

A Guide to Embed Internationalisation at Home in Vocational Teacher Education





Foto: Elin Iversen/NTNU

This guidebook has been written by the following members of the DIVE Project team:

Jon Sverre Hårberg
Britt Karin Utvær
Rabia Vezne
Birgit Rumpold
Ann-Britt Enochsson
Katrine Alterhaug
Peter Gray

With the assistance of all members of the DIVE team.

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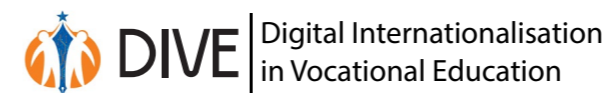
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CONTENTS

List of abbreviations	6	Online courses - MOOCs	34
Foreword	7	Hybrid learning spaces: Designing a Webinar as a space for hybrid learning	37
Acknowledgements	8	Technical support in facilitating a Webinar	42
PART ONE	11	Webinar as Transformative Education	43
Purpose and Applicability of the Guide	11	Online collaboration	44
Purpose and Framework of DIVE	11	Student assignments in DIVE (from CANVAS online course)	45
Ten Steps to DIVE	13	Task 1 (National)	45
Step 1: Introducing internationalisation	13	Task 2 (International)	45
Step 2: Assess the language skills of students	13	Critical thinking, ethical and environmental awareness,	
Step 3: Icebreakers	13	and democratic values and attitudes in vocational education and training	48
Step 4: Relating generic skills and concepts to existing course structures	14	Assessing digital stories	50
Step 5: Working with generic topics	14	Online Activities on Sustainability	54
Step 6: Bringing students together through storytelling	14	Student assignment on sustainable development (from Canvas)	54
Step 7: Production	15	Values	55
Step 8: Performance	15	Digital stories and implementation: views from the partners	57
Step 9: Feedback and evaluation	15	Evaluation – students' voices	57
Step 10: Final Outcomes	16	Feedback from the Partner Institutions	58
DIVE Recommendations: How to support digital international learning activities	16	TU Berlin	58
PART TWO	19	Karlstad University	59
Background: the emergence of DIVE	19	Akdeniz University	61
Background to DIVE: Pandemic versus mobility	20	NTNU	63
Project goals	21	Vocational students' feedback on the	
Internationalisation at Home	22	online course "Democracy and citizenship"	65
Theoretical Framework vs. Practice Framework	23	APPENDIX	69
More about Internationalisation at Home	25	Appendix 1: Video introduction	69
Virtual Exchange	26	Appendix 2: Adult education principles	71
Digital learning communities as inclusive, technology-supported		Appendix 3: Icebreakers for online meetings	75
internationalisation pedagogies	27	A positive, but critical, view of DIVE	78
Exploring VR-technology: reflections from DIVE	29	References	81
Current barriers and experience	29	REFERENCES	81
Current possibilities and implementation plan	30		
Advanced technology: ambitions on hold	30		
Barriers to adoption and theoretical considerations	30		
Pedagogical requirements for achieving educational			
collaboration in virtual environments	32		
Final words	33		

LIST OF ABBREVIATIONS

DIVE	Digital Internationalisation in Vocational Education
PMP	Proximity-Mobility-Possession
SDG	Sustainable Development Goals
TU	Technical University (Berlin)
VET	Vocational Education and Training
VR	Virtual Reality
VTE	Vocational Teacher Education
NTNU	Norwegian University of Science and Technology
OPVET	Online Platform for Vocational Education and Training

FOREWORD

This guidebook provides an account of the DIVE project's activities and how they might be used in a range of settings to improve the education of vocational teachers. It includes an overview of project learning materials and how to use them, together with critical accounts of what went right and what went wrong in trying to implement an ambitious programme of internationalisation at home, or "travelling without travel". This was partly inspired by the restrictions imposed during the Covid-19 pandemic, and partly by the observation, during the previous OPVET project, that vocational teacher students had little time or motivation to participate in international activities.

This guidebook is designed for teacher educators and other professionals working in vocational education and training. It should enable them to design their own programs for international collaboration and incorporate subjects such as citizenship, democratic values and sustainability into these programs.

This document, however, is more than just a guide to implementing a series of activities. Although many, if not all, universities have strategies for internationalisation, they are not always effective in meeting the needs of specific courses and for motivating individual students. Moreover, internationalisation is not simply about exchange visits or other pleasant interludes between the everyday work of vocational teaching and learning. It is about appreciating how the vocational activities that VET teachers teach are interwoven into global systems. These systems are not just economic as in the case of global construction companies (Skanska), catering companies (Sodexo) or global healthcare (United Health). They are also value-based, have implications for democracy, and are more or less sustainable when it comes to climate change and loss of biodiversity. Vocational teachers have a responsibility to prepare their students for this global world, with students who can react critically to global challenges.

DIVE, following the successful OPVET project, has built a course structure around the three core themes of democratic values, democracy and citizenship, and sustainability. Taken together, the three courses mark the first stage in bringing vocational education and training into the 21st century. We believe that debates around such major themes should not be limited to university education but should also involve students of vocational subjects.

Part One of this guidebook provides a step by step guide to introducing internationalisation at home using the DIVE courses. It briefly outlines the underlying principles and how these can be related to existing programs. In this section, we have adopted a 'need-to-know' approach and have avoided an overly theoretical approach, or a detailed account of the evolution of DIVE.

In Part Two, we provide detailed accounts of various aspects of the project, including, for example, a discussion about the possible role of Virtual Reality (VR), feedback from participating students and some theoretical background on internationalisation. This will be useful for anyone wishing to develop programs or projects in this area.

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- Practical pedagogical edu. within vocational subjects, Dept. of Teacher Education, NTNU
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- Master of Science in Education, social studies, Department of Teacher Education, NTNU
- Vocational teacher education, Department of Educational Studies, Karlstad University
- Department Education for Sustainable Nutrition and Food Science, TU Berlin
- Faculty of Education, Akdeniz University

Teacher educators and researchers:

- Minna Arvidsson, Department of Educational Studies, Karlstad University
- Hamid Asghari, Department of Educational Studies, Karlstad University
- Hilmi Demirkaya, Faculty of Education, Akdeniz University
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- Gülnar Özyıldırım, Faculty of Edu./ Dept. of Educational Sciences, Akdeniz University
- Annica Ådefors, Department of Educational Studies, Karlstad University

Technical support:

- Andreas Hansen Schille, Section for teaching and learning support for teachers, NTNU
- Gunnar Orn Thordarson, Section for teaching and learning support for teachers, NTNU

Administration:

- Hilmi Demirkaya, Faculty of Education, Akdeniz University
- Elisabet Larsson, Department of Educational Studies, Karlstad University
- Monika Nyhagen, Department of Teacher Education, NTNU
- David Schecroun, Faculty of Social and Educational Sciences, NTNU

