
Motivating styles in dual, initial vocational education and training

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ABSTRACT

In Switzerland, individuals who follow the typical dual form of an initial vocational education and training (VET) programme to learn a trade do so at two main learning sites: a training company and a vocational school. In this context, apprentices' motivations differ noticeably between the school and the training company. Based on the self-determination theory constructs of motivating styles, basic psychological needs, and autonomous versus controlled motivations, this study aims to understand how apprentices perceive their teachers' and trainers' motivating styles, control and autonomy support at the two learning sites. Three hundred and twenty apprentices provided written answers to open-ended questions. We coded the data using thematic analysis. While the exercise of control appeared to be rather similar at the two learning sites, autonomy support varied greatly. At the vocational school, autonomy support was expressed through teachers' listening skills and availability; at the training company, it was related to independence and equal recognition of apprentices and employees. The apprentices perceived teachers as having a more controlled motivating style and in-company trainers as having a more autonomy-supportive style. At the school, control was described primarily as organisational pressure and teachers' demands, whereas, at the training company, it was reflected in a lack of recognition and thankless tasks. We discuss the relationship between motivating styles and the satisfaction of basic psychological needs in the context of dual VET.

KEYWORDS

Initial vocational education and training; dual system; motivating styles; autonomy support; control; Switzerland

Introduction

Students' motivation to learn a certain topic is a product of both the person and the environment (Bandura, 1997): it is influenced by multiple factors that are both individual and contextual. Individual factors, such as an abiding interest in the topic and self-efficacy beliefs, relate to one's prior experience with this topic. Contextual factors relate primarily to the way in which teaching practices are perceived by the student (Ames, 1992; Ryan & Deci, 2017). Extensive research illustrating the relevance of these contextual factors has been conducted with learners/students from primary education through to university level (Volet & Järvelä, 2001). However, such research is still in its infancy in non-mainstream education, specifically in vocational education and training (VET), which aims to train apprentices in an occupation.

In Switzerland, adolescents and young adults following the typical dual form of an initial VET programme in order to learn a trade find themselves in a situation where they learn at two main learning sites: a training company and a vocational school.^{1, 2} These sites have different organisations, expectations and actors. Furthermore, in the dual VET system, the training company plays a major role in preparing apprentices for their professional futures. There are fundamental differences between the two learning sites, most notably in the type of knowledge, in the way the learning takes place, and in the apprentices' sense of belonging, as summarised by Gurtner, Gulfi, Genoud, De Rocha Trindade and Schumacher (2012) and Tynjälä (2008; see 3.1). Owing to these differences, apprentices have strikingly different motivations to learn in the two environments (Krapp & Lewalter, 2001; Prenzel, Kramer, & Drechsel, 2002; Lewalter & Krapp, 2004; Gurtner et al., 2012).

While researchers have documented the differences in motivation, there is limited knowledge of the factors that can affect apprentices' motivation at the two learning sites. Such factors have been described and conceptualised by several motivational theories, most notably by the self-determination theory (SDT) (Deci & Ryan, 1985; Ryan & Deci, 2017). Therefore, based on the answers to a set of open-ended questions, this article examines the ways in which apprentices' motivation is influenced, from their own point of view, by the vocational school and the training company environment.

1 The apprentices are hired by a company that offers to train them for a specific occupation. This training company decides on the selection procedure, which may include an aptitude test, an interview and a short internship. Several publications offer a thorough description of the system and its actors (Strahm, Geiger, Oertle, & Swars, 2014; Wettstein, Schmid, & Gonon, 2017).

2 There is a third learning site, the 'branch courses', where apprentices in an occupational field are taught in weekly workshops on topics not integrated in the school curriculum (e.g., the use of an innovative material). Much less time is spent at this third learning site than at the other two.

Motivation, motivating styles, and basic psychological needs

Learning is driven by various motivations that lead to specific outcomes and experiences. SDT, a theory of human motivation and behaviour, suggests several fundamental distinctions among motivation types, such as the basic dichotomy between autonomous and controlled motivations (Ryan & Deci, 2017). Autonomous motivation ‘involves the regulation of behaviour with the experiences of volition, psychological freedom, and reflective self-endorsement’, whereas controlled motivation ‘involves the regulation of behaviour with the experiences of pressure and coercion to think, feel, or behave in particular ways’ (Vansteenkiste, Niemiec & Soenens, 2010:118). Autonomous and controlled motivations comprise seven types of motivation (intrinsic motivation, multiple types of extrinsic motivation, and amotivation) that describe motivated behaviour and which have been studied for more than four decades (for definitions of these seven types of motivation, see Ryan & Deci, 2000). Both intrinsic motivation and integrated and identified regulations are considered to be examples of autonomous motivation; introjected and external regulations and also amotivation are considered to be examples of controlled motivation.

