Empower your PhD: Stimulating adaptability and self-management of personal and career development in PhD candidates

Advisory report based on the findings of the Empower your PhD project, a university-wide project at Leiden University

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Contents

1. Summary

For contemporary PhD candidates it is becoming increasingly difficult to anticipate and prepare for their future career. One solution for the university is to help PhD candidates by stimulating them to develop skills for engaging in and steering their career trajectories, the so-called career competencies. Evidence-based practices for stimulating the development of these skills are scarce in current PhD programs but desirable in order to fully reap the benefits of what the university already has to offer in terms of PhD policy and training. This study was set out to examine how career competencies can be developed within the PhD trajectory. Specifically, the present study evaluated the efficacy of three career competencies programs using **interventions that are readily available within University Leiden**, but not offered as standard practice. In a randomized study, 111 PhD candidates from University Leiden received one of the three programs: 1) self-assessment of PhD competencies alone; 2) self-assessment of PhD competencies + personal coaching or 3) self-assessment of PhD competencies + peer group intervention. Career competencies were measured via a survey administered at baseline and six months later. Results showed an overall increase in career competencies, suggesting that all programs showed positive results, even a simple self-assessment supports PhD candidates in developing career competencies. The data further suggest a need in PhD candidates for using a self-assessment tool periodically to support their development. Although the self-assessment tool by itself already shows a positive effect in helping PhD candidates to work on their development, additional coaching and peer group intervention is superior to the tool only in providing the PhD candidates with relevant skills to grow. Specifically, while the tool primarily helps PhD candidates to apply self-reflection and identify and categorize relevant competences that are transferable to academic and non-academic careers, the skills learnt with additional coaching and peer group intervention help with a deeper reflection process and concretizing goals next to skills that are also important for sustaining and maintaining success. **Based on an exploration of different scenarios with the Policy Advisor/coordinator of all Graduate Schools and the HRM Learning & Development, the project team recommends to provide the self-assessment tool on the university webpage and allow optional minimal (budget neutral) support counting towards Transferable Skills training (1-2 coaching sessions and/or workshop session with peers).**

2. Introduction

2.1. Relevance of a developmental perspective for PhD candidates

How can we support early career researchers in their development? This has become an important question over the past few decades. Dutch PhD holders reported that they are being insufficiently prepared for jobs both in- and outside academia[1]. This problem becomes even more pressing considering the volatile economic climate nowadays and the latest budget cuts in higher education. Thus, for contemporary PhD candidates it is becoming increasingly difficult to anticipate and prepare for their future career.

Supporting PhD candidates in their development is also desirable in light of the Recognition and Rewards initiatives, in which room for everyone's talent and the diversification of career paths have been proposed to enhance the quality and sustainability of science[2]. This developmental perspective is strongly in line with the vision of Leiden University as indicated for instance by the introduction of the new Conversations on Performance, Development and Well-being (GROW).

2.2 Filling the gap: stimulate the development of career competencies

The HRM Learning and Development department of the university offers a variety of training and courses that are relevant to PhD candidates' personal and career development as well as career interviews. Like other Dutch universities, Leiden University has sought to further improve PhD training by introducing mandatory Training and Supervision Plans, including mandatory hours of training in scientific and transferable skills. One major goal of this policy is to stimulate PhD candidates to not only work on their specific research skills, but also develop transferable skills. However, the benefits of the current training and supervision scheme, including the PhD policy and training, can only be fully reaped if PhD candidates are also encouraged to be mindful about personal needs, values and strengths, and empowered to take a proactive role in their development.

What could help PhD candidates in this regard are the so-called career competencies[3]. These are meta-competencies that allow PhD candidates to self-manage their development. Such competencies involve awareness about one's needs, values, motivation and strengths, goal setting, strategizing and entrepreneurship.

2.3 Empower your PhD project

The 'Empower your PhD' project was set out in 2023-2024 to investigate how the development of career competencies could be stimulated among PhD candidates at Leiden University. Specifically, the project investigated if an existing self-assessment tool[4,5] could potentiate career competencies in PhD candidates and if additional personal coaching or a peer group intervention[6] could provide an advantage compared to self-assessment only. The self-assessment tool provides the PhD Competence Model[4,5] that helps the PhD candidate to reflect on one's motivation, strengths, and opportunities. It helps to increase self-awareness and facilitates reflection on competence domains that are transferable within and outside academia. Coaching and peer group intervention were expected to further facilitate the translation from self-awareness to goal setting and proactively working on one's development in a healthy and sustainable way.

