



# Effects of coaching on wellbeing, perception of inclusion, and study-interest

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## Abstract

The current study aimed to investigate the influence of an evidence-based coaching intervention on students' wellbeing, perception of inclusion and study-interest, among 93 first year social work students (aged 16–24) in the Netherlands. The coaching intervention that was implemented was based on the REGROW model. A pre-test-intervention-post-test design with two conditions was employed. The experimental condition ( $n = 47$ ) received coaching from their mentor between pre-test and post-test, while the control condition ( $n = 46$ ) received regular academic career counselling from their mentor. The results indicate that coaching has a positive effect on students' emotional wellbeing, but not on psychological and social wellbeing, perception of inclusion and study-interest. In addition, it was found that students' evaluation of the coaching trajectory is predictive of their emotional wellbeing, specifically in relation to relatedness and pressure. In vocational education, coaching seems to be a valuable addition to academic career counselling. A structured practical coach model, such as the REGROW model, potentially combined with a coach card, could help implementing coaching in vocational education.

**Keywords:** vocational education, adolescence, coaching, wellbeing, perception of inclusion, study-interest



## Introduction

In many countries, such as in the Nordic countries, one of the major challenges vocational education teachers face is the large number of student drop-out (Bolhaar et al., 2019; Jørgensen, 2011; Larsen & Thunqvist, 2018). Different approaches are taken to combat this issue, including for example student mentoring in the Netherlands (Meijers, 2008), a personal development plan for students in Sweden (Larsen & Thunqvist, 2018), a drop-out prevention programme in Finland (Vehkasalo, 2020), and individual educational plans in Denmark (Jørgensen, 2016). Despite these measures, drop-out rates in vocational education remain high in both the Nordic countries (Böhn & Deutscher, 2022), and in the Netherlands (Bolhaar et al., 2019).

Research shows that student drop-out can be related to student factors, such as low wellbeing, study-interest, perception of being included in school, motivation, anxiety, stress, and other personal challenges (Bolhaar et al., 2019; Jørgensen, 2011; Larsen & Thunqvist, 2018; Schmid, 2020; Winding et al., 2013). Specifically, Dutch and Nordic vocational students are missing individual support and are not feeling heard at school, while this seems to be positive for their wellbeing (Björk-Åman et al., 2021; Vanneste et al., 2016).

In none of the countries mentioned, however, coaching principles are used structurally to combat drop-out. Previous studies, even though they were conducted amongst special target groups, such as senior students and adolescents, suggested that individual coaching can have positive effects on students' wellbeing (Brandseth et al., 2019; Dulagil et al., 2016; Grant, 2020; Green & Norrish, 2013), inclusion in the classroom (Brandseth et al., 2019; Hagen, 2021), students' motivational study interest (Grant, 2020; Passmore & Lai, 2020), and success in academic goal striving (Atad & Grant, 2021; Dulagil et al., 2016). Therefore, the current study aimed to investigate whether a coaching intervention provided by the students' mentor would have a positive effect on the wellbeing, perception of inclusion, and study interest of typically developing adolescent students enrolled in vocational education in the Netherlands.

### **Vocational education in the Netherlands vis-à-vis in Nordic countries**

In the Netherlands, vocational education educates both young people and adults to be skilled workers, and offers study programmes at different levels, comparable with Danish study programmes where they use different levels of study programmes (Imola et al., 2021; Louw & Katznelson, 2019). The Dutch levels correspond with the duration of the study programme, with level one corresponding to one year of education and level four to four years (De Bruijn et al., 2017). Dutch vocational education provides practical study programmes, including school-based and workplace learning (Schaap et al., 2012), just like

Nordic countries (Jørgensen, 2011). The growing diversity of students who enter vocational education seems to be a major challenge for teachers in the Netherlands, as well as in Nordic countries (Schmid, 2020; Van Middelkoop et al., 2017).

An important role for Dutch teachers in vocational education is student guidance or mentoring. Mentoring in the Netherlands is aimed at stimulating students' learning development and performance by providing emotional support during their education. In general, a class (24 students) is linked to one or two mentor(s) for one year. Mentoring can occur both at the class and at the individual level, and generally occurs every week (Keijzer et al., 2022). As part of this mentoring process, each mentor also provides individual academic career counselling (*studieloopbaanbegeleiding, SLB*), a few times per year. In these short conversations, teachers support, coach and evaluate students' career competencies and learning progression (Meijers & Kuijpers, 2015). Nordic vocational education teachers also provide academic career guidance (Niemi & Jahnu-kainen, 2020). In the Netherlands as well as in the Nordic countries, these conversations focus more on student competencies than on their individual needs (Andreassen et al., 2019; Winters et al., 2009), while students seem to require more individual support, which as research shows is challenging for vocational teachers (Björk-Åman et al., 2021; Keijzer et al., 2022; Røise, 2020).