Research has shown persuasively that autonomous and controlled motivations involve different qualities. Autonomous motivation has beneficial effects on learning, such as higher valuing of school, less work avoidance and greater effort (Ryan & Deci, 2017). In contrast, controlled forms of motivation demonstrate detrimental effects on learning, for instance poor maintenance and transfer of knowledge and less effort, as the task is performed without any link to personal value (Ryan & Deci, 2017). Accordingly, the reasons why learners’ motivation is more or less autonomous and how it can be influenced is of major interest for improving learning outcomes. As reported by SDT, the reasons for more autonomous or more controlled motivation can be found in the degree to which students’ basic psychological needs are satisfied (Ryan, 1995). These needs can be either satisfied or frustrated by various factors in the student’s environment.

One central factor in the environment is the teacher’s motivating style, which refers to the interpersonal practices that the teacher relies on to foster students’ motivation³ (Aelterman, Vansteenkiste, Haerens, Soenens, Fontaine & Reeve, 2018; Deci & Ryan, 1987). The theory assumes that students’ motivation (controlled vs autonomous), perceived competence and, more generally, well-being are dependent on features of the environment, which include the behaviours of teachers and trainers (Dysvik & Kuvaas, 2014; Deci, Olafson & Ryan, 2017). Specifically, the theory conjectures that students’ motivation becomes more adaptive when the teacher’s motivating style satisfies their basic

3 According to SDT, a teacher’s motivating style in respect of students can be conceptualised along a continuum that ranges from highly controlling to highly autonomy supportive. Teachers differ widely in their use of control versus autonomy support to motivate students (Ryan & Grolnick, 1986), and the style that a teacher uses will remain relatively stable throughout the academic year (Deci, Schwartz, Sheinman & Ryan, 1981). Increasingly, researchers have been studying a complementary continuum: structure as opposed to chaos (Aelterman et al., 2018; Reeve, Jang, Carrell, Jeon & Barch, 2004). The present study focused on the control–autonomy continuum as it was the one most present in the data.

psychological needs (Ryan & Deci, 2017). STD posits three fundamental needs common to all human beings: for autonomy, for competence and for relatedness. The need for autonomy refers to the feeling that one's actions emanate from oneself and are one's own. The opposite of autonomy is heteronomy, which means acting 'out of internal or external pressures that are experienced as controlling' (Ryan & Deci, 2017:86). Furthermore, autonomy is different from independence (Soenens, Vansteenkiste, Van Petegem, Beyers & Ryan, 2018b). Independence refers to the degree of dependence on others and to the question of who is regulating one's actions; therefore, this concept is interpersonal. Autonomy, reflected in volitional functioning, refers to 'within-person concordance'; that is, to 'the degree to which behaviours or goals are aligned with one's deeply held values, preferences, and interests' (Soenens et al., 2018b:6). The need for competence corresponds to a sense of effectiveness and efficiency in one's interactions with the environment (White, 1959). It requires the experience of opportunities to exercise, develop and express one's capacities (Ryan & Deci, 2017). This need can be satisfied by a motivating style called 'structure', which consists of transmitting information and direction to scaffold, support and enhance learners' competence development (Ryan & Deci, 2017). Conversely, the absence of structure tends to frustrate this need. The need for relatedness is expressed by the experience of having close and meaningful relationships. It is satisfied when one experiences caring and being cared for – in other words, when there is mutual concern between oneself and others. This need, which is also named the 'need to belong' (Baumeister & Leary, 1995), has been shown to have both emotional and cognitive implications. The satisfaction of all three needs is considered necessary for psychological growth.

Research has shown that the degree of need satisfaction is related to teachers' motivating styles (Ryan & Deci, 2017; Aelterman et al., 2018). The two most prominent and studied motivating styles are autonomy support, which is defined as 'the interpersonal sentiment and behaviour teachers provide to identify, nurture, and develop students' inner motivational resources' (Reeve, 2009:159), and control, which refers to the 'interpersonal sentiment and behaviour teachers provide during instruction to pressure students to think, feel, or behave in a specific way' (Reeve, 2009:160).

Autonomy-supportive practices are reflected in teachers' behaviour that exhibits consideration for students. Examples of such practices include listening to students even if they express negative emotions, offering them an opportunity to talk about themselves and their interests, and acknowledging their perspective and efforts. Whereas some researchers include behaviour that reflects structuring practices, such as offering hints when necessary, specifying how the material can be learnt or providing clear expectations, in autonomy-supportive practices the recent conceptualisation convincingly differentiates structure from autonomy support both conceptually and empirically (Reeve et al., 2004; Aelterman et al., 2018).

Controlling practices are visible in teachers' behaviours that neglect students' perspectives and focus strictly on their own agenda and concerns. Controlling practices include such behaviours as providing the right answer without leaving time for students to arrive at it

themselves, using language aimed at controlling students (demands and directives) rather than informing them, or using direct questions to control the flow of the conversation.

These motivating styles are assumed to satisfy, in the case of autonomy support, or to thwart, in the case of control, all the needs of students (Vansteenkiste et al., 2010; Ryan & Deci, 2017). Empirical research has supported this theoretical association, especially in the school environment (Patall, Steingut, Vasquez, Trimble, Pituch & Freeman, 2018). Accordingly, there are strong relationships between the three elements of the theory: teachers' motivating styles, the degree of need satisfaction, and students' motivation.

