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What Constitutes a Good Learning Environment in VET?

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Abstract

Context: The learning environment at vocational schools influences the students' learning, well-being, and drop-out rates. In the paper, we summarize factors that affect the learning environment in vocational education and training programs.

Approach: The factors have been identified in a literature review of international research. The literature includes studies on learning environment from a previous mapping, literature search in the ERIC database and in the journals, 'International Journal for Research in Vocational Education and Training', 'Nordic Journal of Vocational Education and Training', and 'ECER VETNET proceedings'. In the study, we have categorized the factors in two main categories: the professional learning environment and social learning environment.

Findings: Concerning *the professional learning environment*, it is important that the students accomplish authentic vocational tasks and that they are involved actively and responsibly in the learning process. It is important that the teachers ensure systematic and differentiated feedback, have positive expectations for the students' performance and guide the students to set and stick to realistic goals. Concerning *the social learning environment*, it is important that the teachers establish positive relationships with the students and that the teachers act as authentic role models for the students in and outside the classroom. Furthermore, it is important that the teachers encourage positive relations among the students by creating vocational and social communities, counteracting bullying, and gender discrimination.

Conclusion: The teachers play an important part in the development of the learning environment. Consequently, it requires several competences to be a good VET-teacher, competences that encompass much more than the specific subject and job-related competences. A well-functioning learning environment requires the teachers to have social and personal competences.

Keywords: learning environment, literature review, goal setting, feedback, role models, teacher competences

1 Introduction

The learning environment at vocational schools influences the students' learning, their well-being, and their drop-out rates (Rambøll, 2018; Epinion/DPU, 2020). Consequently, the content and form of the learning environment is an important factor in the learning process.

In the article, we summarize factors that affect the learning environment in vocational education and training programs. These factors have been identified in a literature review of international research. The literature includes primary sources on learning environment from a



previous mapping, literature search in the ERIC¹ database and in the journals, 'International Journal for Research in Vocational Education and Training', 'Nordic Journal of Vocational Education and Training', and 'ECER VETNET proceedings'.

We define learning environment as the context in which the learning takes place. By context we mean the educational setting in which the vocational training programs are conducted. The setting includes the form and content of the training programs. In the current article we focus on factors in the education and training process.

2 Significant factors in a learning environment

A general conclusion from the current study is that many factors play a role in the constitution of the **beneficial learning environment. Moreover, these factors are interrelated and sometimes overlapping. Three examples of such studies can illustrate this complexity.**

A German study of factors having impact on the learning environment based on both review results and comprehensive interviews with students in a vocational setting found that several indicators are vital. The study concludes that a 'powerful' learning environment is characterized by authentic and challenging tasks, activating teaching methods (collaborative learning and problem-based teaching), differentiated teaching and guidance that focuses on the student's professional development (Placklé et al., 2014, 2018, 2020). An Italian study demonstrate the same complexity and summarizes 13 factors that influence the teaching environment in vocational education. The most important factors are the students' experience of autonomy and responsibility and the importance of simulating the work context in teaching (Perini & Pentassuglia, 2018). A study from Malta indicates that a 'powerful learning environment' includes clarification of professional identity, a high degree of participant involvement and reflective learning, comprehensive differential guidance from teachers, and teachers' support for the development of students' motivation for learning and independent management of learning (Said, 2018).

Based on the complexity in the patterns of factors and some overlapping variables, we have located different types of factors in the literature review. We have categorized the factors into two main categories. Factors related to the professional learning environment and factors related to the social learning environment. The first category, defined as the conditions that relate to the teaching process, we have divided into 1) authenticity in the training programs, 2) the students goal setting, 3) feedback from the teacher, and 4) support and differentiation. The second category, defined as the social relationship between teacher and student and among students, we have divided into 1) the relation between teacher and student, and 2) the relations between students.

We present the general findings found in the literature. We have not analyzed the relative influence the different factors have on the quality of the learning environment. Likewise, we have not analyzed how different factors interact. We present factors – found in the analyzed studies - having an impact on the learning environment.

3 The professional learning environment

3.1 Authenticity in the training programs

The students working in the classroom must have *authenticity*. A Norwegian study finds that the teaching must be authentic. Practice-based teaching, where students work with realistic

¹ The search in ERIC has used the following search threads: VET OR 'vocational education and training' or 'vocational education' or 'vocational training' or 'vocational school' AND 'Learning environment' or 'education environment' or 'school environment'. The search has been accomplished in the period 2010-2020.

tasks and relate these tasks to a future job, improve their motivation. In school, vocational practice provides a decisive opportunity for learning and development of motivation. Access to realistic or authentic tasks is of great importance. Students in all program areas highlight it as important (Høst, 2015). A study of vocational training in media production also points to the importance of authentic tasks - particularly at the beginning of the training program. Authentic tasks increase the students' perception of the relevance of education (Aakernes, 2018).

A study of the use of simulation in health care education shows that students understand the theoretical knowledge much better when they can test it in a simulated practice. Thus, simulation can contribute to creating a better connection between theory and practice – and offer a more coherent study environment (Aarkrog & Puge, 2019). Teachers may find it difficult to carry out practice-based teaching. An Australian study points out that teachers must be trained to connect theory and practice in authentic contexts, to include the students' prior learning and to use realistic evaluation methods (Downing, 2017).