Another challenge in Dutch vocational education concerns the fact that teachers often have different backgrounds and experiences in teaching and mentoring students (Ketelaar et al., 2012; Magee et al., 2022; Winters et al., 2009). In general, a teacher training programme, qualifying for teaching at vocational education, concerns a three to four year Bachelors' programme, which is similar to the Norwegian educational system (Isacsson et al., 2018; Mbo Raad, 2020). In addition, it is also possible to acquire a Masters' degree in education at a Dutch university, which is similar to a teacher degree in Finland (Isacsson et al., 2018). Due to a shortage of Dutch teachers in vocational education, teachers can also obtain a pedagogical-didactic certificate, while teaching, within two years (Mbo Raad, 2020; Rijksoverheid, 2023; Van Middelkoop et al., 2017); comparable with a one year programme in Denmark (Isacsson et al., 2018). The different backgrounds of teachers in the Netherlands and some Nordic countries implies a need for professionalising teachers' pedagogical and didactic knowledge and skills, so they can support students more individually in their diverse, educational, and social challenges (Bolhaar et al., 2019; Brevik et al., 2023; Jørgensen, 2011; Jørgensen et al., 2018; Ketelaar et al., 2012). Perhaps that is why teachers in both the Netherlands and the Nordic countries are increasingly taking on a coaching role (Jørgensen, 2011; Kalalahti et al., 2020; Ketelaar et al., 2012). Nevertheless, Nordic and Dutch teachers seem to be missing tools and knowledge to coach their students (Ketelaar et al., 2012; Löfgren et al., 2022;

Niemi & Jahnukainen, 2020). Therefore, coaching might be an interesting tool for teacher professionalisation, considering the fact that coaching allows focusing on individual student needs (Adams, 2016).

### **Coaching in (vocational) education**

Coaching can be defined as a solution-focused and systematic guiding process (Stober & Grant, 2006), in which awareness, reflection, autonomy and self-management are facilitated (Cox et al., 2014) to enhance positive personal growth and change (Anstiss & Passmore, 2017; Grant, 2014; Zyl et al., 2020). A coach creates (conversation) space for the coachee to be able to reflect, find solutions, and achieve goals in different domains of life (Adams, 2016; Madden et al., 2020). To establish this, a coaching framework, coaching techniques, a non-judgemental, objective and positive attitude (Adams, 2016; Grant, 2014, 2020), and time investment (Stewart & Palmer, 2009) are necessary to support the development of the coachee (Grant, 2013, 2020).

There are some theoretical and practical concerns that seem to impede implementation of coaching principles in education. From a theoretical point of view, there is limited research into the effectivity and implementation of evidence-based coaching programmes in (vocational) education (Grant, 2020; Hobson & van Nieuwerburgh, 2022). There are, moreover, few evidence-based models that have been evaluated in an educational context (Athanasopoulou & Dopson, 2018). One such model is the REGROW model (Grant, 2011), a more recent version of the GROW model (Whitmore, 2002). The REGROW model is structured and simple to apply (Grant, 2011), and therefore potentially easy to use for teachers. Nevertheless, the REGROW model is not used frequently in education, and, to our knowledge, its effectivity for vocational education students has not yet been investigated.

From a practical point of view, there are large inter-individual differences in teachers' understanding of coaching (Ketelaar et al., 2012). Moreover, coaching is often provided by untrained teachers (Hobson & van Nieuwerburgh, 2022; Zumpe, 2022), and teachers might become too emotionally involved in students' process (Lippke, 2012). However, training teachers in coaching techniques seems to lead to improvements in their own professional development, wellbeing, leadership, and their objective stance towards students' personal and learning development (Adams, 2016; Grant et al., 2010; Ketelaar et al., 2012; Kraft et al., 2018; Lippke, 2012; Lukiianchuk et al., 2021; White, 2022). Moreover, coaching supports vocational education students' autonomy which, in turn, leads to higher wellbeing, competence, and motivation and seems to reduce drop-out (Bolhaar et al., 2019; Dulagil et al., 2016; Grant, 2014; Kaur et al., 2017; Lippke, 2012; Psifidou et al., 2021).

### **Wellbeing, perception of inclusion, and study-interest**

Defining wellbeing is challenging; it includes life satisfaction, happiness, positive emotions, positive psychological development, and fulfilling goals (Dodge et al., 2012). Wellbeing consists of three dimensions: Emotional, psychological and social wellbeing (Karás et al., 2014; Lamers et al., 2010). In the last twenty years, development of wellbeing (mental health) in education has become more important (Waters, 2017; White, 2016). Students' wellbeing is influenced by personal resources, study environment, study skills and teaching (Heinilä, 2013). This explains why students' (emotional) wellbeing might be influenced by the (perceived) emotional engagement between student and teacher (Arabiat et al., 2018; Krane et al., 2016; Pietarinen et al., 2014). More importantly within the scope of the current study, adolescents' (social) wellbeing seems to be positively affected by social support and a positive and challenging environment (Crone, 2018; Dulagil et al., 2016; Glozah, 2015; Young et al., 2019).

Students' perception of the extent to which they are included in the classroom seems to be related to experiencing a supportive environment. It can be defined as an individual's perception of belonging to a group (Jansen et al., 2014), in which there are large inter-individual and inter-group differences. The perception of inclusion consists of three dimensions: Emotional, social, and academic self-concept (Venetz et al., 2015). Social inclusion concerns friendship, perception, and interaction (Koster et al., 2009), while emotional inclusion concerns emotions related to belonging to a group (Urquhart, 2008). Academic self-concept concerns self-evaluation, self-perception of academic attitude and behaviour, and has two dimensions: change (flexibility to adapt) and stability (relatively stable psychologically) (Supervía et al., 2020). Although the potential effects of a coaching intervention on students' perception of inclusion have not been studied extensively, coaching among target groups in vocational education has been found to support a safe and inclusive learning environment (Christensen et al., 2021), and stimulate students' academic self-concept (Blegur et al., 2018).