Following the seminal work of Deci et al. (1981), numerous studies undertaken in the school environment have investigated how teachers' and adults' motivating styles relate to and affect the satisfaction of students' needs. In their review of the studies on teachers' motivating styles in the school environment, Aelterman et al. (2018) concluded that the provision of autonomy support satisfies the three basic psychological needs. In turn, this fosters students' self-regulation of learning, well-being, interest and engagement. A controlling motivating style, in contrast, has been found to increase need frustration and to result in students' amotivation and disengagement.

Prior research on motivation in the dual VET context

While most research on the topic of motivating styles was conducted in school contexts (Deci, Spiegel, Ryan, Koestner & Kauffman, 1982; Garcia & Pintrich, 1996; Vansteenkiste et al., 2012), these styles are also relevant in the context of workplace learning. Indeed, research shows that both teachers and in-company trainers can have a considerable impact on apprentices' motivation and engagement (Lewalter & Krapp, 2004; Messman & Mulder, 2015; Lauermaann & Berger, 2019). Furthermore, workplace training has recently become a subject of interest for SDT researchers (Dysvik & Kuvaas, 2014). However, few studies have investigated the motivational specificities of the dual VET system, that is, a combination of both school-based and company-based training (Prenzel et al., 2002; Gurtner et al., 2012; Gebhardt, Martinez Zaugg & Metzger, 2014). This setting offers heuristic potential for studying motivating styles and their variations, depending on the training environment. Such a study might provide new insights into apprentices' motivation and basic psychological need satisfaction. Given the dearth of knowledge on how these motivating styles operate in the context of dual VET, further research seems warranted.

Differences between the learning sites in dual VET

In Switzerland, VET is the most popular educational track after compulsory schooling. Roughly every two out of three young people pursue an apprenticeship (Swiss Federal Statistical Office, 2017), and the majority of them do so in a dual form, that is, by spending one or two days per week at a vocational school and the rest of the week at a training company. Initial VET is sanctioned by certificates and diplomas obtained in a two-, three-

or four-year programme, which provide good opportunities for professional integration (Swiss Federal Statistical Office, 2018). This dual training system – praised internationally and frequently proffered as an example of optimal VET – allows apprentices to learn a trade by focusing on the practical side of it while developing the necessary theoretical and general knowledge.

The two learning sites providing the initial VET have different ways of preparing apprentices for a trade: vocational schools focus on conceptual knowledge (vocational and general knowledge) (De Jong & Ferguson-Hessler, 1996), whereas training companies provide opportunities for developing procedural knowledge and practical skills. While vocational schools and training companies are formally connected and cooperate to a variable extent to train apprentices, specific logics exist in each learning site (Prenzel & Drechsel, 1996; Sappa, Choy & Aprea, 2016; Gurtner, Furlan & Cattaneo, 2018). Among the various logics specific to each learning site, at a vocational school apprentices evolve in a learning logic, whereas at a training company a production logic predominates. These two logics lead apprentices to experience their training differently at the two learning sites (Gurtner et al., 2012; Gurtner et al., 2018). First, the level of formality is significantly lower at a training company because the curriculum is less detailed, even if the aims are specified; thus, learning happens in a less intentional way. However, at a training company the problems are real, whereas they are artificial or created at a vocational school.

Regarding the knowledge produced, it is implicit, tacit and situation-specific at a training company, whereas, at a vocational school, knowledge is explicit and skills are generalised (Tynjälä, 2008). Also, the ways of demonstrating the acquired knowledge are different at the two learning sites: at the schools, vocational knowledge is assessed by tests or examinations, whereas procedural knowledge acquired at the training companies is demonstrated in action, in practical situations (Gurtner et al., 2018). Furthermore, apprentices, based on their previous school experience, attend vocational schools with a different attitude and view them with a more critical eye. It must also be taken into account that, as a result of organisational conditions, teaching at the vocational school cannot provide individualised feedback to the same extent that the training at a training company does (Prenzel & Drechsel, 1996). These differences lead to motivations that are specific to each learning site: apprentices attribute different values and expectations and, more generally, they are differently motivated at the two learning sites (Krapp & Lewalter, 2001; Gurtner et al., 2012).

Different learning sites, different motivations

In terms of autonomy support and control, apprentices are supposed to experience greater independence at a training company. Indeed, they are in a work environment and are part of the company's workforce, which implies that they might be treated as qualified employees rather than as apprentices (Billett, 2001). In contrast, at a vocational school, apprentices have student status and are under the supervision of a teacher. Such a difference in status could be the source of contrasting motivations for apprentices. More precisely, they are more

autonomously motivated in their in-company training because of their role and the fact that they can learn in a practically oriented way (Prenzel & Drechsel, 1996; Prenzel et al., 2002). At the training company, the material is displayed in a practically oriented manner, which better supports apprentices' interests compared with the more theory-based teaching offered at the vocational school (Lewalter & Krapp 2004). Accordingly, Krapp and Lewalter (2001:227) have explained that

this context [the training company] seems to be more encouraging regarding the development of interest-related motivational dispositions by supporting the genesis of topic-specific individual interests respectively maintain a somewhat higher intensity of intrinsic (and extrinsic) motivational orientations.