The connection between school and internship can be improved through the collaboration between the school's teachers and the supervisors in the internship. Thus, a Danish study shows that a good relationship between the teacher at the school and the supervisor at the internship can promote the experience of coherence. The challenge is to create a systematic relationship at teacher level and to utilize this relationship to give students a clear perception of the connection between school and internship (Louw & Katznelson, 2019). The students' opportunity to form a clear and coherent picture of their future profession through the company internship has a positive impact on motivation for the school part and the learning environment (Nielsen et al., 2013).

According to a Swedish study of the teachers' relation to learning in practice, teachers with good relationships with the local working life can support students better than teachers without such relationships. It is thus important that teachers have knowledge not only about their subject, but also about the local labor market, companies and their trainers and supervisors (Mårtensson et al., 2019). This is confirmed by another study, where it is concluded that teachers' contact and relationship with businesses in the local environment are important for the learning environment (Høst, 2015). A close collaboration between schools and internships is vital (EVA, 2017b). Such collaboration can also prevent students from feeling that their expectations for the internship are not met, which is a significant reason for dropping out (Dyssegaard et al., 2014 a; 2014 b).

A Dutch study points to the importance of a positive interaction between the learning environment at the school and the learning environment at the workplace. The students experienced that their internship changed their way of learning at school. Through practical experiences, the school-based environment became more meaningful for the students. The study stresses the importance of teachers stimulating these reflections for the students (Bartman et al., 2018).

3.2 The students' goal setting

The clearer the students perceive *the goals* and the meaning of the teaching, the better the learning environment. A Danish study finds that the students' goals for the training and their ability to maintain these goals have a positive effect on the students' motivation for learning and retention in the education. It is therefore important that teachers clarify this in the learning programs (Mariager-Andersson et al., 2019; Aarkrog & Wahlgren, 2022). The schools must strengthen the students' own interests and abilities in relation to their choice of education to maintain and strengthen their goal orientation (Becker et al., 2018). Not least in relation to vulnerable students, it is important that counselors and teachers participate in determining and maintaining young people's goals (Martínez-Serrano et al., 2019). It is important that it is the student who sets the goal, and that the goal setting reflects the student's future and not the content of the education. The challenge is to guide the student to formulate goals that are motivating

as well as realistic (Cedefop, 2016). A study points to the importance of being able to talk to students about their goals and their career paths (Draaisma et al., 2018).

3.3 Feedback from teacher to student

Feedback contributes to increased retention and to strengthening the individual's perception of the learning environment. The teacher's positive expectations of the students and feedback on the students' performance in relation to this positively influence the students' learning and the learning environment (Rambøll, 2018). A study shows that teachers using frequent measurements of the students' development, providing continuous feedback and creating a high level of expectation in the class, make the students more independent achieving better results (Helaire, 2014). A Danish case study of carpentry education shows that it is important for teachers to make it clear to the students what is expected of them and what criteria they are measured against. The teachers must clarify the rules for the students' performance and the assessment of the students. The challenge is to communicate these rules to the students in such a way that they take ownership of the rules and norms of the education (Louw, 2013).

A Norwegian study shows that students' engagement increases when emphasis is placed on the students' own assessment of their work and development. The didactic element is 'station training', i.e., structuring the training in a series of stations (subtasks) that the students accomplish. The students are assessed, and they assess themselves in relation to how they solve the various sub-tasks, learning how they progress. Thus, an important element in the training is the teachers' ongoing professional and pedagogical feedback to the students (Stousland & Witsø, 2015).

3.4 Support and differentiation

The teachers' ability to provide personal and differentiated *professional support* strengthens the learning environment. Individualized support and differentiated teaching have a positive effect on students' well-being (Rambøll, 2016). Teachers with professional practice and working life experience, who can create confidence and give students personal support, are perceived by students as the best teachers (Høst, 2015).

A prerequisite for a good digital learning environment is that the teacher can uncover the students' prerequisites, instruct the students, and give them feedback (EVA, 2017a). In addition, a challenge with digital learning courses is that they require relatively small class sizes, so that the teacher can interact with the individual student (EVA, 2019). IT-supported teaching can be used in connection with differentiation, feedback, motivation and linking of school and practical parts of the programs (EVA, 2017a).

Using IT in teaching can strengthen student retention. The results from a development work show that video-based presentations of simulations of practice-oriented projects and of systematic guidance strengthen the learning environment and reduce dropouts (Salvà et al., 2018).

4 The social learning environment

4.1 The relations between teacher and student

Interaction between teachers, students, counselors, and school leaders support student retention and the development of the learning environment (Dyssegaard et al., 2014b).