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1

PART ONE

PURPOSE AND APPLICABILITY OF THE GUIDE

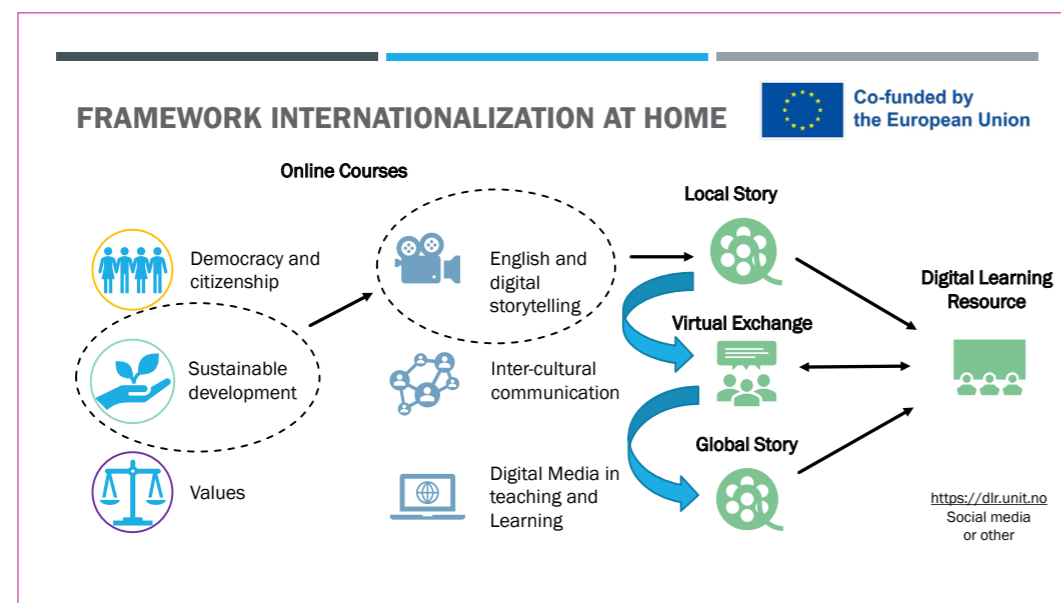
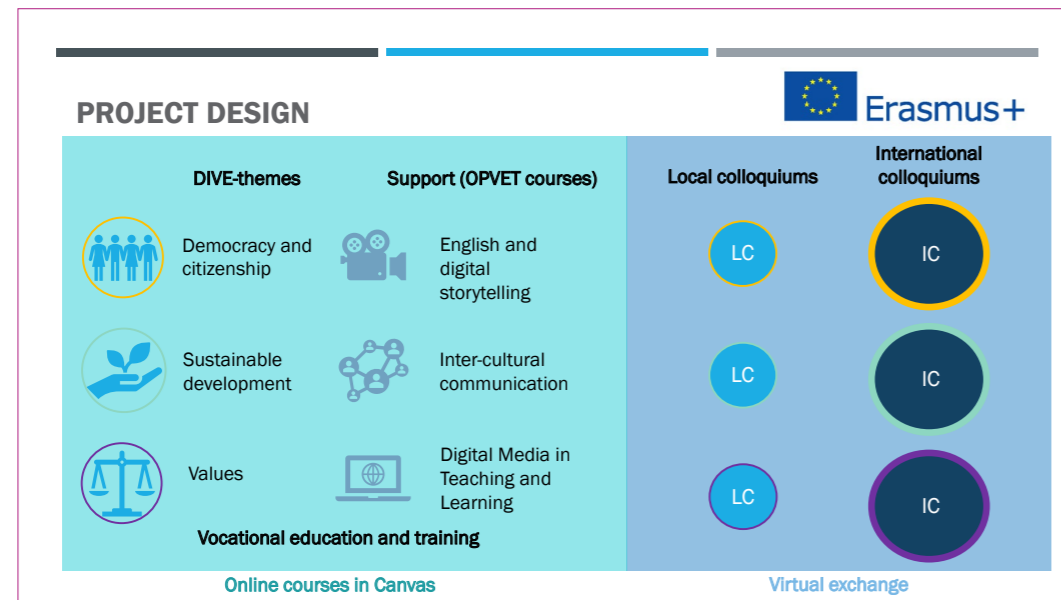
The purpose of this guide is to offer examples of activities through which participating students can learn from culturally situated models of education and the diverse perspectives of institutions around the world without leaving their country of residence. The guide also provides insights into how generic topics such as democracy and citizenship, values and sustainability can be incorporated into vocational education courses.

PURPOSE AND FRAMEWORK OF DIVE

The DIVE project has the primary goal of supporting vocational teachers' students in developing and strengthening the following:

- Intercultural competence (cultural awareness, cultural intelligence, cultural sensitivity and empathy)
- English skills (writing, speaking, listening and reading)
- Digital competence ([DigCompEdu](#) and [development of teacher's professional digital competence](#))
- Local and global awareness within the three overarching DIVE-themes: sustainable development, democratic values and citizenship

The DIVE-project framework is depicted in the following graphic:



Broadly speaking, the online courses provide content for students to discuss through colloquia (virtual exchanges) and digital stories. The creation of digital stories is a collaborative process in which vocational teacher students can reflect on aspects of their work whilst improving their communication skills, teamwork, English and understanding of cultural difference.

TEN STEPS TO DIVE

The DIVE process can be described in ten steps, as follows:

STEP 1: INTRODUCING INTERNATIONALISATION

Before students reach the stage of participating in international activities, they need to be able to relate the idea of internationalisation to the generic concepts from the online courses and their own situations. So, from a practical perspective, the development of teamwork and communication skills might be a good way to frame the activities. These are skills required in all vocational situations, whether international or otherwise.

Vocational teachers and teacher students might have an interest in how their respective professions operate in other countries. Sometimes, however, it is difficult to make contact with sufficient numbers of students in similar professional occupations in other countries. This is why we have developed the DIVE generic courses, which are intended to provide common ground for discussion across different vocational areas.

When introducing internationalisation, therefore, tutors should emphasise skill development and the common concerns of all educators regarding democracy, values and sustainability.

STEP 2: ASSESS THE LANGUAGE SKILLS OF STUDENTS

Assuming that English is the 'lingua franca' for international communication, one would expect that internationalisation would require students to have some degree of proficiency in spoken and written English. We should, of course, bear in mind that in some situations, languages such as German, French, Spanish or Italian might be useful along with, or instead of, English. Translations of the online courses into the partner languages were, however, beyond the scope of DIVE.

Many students will be reluctant or even unable to use a non-native language. Since the overall aim of international activities is to get students to think and act differently, individual tutors may decide not to use DIVE activities for language practice, depending on students' abilities and local conditions. It would be acceptable to produce translations of relevant course materials in local languages as a stimulus for discussion.

This aspect may also have implications for groupwork. There may be situations where peers will "volunteer" individual students with better than average language skills to handle the language aspects of activities like digital stories.

STEP 3: ICEBREAKERS

In the field of education and training, it is regarded as good practice to begin events with a 'icebreaker', a playful activity to bring participants together and create a friendly, inclu-

sive and collaborative environment. Online meetings also benefit from such activities. If we assume that our audience of organisations and educators in VET already have international contacts with similar organisations and educators in other countries, then this stage would be where participants are first given the opportunity to meet their peers in other countries, learn basic facts about them and develop social contacts. In Part Two, we provide some tips and ideas for how to develop icebreakers and international contacts if these are not already in place. From student feedback, we understood that early informal development of contacts was key to more formal interaction at a later stage.

STEP 4: RELATING GENERIC SKILLS AND CONCEPTS TO EXISTING COURSE STRUCTURES

Whilst students are now provided with opportunities to meet and communicate with international peers, they also need a motive to participate in their ongoing learning activities. In vocational teacher education (VTE), pedagogy is a major and increasing concern. In particular, and bearing in mind that most VTE students are adults, the principles of adult education (andragogy) demand that teaching and learning should be dialogical, involve mutual respect and encourage critical thinking and reflection.

Effectively, these are democratic values, which open up wider questions around citizenship, democracy and values. Sustainability is slightly different and might be approached in relation to existing course content. Climate change and associated issues of resource conservation and biodiversity loss have resulted in regulations and requirements for more sustainable practices in a wide variety of vocational situations. For example, food waste is an increasingly important consideration in hospitality and catering industries. Tutors should have no difficulty in providing examples from their own professional areas.

STEP 5: WORKING WITH GENERIC TOPICS

The DIVE online courses and the OPVET courses that are also available online are not designed to be comprehensive academic accounts of their respective topics. It is not even necessary for students to complete the whole set of courses. Rather, they are designed to form a basis for discussion, introducing students to topical issues independent from practical or technical issues related to their respective professional subjects. Some students may see them as irrelevant to their own professional lives. It is, however, important to have debates regarding these ideas even in this situation, since all professions exist within contexts shaped by values, democracy or its absence, and the overarching context of the planet and its limited resources.

STEP 6: BRINGING STUDENTS TOGETHER THROUGH STORYTELLING

Internationalisation is fundamentally a social process. We are accustomed to education as an individual process, in which 'study' involves individuals and texts, rather than groups and questions. Making VTE into a more social process is beneficial in the long run. Two aspects of DIVE contribute to socialising the student experience. Firstly, we had the idea

of 'colloquia', or informal discussion groups for the exchange of ideas, which we initially conceived as being international from the outset. This turned out to be overly ambitious, and it was actually useful to begin at the local level, bringing together students on the same course. Secondly, in order to give these colloquia a purpose, students were tasked with developing digital stories around the generic themes provided in the online courses on CANVAS.

Storytelling is a vital aspect of everyday life, especially in work situations, because narratives make sense of otherwise 'senseless' events or situations. Digital storytelling is a particular way of telling a story, which involves a certain level of skill in media, images, audio and so on, but retains at its core the ideas of narrative, such as setting, plot development, character and resolution.

STEP 7: PRODUCTION

In this step, students get together at local level to produce their digital stories, with additional training in online activities as necessary. This could be extended into transnational collaboration if circumstances permit. Students may need support in the technical aspects of story production, especially in audio, which might entail the use of more advanced equipment (microphones, mixers, equalisers) in order to achieve professional standards, in turn enabling increased student satisfaction and intelligibility for listeners. It is also important that instructors specify minimum and maximum running times, obtain the necessary permissions for image and audio sharing, and provide opportunities for feedback as necessary.

STEP 8: PERFORMANCE

To increase student motivation, it is useful to set a performance date well in advance. By 'performance', we mean presentation of the digital story during an international colloquium, although this might be preceded by local presentations that can be regarded as rehearsals.