Coaching also stimulates undergraduate university students' study-interest (Müller & Louw, 2004). Study-interest consists of feeling and value-related valences and intrinsic orientation (Schiefele, 1999, 2001). This seems to be related to motivational learning; intrinsically motivated students demonstrate higher study-interest than students with different motivational styles (Müller & Louw, 2004). These findings correspond to the self-determination theory, which posits that there are basic psychological needs (autonomy, competence, and relatedness) that influence students' motivation (Deci & Ryan, 2000, 2004). In relation to coaching in education, research indicates that coaching leads to higher levels of motivation for school among (high school) students (Amorose & Anderson-Butcher, 2007). Coached students were more successful in achieving goals and

had a higher study-interest than students who were not coached (Ball et al., 2016; Borkar, 2016).

### **The current study**

The current study aimed to investigate to what extent an evidence-based coaching intervention based on the REGROW model provided by the mentor has beneficial effects on first year vocational educational students' wellbeing, perception of inclusion and study-interest. The first research question concerned the potential positive effect of coaching on students' wellbeing, perception of inclusion and study-interest. It was expected that students who received coaching would show more positive growth from pre-test to post-test in wellbeing (Cronin & Allen, 2018), perception of inclusion (Qian et al., 2018), and study-interest (Müller & Louw, 2003) than their peers who did not receive coaching. In relation to wellbeing, it was specifically expected that those who were coached would show more improvement in all three aspects of wellbeing: emotional, psychological, and social wellbeing (Borkar, 2016; Cronin & Allen, 2018; Shorey et al., 2022).

The second research question concerned the potential relationship between the students' evaluation of the coaching intervention on the one hand, and wellbeing, perception of inclusion, and study-interest on the other hand. It was hypothesised that students' evaluation of the coaching trajectory could predict their level of wellbeing (Cronin & Allen, 2018), perception of inclusion (Qian et al., 2018), and study-interest (Müller & Louw, 2003) at post-test.

## **Method**

### **Participants**

The researchers initially recruited 104 first year students in the Social work study programme in the Netherlands (Level 4) from one school. Some students did not consent to participate or had not completed all questionnaires due to the COVID-19 lockdown, therefore the final sample consisted of 93 participants (27 male and 66 female students) with a mean age of 17.98 ( $SD = 1.71$ ; range 16–24). Within this number of participants, per class, students were allocated to the experimental condition ( $n = 47$ ) or the control condition ( $n = 46$ ). Each class was linked to a specific teacher who functioned as their mentor. For students younger than 16, their parents and the student gave written informed consent prior to the study taking place, and students 16 years or older gave written informed consent themselves. Approval for conducting the study was provided by the institutional Psychology Research Ethics Committee of the corresponding author.

## Design and procedure

The current study employed a quasi-experimental pre-test – intervention – post-test design with two conditions: an experimental and a control condition. Those in the experimental condition received coaching between pre-test and post-test while those in the control condition received regular *SLB* from their mentor (see Table 1).

Table 1. Research design.

Group	Pre-test <sup>1</sup>	Coaching Intervention	Post-test <sup>2</sup>	Coaching Evaluation <sup>3</sup>
Experimental	X	X	X	X
Control	X		X	

Notes: 1. Pre-test: MHC-SF, PIQ-S, SIQ. 2. Post-test: MHC-SF, PIQ-S, SIQ. 3. Evaluation: APQ, SIQ2.

Students in both conditions completed a pre-test and a post-test. Students in the control condition received regular *SLB* from their mentor (once or twice a 10 minute conversation about students' career and study progress), while students in the experimental condition received four coaching conversations from their mentor. After the post-test, students in the experimental condition evaluated their coaching trajectory. All questionnaires for both conditions were completed in the same week.

During the study, all students went in partial lockdown due to the COVID-19 pandemic. Because practical education was partially allowed to continue on campus during lockdown, three of the coaching conversations took place at school, and the other one took place online in a secured digital environment. The online coaching used the same method as the physical coaching conversation and at all times privacy and ethical regulations of the school were adhered to.

## Intervention and materials

### *Coaching intervention*

The coaching intervention consisted of four conversations provided in a timeframe of 12 weeks with each conversation lasting 30 minutes. The coaching trajectory was based on the REGROW model (Grant, 2011), as this model is considered highly structured and relatively easy to apply. All teachers that provided the coaching were provided with a self-developed Coach Card (see Figure 1), to help them structure their coaching conversations. In general, all conversations, with the exception of the first conversation, which started with a wonder question (see Figure 1), had a similar structure. First, the students'

wellbeing was scored, after which the coach led the student through the different steps of the model (review, evaluation, goal, reality, options, and wrap-up). At the end of each conversation the coach asked the student to evaluate the session.

