

Teachers with autonomy-supportive teacher behaviour in honors education: their recommendations and interventions

Ron Weerheijm^{1*}, Eva Voncken²

*Correspondence: ronweer@xs4all.nl

- 1 Ron Weerheijm worked at the Rotterdam University of Applied Sciences.
- 2 Eva Voncken is the owner of research agency Bureau Turf, Utrecht.

Note: This paper was previously published in Dutch in Tijdschrift Hoger Onderwijs: <https://doi.org/10.59532/tvho.v41i4.18314>

Received: January 30, 2024; Accepted: March 11, 2025; Published: March 17, 2025

Abstract

In excellence and honors education in the Netherlands within secondary vocational education (MBO), higher vocational education (HBO) and higher education (WO), stimulating students' autonomy development is an important goal. An autonomy-supportive teaching style forms an essential part of a teacher's pedagogical-didactic actions. Literature research reveals that an autonomy-supportive teaching style is still mostly described in terms of broad constructs, based on the student perspective, being open to the student, actively supporting motivation development and supporting self-regulation. However, little has yet been described about the concrete pedagogical-didactic actions of teachers in their classroom and what kinds of learning environments are facilitative in terms of autonomy support on these four constructs. The aim of this research is to identify through the interviews the pedagogical-didactic interventions teachers report to use to stimulate the development of autonomy in their students. For that, we use the above mentioned constructs of Reeve (2009) and connect them to the actual actions of teachers and significant learning of Fink (2007). Using 21 semi-structured interviews with teachers in MBO, HBO and WO, this paper offers concrete insights on how teachers give substance to these above constructs across three broad themes: the design of the learning environment and teacher facilitation (LE), teacher interventions and learning activities at the group and individual level (LA) and the interpersonal student-teacher relationship, teacher behaviour (TB). The interviews generated a series of concrete autonomy-supportive interventions, such as providing space for student curiosity and teaching students to formulate their own learning goals. This provides teachers with a starting point to design their own teaching and concrete pedagogical-didactic actions to shape autonomy development in their teaching practice.

Keywords: *autonomy, autonomy-support, motivation, teacher interventions, honors*

1. Introduction

Excellence and honors education¹ in secondary vocational education (MBO), higher vocational education (HBO) and higher education (WO) aims to give students more autonomy over their own learning (Kingma et al., 2016). Autonomy is described as a state ‘... in which an individual can choose and act according to the choice of a particular way of life.’ (Winch, 2002, p. 29). Autonomy is viewed as a foundation for experiencing self-direction for and ownership of activities, with students indicating that it gives them a degree of involvement in their own studies, which they associate with academic success and a personal sense of well-being (Chirkov, 2009). Motivation for their education increases when they are able to develop autonomy with regards to their own learning (Ryan & Deci, 2020; Reeve et al., 2004). Students who are given choices and are encouraged to take initiatives that support such autonomy development find themselves in an interesting educational environment (Núñez et al., 2015).

In higher vocational education (HBO), autonomy-supportive actions by teachers have been shown to harbour a positive effect on student motivation (Kazemier et al., 2014). Students from different backgrounds also indicate through self-reporting that their engagement in education, their satisfaction as well as their motivation grows as they experience more autonomy (Hunziker et al., 2018; Deci et al., 1982). An autonomy-supportive learning environment is shaped in the classroom by the teacher and by the educational design. Reeve (2009) described preconditions and teacher behaviour in general terms. He indicates what conditions apply to controlling or autonomy-stimulating teaching behaviour, such as juxtaposing the teacher’s position to that of the student, ignoring students’ ideas versus embracing them, directive teaching behaviour on thoughts versus feeling free to share one’s own thoughts. When it comes to instructing the teacher, he contrasts ignoring input with encouraging it, the use of closed versus open language and whether or not to respond to negative student reactions (Reeve, 2009, table 1, p. 160). Fink (2007) argues in his taxonomy of significant learning that education with meaning consists of three situational factors: teaching and learning activities, learning goals, feedback and assessment. These factors are basics for the design of teaching (Fink, 2007, figure 2, p. 14).

We hypothesise that more insight into the interventions of autonomy-stimulating teachers and their interaction with students will clarify what teacher behaviour can stimulate student autonomy. The present exploration therefore focuses on pedagogical-didactic interventions that teachers use to foster autonomy in students' learning and motivation. We expect the results from these teachers to give concrete substance to the components of the autonomy-supportive teaching style as described by Reeve (2009). As a basis for the interview we use Fink's three situational factors, which according to Fink (2007), stimulate significant learning.