2.4 Goal of this report

As this topic is relevant to many domains within the university, the project leader obtained support from the Board of Deans/Doctorate Board and Academia in Motion during the conception of this project and involved many other stakeholders throughout the course of the project. This project is funded by SoFoKleS and the project proposal was approved by the university's HRM-director. Apart from informing all the stakeholders about the findings of this project, the goal of this advisory report is to provide a recommendation to the Doctorate Board, HRM and Academia in Motion of the university to help the organization decide about potential further implementation of effective interventions in a feasible and sustainable manner.

3. Research project

3.1 Methods

A call for participating in the project was announced on the university website and communicated via different newsletters at the central and faculty levels in collaboration with all the Graduate Schools. All PhD candidates of the university were allowed to participate as long as they could attend the sessions on site and hadn't received any career or personal coaching in the past year. A total of 132 doctoral

candidates were enrolled and were randomly assigned to one of the three programs (see Appendix A and B for more details): 1) self-assessment based on the PhD Competence Model[4,5]; 2) self-assessment + 2 one-hour sessions of personal coaching; 3) self-assessment + two peer group intervention sessions of 3 hours each provided by the Learning Mindset[6]. Randomization was done in permuted blocks of three within the follow strata to balance characteristics between groups: faculty, gender, international/Dutch, internal/external PhD and Year of PhD. A survey was administered at baseline before the start of the program (T1) and at 6 months (T2) to assess socio-demographic characteristics, our primary outcome variable, the career competencies, and several development- and work-related constructs (e.g. motivation, wellbeing/stress, autonomous learning, personal growth, work engagement, perceived support). We also included several open questions to collect feedback and input to understand what participants found useful of the programs. Data were analysed of 111 PhD candidates, who completed the whole study (M_{age} = 28 years, SD = ; 82 female; 59 international; 63 first year PhD candidates). All faculties were well represented in the sample (see Appendix B).
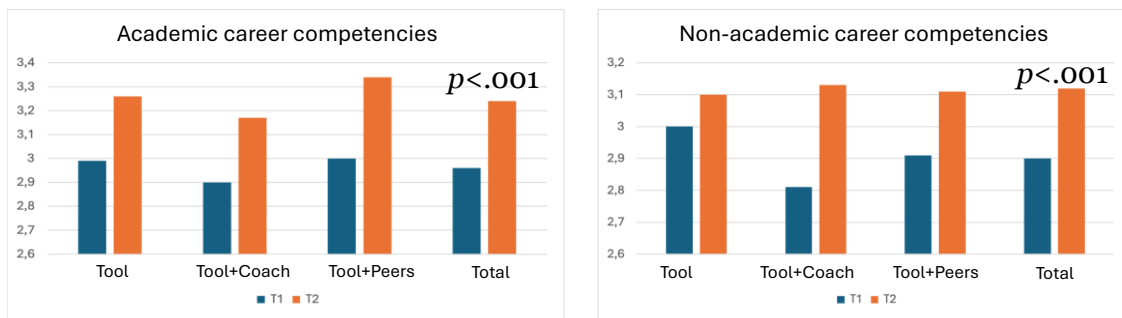
3.2 Results

Fig. 1. All three programs potentiated career competencies
We found an overall increase in terms of career competencies from baseline to post-intervention. This increase was observed for both academic career competencies (left) and nonacademic career competencies (right). No differences were found between the intervention groups in terms of career competencies.