In contrast, at school, apprentices are subjected to the education system and its rules; therefore, apprentices tend to have more controlled motivation (or even amotivation) and less autonomous motivation (Prenzel & Drechsel, 1996). Furthermore, studies have shown that apprentices feel a stronger sense of belonging to the training company compared with the vocational school (Gurtner et al., 2012). Together, these differences in apprentices' status, as well as the distinct logics between the learning sites, may explain why apprentices seem to have more autonomous motivation while undergoing the in-company training component than while learning at a vocational school (Prenzel et al., 2002).

In Switzerland, a study conducted by Gebhardt et al. (2014) showed that apprentices' motivations for learning at the training company were primarily autonomous (identified regulation and intrinsic motivation) and only to some extent controlled (external regulation, introjected regulation). Amotivation was found to be very low. According to Prenzel et al. (2002), the greater autonomous learning motivation at the training company compared with the school might be explained, in accordance with SDT, by the conditions of motivated learning at the two learning sites. In their study, the training company was perceived as more relevant in terms of content and as providing more relatedness, more support for competence, and more support for autonomy.

In sum, the most autonomously motivated apprentices in the workplace believed that their environment was strongly supportive of their motivation. The only conditions that were seen as more motivating for learning at the vocational school were related to the quality of instruction measured according to the structure and the adaptation to apprentices' prerequisites (Prenzel et al., 2002). Finally, a study by Messmann and Mulder (2015) confirmed that perceived autonomy is a supportive condition that is associated with the degree of engagement in learning at the training company.

Aims of the study

Based on the SDT constructs of motivating styles, basic psychological needs and autonomous versus controlled motivations, this study aimed to understand how apprentices perceive their

teachers' and trainers' motivating styles and how such perceptions differed between the two learning sites. This study was part of a project which aimed at describing what constitutes quality of training at vocational schools and at training companies in the context of dual VET in Switzerland (Berger, 2018–2022).

Method

Participants

A total of 320 apprentices enrolled in a Swiss dual, initial VET programme (Mage = 18.8; SD = 3.15) participated in the study. They attended two different dual programmes at two vocational schools: technical occupations (e.g. information technology (IT) technicians and electronic engineers; n = 188, 10.5% women) and retail occupation (n = 132, 64.1% women). They were spread across three training years for the retail occupation and across four years in the technical occupations. The company size, as reported by the apprentices, varied from small (fewer than 50 employees: 45%), to medium (50–249 employees: 15%), to large companies (more than 250 employees: 36%).

Data collection

During class time and under the supervision of a research team member, the participants were invited to answer open-ended questions as part of a questionnaire on the perceived quality of education and training at the school and at the training company (Sauli, Wenger, Gross & Berger, 2019). For each of the two learning sites separately, the apprentices were asked to answer the following questions:

- (1) 'What do you like in your education at the school/the training company?'
- (2) 'What are the positive aspects of your education at the school/the training company?'
- (3) 'What could be improved in your education at the school/the training company?'

The written and oral instructions emphasised that at least three short answers were expected for each question. The questions did not directly target teachers' and trainers' motivating styles. This topic was revealed by the thematic analysis of the data.

Data analysis

The answers were transcribed and imported into NVivo software. We did not analyse the data separately for each open-ended question. However, the answers to the three questions about education at the school were analysed together and separately from the answers to the three questions about education at the training company, which were also analysed together.

First, the corpus of data was read inductively to extract one preliminary set of codes referring to the vocational school and another referring to the training company. The codes were then discussed by the research team in order to reduce interpretation bias and to establish links with theories in education and psychology. Secondly, the data were analysed both inductively, that is, keeping in mind the codes found in the previous step, and deductively by taking into account the theories discussed among the research team (Saldaña, 2013). The coding scheme was refined over several rounds and the overlaps between codes were reduced. A total of 3 713 meaning units were coded: 1 872 referred to quality at the school (using 17 codes) and 1 841 at the training company (using 18 codes). Inter-coder agreement, based on 5% of the statements, was satisfactory (school: Cohen's $\kappa = .782$, company: $\kappa = .735$).

Among the 35 codes, four, representing a total of 406 meaning units, were analysed in the present study:

- (a) Autonomy support at the school (89 meaning units);
- (b) Autonomy support at the training company (111 meaning units);
- (c) Control at the school (150 meaning units); and
- (d) Control at the training company (56 meaning units).