Again, instructors should pay attention to the technical aspects, ensuring that suitable audio-visual equipment is available, that Internet connectivity is adequate, and preferably rehearsing the event before going live.

It is important to make the best use of platforms such as Zoom, maximising interaction in chat, muting and unmuting participants to reduce background noise, and recording sessions/notetaking for subsequent reflection and analysis. This might require assigning duties to team members and clarifying hosting roles, especially for the international colloquia.

STEP 9: FEEDBACK AND EVALUATION

As with all teaching and learning activities, feedback and evaluation should be integral

and formative parts of the process. It might be useful to appoint an external evaluator or judge(s) to review the digital stories and provide constructive comments, perhaps framed in a competitive style, as in TV programs such as 'Dragon's Den, The Apprentice' etc. It may be necessary to make post-course evaluation forms compulsory as a condition of receiving credits, but this should be done sympathetically, with open questions as well as tick box responses, and with the mutual understanding that critical comments are just as welcome as praise! An example of a feedback form for digital stories is presented in Appendix 2.

STEP 10: FINAL OUTCOMES

It is entirely to be expected that not all VTE students will benefit equally from the kinds of activities described above. Nevertheless, we believe that there is an organic trend in vocational education towards a more internationally aware and outward looking community. Continued patterns of migration in Europe and elsewhere will result in a more diverse workforce, and intercultural awareness will be necessary in the training and management of the workforce. Enterprises will be increasingly transnational in their reach, even at the level of small and medium enterprises dealing with diverse customers at a local level. To address skill shortages or local unemployment, the mobility of workers across borders is likely to increase, to the benefit of economic growth. Equally, economic growth on its own is seen as increasingly harmful in terms of climate change and sustainability. Future workers and their teachers/instructors will need to be informed about issues beyond their immediate work context. DIVE principles and techniques can thus make a significant contribution in providing an interculturally sensitive, mobile and environmentally aware workforce.

DIVE RECOMMENDATIONS: HOW TO SUPPORT DIGITAL INTERNATIONAL LEARNING ACTIVITIES

What are the benefits of offering international learning activities? And whom do they benefit (vocational student teachers, teacher educators or vocational students)?

The answers can be summarised as follows:

In terms of its overall impact, DIVE:

1. Increased the ability of VET teacher students to communicate via digital media
2. Raised awareness of intercultural and trans-cultural issues in VET, and especially in the education of VET teachers
3. Increased the English language skills of VET teacher students
4. Increased the ability of these teachers to use digital storytelling in their work

5. Made education in democracy and citizenship, sustainability and values a part of VET teacher education

These are positive benefits with no downside other than the additional effort required from students and staff. Our recommendations are, therefore, as follows:

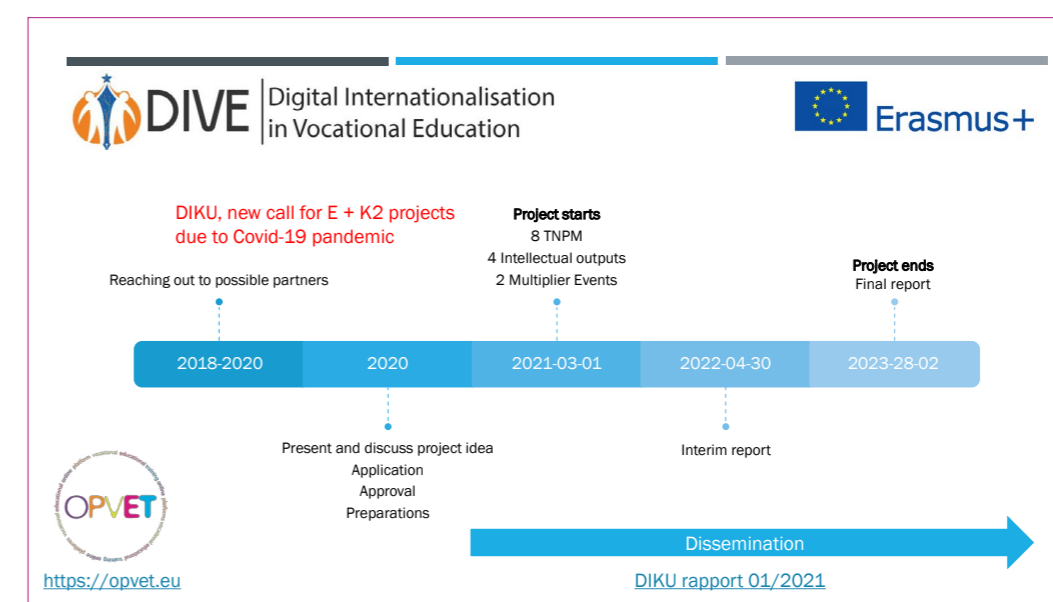
1. All higher education institutions, including, but not limited to, teacher education institutions, can benefit from digital internationalisation and should adopt clear policies or strategies in support of it.
2. Where possible, digital internationalisation should be formally incorporated into existing or future courses in order to support student and staff involvement.
3. Where possible, digital internationalisation activities should be open for credit in order to foster student engagement.
4. Digital internationalisation operates at three levels:
 - a. Informal exchange
 - b. Exchange based on generic topics, such as democracy, citizenship, values and sustainability
 - c. Exchange based on specialised subject knowledge or practice
5. Digital internationalisation programs should make use of all three levels and should also make sufficient time available for students to become familiar with the processes and with their peers in other participating countries.
6. Account should be taken of different institutional calendars, schedules and time zones. This may require careful synchronisation.
7. Not all technology is equal, and students and staff should have access to adequate technical facilities, emphasising audio quality and stable broadband connections.
8. Students should be encouraged to work as teams and collaborate in digital storytelling or other innovative outputs.
9. Institutions should focus on building international networks not only to foster digital internationalisation as a form of student mobility, but to provide further research, innovation and employment opportunities.
10. Staff should be supported in building such networks and should receive appropriate credit for their activities as an integral element of institutional strategy for the future.

2

PART TWO

BACKGROUND: THE EMERGENCE OF DIVE

DIVE is built on a previous Erasmus+ project called OPVET, which pioneered the use of online courses on generic topics as a means of bringing together vocational teacher education students across borders. DIVE has refined the techniques developed in OPVET and has focused more on using generic courses as a basis for discussions amongst the student community.



BACKGROUND TO DIVE: PANDEMIC VERSUS MOBILITY

The Covid pandemic has prevented the normal flow of student mobility in many areas, including VET and VTE. It has also forced digitalisation further up the agenda of all schools, universities and other educational institutions. A recent systematic review of research on international mobility (Roy et al., 2018) concluded that, although the evidence base was relatively weak, there were demonstrable benefits for students with short-term international mobility. Increasing the length of visits to different countries was likely to increase the benefits proportionately, but there are serious practical implications of extending visits beyond the 2-3 week periods generally undertaken by VET teacher students. Roy et al. recommend various lines of further research, but our purpose in DIVE was to develop innovative approaches based on the available evidence and our own experience with mobility programmes. The DIVE project has taken a positive approach to these developments. Whereas student and teacher mobility, in a physical sense, is necessarily selective, digital mobility can be inclusive, providing opportunities for all. However, this requires careful consideration of the educational benefits of international and intercultural exchange.

Internationalisation generally requires physical travel, but this is increasingly difficult in the short term due to the Coronavirus pandemic, and in the medium and long term due to climate change and the need for carbon reduction. Digital technologies offer the possibility of communicating internationally without travel, but there is a lack of knowledge regarding practices that can recreate the benefits of international mobility without issues regarding physical travel and presence. DIVE has addressed these concerns using the experience of previous projects in the internationalisation of vocational and other teacher education, including OPVET, RECITE¹, RECREADE² and SATE³.

The Erasmus+ call on digital readiness, as answered by DIVE, is therefore a welcome and timely intervention in promoting better and more effective online interaction with all education systems, particularly in VET. All partners in DIVE were committed to building the scope and profile of VET in relation to 21st century challenges such as pandemics and climate change. As in all areas of life, experiential learning is the key to achieving better outcomes, and DIVE has provided such experiential learning in the context of these challenges and the increasing digitalisation of education and everyday life. We recognise that, already, the changes in practice forced upon individuals and institutions by Covid-19 have resulted in opportunities for, and barriers to, teaching and learning. This is a paradigm change in education, which is largely unprecedented.