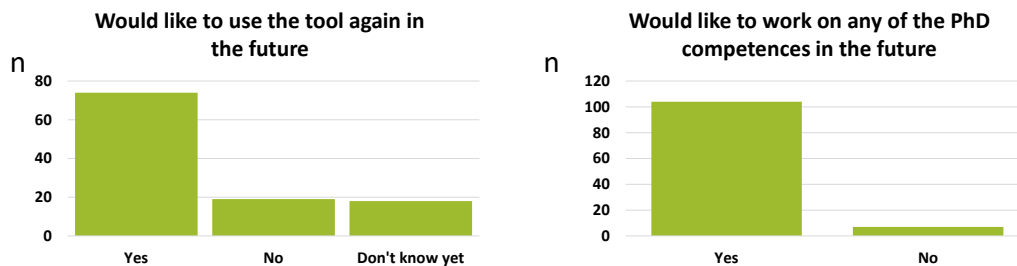**Fig.2. Interest in using the self-assessment tool periodically in the future**
About 70% of the participants indicated that they would like to use the self-assessment tool periodically in the future (left). In Appendix C, the frequencies are shown for the various PhD competences chosen by the participants. These data show a great interest in developing competences outside the domain of research among the participants.
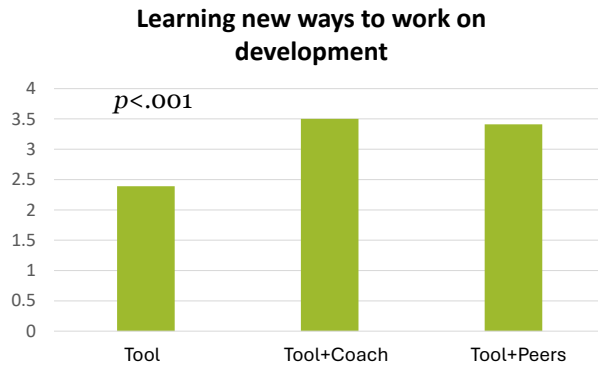
Learning new ways to work on development

$p<.001$

Fig. 3. Advantage of additional coaching and peer group intervention

Compared to the participants in the self-assessment tool only group, participants in the coaching and the peer group intervention found the trajectory more useful in terms of learning new ways to work on their personal and/or career development. This finding is further substantiated by our qualitative data. See Appendix D. Also, see interviews of four cases in Appendix E. These data reveal that the tool primarily helps PhD candidates to apply self-reflection and identify and categorize relevant competences that are transferable to academic and non-academic careers. Additional coaching and peer group intervention were superior as compared to the tool-only group in learning skills to work on their development in a goal-directed manner as well as inter- and intrapersonal skills that facilitate them in this process (e.g. support seeking and time management). These results suggest that skills learnt with additional coaching and peer group intervention could help in a deeper reflection process and concretizing goals, and are important for sustaining and maintaining success. These intervention elements could thus help PhD candidates become more values-driven, purpose-led, and goal-directed while enabling them to work on their development in a more sustainable and healthy way.

3.3 Conclusions

Career competencies are crucial skills that allow PhD candidates to self-manage their personal and career development. The findings suggest that offering a simple self-assessment on PhD competences already supports PhD candidates in developing career competencies. The data reveal that there is a need in PhD candidates for using a self-assessment tool periodically to support their development. Although the self-assessment tool by itself already shows a positive effect in helping PhD candidates to work on their development, additional coaching and peer group intervention is superior to the tool only in providing the PhD candidates with relevant skills to grow in a sustainable and healthy way.

4. Scenario's

In meetings with the Policy Advisor and coordinator of all Graduate Schools (Janneke Vader) and HRM Learning & Development (Tineke Rutgers, Anita Romijn, Monique Oomes), the project team explored various scenarios to inform decision-making on the future implementation of the interventions as used in the Empower your PhD project. By considering potential outcomes of our project, we aim to provide knowledge and insights into the possible consequences of different scenarios.

Three scenarios are presented below in Table 1. Each scenario offers a clear understanding of the implications of various choices based on the relevant project findings and future organizational developments. These scenarios could guide policymakers and help them assess pros and cons of the

interventions, and discover opportunities and approaches to stimulate (starting) PhD candidates in working on their development.