<b>COACH CARD</b>	Wellbeing: 0 – 1 – 2 – 3 – 4 – 5 – 6 – 7 – 8 – 9 – 10 <small>(0 is low and 10 is high)</small>	30 min.
<b>R</b>	<b>REVIEW</b> - Did you think about the past week(s)? - What did it bring you?	
<b>E</b>	<b>EVALUATION</b> - How did you experience the last conversation? - What have you changed? How did you noticed that? - What went well? - What obstacles/problems are you running into? - Who did you ask for help?	
<b>G</b>	<b>GOAL</b> <span style="float: right;"><small>Wonder question</small></span> - What do you want to achieve? - What makes you happy? - What gives you a lot of energy? - What is your goal, are your goals? (Cut long term into sub-goals) - What do you need to get there?	
<b>R</b>	<b>REALITY</b> - Where do I stand now (regarding the desired goal)? - How are you feeling? - What does your week look like? What do your circumstances look like?	
<b>O</b>	<b>OPTIONS</b> - How are you going to achieve that? - What are your (creative) options to achieve your goal(s)? - The coach repeats all mentioned options. - The coachee chooses the best option.	
<b>W</b>	<b>WRAP-UP</b> - Action: you start working on the option(s) of your choice. - What is your plan? - What do you need to do to achieve your goal(s)? - What could get in the way? - Do you need help? - Make the goal SMART. - Visualization might help in this.	
<b>The coach asks feedback about.....</b>		
Experiencing the conversation	Felt heard and seen	Tips for the coach
Attitude Coach: Open and positive Equal Listing, summarize and ask questions	Attention Stimulate autonomy Reflect	No judgment No good/wrong Student writes goal(s) down Open questions Do not push
<small>Based on Grant, 2011                      REGROW Coach Model</small>		

Figure 1. Coach Card based on the REGROW model (Grant, 2011).

### Training in coaching for teachers

Teachers in the experimental condition were provided with a short training programme to familiarise them with coaching techniques and refresh their knowledge about adolescent students and their learning processes. The training programme, which was developed for this study and provided by the first author, consisted of two three-hour sessions. The first session consisted of a general theoretical background related to adolescence and evidence-based coaching, specifically the REGROW model (Grant, 2011), after which teachers practiced their newly acquired knowledge and skills with their colleagues under supervision of the first author. The second session recapitulated the theoretical

background, after which the participants practiced coaching techniques and use of the coach card with colleagues and students that did not participate in the study.

#### *Mental Health Continuum-Short Form (MHC-SF)*

The MHC-SF (Karás et al., 2014; Lamers et al., 2010) is a questionnaire which measures wellbeing and takes 5–10 minutes to administer. The scale has 14 items and subscales: emotional wellbeing (3 items), social wellbeing (5 items), and psychological wellbeing (6 items). The questionnaire has been translated to Dutch. Respondents score items on a 6-point Likert scale ranging from 0 (never) to 5 (every day). The questionnaire has been shown to have a high internal consistency in the current sample (Cronbach's  $\alpha = .85$ ).

#### *Perception of Inclusion Questionnaire Student (PIQ-S)*

The PIQ-S (Zurbriggen & Knickenberg, 2020) is a questionnaire which measures perception of inclusion. It has 12 items and three subscales: emotional inclusion (4 items), social inclusion (4 items), and academic self-concept (4 items), and it takes 10 minutes to administer. Respondents score items on a 4-point Likert scale ranging from 1 (not at all true) to 4 (certainly true). There is a student, teacher, and parent version. The current study used the student version. The questionnaire has been shown to have a high internal consistency in the current sample (Cronbach's  $\alpha = .73$ ). The questionnaire has been translated into Dutch.

#### *Study Interest Questionnaire (SIQ)*

The SIQ (Schiefele, 1999, 2001) is a questionnaire which measures feeling-related valences (item 1–7), value-related valences (item 8–14), and intrinsic orientation (item 15–18) and takes 10 minutes to administer. Respondents score items on a 4-point Likert scale ranging from 1 (not at all true) to 4 (completely true). The questionnaire has been translated into Dutch. The questionnaire has been shown to have a high internal consistency in the current sample (Cronbach's  $\alpha = .78$ ).

#### *Activity Perception Questionnaire (APQ)*

The APQ (Deci et al., 1994; McAuley et al., 1989; Plant & Ryan, 1985; Ryan, 1982; Ryan et al., 1983, 1990, 1991) is one of the five parts of the Intrinsic Motivation Inventory (IMI) and is a questionnaire which measures participants' subjective experiences in relation to a target activity. The scale has 25 items and three subscales: interest/enjoyment (8 items), value/usefulness (9 items), and perceived choice (8 items) and takes 15 minutes to administer. Respondents score items on a 7-point Likert scale ranging from 1 (not at all true) to 7 (very true). The questionnaire has been translated into Dutch. The questionnaire has been shown to have a high internal consistency in the current sample (Cronbach's  $\alpha = .96$ ).

*Subject Impression Questionnaire (SIQ2)*

The SIQ2 (Deci et al., 1994; McAuley et al., 1989; Plant & Ryan, 1985; Ryan, 1982; Ryan et al., 1983, 1990, 1991) is one of the five parts of the Intrinsic Motivation Inventory (IMI). The SIQ2 is a questionnaire which measures how an individual feels in relation to a second person participating in a target activity. The scale has 29 items and 5 subscales: relatedness (8 items), interest/enjoyment (7 items), perceived choice (5 items), pressure/tension (5 items), and effort (4 items) and takes 15 minutes to administer. Respondents score items on a 7-point Likert scale ranging from 1 (not at all true) to 7 (very true). The questionnaire has been translated into Dutch. The questionnaire has been shown to have a high internal consistency in the current sample (Cronbach’s  $\alpha = .84$ ).

Results

**Initial analyses**

Prior to conducting our analyses, we investigated whether the experimental group and control group showed any differences at baseline. To do this, a one-way MANOVA was performed, including age, and pre-test scores as dependent and condition as the independent variable. This model was not significant (Wilk’s  $\lambda = .93$ ,  $F(1,90) = 0.82$ ,  $p = .591$ ,  $\eta_p^2 = .07$ ), indicating no significant group differences. Mean scores for each condition are displayed in Table 2. Both conditions had a similar gender distribution ( $\chi^2 (1, N=93) = 1.46$ ,  $p = .227$ ), which is displayed in Table 3.