The autonomy-supportive teaching style: Concrete teacher interventions

Navigating contemporary social, economic and environmental challenges will require our students to be entrepreneurial and self-directed (Howells, 2018). It is well known from the literature that providing support for the (individual) learning process is more successful for

¹ We would like to mention that 'honors education' is a common term in higher education; the designation 'excellence education' is used in the MBO level. For the sake of readability, we only use the term 'honors education' in this paper.

the motivation and performance of students than adopting a more controlling teaching style and that the use of punishment is less successful for motivation and achievement (Ryan & Deci, 2020). An autonomy-supportive teaching strategy encourages the development of self-directedness, engagement and intrinsic motivation among students (Vansteenkiste et al., 2012; Kingma et al., 2018). This increases the likelihood of the student demonstrating commitment and responsibility with regard to the problem at hand and the ability and skill to delve further into knowledge about the topic, rather than assuming the status quo (Henri et al., 2018). Reeve (2009) concludes that '(...) the teacher's motivating style is an important educational construct because students function more positively when teachers support their autonomy rather than control and pressure them toward a specific way of thinking, feeling or behaving' (Reeve, 2009, p. 163). He supports this claim partly with evidence found in education at many levels and aimed at a diverse range of audiences (Reeve et al., 2004). In addition, Reeve (2009) gives examples of controlling behaviour and autonomy-supportive behaviour among teachers. In the case of controlling behaviour, instructions focus on performing the task as the teacher sees fit, and the prospect of possible punishment, guilt, shame or loss of self-esteem is seen as too high a cost by the student to display deviating behaviour. In the case of an autonomy-supportive teaching style, on the other hand, the teacher aligns with the student's motivation, offers more explanation on why a task is necessary, acknowledges the feelings and emotions expressed by the student, acknowledges differences between students in how much time they need for the task and deploys non-controlling language. The teacher's autonomy-supportive behaviour builds an interpersonal student-teacher relationship.

The question of whether 'autonomy support' also predicts the emergence of 'autonomy' can be answered positively (Núñez et al., 2015, p.198): 'Thus, if students perceive that their teachers understand and accept their decisions and negative feelings, provide meaningful rationales, suggest alternative solutions, and offer choices between different tasks in the classroom, this will produce changes in students' autonomy over time.' Reeve's explanation is based on the idea that it '.... supports in students an internal perceived locus of causality, an experience of volition, and a sense of choice.' (p. 163), and that this generates a high-quality type of motivation. A meta-analysis (Howard et al., 2021) shows different types of 'motivation' within SDT (Self-Determination Theory), ranging from non-motivated to intrinsically motivated. Between these extremes on the scale are different types of extrinsic motivation. Starting from non-motivated, the next type is external regulation where external reward plays an important role. Then introjected regulation in which avoidance of blame, among other things, plays a role (both named 'controlled' types of motivation), followed by identified regulation where personal values play a role, regardless of whether the behaviour is enjoyable in and of itself. The penultimate type is integrated regulation, which is highly self-determined and where the student's behaviour coincides with their identity to a large extent. The final two are called 'autonomous' types of motivation. Intrinsic motivation is the final autonomous type. (Howard et al., Fig. 1, p. 1301).

In parallel, teachers who adopt an autonomy-supportive teaching style also self-report a high sense of fulfilment, less emotional exhaustion, a high sense of satisfaction and a more valued teacher-student relationship (Reeve & Jang, 2006). Based on previous insights, Kingma et al. (2016) described the predictors for an autonomy-supportive teaching style in their research focused on honors education. In short, these are the intrinsic motivation of the teacher active in honors education, having a growth mindset (Dweck, 2015) about the

developmental potential of intelligence and the degree of perceived policy and organisational pressure from one's own educational institution. Fink (2007) also shows that a coherent teaching design in particular determines student learning.

We therefore aim our focus on the teacher's reported actual behaviour in the classroom: what does a teacher report or say in the teaching environment they facilitated in their daily interaction with students? Participants in this study are teachers and students involved in honors education. Students in honors education voluntarily participate in programmes that focus specifically on their talent development (Wolfensberger & Offringa, 2012; Winch, 2002) where the motivation for participating in this education plays an important role (Renzulli, 2012; Scager et al., 2012). We therefore expected teachers' interventions to be more explicitly visible with this target group of students (Achterberg, 2005) and chose this group of honors students and their honors teachers for that reason.