Table 1: Scenarios for follow-up from EmPhD project

	Scenario 1	Scenario 2	Scenario 3
	Do nothing	Self-assessment with instructions for development plan	Scenario 2 + optional minimal support counting towards Transferable Skills training (1-2 coaching sessions and/or workshop session with peers)
Goals	n/a	Stimulate personal and career development in (starting) PhD candidates	Stimulate personal and career development in (starting) PhD candidates
Pros	-	Provide (starting) PhD candidates a tool and starting point to work on their development and skills training. Increases self-management in PhD candidates (and thereby also supports supervisors).	Provide (starting) PhD candidates a tool and starting point to work on their development and skills training. Increases self-management in PhD candidates (and thereby also supports supervisors). Promotes more sustainable development (through attention to inter- and intrapersonal skills). Improves integration of intervention in PhD program and existing PhD policy and training. Reinforces the benefits of existing PhD policy and training.
Cons	Need for tools to work on development remains unmet for PhD candidates Results and products of the project wasted	-	-
Feasibility	n/a	High	High
Stakeholder impact		Benefit for PhD candidates and their supervisors	Benefit for PhD candidates and their supervisors Benefit policy and organization (e.g. better integration and alignment PhD policy and HRM L&D)
Cost	n/a	Negligible	Negligible

- In scenario 1, the university decides to do nothing with the results and products of this project, even though the findings of the current project indicate a clear interest in (and need for) tools for development in PhD candidates and the tools and interventions are readily available.
- In scenario 2, the self-assessment tool in its current form along with instructions on how to use it and work on a development plan will be provided <u>low threshold</u> on this <u>webpage</u>. Stakeholders that work directly with PhD candidates could play a role in disseminating the tool through regular communication channels and in the regular PhD meetings/events, settings, or courses. The tool is also disseminated by HRM Learning & Development via their regular channels (e.g. the career platform and Learning Management System) and the tool will also play a role in supporting PhD candidates to choose more consciously between the training offered by the university (see Appendix F).
- Scenario 3 includes scenario 2 but adds the <u>optional support</u> of 1 or 2 coaching sessions, or a session with peers offered via HRM Learning & Development and the Learning Mindset. The benefits and stakeholder impact of this scenario are larger compared to scenario 2, whereas the costs are negligible. The interventions have already been developed and/or implemented within the organization. For instance, the PhD candidates could choose to do 1 or 2 coaching sessions or a workshop (e.g. instead of another training) as part of their 140 hours of Transferable Skills training. This way, this new proposal could be considered budget neutral, since the costs of coaching or facilitating the workshop are equal to/less than the price of other courses or training[1].

5. Recommendation

Based on our exploration of scenarios with the coordinator of all Graduate Schools and the HRM Learning & Development, we recommend implementing scenario 3: to provide the self-assessment tool on the university webpage and allow optional minimal support counting towards Transferable Skills training (1-2 coaching sessions and/or workshop session with peers).

6. References

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2. VSNU, NFU, KNAW, NOW, ZonMw. (2019). Position paper 'Room for everyone's talent' https://recognitionrewards.nl/wp-content/uploads/2020/12/position-paper-room-for-everyones-talent.pdf
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4. https://www.uu.nl/en/education/graduate-school-of-life-sciences/phd/during-your-phd/phd-course-centre/phd-competences-and-skills
5. https://phdcompetencemodel.nl/
6. https://www.learningmindset.org/

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[1] Based on calculations from Policy Advisor (J.V.) and HRM adviser (A.R.) a training or course is ~300 euros and 2 coaching sessions is ~300 euros or even less.

1. Appendices

Appendix A. Intervention groups

Group 1: Self-assessment tool

In this group, participants were offered the self-assessment tool. In 2016, University Medical Centres (UMCs) of the Netherlands developed this self-assessment tool based on the PhD Competence Model (see Figure 1, https://www.intrinsicactivity.org/2016/4/S1/A3.5/index.html). It allows PhD candidates to evaluate several competences (specific, transferable/generic) annually during their trajectory and formulate goals. In this way, the tool encourages PhD candidates to be self-aware and self-reflective early on in the trajectory and facilitates a proactive attitude in the personal development process.

*The tool has now been used by UMCs and Dutch universities for several years. Utrecht University has also offered the self-assessment tool for some time and in some Graduate Schools its use is a standard procedure. An internal evaluation at Utrecht University showed that PhD candidates have positive experiences when using this tool. Our partners at Utrecht University made a digital version of this tool available to our PhD candidates within Leiden University for the current project. This tool was available at https://insci.nl/, also to be used free of charge by our PhD candidates, **even when not participating in this research for the duration of the project.***

In addition to the self-assessment tool, this group also received a template to write a developmental plan.