Education systems have developed in an organic and ad-hoc manner since the Middle Ages, driven by a combination of precedent, arbitrary policy decisions and latterly, scientific evidence based on empirical research. However, each of these drivers, considered individually, is incapable of generating effective responses to massive and sudden external change. Strategies for internationalisation and student mobility are built into the planning processes of most, if not all, major universities and teacher education providers. These strategies were not designed to take account of major pandemics or other restrictions

1 <https://recite.dk/> - Research Circulation in Teacher Education

2 <https://www.recreade-erasmus.eu/> - Reimagining Creative Democracy

3 <https://www.uni-flensburg.de/fileadmin/content/zentren/zfl/dokumente/presse/2019-bandorski-sate-online.pdf>

School adoption in Teacher Education

on physical travel. DIVE has, therefore, provided an opportunity to revisit these strategies with a plan to increase their resilience, whilst at the same time allowing a wider range of students the opportunity to benefit from an international experience.


PROJECT GOALS

The DIVE project had the primary goal of supporting vocational teachers' students in developing and strengthening:

- Intercultural competence (cultural awareness, cultural intelligence, cultural sensitivity and empathy)
- English skills (writing, speaking, listening and reading)
- Digital competence (see e.g. DigCompEdu and development of teacher's professional digital competence)
- Local and global awareness within the three overarching DIVE-themes of sustainable development, democratic values and citizenship

The project directly involved over 250 vocational teacher students and teacher educators across the four partners, together with 800 + indirect participants. Vocational teacher students' pedagogical and didactical involvement in the project has given them the ability to support their future students to become reflective workers and responsible global citizens. Vocational teacher educators have emphasized the role of 21st century or future skills in facilitating international learning activities, thus raising students' awareness of present and future challenges that are most relevant and manageable for their respective vocational occupations. The teacher students have undertaken critical thinking by analysing and discussing current issues, and reflecting on how democratic or environmental challenges can be dealt with in school and work life.

VOCATIONAL TEACHER STUDENTS' LIFELONG IMPACT ON FUTURE GLOBAL CITIZENS


 Erasmus+

VET teachers and students - devolving globally awareness through:

- Critical thinking (analyzing, discussion, interpretation and reflection)
- (Online) Collaboration (in LC & IC)
- Communication (digital learning communities in digital platforms)
- Creativity (creating digital stories, meetings in virtual spaces etc.)

Teacher educators manage learning activities in meaningful ways by:

- Incorporating the online courses and colloquiums to existing syllabus
- Extending awareness – competent to act



INTERNATIONALISATION AT HOME

Internationalisation is a powerful force that influences the orientation, action, and development of education worldwide. Climate and energy crises, war, pandemics, natural disasters, and hunger are some examples of challenges that need to be solved. If we are to overcome these challenges, both now and in the future, we must communicate, cooperate, and exchange knowledge and experience locally, nationally, and not least globally. The internationalisation of education is therefore essential.

Why is internationalisation important? The European Commission (2017) and NAFSA (2021), amongst others, discuss it in terms of “21st Century Skills”, which include problem-solving, analytical capability, a tolerance for complexity and ambiguity, creative thinking, and communicating effectively across national and professional cultures, as well as competences needed for successfully tackling future professional challenges. The most frequently cited and most widely accepted definition of internationalisation was given by Jane Knight in 2004:

“The process of integrating an international, intercultural, or global dimension into the purpose, functions or delivery of post-secondary education” (Knight, 2004).

This definition emphasizes internationalisation as a process and highlights the international and intercultural dimensions of the curriculum.

Since then, two distinct strands in internationalisation have been identified: “Internationalisation Abroad” and “Internationalisation at Home”. The first, Internationalisation Abroad, encompasses all forms of cross-border education, including the mobility of students, apprentices, teachers, and scholars, study abroad programs and courses, and cross-border research projects. The second, Internationalisation at Home, encompasses activities that help students develop international understanding and intercultural skills without traveling abroad. Quite often, the term Internationalisation Abroad is often interchangeable with internationalisation. Mobility programs are widely recognized as desirable (Birkin et al., 2014).

However, there is some criticism of focusing solely on physical mobility. Outbound student mobility usually involves only a small percentage of students (Birkin et al., 2014), as indicated by studies involving vocational teacher students (Utvær et al., 2022). Although international exchange is advocated in many higher education institutions, the number of students who actually study abroad is low. Less than 4 % of students in the European Union and less than 1% of American students were able to participate in study abroad programs in 2018 (OECD, 2019). A DIKU and NOKUT report (2018) points to significant differences in mobility between programs and shows that teacher education in general, and especially vocational teacher education, is weak compared to other study programs. With regards to vocational teacher students, there are several reasons for low participation rates in mobility schemes.

Firstly, vocational teacher students are not required to have three months of continuous practice, which is necessary to receive financial support from Erasmus+. Secondly, vocational teacher students have a higher average age compared to many other university students, including teacher students in general teacher education. Thirdly, most of them were working alongside their studies and had family responsibilities, making it difficult for them to participate in study abroad programs (Utvær et al., 2022). In addition, research shows that motivation to participate in exchange programs is far higher among students up to the mid-twenties age group than in subsequent years (Wiggen, 2019). In light of these challenges, DIVE formulated the concept of Internationalisation at Home as a means to provide internationalisation opportunities to vocational teacher students despite their reservations concerning international travel, and to evaluate new ways of delivering the benefits of mobility more generally.

THEORETICAL FRAMEWORK VS. PRACTICE FRAMEWORK

Since DIVE is not a research project but is designed to test innovative practices, it is based on what we might call a ‘practice framework’. This means that we are not trying to prove a theory or test a hypothesis but are reconfiguring existing practices in a new way. The overall idea of DIVE is that the benefits of international exchange can be shared with students who are unable or unwilling to travel. This topic has become massively more important since the Covid-19 pandemic, as international exchanges are on hold in most countries. However, there are different perspectives on ‘staying at home’ as a philosophy. For one, staying at home is generally more sustainable than travelling. Recent research on air travel indicates its elitist nature, with a small percentage of the global population accounting for a high percentage of airmiles, replacing the old term ‘jet set’ with a new and perhaps more pejorative term flyskam (flight shame). For students, including vocational teacher students with jobs and families, frequent flying is less desirable.

The DIVE practice framework requires, firstly, an understanding of the benefits of international exchange. In this aspect, we will draw on the comprehensive review conducted by Roy et al. (2018), which identifies a range of potential benefits of international exchange and reviews the effectiveness of international exchange in promoting these benefits. The conclusions of this article are that the evidence for the positive effects of international mobility is inconclusive and is to some extent distorted by the self-selection processes involved in student exchange. In other words, students who volunteer for short-term international exchanges are thought to be more motivated than students who stay at home. We return to this topic below.

As mentioned above, Roy et al. (2018) and Birkin et al. (2014) provide comprehensive overviews of international mobility and its benefits. However, both publications note that there is an absence of systematic research, with the majority of studies relying on small-scale studies of student groups in higher education.

The work of Milton Bennett and his Developmental Model of Intercultural Sensitivity (1986, p. 2) provides a starting point for thinking about intercultural learning, and it is worth quoting Bennett at length:

The basic mechanism for internalizing (embodying) worldview is perception. Following Piaget, Vygotsky, and other developmentalists, children become more adaptive to their particular circumstances by elaborating perceptual categories of relevant things while leaving irrelevant things either unperceived or only vaguely categorized.

For example, pasta is a relevant category for Italian kids, and many of them already know the shapes (e.g., penne or rigatoni) that go with different sauces. Pasta is not very relevant for American kids, and most of them can only use the undifferentiated category of “macaroni.” Writ large, culture provides us with a set of these kinds of figure/ground distinctions that allow us to co-construct with our compatriots the unique adaptive processes of our group....

As a result, otherness exists in a broad and vaguely defined perceptual category, like macaroni for pasta. Such a perceptual condition is inadequate for communicating effectively with cultural outsiders, since it lumps together people of different cultures inappropriately and precludes taking their unique perspectives in any meaningful way.⁴

Models of intercultural competence, or other attributes gained from international mobility, are generally based on a combination of individual gains and social dynamics. That is, the individual learns from social activity in an intercultural context. However, from the point of view of vocational teacher education, intercultural competence is usually less important than professional competence in one’s chosen field. The teaching profession is still very much place-based, and although teachers can be internationally mobile, especially in higher education, they are generally less so in vocational secondary or tertiary education, as discussed by the partners in their respective sections above.

We therefore need to look at theoretical understandings of place and space in order to fully understand the interactions that take place during international mobility, and the possible interactions that might take place in a model of ‘internationalisation at home’. As a starting point, Gray (2005, p. ii) suggests,

The philosophy of embodied realism developed by Lakoff and Johnson (1999)... is central to any consideration of spatiality... a framework based on the interlocking concepts of proximity, mobility and possession provides a comprehensive analytical tool for investigating spatiality within discourse.