Specifically, autonomy support refers to practices that satisfy apprentices' basic psychological needs, such as when the apprentice is adequately supported by the teacher in the development of their motivation and self-regulation (at the school) or when they are given certain choices and flexibility in accomplishing tasks (at the training company). Typical meaning units that were coded as autonomy support included words such as 'availability', 'support', 'listening' or 'help' for the school, and words such as 'autonomy', 'responsibility' or 'trust' for the training company. The codes regarding control, both for the school and for the training company, referred to the pressure and the demands to meet the objectives fixed by the school or the training company. Moreover, misrecognition of status and inappropriate task assignments were also coded as control because of the neglect of students' perspective and the lack of reflective self-endorsement that they imply. At the school, some of the typical words used were 'homework', 'exams' and 'exercises'; at the training company, they were 'workload', 'overload', 'treatment' and 'tasks'.

Findings and discussion

First, this section presents the main findings. We briefly introduce the frequency and content differences between the learning sites. Then we analyse each category in more detail in four distinct subsections. Providing an overview of the apprentices' responses, Table 1 lists examples for each of the four codes: *school: autonomy support*; *school: control*; *company: autonomy support*; and *company: control*.

Table 1: Examples of autonomy support and control at the vocational school and training company

	EXAMPLE OF AUTONOMY SUPPORT	EXAMPLES OF CONTROL
Vocational school	<p>The teachers are great because they listen to us. [F; 3rd year; Retail]</p> <p>The teachers are available when you do not understand, you can always call on them or send them emails when something is not understood. [F; 1st year; Retail]</p> <p>Some teachers are not listening enough to our needs and opinions [F; 3rd year; Retail]</p>	<p>There is a lot to do at home, which gives me the impression that the teachers do not realize that we also work the rest of the week. [M; 2nd year; Technical]</p> <p>There must be trust and no need to fill out absence forms in order to be justified. [F; 1st year; Retail]</p> <p>School should not treat people as if they were 'children' (having detention when you are 22 years old). [F; 1st year; Retail]</p>
Training company	<p>We learn to manage ourselves on our own. [F; 3rd year; Retail]</p> <p>Very autonomous: my trainer trusts me and lets me handle tasks myself. My trainer considers me sufficiently qualified to undertake a large part of the work. [M; 3rd year; Technical]</p> <p>I have the freedom to work as an employee and not as an apprentice. They value the work we do. [F; 2nd year; Retail]</p>	<p>Apprentices are considered incompetent. [M; 2nd year; Technical]</p> <p>As apprentices, we sometimes do not receive the right treatment. People think we are here to do the undesirable work, while we are actually here to be trained. [M; 2nd year; Technical]</p> <p>I am not a mover or a cleaner. [M; 3rd year; Technical]</p>
<p>Note: F = female M = male</p>		

Overall, the apprentices showed different types of concern regarding the vocational school and the training company. Whereas the apprentices tended to consider autonomy support at the vocational school through their teachers' autonomy-supportive practices, they broached autonomy at the training company in a more direct and intra-individual manner by speaking of the autonomy and independence they might experience in their work. Concerning control, the analysis of the statements revealed fewer fundamental distinctions regarding autonomy support between the two learning sites. Both learning sites were described as exerting pressure, for example through 'exams' at the school and 'workload' at the training company. Moreover, the apprentices declared that they were

wrongly acknowledged at both learning sites because they were seen as ‘children’ rather than ‘adults’ at the school and treated as ‘employees’ rather than ‘trainees’ at the training company. Relative to the total number of statements referring to the vocational school, the apprentices mentioned control more often (35.3%) than autonomy support (20.6%). Moreover, autonomy support was presented in a less diverse manner than control. Indeed, autonomy support was largely referenced in relation to teaching practices, such as availability and eagerness to listen to the apprentices. In contrast, control was reflected as organisational workload, teaching practices, teachers’ expectations and status recognition. In sum, the differences between autonomy support and control were present not only in the frequency of mentions but also in the diversity of the subjects brought up.

Concerning the training company, the apprentices spoke more about autonomy support (27.2%) than about control (15.6%), which immediately denotes a different tendency than the results for the school. When we focus on the content, we find that the main differences between the vocational school and the training company lay in the way the apprentices considered autonomy support. At the school, autonomy support consisted of supporting the apprentices’ intrinsic motivation to learn, whereas, at the training company, the apprentices described their feeling of autonomy in a manner that approached the concept of independence. The feeling of autonomy entailed, for instance, performing tasks by themselves, without assistance from trainers or colleagues. In contrast, concerning control, while the frequency of mentions differed largely depending on the learning site, the apprentices’ descriptions regarding the vocational school and the training company were fundamentally similar. The following sections present in more detail the way in which the apprentices described autonomy support and control for each of the two learning sites.