***Figure 1.** PhD Competence Model on which the self-assessment tool is based. PhD candidates can use the self-assessment tool to monitor their development on these competences and set goals of their own choosing.*

Group 2: Personal coaching + tool

This group is offered the tool and the template for a developmental plan as Group 1, but also receives 2 individual coaching sessions to support and facilitate the use of the tool and the template for a developmental plan. The coaching sessions are one-hour sessions and take place at Leiden University. There are approximately 3 weeks between the first and second session. In two one-hourly sessions the coach and coachee work on the following:

1. Strengthen autonomy and empower the PhD

2. Support and facilitate use of the PhD Competence self-assessment tool

3. Support in an elaborate and concrete Personal Development Plan

4. Stimulate PhD to maintain focus

Group 3: Group intervention with the Learning Mindset + tool

This group is offered the tool as Group 1, but is also offered two workshop sessions at Leiden University to supprt and facilitate the use of the tool.

Workshops:

Session 1 – 12 steps from envisioning future to committing to action plan

Session 2 – Evaluate learning process with peers

Appendix B. Flowchart inclusions and representation of faculties
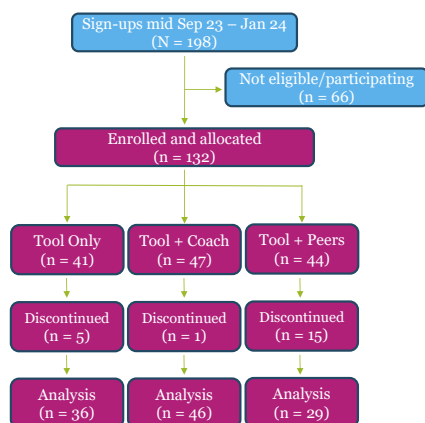
What faculty are you pursuing your PhD in?	n
Science	41
Medicine/LUMC	19
Social and Behavioural Sciences	19
Humanities	17
Law	7
Governance and Global Affairs	5
Archaeology	3
Total	**111**

Appendix C. Chosen PhD competences

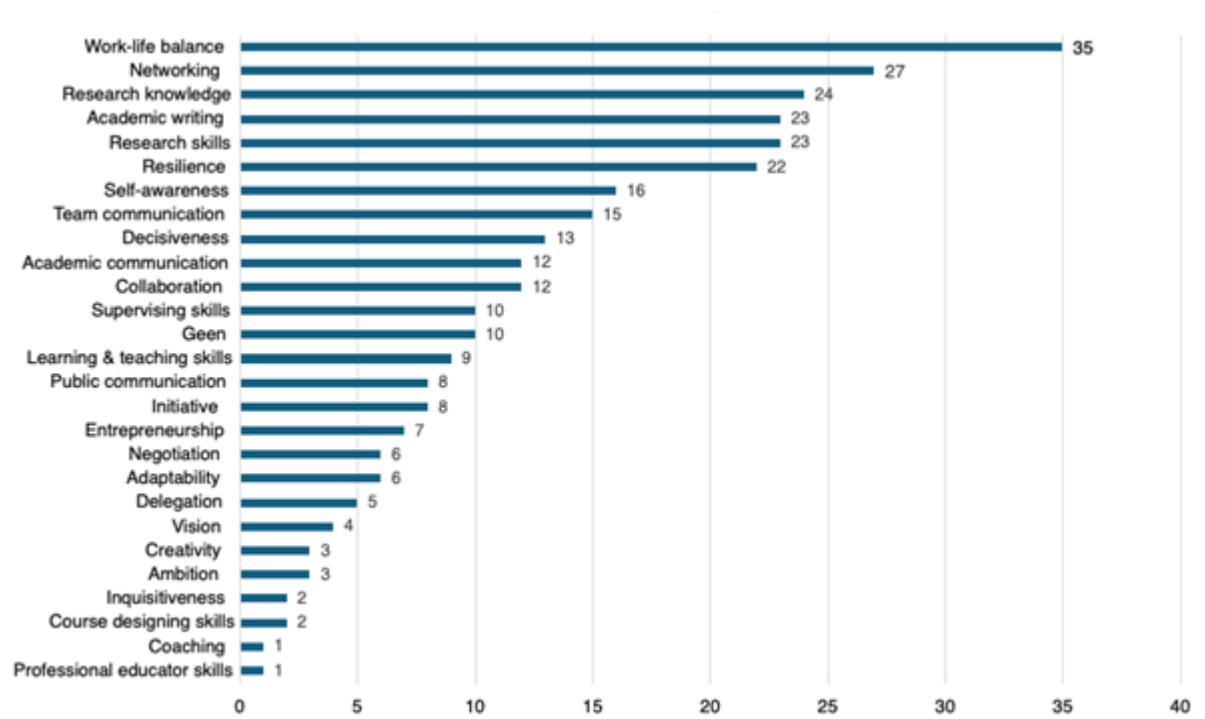| Competence	Value
Work-life balance	35
Networking	27
Research knowledge	24
Academic writing	23
Research skills	23
Resilience	22
Self-awareness	16
Team communication	15
Decisiveness	13
Academic communication	12
Collaboration	12
Supervising skills	10
Geen	10
Learning & teaching skills	9
Public communication	8
Initiative	8
Entrepreneurship	7
Negotiation	6
Adaptability	6
Delegation	5
Vision	4
Creativity	3
Ambition	3
Inquisitiveness	2
Course designing skills	2
Coaching	1
Professional educator skills	1