*Table 2. Basic statistics for questionnaire scores and age for each condition at pre-test.*

		<b>Experimental condition</b>	<b>Control condition</b>
Emotional wellbeing	<i>M (SD)</i>	3.45	3.45
Social wellbeing	<i>M (SD)</i>	2.61	2.68
Psychological wellbeing	<i>M (SD)</i>	3.62	3.45
Social inclusion	<i>M (SD)</i>	13.80	13.41
Emotional inclusion	<i>M (SD)</i>	12.85	12.63
Academic self-concept	<i>M (SD)</i>	11.98	11.67
Study-interest	<i>M (SD)</i>	3.03	2.92
Age	<i>M (SD)</i>	17.85	18.14

Table 3. Gender distribution over the different conditions.

	Experimental condition	Control condition	Total
Female	36	30	66
Male	11	16	27
<b>Total</b>	<b>47</b>	<b>46</b>	<b>93</b>

Table 4. Multivariate and univariate RM MANOVA outcomes of the effect of coaching on wellbeing, perception of inclusion, and study-interest.

	Wilk's $\lambda$	F	p	$\eta_p^2$
<b>Multivariate effects</b>				
Session	.87	1.78	.102	.13
Session x Condition	.91	1.11	.364	.09
<b>Univariate effects</b>				
Emotional wellbeing				
Session		.20	.657	.002
Session x Condition		5.68	.019	.06
Social wellbeing				
Session		.48	.492	.01
Session x Condition		1.47	.228	.02
Psychological wellbeing				
Session		.54	.465	.01
Session x Condition		.88	.352	.01
Social inclusion				
Session		3.16	.079	.03
Session x Condition		.01	.906	< .001
Emotional inclusion				
Session		4.57	.035	.05
Session x Condition		1.89	.173	.02
Academic self-concept				
Session		1.65	.202	.02
Session x Condition		1.33	.252	.02
Study-interest				
Session		7.46	.008	.08
Session x Condition		< .001	.990	< .001

### The effect of coaching

The potential effect of coaching on student-reported perception of inclusion, study-interest, and wellbeing of all participants was examined through a repeated measures multivariate analysis of variance (RM MANOVA). Session (pre-test vs. post-test) was included as within-subjects factor, and condition (experimental vs. control) as between-subjects factor. Student-reported scores of emotional, social, and psychological wellbeing, social, and emotional inclusion, academic self-concept, and study-interest were included as dependent variables. All multivariate and univariate within-subject effects are displayed in Table 4. The multivariate results indicate no significant effect of Session or Session x Condition. Basic statistics for the different measures are provided in Table 5. Additionally, mean scores of all variables are displayed in Figure 2. In addition, between-subject effects are displayed in Table 6. None of these effects were significant. This means there were no group differences on wellbeing, perception of inclusion, nor study-interest.

Table 5. Basic statistics for all scores regarding wellbeing, perception of inclusion and study-interest at pre- and post-test.

		Experimental		Control	
		Pre-test	Post-test	Pre-test	Post-test
Emotional wellbeing	<i>M (SD)</i>	3.46 (.84)	3.63 (.88)	3.45 (.92)	3.19 (.96)
Social wellbeing	<i>M (SD)</i>	2.61 (.99)	2.66 (.90)	2.69 (.90)	2.52 (.89)
Psychological wellbeing	<i>M (SD)</i>	3.62 (.77)	3.63 (.93)	3.46 (.77)	3.32 (.85)
Social inclusion	<i>M (SD)</i>	13.80 (2.07)	13.43 (2.01)	13.42 (2.48)	13.00 (2.26)
Emotional inclusion	<i>M (SD)</i>	12.85 (2.30)	12.67 (2.20)	12.64 (1.82)	11.84 (2.61)
Academic self-concept	<i>M (SD)</i>	11.67 (2.04)	12.09 (1.98)	11.98 (1.71)	12.00 (2.15)
Study-interest	<i>M (SD)</i>	3.03 (.38)	2.93 (.43)	2.92 (.33)	2.82 (.50)