Research question

Our assumption is that teachers who are active in honors education have or are given the space within the design of the education to develop the autonomy-supportive teaching style as optimally as possible. Parallel to Fink's taxonomy (Fink, 2007, figure 2, p.14), these teachers thus have direct influence on three factors within which they develop and deploy concrete pedagogical-didactic interventions to promote the autonomy-supportive learning approach in their contact with students: teaching and learning activities, learning goals, feedback and assessment. With these pedagogical-didactic interventions, we expect teachers to give concrete substance to the four components as described by Reeve (2009): student perspective, being open to thoughts and feelings, stimulating intrinsic motivation, stimulating autonomous self-regulation. The three factors for being able to develop interventions within their own teaching are:

- The design of the learning environment and teacher facilitation (LE);
- Teacher interventions and learning activities at the group and individual level (LA);
- The interpersonal student-teacher relationship, teacher behaviour (TB).

The questions in the interview guide (can be requested from first author) are therefore tailored to these factors.

Based on these considerations, the research question was formulated as follows.

What behaviour do teachers report in order to give space for autonomy to their students (interventions, behaviour), what works pedagogically-didactically (learning activity, interventions) and in what context does this flourish (learning environment, facilitation)?

Based on the interviews with teachers, are there any similarities and differences between MBO, HBO and WO?

2. Methods

Participants

The selected teachers are all closely involved in designing and implementing honors education within their institution. Through that involvement, they directly influence the design of their own education.

Measuring instruments

The design of the study was exploratory in nature: we wanted to learn from teachers how they work with their honors students in their teaching to develop autonomy. We opted for semi-structured interviews among 21 teachers, seven MBO, seven from HBO and seven from WO who are involved in honors education. The aim was to identify through the interviews the pedagogical-didactic interventions teachers report to use to stimulate the development of autonomy in their students. The researchers conducted the 45-60-minute long interviews online between June and October 2020. After the interviews, the researchers presented the data to a 12-member panel consisting of previously interviewed teachers and their honors students. The panel consisted of three teachers and two students from MBO, two teachers and two students from HBO and two teachers and one student from WO. The panel discussion took place in May 2021 and lasted 2.5 hours. The aim of the panel discussion was to determine to what extent the panel members recognised themselves in the reporting of the initial results and characteristic statements from the interviews, organised according to the three factors.

Data collection

Interviews: teachers from different institutions were approached for each education level. Thus, seven teachers from MBO, seven from HBO and seven from WO were found willing to participate in the interviews. The teachers were sourced from five different MBOs, seven colleges and three universities. To retrieve the experiences of teachers as equally as possible, a four-part interview guideline was set up:

- (1) The context within the institution and the way in which honors education is organised there; we wanted to get an idea of the position of the teacher within the institution and how much room the teacher has to actually shape their own education. In addition, this section focuses the teacher on their own teaching. We expected this topic to result in recommendations for educational design.
- (2) How the interviewees themselves view (the importance of) autonomy; here, the teacher would paint a picture of how they view autonomy in the classroom in relation to their own teaching and what importance they assign to it. The literature shows that it is important for teachers to have a clear picture of how autonomy can affect student motivation (Wolfensberger & Offringa, 2012). Based on this question, we expected to gain understanding of the interventions the teacher makes within their own context.
- (3) How autonomy is shaped in their own teaching: in terms of the educational design, in their own teaching behaviour and in dealing with differences between students. Literature shows that teachers who want to leave room for autonomy must themselves experience enough room (policy-wise) to do so (Kingma et al., 2016); another aspect of this topic that was discussed in the interview. The expectation was for this to lead to recommendations for design and concrete interventions and teacher behaviour.
- (4) Autonomy in one's own context: specific practices or experiences. The purpose of this final question was for the teachers to give examples drawn from their own educational work, of pedagogical actions that stimulated the students' intended autonomy according to the teacher themselves. This question was intended for the teacher to express their enthusiasm about their teaching.

The interviews were transcribed by student assistants. The transcriptions were checked by the researchers and any ambiguities were resolved. Coding was carried out on the basis of the three factors mentioned below and is therefore basically deductive and thematic. For

each educational level, the coding in the transcripts was carried out by the same researcher and then checked by a second researcher. Discussions were held where necessary in order to sharpen or align the coding. Regarding the results of the panel discussion: the researchers analysed the results of the panel discussion in terms of whether the data reflected, complemented or contradicted the results of the interviews. The final results were then described based on this analysis.

Analysis

In the text of the interviews, statements about the three themes that had to be identified from the research question were marked:

- a) The learning environment (LE);
- b) The learning activities (LA);
- c) Teacher behaviour (TB).