School: Autonomy support

By and large, the apprentices referred to the teachers’ ability to listen and understand them. The teachers were either positively presented as understanding and available or negatively described as irritable and unsupportive when faced with the apprentices’ requests:

Listening supports us in facing our difficulties. [Female (F); 1st year of training; Retail]

Some teachers can get angry quickly and do not understand and could take more time.
[F; 1st year; Retail]

These statements revealed the importance that the apprentices attributed to availability, listening, and the dispositions of attentive teachers. Most of these comments were general in the sense that they did not focus on specific topics. Because of the school environment, it was possible to infer that the apprentices referred to teaching and learning processes. However, some more detailed statements suggested that these comments sometimes applied to the

training company too. Furthermore, the teachers' dispositions might have positive effects on relational and motivational aspects, as mentioned in some statements:

Teachers' understanding of students (not enough trust). [Male (M); 1st year; Technical]

Having trusted teachers. [F; 3rd year; Retail]

Teachers motivate us to learn. [M; 3rd year; Technical]

Overall, these statements echoed what prior research on autonomy-supportive practices (Deci & Ryan, 1987; Reeve et al., 2004; Aelterman et al., 2018) observed in teachers' behaviour when demonstrating considerations for apprentices through availability, listening and trust. In that sense, autonomy support did not look any different in VET schools than in studies with younger learners and other educational tracks.

As stated before, the apprentices spoke less frequently about autonomy support than control at the school, and, moreover, demonstrated a more diverse picture of control, as shown in the next section.

School: Control

The amount of work assigned at the vocational school was one of the more central and frequent difficulties mentioned by the apprentices. More precisely, they reported a problematic gap between the work that they were expected to produce and the lack of time and energy they had left at the end of the day. In the dual system, apprentices must balance school duties, such as homework and examination preparation, with their work at the training company. Many of them declared that they lacked the time to accomplish these tasks because of work schedules during the rest of the week:

The problem with school is that sometimes there is too much homework while we all already work a lot for our company, and we are exhausted when we get home at the end of the day. [M; 3rd year; Technical]

We do not always have time to study because of work schedules. [F; 1st year; Retail]

To give less homework because, in our training, we go through long days and we do not always have time... Also, when we come home in the evening, we are tired, we eat, we shower, and we go to bed. [F; 1st year; Retail]

These pressures and other demands that the apprentices confessed to facing in their schooling were attributed to two main sources: the curricular organisation at large and the teachers in particular. Indeed, the gap between the workload and the time available, for example, could be considered as an organisational issue, but while some of the apprentices referred to the

amount of work in a general manner by broadly mentioning their training, others specifically held their teachers responsible. Through various statements, some subjects interchangeably appeared as organisational or teacher-related problems. Workload, homework or examinations, for example, were mentioned as excessive by those apprentices targeting their teachers directly or indirectly:

Less homework to do at home. [M; 3rd year; Retail]

Rethink instruction because we have too much to do in a short time.
[M; 3rd year; Technical]

Better coordination between teachers so we do not have all exams [for] every class at once. [M; 3rd year; Technical]

There is a lot of work to do at home, which gives me the impression that teachers do not realise that we also work the rest of the week. [F; 3rd year; Retail]

Beyond a simple complaint about the training's high demand in terms of workload, statements focusing on teachers' responsibility in respect of this issue could reflect a widespread feeling that the teachers do not recognise the work that the apprentices accomplish outside of the vocational school. This interpretation stems from other issues raised by the apprentices regarding teachers' expectations and the lack of recognition that they sometimes perceived. Indeed, on the relational level with teachers, the apprentices referred to the lack of trust that they had to face and to a tendency to still be considered as 'children' instead of 'adults':

The school should not treat people like they are 'children' (having detention when you are 22 years old). [F; 3rd year; Retail]

Some teachers should stop thinking we are children. [F; 1st year; Retail]

There must be trust and no need to fill out absence forms in order to be justified.
[F; 1st year; Retail]

This lack of trust might be due to striking differences regarding what the apprentices experienced at the training company. Owing to the dual nature of the training, they discovered a new status in their training-company setting by bearing responsibilities and undertaking some tasks independently. This might highlight the contrast with controlling measures inherent in the school system. Indeed, various statements underlined the wish to be recognised as 'adults' and to experience more independence from teachers:

Be treated less like children but more like adults who will enter the labour market.
[F; 1st year; Retail]

More 'freedom'. They restrict us too much with the phone, for example. We are adults and we know very well that we must not use it during classes. [F; 3rd year; Retail]

As Ryan and Deci (2017) assumed, a controlling environment might thwart apprentices' psychological needs and, therefore, undermine autonomous motivation. As a central component of the learning environment, teachers have a great amount of influence on apprentices' motivation to learn. Some of the apprentices' statements specifically illustrated their perceptions of the teachers' role in the negative aspects of their training and the way that the teachers exercised control by assigning an excessive workload. This perceived pressure through workload presumably obstructed the opportunity for the apprentices to develop autonomous motivation to learn because of the teachers' lack of consideration for their efforts, which were mostly produced at the training company. Furthermore, feeling submerged under an excessive amount of work might also lead to a feeling of incompetence and lower autonomous motivation (Dysvik & Kuvaas, 2014). Indeed, a match between job requirements and perceived competence is one of the conditions for experiencing autonomous motivation (Dysvik & Kuvaas, 2014). Some of the apprentices also declared that they perceived this workload as lack of consideration for their work outside of the school, which would translate to a lack of relatedness with teachers. Furthermore, the feeling of being infantilised presumably impeded the sentiments of competence and relatedness that the apprentices would need in order to be autonomously motivated (Lamamra & Masdonati, 2009).