Embodiment, however, is central to our experience of space, and something like an expedition to Everest provides an extreme example, where cold, fatigue and lack of oxygen make up a large part of what individuals experience. Clearly, sitting at home watching climbers feeling cold, tired and breathless is not the same as the real thing, but we can

⁴ Milton Bennett, “Developmental Model of Intercultural Sensitivity,” *International Encyclopedia of Intercultural Communication*

understand from our own embodied experience what it is like to be cold, tired, or out of breath. Using a proximity-mobility-possession (PMP) lens to think about internationalisation leads to the following comparison:

Dimension	Internationalisation at home	Internationalisation abroad
Proximity	Caring about topics, or specific groups of people is enabled	Caring about topics, or specific groups of people is enabled
Mobility	Ability to act is restricted	Ability to act is less restricted
Possession	No ownership of spaces	Ownership of spaces emerges over time

We will keep this in mind when discussing internationalisation at home.

MORE ABOUT INTERNATIONALISATION AT HOME

Internationalisation at Home in relation to post-secondary education could be defined as “Any internationally related activity with the exception of outbound student and staff mobility” (Crowther et al., 2001). This definition has been criticized and debated, leading to various attempts by researchers to provide a more comprehensive definition. In 2015, Beelen and Jones proposed the following definition:

Internationalization at Home is the purposeful integration of international and intercultural dimensions into the formal and informal curriculum for all students within domestic learning environments. (Beelen and Jones, 2015, p. 69)

This definition stresses the intentional inclusion of international and intercultural aspects into curricula. It also highlights the role of Internationalisation at Home for all students in all programs. Domestic learning environments can extend beyond the students’ home campus and formal learning settings to include other intercultural and/or international learning opportunities within the local community. This can include working with local intercultural and/or international companies, businesses and schools, interacting with international students domestically, and utilizing diversity within the classroom.

Moreover, Internationalisation at Home is delivered not only through formal, assessed curriculum but also through informal curriculum and non-assessed elements of the student experience that are provided by, or associated with, the institutions involved.

The definition by Beelen and Jones does not mention staff. However, there are many activities across university campuses that fall under the umbrella of Internationalisation at Home, including encouraging faculty engagement in internationalisation and developing strategic partnerships with foreign institutions for collaboration in areas such as teaching, research, co-writing, community engagement, and development projects.

VIRTUAL EXCHANGE

A central component of Internalisation at Home is virtual exchange, a rich and multifaceted activity which refers to online intercultural interaction and collaboration projects between partner classes from other cultural contexts or geographical locations, guided by educators and/or facilitators (Baroni et al., 2019). The term describes various methods of engaging groups of learners (e.g., students, apprentices, teachers and staff) in virtual exchanges with relevant partners (e.g., vocational schools, universities, companies, training offices). From the perspective of the PMP framework, virtual exchange provides proximity, meaning that we can see and hear persons at a distance, but whilst we are still in our own environment. We cannot share the embodied experience of being in their space, the weather, the smell of cooking, and the external soundscape. It does not provide mobility in the sense that we can move around in the other environment, although technologies such as VR and GoPro 360 can simulate this experience (but see below, pp. 30-35 for a detailed discussion of the use of these technologies). And we feel no sense of ownership or possession of the other space, no regular seat or route into the building.

Mittelman et al. (2020) problematize the latter definition about what is really “at home” today with increasing migration and distance education. The authors assert that there is an inbuilt assumption that students are living and studying within their own country of citizenship, but today, it is possible to study across borders online, and the definition of what is at home and abroad becomes blurry. Technology-supported internationalisation has been discussed earlier, and Mittelman et al. (2020) provide an overview. However, the authors see a need for making distinctions, and introduce a third category: “Internationalisation at a distance”, where one can meet people from other cultures virtually. At a first glance, it can seem an easy way to get international experience, but in a Swedish study where students from two countries were expected to collaborate (Aldrich and Johansson, 2015), they considered both technology and language to be significant challenges.

Virtual exchange could be defined as an online intercultural collaborative and communicative method, which allows vocational teacher students and educators to facilitate digital student mobility (Velden and Helm, 2020). Virtual exchange can be an important part of internationalisation at home and a potent complement to physical mobility, but it requires that teachers are trained, that their additional workload is recognised and that their institutions have the necessary institutional, technological, and administrative support necessary to carry out exchanges (Baroni et al., 2019, p. 111).

DIGITAL LEARNING COMMUNITIES AS INCLUSIVE, TECHNOLOGY-SUPPORTED INTERNATIONALISATION PEDAGOGIES

There are many studies that have explored the challenges of using technologies to facilitate learning across countries and cultures (e.g. Baroni et al., 2019; Leask and Carroll, 2011). Mittelemeier et al. (2020, p. 276) argue that internationalised activities “must be designed in a way that...they cannot be completed satisfactorily without meaningful intercultural interaction.” More research is, however, needed in order to support inclusive technological internationalisation pedagogies within vocational education.

Although the use of digital conferencing platforms such as Skype, Teams and Zoom was well established before the pandemic struck in 2020, their use in learning situations expanded massively as the need for physical isolation kicked in. This brought several challenges for educators, and vocational teacher education was no exception. The technical challenges in terms of connectivity and availability of equipment are ubiquitous, and we do not propose to go into detail about how these can be solved. However, in terms of the international experience and the scale of how students can benefit from digital exchange, there are several factors that might be considered.

Firstly, in terms of privacy, confidence and data protection, the use of online meetings can be challenging for some students, but beneficial for others. The ability to switch off one’s camera or microphone can create a degree of anonymity but can also reduce participants’ sense of involvement. This is particularly significant for teachers, who need to make judgements from students’ body language or expression.

Secondly, the fact that virtual meetings end at a fixed point (“Leave meeting”) means that there are fewer opportunities for follow-up afterwards. It is more difficult, or impossible, for students to ask the instructor questions or go for coffee in groups. There are, of course, other social media possibilities for such follow up activities, but these are perceived as less satisfactory. On the other hand, the persistence of social media texts and artefacts, as opposed to memories of physical encounters, provides the possibility of extended debate and analysis over time.

Thirdly, there are two opposite possibilities regarding audio. On the one hand, connectivity problems, room acoustics and inadequate technical equipment may contribute to a lack of what we might call learning fidelity, or an inability to make out words, which is particularly problematic for language learning. On the other hand, these problems may also occur in physical spaces, such as badly designed lecture theatres. Online platforms are amenable to various technical solutions. For example, a graphic equalizer can be used to clean up audio quality, better microphones can be used or participants can wear high quality headphones.

Finally, the chat function on these platforms is a major step forward in enabling comments and questions to be seen by instructors and students, often with multiple threads arising

simultaneously. If properly handled, these can be a real asset. Students who might be too shy to ask questions face-to-face can pose these much more easily. The ability to record and play back sessions is also useful, although again, this is becoming the norm in physical learning spaces as well.

What we conclude from this discussion is that although internationalisation at home can never be a 100% substitute for physical travel, enough of the pedagogical and didactical elements of learning experiences can be reproduced for students to benefit from the experience. The limitations on student participation, which will be discussed in the partner contributions below, are not inherent to virtual exchange but are related to administrative or workload issues. The lack of immersive time in other cultures will reduce the degree of intercultural learning students experience, but does not negate the advantages of accessibility and equity conferred by digital methods.

EXPLORING VR-TECHNOLOGY: REFLECTIONS FROM DIVE

In this section, we reflect on future possibilities and current barriers to exploring immersive and digital technology in DIVE. In this ongoing project, teacher students from the department of teacher education at NTNU, Karlstad University (Sweden), Akdeniz University (Turkey) and the Technical University in Berlin (Germany) collaborate in local and international colloquiums. In this project, students are challenged to address, describe, analyse, interpret, discuss and critically reflect on current challenges and future possibilities within the project's themes of democracy and citizenship, sustainable development and democratic values in vocational teacher education. In this virtual mobility project, students are required to exchange and interact in digital meeting rooms such as Zoom, and on the e-learning platform Canvas. The groups are also required to create digital stories that should raise awareness about a local or global issue regarding the three themes. The stories should be adaptable for vocational pupils in upper secondary school, and/or should reflect on the role of intercultural and virtual interaction and collaboration in teacher education.

CURRENT BARRIERS AND EXPERIENCE

The project has so far only explored virtual exchange in digital meeting rooms. This is, however, sufficient for the purposes of facilitating international collaboration between the participating educational institutions. The purpose of DIVE is to redefine the traditional concept of student mobility in terms of internationalisation at home, digital technology, and online collaboration (Beelen and Jones, 2015; Baroni et al., 2019; Aagaard and Lund, 2020; Conole, 2020). Various barriers regarding "digital ambitions" have emerged to motivate students to participate in an international learning environment. These barriers include:

- Universities having different semester plans/periods and curricula
- Educational commitment to local and national content/context/practice
- Students' motivation and self-confidence to communicate in English
- Budget, time and attitudes towards exploring technology in the project
- Uncertainty of learning outcome – gap between pedagogy and technology

The project is therefore, at present, looking to develop an additional international credit-bearing course that might motivate even more students to participate in international learning activities. This has been successful in OPVET, one of our previous international projects, and has been helpful in orienting DIVE's pedagogical framework towards aspects of hybrid pedagogy and cross-campus teaching and learning (Hilli et al., 2019). Such a pedagogical framework tends to be used in new ways, where "contexts, roles, media and sometimes even curricula and countries are mixed" (Hilli et al., 2019, p. 68).