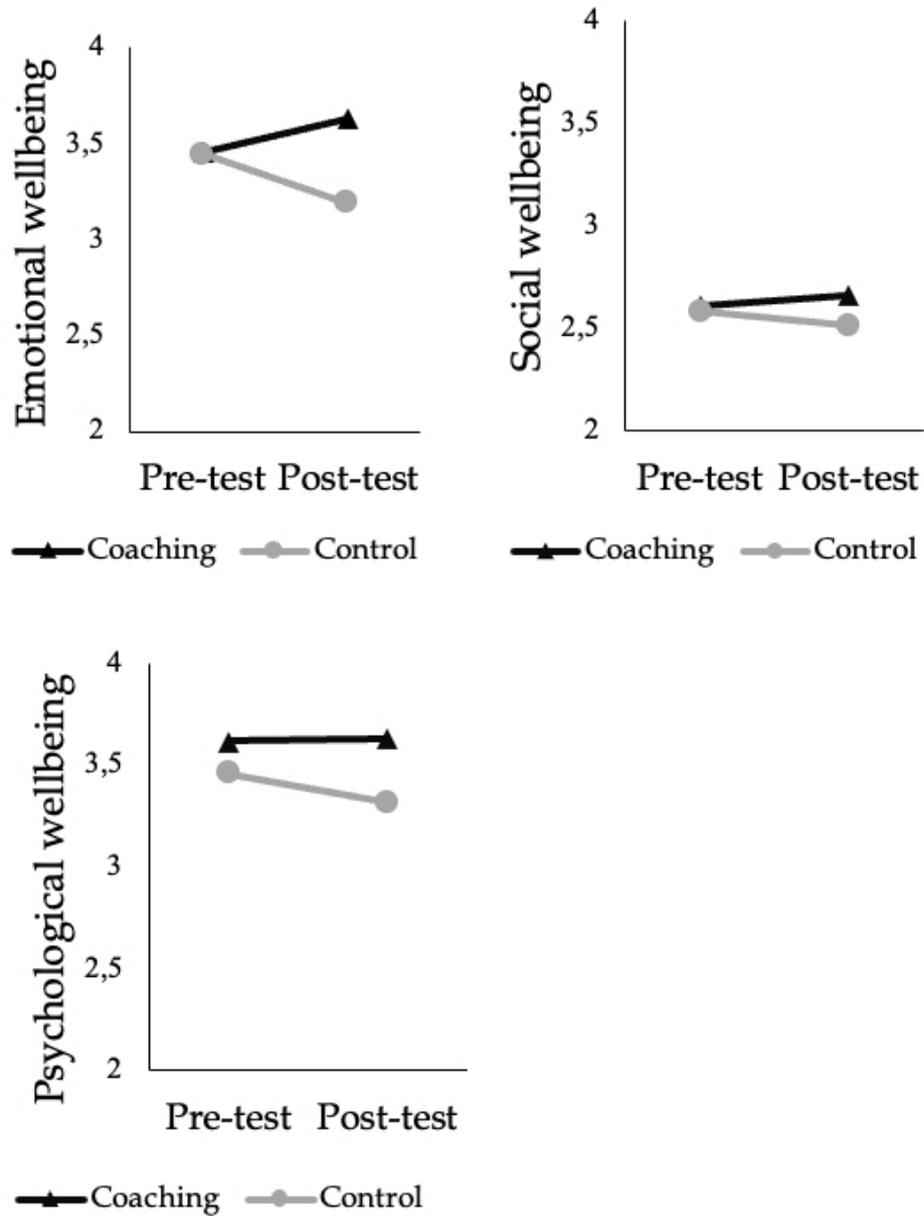


Figure 2. Pre-test and post-test scores regarding wellbeing (upper row), perception of inclusion (middle row), and study interest (lower row), divided by condition.