Appendix D. Methods learnt per group – Qualitative data

The participants were asked with an open question to indicate what methods they have learnt that they would like to use in the future. Based on the data and the principles behind the interventions, we could categorize the responses into several dimensions including: identification of competencies, self-reflection, goal action, interpersonal and intrapersonal skills. Additionally, we also received some input on the lack of certain skills during the trajectory even though this was not formulated in the question. In the descriptions below, we highlight which elements were predominantly mentioned by the separate groups.

Self-assessment tool only

The use of the PhD competence model resulted in the identification of competences and skills in the PhD trajectory (5/36). Self-reflection and the examination of the competences and skills to improve during the PhD trajectory was most often mentioned (10/36). This is illustrated by the quote: '*…getting an overview of all the competences you have to develop during a PhD and then pick a few to focus on'.* Participants (7/36) reported that they liked the self-assessment of their different competences resulting in the identification of their strength and weaknesses. There were a few participants who indicated that they particularly learned how to specify goals to be working on their development. A couple of participants also indicated that they acquired interpersonal and other intrapersonal skills that help them in their development. Some participants stated that they missed external support and guidance as they worked on their skill development. Without help it was difficult to set development goals and create action plans and share learning experiences. As one of the participants stated: *…'I feel like the tool is nice but then you have to motivate yourself to progress your own learning which I think is very hard to do without any external help. It's not like you start the day 'oh today I will practice my flexibility' and just go about that. So I think the tool is nice to get a clear overview what you want to adapt, but is not so efficient in the actual changing of habits/practicing'.*

Self-assessment tool + coaching

A large number of participants indicated that they particularly would like to employ self-reflection in the future (17/46). Furthermore, several participants also reported that they learnt to use skills in the domain of goal action, particularly how to strategize and develop a plan to reach their goals (9/46). For instance, one participant mentioned: '*Transform a problem into several specific goals that are more easily to achieve….*' Also, interpersonal and intrapersonal skills were mentioned by many participants, particularly intrapersonal skills that are helpful for sustainable development and sustaining success, such as skills that aid in maintaining well-being were prominent in this group (7/46): '*Being more conscious of what I can do and what I can't because of time, and speak up for myself when I don't have time to do something'.*

Self-assessment tool + Learning Mindset peer group intervention

Skills from the domain of goal action was mentioned most in this group, particularly skills on how to formulate SMART goals (10/29) and how to maintain focus on one's goals (5/29). Also, interpersonal and intrapersonal skills were mentioned by many participants of this group, particularly communicating with others and sharing one's goals (5/29) were found useful as methods for development. For instance, one participant indicated: '*Setting very specific goals and back-up plans, and having a buddy to sign a*

contract with, so that you stick to it better and motivate each other'. Another participant revealed: *'Several strategies for sticking to my goals, sharing it with others, but also the categorization of competences was useful to me.'*

Conclusion

Based on the tool-only group it has become apparent that the tool helps PhD candidates to identify and categorize relevant competences and apply self-reflection. These methods could help the PhD candidates to take ownership of their professional growth and actively manage their own skills development during their PhD trajectory.