Subthemes used during coding:

For the Learning Environment factor, these are the structure of the programme, the factors or circumstances the teacher creates in the design of the programme, whether conscious thought is given to when you meet and also where you meet (location: school, principal, elsewhere, and so on).

For the Learning Activities factor, these are the supply (as a design question for the developed education), the assignments you give, how testing is organised, who assesses and also what is assessed (product, learning process, and so on).

For the factor Teacher Behaviour (interpersonal teacher-student relationship), it is the behaviour the teacher actually reports to exhibit when meeting, counselling and coaching as well as the reported teacher behaviour in response to student behaviour.

The subthemes to the three factors emerged on the basis of mutual agreement among the three authors and were formulated on the basis of the expectation that teachers would be able to respond with concrete pedagogical behaviour from teaching practice. Based on the factors and subthemes, a collection of recommendations and outcomes was made for each factor and characteristic statements were collected. The focus for the teachers' statements was on quality (the substance: what did they say) rather than quantity (how often they said it).

The different outcomes for each factor and a large number of characteristic statements were used for the panel discussion described in document A with the collected statements. After a brief introduction and getting acquainted, the participants were split up into three groups: one group of students and two groups of teachers, heterogeneously composed from the educational levels. Two questions were discussed in the subgroups: 1) Do the panel members recognise the items in document A with the collected statements? 2) What similarities and differences between MBO, HBO and WO do you see or recognise in document A with the collected statements? The results of these questions were discussed in a plenary session, which resulted in a more substantive interpretation of statements made by teachers, sometimes related to their educational level. We note that students generated a lot of feedback on the Learning Activity and Teacher Behaviour themes. Teachers responded to all themes.

Based on document A with the collected statements combined with the input from the panel, the final actions and interventions were ordered by the three factors. Based on the results found, an adjustment was made to the titles of the factors to do more justice to the statements made by teachers and students. The factor Learning Environment was broadened to 'Learning environment and facilitation of the teacher' the factor Learning Activity was broadened to 'Learning activity and interventions'. The factor Teacher Behaviour was broadened to 'Teacher behaviour in interaction with the student-teacher relationship'. Based on the data, characterisations were described of teachers and students within this autonomy-stimulating education: how did this education develop me? This is described in the results in 'Teacher and student attitude'.

3. Results

Our research question was:

What behaviour do teachers report in order to give space for autonomy to their students (interventions, behaviour), what works pedagogically-didactically (learning activity, interventions) and in what context does this flourish (learning environment, facilitation)? Based on the interviews with teachers, are there any similarities and differences between MBO, HBO and WO?

We interviewed teachers who intent to stimulate autonomy development with their students in search of 'hands on' teacher activities in class. Analysing their interviews we found different autonomy-supportive actions these teachers take to reach this result. In the analysis we used a combination of Reeve's four indicators (2009) and Fink's three key steps of Integrated Course Design (ICD) (2007).

Fink's Integrated Course Design (ICD) (2007) in education takes factors about context, expectations and students into account, resulting in his three components (1) learning goals, (2) teaching and learning activities and (3) feedback and assessment.

Reeve (2009) describes that the autonomy-supportive teaching style consists of four components: (1) using the student perspective; (2) being open to students' thoughts and feelings; (3) supporting the student's own motivation and (4) stimulating the student's capacity for autonomous self-regulation. The results from the interviews allow for these four components to be fleshed out. Because we also want to clarify how teachers can influence this through the design of their education, the design factors that can be linked to the aspects found shown: learning environment (LE), learning activity (LA) or teacher behaviour (TB). This creates an intersection between Reeve's constructs and Fink's teaching design factors.

Using the student perspective

When it comes to deploying the student perspective, teachers indicate different aspects, such as that students themselves (help) determine which activities shape their learning process (LA). Making room for the individual student's curiosity is an important aspect here (LE). They also indicate that it is important for a teacher to show what they stand for, i.e. offering personal openness and displaying a willingness to be vulnerable (TB), as well as professional openness by sharing one's network and using one's own expertise (TB). The student perspective is also stimulated if the teacher focuses on the student's self-formulated learning goals and looks for development opportunities in dialogue (LE). These

results also give substance to Fink's components learning goals and teaching and learning activities.

Characteristic statements

- 'Learning activities characterised by deep questioning rather than just sending information; leaving room for students to make their own choices.'
- 'It's also a matter of design. Which is, once again, largely generated by students themselves.'