CURRENT POSSIBILITIES AND IMPLEMENTATION PLAN

The DIVE project was established as a response to the Covid pandemic and consequent restrictions on the normal flow of student mobility. To meet the Erasmus+ funding requirements, the project was required to stress an innovative aspect, aimed at exploring and exploiting the potential uses of digital technology. This innovation is intended to maintain and develop new ways of interacting across borders in the wake of the pandemic. The project is also intended to motivate students to create more immersive digital stories. We have, therefore, purchased digital recording equipment such as GoPro 360 degree cameras. Such digital tools allow students to film whole scenarios and real-life contexts in which viewers can self-select their own focus, browsing with a mouse, cardboard phone lenses or VR-headsets. This is one small step towards expanding the immersive experience of students' active learning, but likely not one that would be perceived as overwhelmingly innovative.

ADVANCED TECHNOLOGY: AMBITIONS ON HOLD

The exploratory ambition to enhance the innovative dimension of DIVE grew during the project. This led to investigating possibilities for enriching international teaching and learning in virtual spaces/hubs. As part of a pilot project with a company called Breach VR in Trondheim, associated with NTNU, we made a deal to get free access to virtual spaces. Oculus Quest 2 business VR-headsets (free licenses) were also ordered but were cancelled at the last minute due to Facebook rebranding itself to Meta(verse) and NTNU data protection rules. This technology adaption was therefore put on hold, but it might experience a resurgence of interest in the near future.

BARRIERS TO ADOPTION AND THEORETICAL CONSIDERATIONS

Gregory et al. (2015) investigated the past, present and future experience of 200 academics and their knowledge of virtual environments. They point out that, in higher education, virtual learning environments (or virtual worlds) have been given broad attention and interest. Nevertheless, this technology has not been established as a solid pedagogical or didactic alternative to traditional ways of providing students with new teaching and learning experiences. Its popularity among educators had also declined, along with their original optimism regarding the potential of teaching and learning in virtual learning environments (Lee, 2009; Gregory et al., 2015).

The Gartner Hype Cycle outlines a model for predicting the adoption of a given idea or product (Gregory et al., 2015, p. 4). The ambition to use VR-headsets in the DIVE-project might be understood by reflecting on the different phases in the Hype Cycle. The different phases are described as technology trigger, peak of inflated expectations, trough of disillusionment, slope of enlightenment and plateau of productivity. At first, the VR-headsets were considered to have great potential in enhancing the quality and learning experience of virtual collaboration. Secondly, the possibilities of VR have mainly been argued in pos-

itive terms and considered as the next innovative step, by moving from collaborating in digital rooms like Zoom to giving students an enriched experience of international collaboration in a virtual-reality space. Here, the issue is representation of the self, the other and the surrounding environment. For some purposes, VR spaces are useful in representing high-risk environments where the physical presence of students or other learners is undesirable or difficult to arrange, such as offshore installations, nuclear plants or spacecraft. In a trickle-down effect, it might be assumed that the same technology could be used to represent construction sites, restaurant kitchens or care home settings. However, the costs of developing new VR environments are currently prohibitive in relation to the costs of simply placing students in these environments.

In relation to international and intercultural exchanges, the primary consideration is not a representation of the environment but representation of the self and others. There is considerable interest in the use of avatars to distance, for instance, autistic students from stressful situations such as job interviews⁵. In Norway, a system called Heimdall's Quest⁶ has been developed to allow students to build their own self-representations as avatars, although not in VR. For our purposes in DIVE, however, we are more interested in supporting vocational teacher students to develop their authentic selves in the context of being teachers. This means that their self-confidence, communication skills and professional image need to be nurtured in person rather than in the guise of an avatar. Thus, the use of VR simply to substitute for personal appearances in Zoom meetings was at best superfluous and, at worst, unproductive in terms of personal development.

By encountering the barriers to explore tech, we also become more aware of the implications to affordance. The accumulation of critical reflections tamed the ambitions of DIVE towards more realistic and justified assumptions, which are supported by empirical evidence rather than by intentions. For instance, the SECTIONS⁷ framework could be useful in making effective decisions regarding purchase of technology/media for teaching and learning (Conlo, 2020). However, the fact that VR-headsets were not utilized did not affect the project's outcomes. Nevertheless, our experience with barriers to the use of VR-headsets in DIVE highlights some common challenges when it comes to integrating concepts of virtual worlds in teaching and learning in higher education, such as funding and time, usability and familiarity, equity, ethics, management and planning. According to Gregory et al. (2015, p. 10), their respondents "agreed that an institution that does not provide funding, technical or teaching support is the greatest barrier to the continued adoption of virtual worlds for teaching, learning and research". The authors suggest it would be beneficial to establish a community of practice at each institution, a community that supports educators in facilitating sustainable integration and utilization of technology in teaching and learning. At NTNU, there are several "digital friendly" communities, including both research groups and administrative staff. Educators could also overcome tech barriers by seeking help at NTNU's section for teaching and learning support, or the equivalent department at other institutions.

5 <https://www.ivanhoe.com/family-health/vr-avatars-gets-adults-with-autism-jobs/>

6 <https://www.heimdallsquest.biz/start/>

7 *Stands for «Students, Ease of use, Costs, Teaching functions, Interaction, Organisational issues, Networking, and Security and privacy»*

PEDAGOGICAL REQUIREMENTS FOR ACHIEVING EDUCATIONAL COLLABORATION IN VIRTUAL ENVIRONMENTS

Lee (2009) examined how virtual environments were supporting collaborative learning, and states that it is “vitaly important that educators carefully consider whether the use of a virtual environment is required or ideal for a given collaborative learning scenario” (p. 156). He concludes by stating “(...) collaborative learning requires educators to recognise that definite steps must be taken to foster social and interpersonal skills such as leadership, trust building, team communication, group decision making / consensus building and conflict management” (p. 157). Educational virtual environments are frequently described in constructivist terms, and if not concrete, they are often implicitly regarded as problem-based, experimental or collaborative learning (Fowler, 2015).

It is well known in teacher education that different theoretical learning perspectives can generate different understandings and knowledge about a subject, phenomenon, learning situation and so forth, not only from the view of one actor/individual, but also from different lenses (Halvorsen, 2017). This involves fundamental philosophical questions, including ontological and epistemological assumptions about what reality is and how one extracts knowledge about «the world».

The DIVE-project is, on the one hand, designed as a pedagogical architecture that facilitates ideas for collaboration, the use of digital resources and learning tasks. To some degree, however, the design is weakened by an implicit pedagogical position and assumptions about learning outcome and future impact. On the other hand, therefore, the pedagogical framework should, to a greater extent, prepare students and educators to teach and learn in virtual environments. There are several future options for adjusting the design. For example, Fowler (2015) argues for a framework that is driven by pedagogical aspects through three stages- conceptualisation, construction and dialogue, which connects the technological affordances and psychological and pedagogical requirements to learn in virtual environments.

FINAL WORDS

The SAMR-model (Substitution, Augmentation, Modification, and Redefinition) could also be useful to describe the current status and future ambitions of implementing and exploring the use of digital technology in the project (Aagaard and Lund, 2020; Conole, 2020). The DIVE project is redefining and expanding traditional student mobility by moving from physical to virtual exchange (modification). However, such collaboration will likely miss out on embodied learning in physical and cultural surroundings affected by language and social interaction (sociocultural perspective on learning). The project is developing massive open online courses and facilitating students in international online collaborative groups (redefining student exchange by enhancing digital technology). Such pedagogical design for teaching and learning could be seen as transformative (Aagaard and Lund, 2020; Conole, 2020).

The pedagogical framework is embedded in technology and vice versa. The design could be understood in various ways, both isolated and integrated, depending on what aspects are to be emphasized within the theoretical learning perspectives. So, considering this pluralistic understanding of barriers and possibilities of teaching and learning with immersive technology, one might easily fall into a relativistic pitfall in grasping the whole concept. This applies especially if the particular is given less attention, and when critical reflections are blinded by idealistic intensions to embed immersive technology in vocational teacher education at any cost.

The next section describes current thinking about another kind of educational technology.