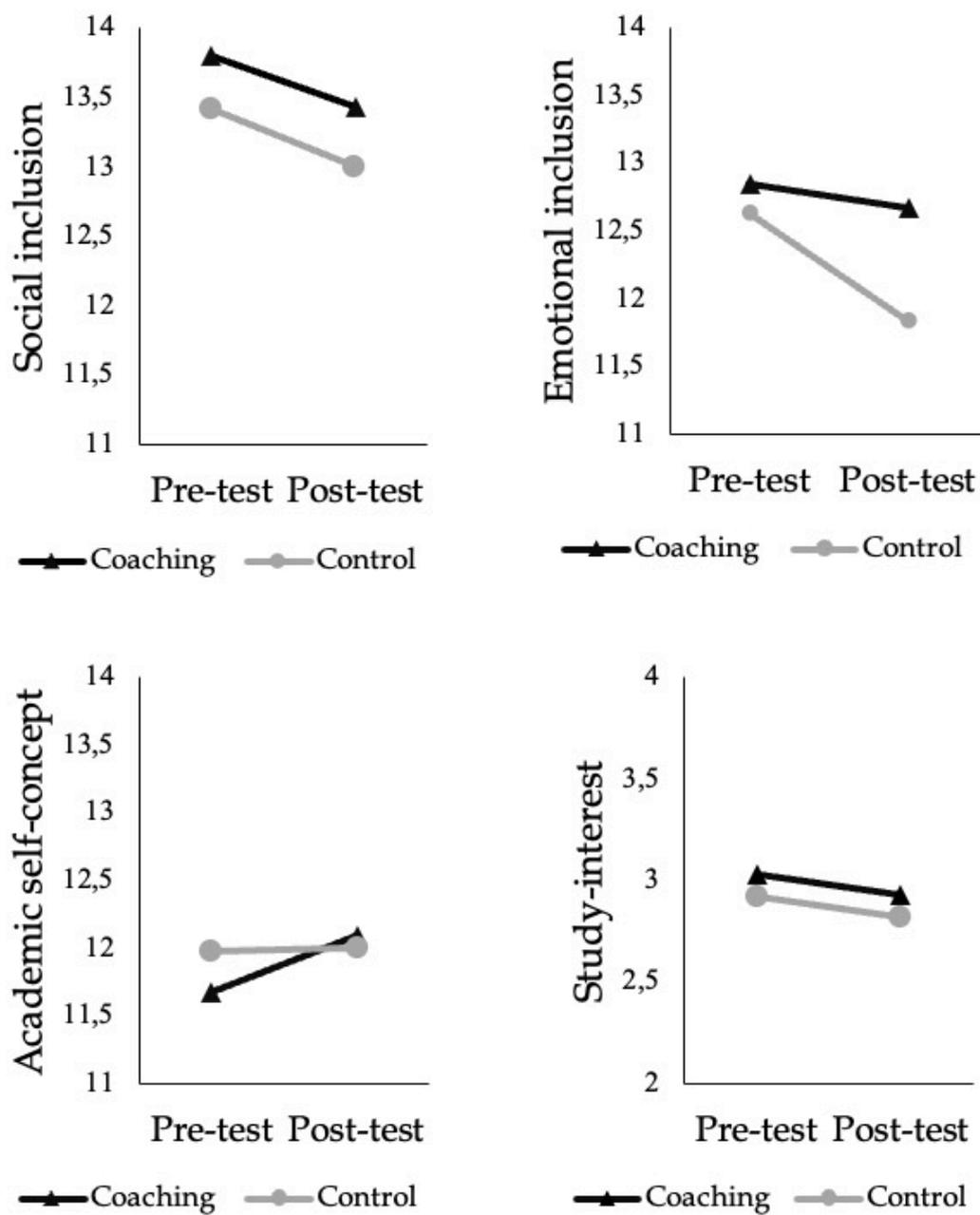


Figure 2. (Continued.)

Table 6. Between-subject effects of all variables included in RM MANOVA concerning the effect of coaching on wellbeing, perception of inclusion and study-interest.

	<i>F</i>	<i>p</i>	$\eta_p^2$
Emotional wellbeing	1.83	.179	.02
Social wellbeing	.03	.871	< .001
Psychological wellbeing	2.34	.130	.03
Social inclusion	1.01	.318	.01
Emotional inclusion	1.56	.215	.02
Academic self-concept	0.8	.775	.001
Study-interest	1.96	.165	.02

**Wellbeing.** The univariate effects revealed no significant effects of Session on the three variables representing wellbeing. However, a significant Session x Condition effect was found for emotional wellbeing ( $F(1,89) = 5.68, p = .019, \eta_p^2 = .06$ ). This is reflected in the mean scores for the separate conditions. When investigating the mean scores of all participants, little difference is observed between pre and post-test ( $M = 3.45$  vs.  $M = 3.42$ ). However, when looking at the conditions separately, it is noticed that the emotional wellbeing of students who received coaching increased slightly ( $M = 3.46$  vs.  $M = 3.63$ ), while these scores decreased for students in the control group ( $M = 3.45$  vs.  $M = 3.19$ ).

**Perception of inclusion.** The univariate effects revealed a significant Session effect for emotional inclusion ( $F(1,89) = 4.57, p = .035, \eta_p^2 = .05$ ), but not for social inclusion ( $F(1,89) = 3.16, p = .079, \eta_p^2 = .03$ ), or academic self-concept ( $F(1,89) = 1.65, p = .202, \eta_p^2 = .02$ ). No significant effects of Session x Condition were found on all three variables representing perception of inclusion.

**Study-interest.** The univariate effects revealed a significant effect of Session ( $F(1,89) = 7.46, p = .008, \eta_p^2 = .08$ ), but not of Session x Condition ( $F(1,89) < .001, p = .990, \eta_p^2 < .001$ ).

### Evaluation of coaching

In order to investigate whether students' evaluation of the coaching session was predictive of their wellbeing, perception of inclusion, and study-interest, seven linear regressions were performed. In these analyses, post-test scores of emotional, social, and psychological wellbeing, social, and emotional inclusion, academic self-concept, and study-interest served as the dependent variables. Activity interest, usefulness, and perceived choice, were included as predictors, alongside coach relatedness, interest, perceived choice, pressure, and effort. Results of these analyses are displayed in Table 7.

**Wellbeing.** The predictive model for emotional wellbeing was significant ( $F(8,33) = 2.35, p = .041, R^2 = .36$ ), indicating that coached students' emotional wellbeing could be predicted by their evaluation of the coaching sessions. Analysis of the coefficients indicated that the only significant predictors were coach relatedness ( $B = -.54, p = .029$ ), and pressure ( $B = -.32, p = .034$ ). These regression coefficients are negative, indicating that higher scores on relatedness and pressure were predictive of lower scores on emotional wellbeing. The model was not significant for social wellbeing ( $F(8,34) = 1.98, p = .080, R^2 = .32$ ), or psychological wellbeing ( $F(8,33) = 2.17, p = .056, R^2 = .35$ ), therefore providing no support for our hypotheses regarding these variables.

**Perception of inclusion.** The predictive model was not significant for emotional inclusion ( $F(8,33) = 1.70, p = .135, R^2 = .29$ ), or social inclusion ( $F(8,33) = 1.79, p = .116, R^2 = .30$ ), therefore providing no evidence for our hypotheses in relation to these variables. For academic self-concept, results again revealed a non-significant predictive model ( $F(8,33) = 1.86, p = .101$ ).

**Study-interest.** The predictive model was not significant for study-interest ( $F(8,33) = 2.21, p = .053, R^2 = .35$ ), therefore providing no evidence for our hypothesis.

Table 7. Regression coefficients for evaluation predictors of wellbeing, inclusion and study-interest.

	$R^2$	$F$	Constant	AI	AU	APC	CR	CI	CPC	CP	CE
Emotional Wellbeing	.36	2.35*	5.56*	-.22	.02	.14	-.54*	.40	.04	-.32*	.10
Social Wellbeing	.32	1.96	2.78*	-.20	-.10	.42	-.10	.35	-.25	-.30	-.03
Psychological Wellbeing	.35	2.17	3.36*	-.20	-.04	.27	-.13	.20	.05	-.28	.004
Social Inclusion	.30	1.79	11.76*	.15	.50	-.28	.42	.16	-.39	-.36	-.03
Emotional Inclusion	.29	1.70	12.29*	.66	.06	.62	-.32	.62	-.22	-.17	.18
Academic Self Concept	.31	1.86	8.26*	-1.17*	.14	1.17	.40	.75	-.45	.40	-.04
Study-interest	.35	2.21	2.38*	.03	.11	.08	-.09	.07	-.09	.05	.03

\*  $p < 0.05$ , AI = activity interest, AU = Usefulness, APC = Perceived Choice, CR = coach relatedness, CI = Interest, CPC = Perceived choice, CP = pressure, and CE = effort.