Being open to students' thoughts and feelings

For this component, teachers and students both indicate the importance of equality between the student and the teacher in the learning process (TB), attention being given through open and genuinely interested conversation, the facilitation of both giving and receiving feedback (also as a teacher) and genuine curiosity about one's students (TB) as well as the importance of students having the freedom to formulate their own learning goals (LE). These results also give substance to Fink's components feedback and learning goals.

Characteristic statements

- 'Being open to learning and having gone through whatever it is you ask of your students. I still learn from my students as a teacher.'
- 'Paying genuine attention and listening to the other person's answers. Asking a lot of questions.'

Stimulating one's own motivation

When it comes to stimulating motivation, teachers indicate that having high expectations of students is stimulating (TB). They emphasise the importance of making interventions in the learning process at the right time (LA) and they state that taking students out of their comfort zone can be stimulating as well (LA). The working environment, i.e. working in a professional environment appropriate to the problem at hand, is yet another stimulating factor (LE). For teachers, there is the added factor of motivation being stimulated by the experience of appreciation and trust from their organisation (LA). These results also give substance to Fink's learning goals and learning activities.

Characteristic statements

- 'Rather than working for a client, you have to find a meaningful assignment yourself.'
- 'Autonomy resides in the fact that students choose based on their own interests.'

Encouraging students' autonomous self-regulation

To encourage autonomous self-regulation, it is important for the teacher to take on a coaching role (TB) and teach students how to cope with this degree of freedom (LE). Conversely, one has to be able to have a hands-off approach in order to allow students to develop the sense of responsibility needed to steer themselves (LA). One stimulating method is to ask for their approach and argumentation (LA). It is important for students to work on an authentic practical problem, an issue 'that matters' (LA). The learning environment should offer a limited basic structure that provides sufficient room for student input (LE). It helps if there are no pre-formulated examination requirements (LE). When it comes to the self-regulation of teachers, it is important that their institution offers room for

teacher experimentation and learning. These results also give substance to Fink's components feedback and assessments and teaching and learning activities.

Characteristic statements

- 'The undergraduate course offers very clear steps and criteria, while we shape them ourselves as we go. It's up to you [student]. We help you and are there for you. We do it together.'
- 'The core of the design is that it is shaped by the students as a collective.'

Similarities and differences between MBO, HBO and WO

On the part of the research question if similarities or differences were found between MBO, HBO and WO, no differences between MBO, HBO and WO emerged from the panel discussion on the factors Learning Environment and Teacher Behaviour. For the factor Learning Activities and interventions, the panel discussion revealed two differences between MBO, HBO and WO:

1. MBO, HBO and WO students may react differently to being 'taken out of their comfort zone' and may therefore require a different approach in terms of coaching. This difference seems to disappear with coaching focused on what role students and teachers have in the (shared) learning process.
2. Reactions to teachers who say they 'don't know something (either)' differ between MBO, HBO and WO. In MBO, the response is more appreciative of the teacher, while it may raise doubts about the teacher's 'expertise' in HBO and WO.

Teacher and student attitude

Based on the statements made in the interviews and the panel discussion with the students, two student and teacher characterisations can be made to indicate with which attitudes and behaviours autonomy-stimulating teaching might yield positive results.

- Teachers with the will to give students autonomy and shape an appropriate and challenging learning process with them.
- Students who seize the opportunity to develop and stand out.

Characteristic statements by teachers

- 'I [teacher] learn a lot from it myself.'
- 'I take a more pragmatic approach now: how can it [giving autonomy] help us make our teaching even better?'

Characteristic statements by students

- 'It's okay if it's scary. Fear used to stop me from doing things, but not anymore.'
- 'At the same time: trust yourself and trust what interests you. Less focus on whether it's good enough.'
- 'Being able to participate in the honors programme helped me gain confidence in my ability to handle it. Later, once he [teacher] had gotten to know me better, he challenged me to develop my weaknesses. I appreciate that very much.'

The results based on the three factors are summarised in the infographic in Appendix 1.

4. Conclusions

In this exploration, we gave teachers from MBO (secondary vocational education), HBO (higher vocational education) and WO (higher education) the opportunity to talk about how they encourage autonomy in their honors education. We draw the following conclusions.