Training company: Autonomy support

While in the school environment the apprentices mentioned teachers' availability, trust or listening skills – which are considered typical autonomy-supportive behaviours – they rarely discussed autonomy support explicitly in the training company environment. In the latter, the apprentices clearly acknowledged the 'autonomy' and 'independence' that they experienced. These two words seemed to be used synonymously. Interestingly, the apprentices expressed this 'autonomy' in a polysemous manner, either in relational or in personal terms. In relational terms, they referred to how they were expected to accomplish a task, that is, by themselves, without direct support. In personal terms, they referred to autonomy as a competency that they were developing. Indeed, some of the apprentices mentioned their 'autonomy' or 'freedom' without referring to a specific work task, which corroborates the idea of autonomy on a personal level, and beyond a relational characteristic with the trainer:

What I like is being free. My superior gives me a task for a day, and he lets me carry it out as I wish, as long as deadlines are respected. It is this autonomous aspect that I like in a company. [M; 3rd year; Technical]

The boss gives me a lot of freedom. [M; 1st year; Technical]

We learn to manage ourselves on our own. [F; 3rd year; Retail]

Development of autonomy in a job. [M; 3rd year; Technical]

This question of independence in the training company was also intertwined with the issue of recognition. Indeed, the apprentices praised being considered like ‘employees’ when undertaking a task, which denoted egalitarian considerations with colleagues:

I have the freedom to work as an employee and not as an apprentice. They value the work we do. [F; 2nd year; Retail]

To be considered a normal employee when I have specific tasks to perform – to be free without always checking. [M; 1st year; Technical]

Here, the apprentices demonstrated a will to be, and a satisfaction with being, considered as ‘employees’ rather than as ‘apprentices’. This recognition implied receiving both autonomy support and acknowledgment and respect. Moreover, being considered as equals among colleagues certainly produced high confidence in one’s own competence at work. Autonomy and equal status recognition presumably promote apprentices’ autonomous motivation. Although what the apprentices called ‘autonomy’ at the training company differed from the observations made in the school environments (Reeve, 2009), it might still be an autonomy-supportive aspect of their work environment. Indeed, the apprentices valued the freedom that they received from their training to carry out their activities because it presumably allowed them to handle the tasks in their own manner. Moreover, autonomy might be perceived as evidence of trust from colleagues and in this way promote sentiments of both competence and relatedness (Ryan & Deci, 2017). As stated, autonomy varied greatly between learning sites. The next section focuses on control in the training company, which displayed characteristics similar to control in the vocational school.

Training company: Control

In the training company environment, the apprentices referred to the workload and the difficulties in getting the work done, using terms such as ‘pressure’ and ‘stress’ frequently and in a non-specific manner; for instance:

... too much stress. [F; 1st year; Retail]

As observed in the school environment, although these comments were mainly brought up in a systemic manner, a few statements directly targeted trainers or managers:

The manager is very stressful for us. [F; 2nd year; Retail]

Another observation that echoed the school environment, although less frequently so, was the gap between the amount of work and the time available, and even how this workload could eat into free time or other professional tasks:

I do not always have the time to meet my goals. [F; 2nd year; Retail]

Less pressure, less work hours, because sometimes we do not have enough time to study.
[F; 2nd year; Retail]

However, the subject relating to the training in the company that was most frequently mentioned was status recognition. More precisely put, many statements focused on the misconceptions that trainers and colleagues held of the apprentices' status. Again, in parallel with the school, whereas the teachers were said to regard the apprentices as 'children' instead of 'adults', the trainers and colleagues were said to consider the apprentices 'employees' or 'workers' instead of 'trainees' or 'learners':

My trainer (manager) thinks of me as an employee and not as an apprentice.
[F; 2nd year; Retail]

Apprentices are treated as workers and not as learners. [M; 2nd year; Technical]

Being recognised as an apprentice implied being treated in a specific and adapted way that would differ from the way in which an employee was treated. Indeed, the apprentices expected tasks oriented towards formative goals and with adequate consideration of their prior knowledge:

Sometimes we are not very well trained. We are seen as employees who already know the trade, so we do not get much information. [M; 2nd year; Retail].

Furthermore, neglecting this formative dimension led trainers to assign tasks that the apprentices considered as inappropriate to their training:

As apprentices, we sometimes do not receive the right treatment. People think we are here to do the undesirable work, when we are actually here to be trained. I think this aspect should be improved so that the training is optimal. [M; 3rd year; Technical]

I am not a mover or a cleaner. [M; 3rd year; Technical]

Lack of very complicated tasks for me to improve. [F; 1st year; Technical]

These misconceptions might have various deleterious consequences, such as an inappropriate distribution of work, which could frustrate the need to gain competence. Beyond such an implication, the apprentices seemed to suffer from this label at the broader level of status and personal recognition:

More respect for apprentices. [M; 3rd year; Technical]

Equality among all. [F; 2nd year; Retail]

A lack of status recognition might thwart the apprentices' need to gain competence. Indeed, the apprentices' complaints about the negligence of the formative aspect of their activity at the training company may point to a feeling of incompetence that they might experience when asked to perform a task that they are not yet able to undertake. Furthermore, when asked to complete thankless tasks, apprentices might well find no interest in them and, therefore, have controlled motivation.

