to the learning goals (Freire, 2000). Moreover, they have to show a reflective attitude themselves. This way, their own reflective attitude will serve as an example for students (i.e. the teacher becomes a role model) and support students in their learning and reflection (Brookfield, 2017).

Teachers need to create an atmosphere that not only encourages trust and open conversations but also embodies genuine interest in the students and enjoyment of teaching and learning. This will provide optimal ground for overcoming obstacles and promoting positive development (Frenzel et al., 2009; Zigmont et al., 2011). In addition, teachers should ideally convey a mindful and compassionate attitude that prioritises being curious, open, engaged, non-judgmental, accepting and patient (Ferdig & Pytash, 2021; Kabat-Zinn & Living, 1990).

To achieve this, we have set up several teacher training sessions. This training includes knowledge transfer about the theoretical framework and the six steps of the pedagogical approach, as well as a discussion of the teacher's role and attitude. In the next writing stage of this book, we will elaborate more on the role of the teacher.

## Make it part of the formal curriculum

The pedagogical approach to foster a reflective attitude needs to be an integrated part of the formal curriculum. We know from experience that offering classes or courses aimed at training **reflection** and PPD as electives will lead to the participation of only those who are already inclined to reflect. Students are often occupied by tests, exams, and other assessments, unaware of the importance of reflection for their PPD. Therefore, curricula should convey the message that reflection is a vital skill that students must develop to eventually become professionals who take responsibility for themselves and their context. Reflection on PPD needs to have a similar status as knowledge acquisition or the development of other skills.

## Take a longitudinal approach

Students will have to navigate their **socialisation** process and make sure that their personal and professional identities remain synchronised throughout their studies (as well as thereafter). From day one, they start to internalise collective **values**, attitudes, and behaviours of the culture around them (Biesta, 2020). Therefore, the cultivation of a reflective attitude in students towards their own PPD should commence during the undergraduate program and continue from there.

For the optimal development of competencies, students will require repeated practice, feedback, and structured **reflection** (Malecka et al., 2022). Repetition alone, however, is insufficient; students also need to connect new experiences to prior learning to achieve progression (Merrill, 2002). In addition, students tend to ‘overlook’ their development or do not recognise their learning—when competencies are not made explicit, students prioritise disciplinary content and overlook competency development (Clement et al., 2023).

The development of a reflective attitude and PPD in general, therefore, requires a longitudinal approach, which includes classes and courses that are offered regularly throughout the curriculum.

## Establish an interdisciplinary expert team

We have experienced that developing educational practices that facilitate **reflection** is complex. It requires expertise, time, and energy. It is essential, therefore, to have the right individuals—who have an affinity with the topic and time for the task—with the right expertise on board. It would be advantageous to form an interdisciplinary team of teachers who know the curriculum and the profession, and teachers with backgrounds in behavioural sciences or the humanities (who can help broaden the scope of the **experiential exercises**). At our university, two faculties have decided to install a centre of expertise to develop this education. An advantage of centralising this educational expertise is that other educational tracks can also make use of the educational practices developed by this centre.

## A few words on assessing reflection and PPD

We live in an educational culture in which curriculum developers often assume that assessment drives learning. In their paper, De la Croix and Veen (2018) have identified how this affects current reflective educational practices in medical curricula. There appears to be a mismatch between curricula, which tend to focus on assessment and measurement, and the

innate, complex, and personal nature of **reflection** that does not lend itself to an instrumental and output-oriented approach.

Although the importance of developing reflective competencies is recognised, most educators agree on the complexity of assessing **critical reflection** competencies (Chan & Lee, 2021; Daff et al., 2024; Tsingos et al., 2015), and some even have doubts about whether it is useful or even appropriate to assess. Moreover, teachers have expressed their uncertainty about how to assess reflection in a valid and transparent manner that also supports students' learning. After all, evaluating students' reflection competencies may hinder students from experimenting, exploring, and opening up. Students may experience discomfort if they feel pressured to 'open up' or censor their reflections in front of their peers and teachers (Chan & Lee, 2021). In addition, assessment has become even more challenging due to the widespread availability of generative AI (GenAI) tools, which can easily be used to enhance written reflection reports (Corbin et al., 2025).

However, there are good reasons to include a formative or summative assessment of your students' **reflection** competencies. Also, you might be in a situation where you cannot make your own decision on whether to assess or not. Although we often do not grade students' reflection skills, we would like to share some of our perspectives on and experiences with assessing reflection skills.

First of all, it is of prime importance for both students and teachers to distinguish clearly between teaching and learning **reflection** on the one hand, and the evaluation or assessment of students' accomplishments on the other. Teaching, practice, and exploration should always come first, and teachers should ensure that students can experiment without fear of judgment or evaluation. During the learning process, evaluation should be avoided to prevent disrupting students' exploration. Placing too much focus on assessment and incorporating it into the learning process may result in the creation of '**reflective zombies**' (i.e. students who have been conditioned to follow prescribed steps rather than engage in genuine reflective behaviour). However, formative feedback can be included to guide the development of students.

Second, teachers should use an assessment approach that matches the intended learning outcomes and focus on the students' **reflection** competencies rather than another skill or outcome (e.g. how their teamwork has evolved). A rubric might help to inform students about the expectations of the teachers and could also increase transparency. This will not only facilitate student learning but also provide a structured framework for teachers to offer feedback on students' reflection competencies (Alsina et al., 2019; Cheng & Chan, 2019).

It [reflection presentation] gives you the chance to reflect in the moment, and questions are being thrown at you that makes you think even more (Master student Business Administration)

Finally, it is preferable to work with teachers whom students do not depend on for their future education or diploma. Although teachers who grade students can, of course, also promote

authentic reflection, the chances are higher that this dependency will drive students away from engaging in authentic reflection and lead them to behave in a socially desirable and performance-oriented way.

Although we agree that evaluating and assessing reflection competencies may be challenging, we have seen that, by following the steps mentioned in the previous section, students' reflections become observable for trained teachers, enabling them to get insight into the process students go through, and assess the depth of the reflection.

*Examples of a reflective assignment and rubric*

[Example Rubric reflection assessment](#)

[Example Assignment reflection](#)

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