ONLINE COURSES - MOOCS

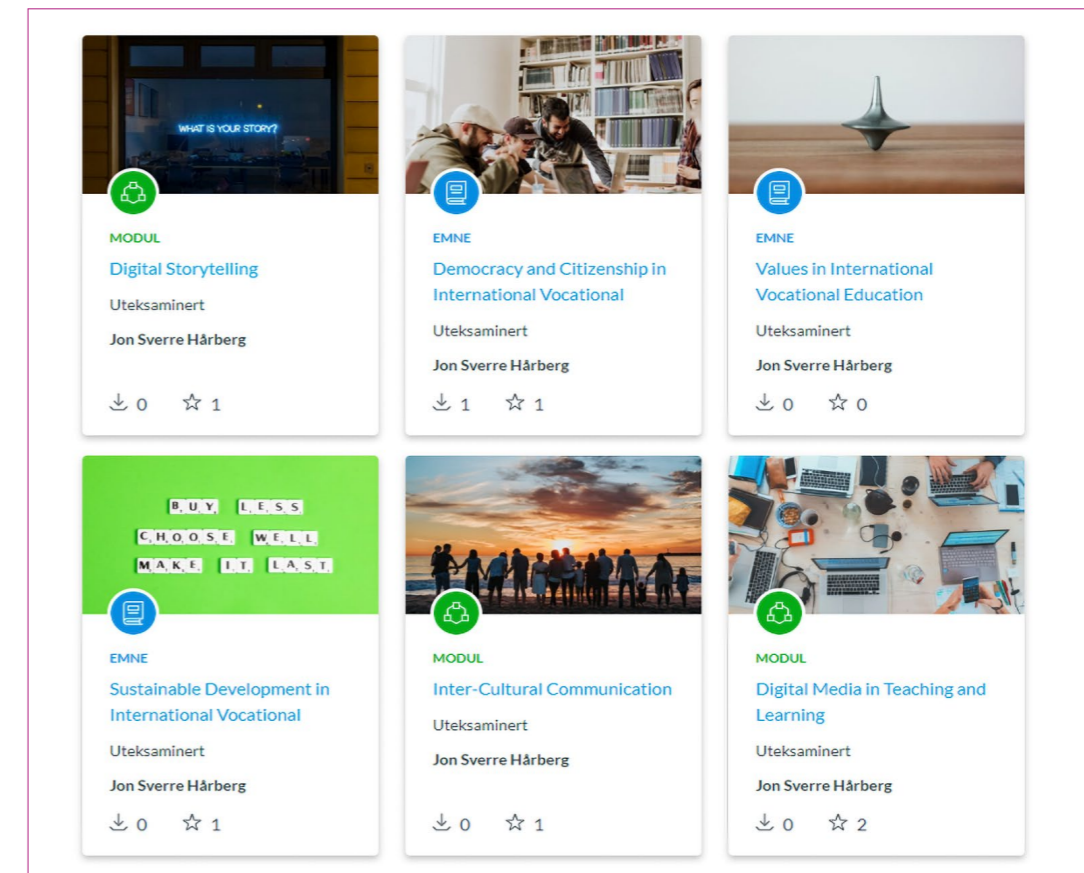
Massive open online courses (MOOCs) as an innovative approach for leveraging technology for educational purposes have recently increased in number (Xing, 2019). The main aim of MOOCs is to provide free and open courses covering an ever-expanding range of topics and interests (Greene, Oswald and Pomerantz, 2015; Missopoulos, Argyropoulou, and Tzavara, 2018) for a wide and global audience. The MOOC movement can be seen as a demonstration of democratizing educational opportunities by making educational resources more accessible, affordable, and free of charge in most cases (Joo et al., 2018).

MOOCs started with a face to face and online free seminar for 2,200 people at Manitoba University in Canada in 2008 (Yoo et al., 2018). In 2011, Stanford University offered an introductory artificial intelligence (AI) course for 160,000 students from more than 190 countries. Subsequently, Coursera, edX, and Udacity, typical MOOC platforms, started in the United States. The New York Times announced 2012 as "MOOC's Year". Finally, MOOCs have expanded to many countries such as OpenUpEd (EU), FutureLearn (UK), and China's Coursera Zone and Tsinghua University (Yoo et al., 2018).

Despite the great potential of MOOCs, there are still pedagogical problems (Yousef et al., 2014), such as low levels of student achievement and high rates of attrition (Cruess et al., 2018; Raffaghelli et al., 2015; Veletsianos and Shepherdson, 2016), lack of success in pursuing the personal learning goals (Henderikx et al., 2017), and dropout (Henderikx et al., 2019).

On the other hand, the research indicates that course completion and drop-out rates are more relevant to traditional courses (Jordan, 2014; Liyanagunawardena et al., 2014; Wang and Baker, 2015). Most MOOC participants do not aim to complete entire courses but are more selectively interested in studying a subset of the full course (Anderson, 2013; Belanger and Thornton, 2013).

When MOOCs are considered in the context of the DIVE project, offering them can be seen as an effective means to recruit more international students. However, supporting international students in online learning is no simple task for both universities and teachers. The problem mainly stems from a lack of theoretical understanding of online international students and their learning experiences (Lee and Bligh, 2019). In the DIVE context, therefore, we cannot really claim to be offering MOOCs since there is no provision in Erasmus+ for the kind of long-term follow up, comprising support, and feedback and assessment that is necessary to deliver genuine MOOCs. Along with many other EU projects, the term MOOC has become a synonym for any kind of online course, and perhaps there is a need for an alternative term, such as VOC-ALs (Versatile Online Course-Assessment Limited).



Search for themes and online courses at the following sites:

<https://lor.instructure.com>
<https://digit.ntnu.no>

The links to the online courses will occasionally be updated on the project's website until the year of 2027.

<https://www.ntnu.edu/dive/online-courses>





Studio Akriinn. Located in campus Kalvskinnet at the Department of Teacher Education, NTNU.

HYBRID LEARNING SPACES: DESIGNING A WEBINAR AS A SPACE FOR HYBRID LEARNING

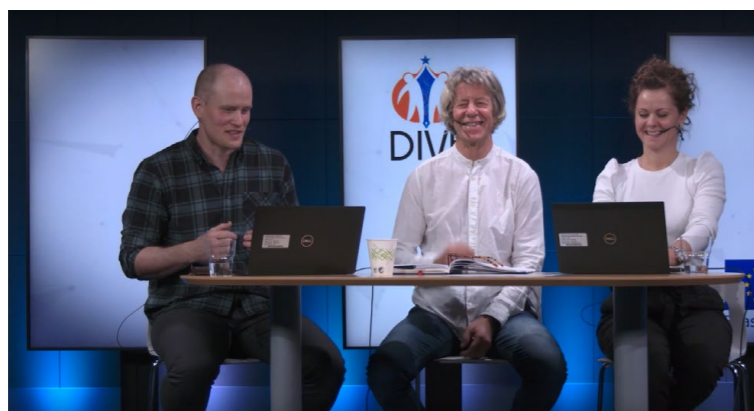
The role of technology in internationalisation has a growing influential role. Leask (2004, p. 340) has argued for the supporting role of technology:

The use of the Internet by all students to access information, communicate with teachers, and interact and collaborate with other scholars and learners all over the world means that distance and time are, theoretically at least, no longer barriers to international exposure and awareness for any student with access to a computer and a modem.

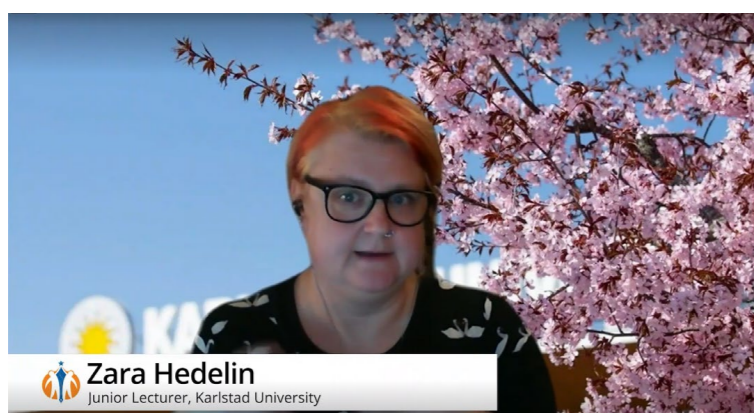
Technologies are, however, not neutral (Strate, 2012) and cannot be seen as a driving force for internationalisation without human intervention. There is a need for technologies to be underpinned and supported by pedagogy through critical and contextual reflection. DIVE digital technologies contribute to meaningful intercultural interaction through the forms of online courses and digital stories when working with topics such as democracy, sustainability and values.

"In Hybrid Learning Spaces, contexts, roles, media and sometimes even curricula and countries are mixed and fused in new ways" (Hilli et al., 2019, p. 67).