Conclusion

Motivation is a product of both the person and the person's environment. Accordingly, the aim of this study was to question the implications of a dual training programme at two different sites – and therefore in two different environments – for apprentices' motivation. More precisely, grounded in SDT (Ryan & Deci, 2017) and based on the construct of motivating styles (Deci & Ryan, 1987; Reeve, 2009; Aelterman et al., 2018), this study focused on the contextual factors that might influence apprentices' autonomous and controlled motivations. Since these two types of motivation are influenced by the degree of satisfaction of one's basic psychological needs, the study examined the apprentices' point of view in order to investigate the factors that might either satisfy or thwart their need for autonomy, competence and relatedness (Ryan & Deci, 2017).

The results of the study revealed major differences in those environmental features either meeting or frustrating these three psychological needs. Most differences were related to the training stakeholders at each learning site, namely the teachers at the vocational school and the trainers at the training company. At the school, the teachers were described by the apprentices as demonstrating more or less availability, understanding and listening skills. These behaviours mirror prior descriptions of teachers' motivating styles (Reeve, 2009) and correspond closely to the construct of autonomy support, which has been attested as satisfying basic psychological needs (Aelterman et al., 2018). At the training company, autonomy support was described in a different manner. Whereas, at the school, autonomy support was accommodated only through teachers and their practices, at the training company the apprentices referred to autonomy more directly and explicitly, confusing it with independence. Statements about the possibility of handling tasks one prefers or about the equal recognition that one receives from colleagues possibly indicate satisfaction of the three psychological needs. Indeed, prior studies investigating SDT relevance in work organisations demonstrated how organisational supports, including managerial styles, influenced employees' motivation by satisfying their basic psychological needs (Dysvik & Kuvaas, 2014; Spreitzer & Porath, 2014; Deci et al., 2017). They notably pointed out how trainers and managers can promote autonomous motivation by encouraging initiative, acknowledging the employee's perspective, and offering choices. Moreover, they asserted that, in addition to trainers and managers, autonomy support can stem from colleagues, consequently improving the feeling of relatedness. Such conclusions were also observed in the present study, suggesting that these conditions could extend to apprentices in training companies.

The opposite motivating style, control, was also present in the apprentices' statements about teachers at the school. According to the apprentices, teachers can be held responsible for the excessive amount of work demanded by the vocational school. This responsibility attributed to teachers might have an impact on students by causing them to feel neglected and having them comply irremediably with the teachers' agenda and demands. As supported by the literature (Reeve, 2009; Vansteenkiste et al., 2010), these controlling practices impede students' basic psychological needs and lead to controlled motivation. When comparing statements referring to the school with those referring to the training company, control was described in a relatively similar manner, with the apprentices blaming trainers for lacking consideration for the work they had to accomplish during the week.

Another similarity between the school and the training company emerged in respect of status recognition. When the apprentices felt as if they were regarded as 'children' instead of 'adults' at the school or as 'employees' instead of 'trainees' at the training company, the possibility of developing a sense of competence or of experiencing a close relationship with teachers and trainers was impeded (Spreitzer & Porath, 2014).

The differences between the vocational school and the training company concerning autonomy support confirm the results of prior studies on the specificities of each learning site in the dual system (Prenzel & Drechsel, 1996; Gurtner et al., 2012). Indeed, as teachers and trainers have very different backgrounds and roles, they demonstrate differences in their ways of providing autonomy or imposing control on apprentices. These variations in motivating styles are not only caused by the teachers and trainers but also by the specific logics at each learning site: teachers must supervise several students in class at the same time, whereas trainers may give individual feedback to a smaller number of apprentices or may easily delegate the care of apprentices to colleagues (Prenzel & Drechsel, 1996). In addition, the lower level of formality at a training company might more easily promote close relationships with trainers than in the case of teachers at a school (Gurtner et al., 2012).

In the context of the high interest in the dual VET systems (OECD, 2018), the challenges associated with implementing such types of system are numerous. One of them is supporting apprentices' motivation. The findings of this study indicate the specific ways in which apprentices' motivation can be sustained at the two learning sites. The study notably reveals the various ways in which autonomy support and control take place at the training company. Further description of the specificities associated with a dual VET system will increase the knowledge base necessary to understand the conditions of its implementation.

While many other differences may exist between learning sites, the results presented here were based on apprentices' perceptions. Therefore, explorations of other influences on motivation, such as institutional influences (e.g. regulations, curriculum content), were lacking. Furthermore, while the thematic-coding method provided a rich description of motivating styles, it could not support the hypothesis of a causal impact of these styles on

apprentices' motivation. Further studies based either on quantitative methods or on longer responses from apprentices – through individual and collective interviews, for instance – might be beneficial in finding answers to the questions that still remain.

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