Both Fink (2007) and Reeve (2009) describe aspects of education in partly different and overlapping timeframes of development and execution: Fink's three components can be specified by some findings in the interviews and Reeve's four constructs can be specified more precisely:

- a) The 'student perspective' is manifested in giving students space in various areas: activities and learning objectives, as well as by displaying specific behaviour as a teacher: openness, both professionally and personally, and engaging in a lot of dialogue in relation to the student. Being 'open' to students is displayed in equality between both parties, giving and receiving feedback and having open and genuinely curious conversations. For 'motivation', key factors are setting high expectations, making the right interventions and being able to deal with the students' comfort zone. The work environment stimulates motivation as well. Finally, 'self-regulation' is developed by assuming a coaching role, teaching students how to handle their freedom and deal with constraints. Self-regulation is stimulated by asking about their approach and offering authentic problems to work on. Other helpful factors include having a certain basic structure and the absence of pre-formulated examination obligations.
- b) These revelations potentially show two things: the first is that if we look at the relationship between autonomy and motivation, the results show that by using the student perspective, being open and deliberately stimulating motivation and self-regulation, the potential emerges for students to experience integrated regulation, a high degree of motivation for their education, where the student's behaviour coincides to a large extent with their identity. Further research is needed in this regard in order to truly measure the degree of motivation within this type of education. Secondly, the design of education, learning activities, learning environment and teacher behaviour is applicable at the classroom level. After all, many aspects can be reduced to the level of one's own teacher behaviour, the design of one's own learning environment and the activities to be developed within it. Experiments and further research are needed here as well.

The results from the interviews also provide an overview of specific teacher behaviour and other factors in educational design that lead to students being encouraged to develop autonomy and self-regulation in their education:

- c) Guidance (coaching) of individual students focuses on confidence: 'you can do this' and through that guidance the teacher will 'teach them how to think'. Behaviour often stems from genuine curiosity. The form it takes is mainly holding up a mirror to and questioning the student's own (learning) goals and providing feedback and feedforward based on that.
- d) The teacher's interventions during the educational process focus on learning to take responsibility for the student's own learning. As a teacher this includes having a hands-off approach and experiencing when the timing of one's interventions supports or slows down the learning process. Giving students room to develop their own learning activities and to explore their own capabilities and, as a teacher, radiating confidence that things are going well, while also questioning it. Mistakes are lessons to learn from, and that is what they are actively used for.

Besides the type of teacher, the type of student is important as well:

- e) These are mostly curious students with a drive to develop themselves, without the necessity for a fixed (end) goal. Working with like-minded people stimulates them, they want more and they want to develop beyond the average.
- f) The teacher's willingness to give students autonomy and to shape an appropriate and challenging learning process together with students plays a major role: the willingness as a teacher to think about how to do this, to learn whatever it takes, without reverting to old and more traditional habits and patterns.

The educational level seems to have little influence on the factors that the teacher may deploy in order to pursue autonomy and self-regulation in their teaching:

- g) The differences found between MBO, HBO and WO are limited to two points (issues leaving one's comfort zone and doubts about expertise) that seem to disappear with proper coaching.
- h) We find that the similarities between the three sectors of MBO, HBO and WO are much greater than the differences. Between educational levels, differences exist in terms of how their education is organised. When it comes to teacher behaviour and the pedagogical-didactic skills appropriate to providing autonomy in education, however, we observe great similarities as well as agreement among teachers and students in this regard.

5. Discussion

Interpretation of the results

The results bear significance in three areas:

1. They provide teachers with concrete guidance on their educational design. Although the study consisted of a limited group of teachers, they provide insight into the design and implementation possibilities offered by their teaching to be autonomy-supportive.
2. They provide teachers with guidance on their own behaviour and its influence on students and the potential outcomes. These teachers also offer practical guidance on how to interact with students.
3. The differences between MBO, HBO and WO are minimal, implying that the results are of a pedagogical nature and widely applicable in education.

We do not claim to have conducted exhaustive research on any of these three points. However, the study does provide a good understanding of the possibilities deployed by this group of teachers in their educational practice.

Restrictions

The present study has two limitations. Firstly, the number of interviewed teachers is small compared to the population as a whole, and relevant perspectives may have been missed as a result. Secondly, follow-up impact research should be carried out to validate the autonomy-stimulating actions indicated by the teachers. After all, the teacher may think that the actions stimulates autonomy in students, but this remains speculative without research on the impact on student outcomes. An additional complication with regard to the aspect of validation is that students themselves, when participating in education, may view the developed autonomy differently, but nevertheless exhibit the (developing) behaviour (Henri et al., 2018).

Contribution to existing knowledge and follow-up research

Based on the outcomes described, (excellence and honors) teachers can make conscious choices in their educational design and implementation, professionalise their teacher behaviour in support of autonomy and, thus, expand their behavioural repertoire. The presented results provide a guideline for an autonomy-supportive teaching style. In addition, we identified practical interventions that align with and deepen previously known teacher behaviour (Reeve et al., 2004; Núñez et al., 2015; Kingma et al., 2018) and we give concrete substance to experienced autonomy via the model around motivation within SDT (Howard et al., 2021), autonomy-supporting behaviour (Reeve, 2009) and Fink's Integrated Course Design (2007). As such, our teacher interviews offer a complement to existing knowledge about potentially useful and effective interventions and design.