Indeed, a few participants of this tool-only group also indicated that they acquired skills to work on their development in a goal-directed manner and that they acquired inter- and intrapersonal skills that help them in doing so. Such skills include for instance support seeking, communicating with others and time management. The two groups that received additional coaching or peer group intervention were more superior as compared to the tool-only group in learning these skills. These results suggest that skills learnt with additional coaching and peer group intervention could help in a deeper reflection process and concretizing goals, and are important for sustaining and maintaining success. These intervention elements could thus help PhD candidates to become more values-driven, purpose-led and goal-directed while enabling them to work on their development in a sustainable and healthy way.

Appendix E. Interviews with three participants

Anonymous PhD candidate

I learned about the 'Empower your PhD' project at the introduction meeting for new PhD candidates organised by Leiden University. As I would like to develop myself more broadly, I decided to participate in this project. It was an eye opener to find out the variety of skills included in the PhD competence model. In my research team, the focus is mostly on the development of research skills. I chose the skills of leadership, project management and networking to work on. I was surprised that the PhD competence model is not yet a standard part of doctoral education at Leiden University. I think that personal and career development should play a more important role in the PhD trajectory, especially because the chances of continuing an academic career after PhD completion are small. The self-assessment model and the development plan are relatively simple to use, and you can easily work with the tools at home.

Erica Hyatt, FSW
I am an external PhD candidate and generally a bit older than most of my PhD colleagues. I decided to participate in the 'Empower your PhD project' to explore what I can do with my PhD in the future as I started my PhD project out of curiosity. After the useful self-assessment, I answered a few questions to prepare for my two coaching sessions. The meetings with my coach stayed with me; the advice that I got was extremely helpful. The self-reflection as well as input from my coach helped me to think about my future goals. I worked on two skills, strategic thinking and teaching/guiding other students. During the Empower your PhD project I discovered that I would like to become a role model for younger female students, to inspire them to follow their dreams. In the future, offering the possibility to have a yearly coaching session with someone who has nothing to do with your PhD project could strengthen the doctoral education program at Leiden University. For PhD that value peer learning, it should also be possible to join an intervision group.

Djibrila Tetereou, FGW
As a starting PhD candidate, I decided to participate in the 'Empower your PhD' project to get more control over my own development. As a first step, I completed the self-assessment tool. The outcomes visualized in a spider diagram showed a clear picture of my strengths and weaknesses. It was like looking into a mirror; this was really me. I decided to work on the competence's public communication, networking and teaching. The different steps of the personal development plan were very useful as they helped me to think how and when I should work on my competences. I feel that improved a lot and I am very proud of these developments. I think that the PhD competence tool should be a compulsory element of the doctoral education program at Leiden University.

Shana Hepping, FGGA
After hearing about this project from our PhD Dean, I decided to participate as a starting PhD candidate to gain more control over my development. One major decision for PhD candidates is whether to continue in academia or pursue other paths. To make this choice, it's important for me to understand my

career goals, personal strengths, and opportunities for growth. The PhD competence model provided a useful framework to identify relevant skills for my development. The model in combination with the workshop sessions helped me focus my efforts, set goals, and take action. It also facilitated discussions with my supervisor on topics like communication and work-life balance, beyond just my PhD project. The workshop elements motivated me to work on my goals and engage with my peers. Overall, I learned that applying these skills enables continuous development. It's easy for PhD candidates to feel passive in their journey, but regular self-assessment with the competence model, combined with feedback from a coach or peers, can support reflection and goal setting. This approach not only fosters greater awareness but also makes the PhD process more enjoyable.

Appendix F. PhD Competence Model and Training within University Leiden

Domain	Training
Research skills & knowledge	Academic writing Communication in Science
Personal effectiveness (self-reflection, work-life balance)	Project me Club PhD
Professional development (networking)	Building your academic network
Leadership & Management	Club PhD Standing up for yourself Project management
Communication	Presenting skills (online and live) Academic writing Communication in Science Standing up for yourself Building your academic network Academic outreach/blogging/storytelling
Teaching	LLINC