## Discussion

The current study aimed to investigate the effects of a coaching intervention based on the REGROW model on Dutch first year vocational education students' wellbeing, perception of inclusion and study-interest. It also aimed to investigate whether coached students' evaluation of a coaching trajectory could predict their wellbeing, perception of inclusion and study-interest after the coaching trajectory.

Findings of the current study indicated that coaching had positive effects on students' emotional wellbeing, in line with other studies amongst adolescent

high school students (Anstiss & Passmore, 2017; Dulagil et al., 2016; Green et al., 2014). Moreover, we found that students' evaluation of the coaching trajectory could predict their emotional wellbeing. These findings highlight the importance of students' perception and view of the coaching trajectory, as research shows that coaching evaluation and feedback supports individual development (Sargeant, 2019; Schmid & Garrels, 2022). More specifically, we found that pressure and relatedness the student experienced during the coaching intervention, both part of motivation, could predict their emotional wellbeing after the coaching intervention; students' emotional wellbeing is lower if they experience more pressure during coaching. More notably, students that experienced a high feeling of relatedness reported lower emotional wellbeing, contrary to our hypothesis. This could potentially be explained by the fact that high levels of relatedness could indicate a lack of professional distance from the teacher (Deci & Ryan, 2000, 2004), while it is important that a coach takes an objective stance towards the coachee (Adams, 2016; Grant, 2014; Lippke, 2012). This stance, including supporting students' autonomy, could potentially facilitate adolescent students to take control of their own learning process (Núñez & León, 2015), increase their motivation (Brevik et al., 2023) for school and decrease the feeling to drop-out (Kaur et al., 2017). Although the changes in emotional wellbeing were small, and will need to be investigated further, this finding does highlight the importance of coaching as a potential tool in boosting vocational education students' wellbeing. Contrary to our expectations, it seems that students' coaching evaluation was not related to their perception of inclusion, and coaching did not bring about significant changes in psychological and social wellbeing, or study-interest.

An important factor that could have influenced our results is the pandemic and lockdown. During the COVID-19 pandemic vocational education changed from physical classes to (partial) online instruction (Daniel, 2020; Syauqi et al., 2020), and social distancing made it more difficult for students, especially vulnerable students whose health was already at risk (Clemens et al., 2020). The social restrictions as part of the lockdown have been found to affect adolescents' psychological and social wellbeing and perception of inclusion, especially considering that adolescents are sensitive for exclusion (Young et al., 2019). Another reason could be that the coaching intervention was not specifically aimed at improving students' perception of inclusion which seems to be more complex and might take more time to change (Urquhart, 2008). In relation to the potential effects of the COVID-19 lockdown, we found that the emotional wellbeing of students who were coached seemed to increase, while those in the control condition demonstrated a decrease. These findings seem to provide a first indication that an evidence-based coaching trajectory might serve as a protective

factor in relation to students' emotional wellbeing during a stressful period such as the lockdown.

Moreover, all measures collected were self-report questionnaires by students and some participants did not want to participate or dropped out later, as a result of which the number of participants is relatively small. Of course, this study only included the student perspective. Perhaps in future research parents' or teachers' perspectives could shed additional light on student wellbeing. Another perspective worth investigating is the potential relationship between wellbeing and drop-out. In this research students from both conditions were aware of the fact that they were coached or not. Moreover, teachers were provided with a short training and perhaps the coaching intervention was too short: Perhaps a longer and more intensive trajectory would lead to more changes (Waters & White, 2015).

### **Practical implications, recommendations, and conclusion**

The findings of the current study highlight that coaching in Dutch vocational education could have a positive effect on students' emotional wellbeing, even during a stressful time such as the lockdown. Coaching could be of interest to vocational education in the Nordic countries, especially now that students' wellbeing in school has become more important since the pandemic (Sormunen et al., 2022). More importantly, the Nordic countries have similar challenges regarding high student drop-out in vocational education and the growing diverse student populations that seem to need more adequate individual support (Björk-Åman et al., 2021; Jørgensen, 2011). A highly structured and practical evidence-based model, such as REGROW model (Grant, 2011) with the use of a coach card (see Figure 1) could help implement coaching in Nordic and Dutch vocational education to improve students' emotional wellbeing and use students' evaluation about their coaching process in order to support the diversity of students' personal and learning needs in vocational education (De Bruijn et al., 2017; Dulagil et al., 2016; Jørgensen, 2011). The REGROW method and coach card seem simple to combine with academic career guidance and is individually applicable.

Professionalising teachers in coaching techniques (with a short training provided by an expert) expands their expertise, strengthens their coaching role and objective stance towards students, as a part of career guidance (Adams, 2016; Ketelaar et al., 2012; Lippke, 2012; Lofthouse, 2019; Niles et al., 2019). As a result, this might increase students' health, autonomy, and motivation for school (Brandseth et al., 2019; Passmore & Lai, 2020; Schmid, 2020).

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