Changes can be identified in current education that refer to more independence for students, developing autonomy, self-directed learning, increasingly flexible education and other similar changes (Dijkgraaf, 2022). Although our research was conducted among teachers working with honors students, it is worth noting that this is not a limitation to the use of autonomy-supportive teaching styles. No evidence was found in the literature that an autonomy-supportive teaching style would not be effective for non-excellence and non-honors students (Vansteenkiste et al., 2012) or students from different cultural backgrounds (Chirkov, 2009). Results were obtained from samples with a wide variety of education both in terms of level and content (Reeve et al., 2004). This supports the finding in our study that the educational level in which they teach makes no difference to the teaching style used by the teachers we interviewed. The further deployment of honors education as a testing ground may offer scope to further investigate the aspect of autonomy-supportive teaching styles and to learn in what way and possibly under what preconditions this teaching style can be effectively deployed in regular education as well.

Research funding

The research was funded by the MBO excellence network (MBOe), the HBO-WO honors network and Rotterdam University of Applied Sciences. The grant providers did not exert any influence on the research design and results.

Author contributions

Research design, implementation of the study, data collection, data processing and first draft of the report were carried out by Ron Weerheijm, Eva Voncken and Hanne ten Berge (UU). The final paper was written by Ron Weerheijm with Eva Voncken as second reader.

Literature

Achterberg, C. (2005). What is an honors student? *Journal of the National Collegiate Honors Council, Online Archive*, 170. <http://digitalcommons.unl.edu/nchcjournal/170>

Chirkov, V.I. (2009). A cross-cultural analysis of autonomy in education: A self-determination theory perspective. *Theory and Research in Education*, 7(2), 253–262. <https://doi.org/10.1177/1477878509104330>

Deci, E.L., Spiegel, N.H., Ryan, R.M., Koestner, R. & Kauffman, M. (1982). Effects of performance standards on teaching styles: Behavior of controlling teachers. *Journal of Educational Psychology*, 74(6), 852.
https://selfdeterminationtheory.org/SDT/documents/1982_DeciSpiegelRyanKoestnerKauffman_JEP.pdf

Dijkgraaf 2022: Ministerie van Onderwijs, Cultuur en Wetenschap. (2022, 5 september). Toespraak van minister Dijkgraaf bij Opening Academisch Jaar Maastricht [speech by the minister of education, Dijkgraaf, opening the Academic year, University of Maastricht] . Toespraak Rijksoverheid.nl. Geraadpleegd op 13 oktober 2022, van <https://www.rijksoverheid.nl/ministeries/ministerie-van-onderwijs-cultuur-en-wetenschap/documenten/toespraken/2022/09/05/toespraak-van-minister-dijkgraaf-bij-opening-academisch-jaar-5-september-2022-theater-aan-t-vrijthof-maastricht>

Dweck, C. (2015). Carol Dweck revisits the growth mindset. *Education Week*, 35(5), 20–24.

Fink, L.D. (2007). The power of course design to increase student engagement and learning. *peerReview*, 9(1), 13–17.
<https://citeseerx.ist.psu.edu/document?repid=rep1&type=pdf&doi=3984b2447d371facd0a8a6d182a3462ede6655c8>

Henri, D., Morrell, L. & Scott, G. (2018). Student perceptions of their autonomy at University. *Higher Education: The International Journal of Higher Education Research*, 75(3), 507–516.
<https://doi.org/10.1007/s10734-017-0152-y>

Howard, J.L., Bureau, J., Guay, F., Chong, J.X. & Ryan, R.M. (2021). Student motivation and associated outcomes: A meta-analysis from self-determination theory. *Perspectives on Psychological Science*, 16(6), 1300–1323. <https://doi.org/10.1177/1745691620966789>

Howells, K. 2018. The future of education and skills: Education 2030: The future we want. Paris OECD. Retrieved from <https://repository.canterbury.ac.uk/item/88qzy/the-future-of-education-and-skills-education-2030-the-future-we-want>

Hunziker, M. and Luijs, K. and Peltenburg, M. (2018). Studentbetrokkenheid stimuleren via autonomie. [Encouraging student engagement through autonomy]. *Onderzoek van Onderwijs*, 47(3), 10–13.