The students' autonomy and self-determination, which is supported in student-activating forms of teaching such as project work, has a positive effect on their relationship with the teachers. The more the teachers collaborate with the students, the more the students are motivated and take responsibility for their learning (Rambøll, 2016). An Australian study points to factors that are important for engaging students in education, including care for the student's well-

being, positive teacher-student relationships, an overall goal of building students' faith in their own abilities and more generally faith in themselves (Murray & Mitchell, 2016). A Spanish study shows that it has a positive impact on retention in education when teachers have faith in the students' potential, make demands on the students and evaluate these demands. In addition, that the teachers create closeness and are available to the students (Pinya et al., 2018).

Students who do not show sufficient respect for the teacher have a negative influence on the relationship with the teacher. Teachers favoring some students and stigmatizing others also negatively affect the relationship. It has a positive effect on the students' well-being and retention in education that the teacher is friendly, caring, and professionally and personally supportive. Finally, it is important that the schools appreciate teachers who work to create positive teacher-student relationships (Krane et al., 2016).

A study of the teachers' relational work shows that this makes demands on the teacher's socio-emotional competences, which include that the teacher acts sensitively and responsibly, that the teacher is present and can handle emotions, and that the teacher acknowledge the student and supports his emotional development (Aspelin, 2019). Furthermore, regarding the teachers' competences, an Australian study shows that it is important that teachers are aware of their importance for retention and student engagement. Positive relationships must be created with the students. The relationships must be respectful, inclusive, and supportive in relation to the students' differential needs. Students must feel valued and respected by their teacher (Dutschke, 2018).

A Danish study of the teachers' relational competence, i.e., the ability to create relationships among the students and between the students and the teacher, shows that the relational competence has an influence on the students' dropout. The relational competence included teachers' ability to meet students as individuals, know their names, greet them, encourage them; but also, their ability to understand the students' situation and the difficulties they may have in and outside of school. The study also showed that the teachers' relational competence and their social responsibility could be increased through teacher training (Wahlgren & Mariager-Andersson, 2017).

A part of the relationship between teachers and students is that the teachers are role models for the students. A German study shows that contact with practice and with professional role models strengthens a professional environment. Career guidance of students can be strengthened through the inclusion of role models related to the students' wishes (Neuenschwander et al., 2018). Another study points out that the students in vocational education are mainly engaged in the workshop training rather than in theoretical education, partly because the students perceive the workshop teacher as a role model (Nielsen et al., 2013).

4.2 Relations between students

Students' cooperation has an impact on the learning environment. It has a positive impact on retention when students experience a family-like community that centers on the students' needs (Adam, 2012). The students' cooperation has a positive effect on their active participation in their own learning process (Dyssegaard et al., 2014b). Postponing the division of students into levels also has a positive effect on retention and the learning environment (Munk et al., 2015). A study, on what extent the establishment of a 'community of learners' in different teaching courses has an influence on the learning environment, concluded that when students gather in communities with a view to qualification in relation to a vocational orientation, their learning is strengthened (Boersma et al., 2016).

The student's self-image is important for the student's ability to have good relationships with classmates (Mariager-Andersson et al., 2019). A Swiss study points to the importance of the learning environment and the students' self-image for the students' school progress. Self-image is measured by three factors: Self-efficacy, self-esteem, and degree of negative emotions.

The study shows that the learning environment must contribute to strengthening the students' self-image (Lüthi, & Stalder, 2018, 2019). A Finnish study points to the importance of having friends and support from friends (peer support) at school. This is particularly important at the beginning of the education having an impact on the students' sense of (in)security and their commitment and career choice. The researchers recommend that there must be time in class for the students to work with these conditions (Niittylahti et al., 2019). Thus, the teachers must create good relationships with the students and among the students early in the study program. (EVA, 2017b). Furthermore, it is important that the school is aware of early signs of dropping out and failure to thrive to organize a safe and confident learning environment (Cedefop, 2016; EVA, 2017b; Mariager-Andersson et al., 2019).

5 Summary and discussion

In the study, we have identified several factors that have an impact on the learning environment. We have categorized these factors into the professional learning environment and the social learning environment.

In the category of factors improving the professional learning environment, we can summarize that: It is important that the students work with authentic tasks reflecting their future jobs as skilled workers. It is important that the students have a clear goal for the training and that they can maintain this goal during the training program. It is important that the students receive continuous feedback from the teacher, that the teacher has positive expectations of the students and can convey these expectations to the individual student.

In the category of factors improving the social learning environment, we can summarize that it is important that the teacher emphasizes creating positive relationships with the students. Such relationships include being authentic role models for the students inside and outside the classroom. Furthermore, the teachers must support positive relationships among the students by creating professional and social communities. The social teaching environment focuses on the teachers' social and personal competences.

There are methodological limitations in results and conclusions. One is that we have summarized across national contexts and different types of educational institution. Thus, the conclusions are not related to the specific contexts and are therefore rather general.

It is also a limitation that the method used only makes it possible to point to various factors which have been shown to have an influence on the learning environment. The method does not give reason to assess the mutual strength of the various factors. It also does not provide the opportunity to describe how the different variables interrelate.

However, we have located several factors that, individually and combined, have shown to have an influence on the content of a learning environment. The specific design of the factors will depend on the educational and cultural context.

The teachers play an important part in the development of the learning environment. A well-functioning learning environment requires the teachers have social and personal competences.

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