Kazemier, E., Offringa, J., Eggens, L. & Wolfensberger, M.V.C. (2014). Motivatie, leerstrategieën en voorkeur voor doceerbenadering van honorsstudenten in het HBO. [Motivation, learning strategies and teaching approach preferences of honors students in higher professional education]. *Tijdschrift Voor Hoger Onderwijs*, 106–123.
<https://research.hanze.nl/ws/portalfiles/portal/13886645/kazemier.pdf>

Kingma, T., Kamans, E., Heijne-Penninga, M., & Wolfensberger, M. V. C. (2016a, February 4). *Hoe autonomie-ondersteunend werkt een docent binnen honorsonderwijs?* [How autonomy-supportive does a teacher work within honors education?] [Paper presentation].

VELOV/VELON 'Congres voor Lerarenopleiders 2016', Brussels, Belgium.

https://research.hanze.nl/ws/portalfiles/portal/12803906/P152_Kingma_Bijdrage_VELOV_congres_aangepaste_versie.pdf

Kingma, T., Kamans, E., Heijne-Penninga, M. & Wolfensberger, M.V.C. (2018). De autonomie-ondersteunende doceerstijl in excellentieprogramma's: De invloed van mindset, motivatie en druk vanuit de sociale werkomgeving . [The autonomy-supportive teaching style in excellence programs: The influence of mindset, motivation, and pressure from the social working environment]. *Tijdschrift voor Hoger Onderwijs*, 34-1, 5-22.

<https://tvho.archief.openjournals.nl/pdf/TvHO%202016%2034%201%202.pdf>

Núñez, J.L., Fernández, C., León, J. & Grijalvo, F. (2015). The relationship between teacher's autonomy support and students' autonomy and vitality. *Teachers and Teaching*, 21(2), 191–202. <https://doi.org/10.1080/13540602.2014.928127>

Reeve, J. (2009). Why teachers adopt a controlling motivating style toward students and how they can become more autonomy supportive. *Educational Psychologist*, 44(3), 159–175. <https://doi.org/10.1080/00461520903028990>

Reeve, J. & Jang, H. (2006). What teachers say and do to support students' autonomy during a learning activity. *Journal of Educational Psychology*, 98(1), 209.

<https://doi.org/10.1037/0022-0663.98.1.209>

Reeve, J., Jang, H., Carrell, D., Jeon, S. & Barch, J. (2004). Enhancing students' engagement by increasing teachers' autonomy support. *Motivation and Emotion*, 28(2), 147–169.

<https://doi.org/10.1023/b:moem.0000032312.95499.6f>

Renzulli, J.S. (2012). Reexamining the role of gifted education and talent development for the 21st century a four-part theoretical approach. *Gifted Child Quarterly*, 56(3), 150–159.

<https://files.eric.ed.gov/fulltext/EJ1301466.pdf>

Ryan, R.M. & Deci, E.L. (2020). Intrinsic and extrinsic motivation from a self-determination theory perspective: Definitions, theory, practices, and future directions. *Contemporary Educational Psychology*, 61, 101860.

<https://doi.org/10.1016/j.cedpsych.2020.101860>

Scager, K., Akkerman, S.F., Keesen, F., Mainhard, M.T., Pilot, A. & Wubbels, T. (2012). Do honors students have more potential for excellence in their professional lives? *Higher Education*, 64(1), 19–39.

<https://doi.org/10.1007/s10734-011-9478-z>

Vansteenkiste, M., Sierens, E., Goossens, L., Soenens, B., Dochy, F., Mouratidis, A., Beyers, W. (2012). Identifying configurations of perceived teacher autonomy support and structure: Associations with self-regulated learning, motivation and problem behavior. *Learning and Instruction*, 22(6), 431–439. <https://doi.org/10.1016/j.learninstruc.2012.04.002>

Winch, C. (2002). Strong autonomy and education. *Educational Theory*, 52(1), 27.

<https://www.proquest.com/openview/b4a2e74b3b468e9bcfc71c842d31ad5f/1?pq->

[origsite=gscholar&cbl=34718](#)

Wolfensberger, M.V.C. & Offringa, G.J. (2012). Qualities honors students look for in faculty and courses. *Journal of the National Collegiate Honors Council*, 5 (2), 55–66.

<https://digitalcommons.unl.edu/cgi/viewcontent.cgi?article=1360&context=nhcjournal>

Appendix 1: learning activities, learning environment, teacher behaviour infographic

AUTONOMY: YOU NEED TO WANT IT

This is how teachers in excellence or honors education create room for students' autonomy