Hybridity is not to be confused with other uses of digital media to support learning such as 'flipped classroom' or blended learning. The concept of Hybrid Learning Spaces is different from the 'flipped classroom' as it is not an instructional strategy that reverses the traditional learning environment and moves instructional content outside the classroom and activities that traditionally take place outside the classroom into the classroom. Likewise, hybridity is not to be confused with blended learning that uses sequences of online and offline learning activities and combines online materials with in-person instruction. Finally, even though Hybrid Learning Spaces and hybrid pedagogy share some affinity with other fields such as computer supported collaborative learning, distance learning, e-learning or networked learning, we hope to show that it is also a field in its own right.



Webinar panel - consisting of different roles, such as webinar leader / host, an academic opponent / commentator and moderator.



Cross campus teaching – using guest lecturers from other educational institutes and campuses abroad.



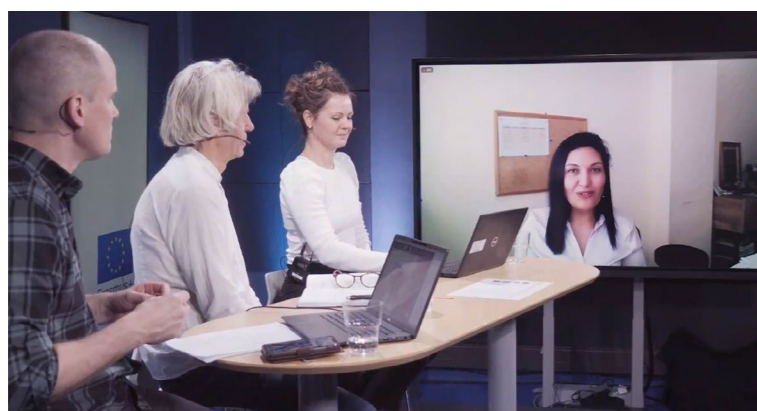
Teacher students located at home or at an institute / campus abroad. Presenting their digital story and answering questions.



Teacher students located at a classroom at the hosting institute / campus. Presenting their digital story and answering questions.



Cross campus teaching – using guest lecturers from other educational institutes and campuses abroad.



Cross campus teaching – using guest lecturers from other educational institutes and campuses abroad.

The following section provides an example of the design of a webinar within the DIVE project.

Webinar invitation

Welcome to the Democracy and Citizenship in vocational education and training Webinar on 26 November at 09.00-11.30. Vocational Teacher students from the vocational teacher education section at the Department of Teacher Education (ILU) at NTNU will present digital stories about the challenges and strengths of democracy and citizenship in vocational education and training. Master teacher students from social sciences (ILU) and PhD students from Akdeniz will also present their collaborative experiences.

In addition, guest lecturers Trond Solhaug (Emeritus, NTNU), Hamid Asghari and Zara Hedelin (Karlstad University, Sweden) and Rabia Vezne (Akdeniz University, Turkey), will contribute different perspectives and ideas to the Webinar topic.

At the end of the seminar, you will be able to meet one or more of the student groups, where you can ask questions and create dialogue and reflections on the content and focus of the digital stories. The rooms will be open from 12.15 to 14.00.

The webinar is a Multiplier Event directed by the Erasmus+ project DIVE (Digital Internationalization in Vocational Education). The webinar is open to anyone who is interested. We especially welcome vocational students, teacher students, teachers, teacher educators, education management, school owners, policy makers and other actors involved in vocational education and training nationally and/or internationally.

We hope you can join us on the 26th of November.

Best Regards,
The DIVE project team

09:00	Welcome to the Webinar
09:05	Introduction to DIVE
09:10	Digital Story 1
09:20	Digital Story 2
09:30	Lecture/Speech
09:55	Digital Story 3
10:05	Digital Story 4
10:15	Lecture/Speech
10:40	Digital Story 5
10:50	Lecture/Speech
11:15	Digital Story 6
11:25	Final Words
11:30	End
12:15 - 14:00	Meet up with the creators of the digital stories



Trond Solhaug
PROFESSOR EMERITUS @NTNU

A plea for 'citizenship education' in Norway



Hamid Asghari
PHD IN EDUCATIONAL WORK @KARLSTAD UNIVERSITY

Vocational education and the school's values



Zara Hedelin
JUNIOR LECTURER @KARLSTAD UNIVERSITY

Vocational education and the school's values



Rabia Vezne
ASSOC. PROF. DR. @AKDENIZ UNIVERSITY

Global Citizenship from a Turkish Perspective

The following table illustrates some of the considerations in designing this webinar to support existing course activities but with the added dimensions of internationalisation and digital storytelling.

Name of the field	Your input
1. Generic Information	
1.1 Subject and Topic	YFL2003 – The School and the Society. Webinar. Democracy and Citizenship in vocational education and training. Hybrid learning/previous completed projects on cross-campus teaching
1.2 Learning time (f2f time and time online)	Please see the attached Webinar program, including the timetable.
1.3 Size of class	21 internal participants on campus/online and 10 external participants online
1.4 Year and program of study	Vocational Teacher Education, bachelor's degree. The students are in their final year.
2. Context	
2.1 Learning outcomes -expressed as knowledge, skills, and competence	<p>Knowledge:</p> <ul style="list-style-type: none"> Have knowledge about the meaning of international collaboration Have knowledge about different cultures and multi-cultural societies Have knowledge about connections between educational history, educational policy and the role of the school and the teacher in society <p>Skills:</p> <ul style="list-style-type: none"> Can reflect upon and develop their own practice in relation to the students' prerequisites, interests and needs based on knowledge from research and experience Can contribute to developing a democratic learning environment, discuss and develop values and ethical considerations related to teaching and learning <p>Competence:</p> <ul style="list-style-type: none"> Can raise questions based on vocational and ethical problems, investigate and discuss these critically through theoretical and research-based knowledge to further develop their own practice and contribute to the development of the school and other learning arenas Can utilize development competence as a basis for meeting future needs in the school and the labour market Can identify their own learning and competence needs, reflect and discuss on their own role in cooperation and in conflict Can analyse educational policy and assess educational needs within their vocation in a historical and cultural perspective Additionally, in the Erasmus+ project DIVE: Develop and strengthen English literacy, digital competence, intercultural competence, international collaboration, critical thinking, creativity, and local and global awareness within the project's themes of sustainable development, democratic values and citizenship.
2.2 Main learning activities and their sequence/or- chestration	The learning activities emphasise informative, descriptive, analytical, interpretive, reflective and dialog orientated approaches.

Name of the field	Your input
2.3 Readiness reflects levels of experience and motivation (instructor readiness, student/trainees' readiness)	The webinar was held in a film studio on Campus Kalvskinnet. NTNU's Teaching and Learning Support Unit was also involved in planning and conducting the Webinar. The students had no experience in presenting digital stories in English. The tutor had sufficient experience with online teaching, but had no experience in leading a Webinar from a studio that resembled a talk show or news reporting format.
3. Resources - learning content, learning services, other	<p>Learning content:</p> <ul style="list-style-type: none"> Digital stories on democracy and citizenship in vocational education and training Introduction with presentation 6 digital stories 3 guest speakers <p>Learning services:</p> <ul style="list-style-type: none"> Professional film studio with crew Panopto video platform for sharing the Webinar on DLR Zoom web conference system for the discussion Zoom breakout rooms for dialog and discussion
4. Design principles (*) - Learning through:	<ul style="list-style-type: none"> Acquisition(read/watch/listen) Inquiry (investigate) Discussion Practice Collaboration Other (?) <ul style="list-style-type: none"> Watch and listen (acquisition) digital stories Watch, listen and read presentations Collaborate online (dialog and discussion) Investigate the topic to gain broader understanding of current and future challenges within the theme Recording and sharing the Webinar – constructing a digital learning resource that makes it possible to analyse and reflect on the content afterwards and evaluate the quality of the Webinar.
5. Roles (*): Instructor role, student role, learning technology role, if any; what is the added value? You can describe the added value with respect to the 4 levels of the SAMR model. See for example https://hdl.handle.net/11250/2979449 , or you can explain it in terms of the five design principles mentioned in Hilli et al. (2019).	<p>The role of the instructor/host is to present and lead the Webinar. The studio staff members made sure the video, audio and pictures were balanced and ran smoothly. The guest speakers presented inputs and perceptive comments related to the topic of the Webinar. The students interacted online and physically in classroom/on campus. The students used digital artifacts to create a digital story.</p> <p>The film studio is equipped with high quality digital technology for recording and broadcasting/streaming the Webinar. In light of re-defining virtual exchange and international collaboration methods by modifying the physical and digital learning activities, such Webinars could probably be defined as transformative. The exploration of virtual exchange is likely to make an impact on the consideration of pros and cons by educational institutions and international agencies to facilitate cross campus teaching and learning.</p>
6. Assessment and evidence of student learning (*)	<ul style="list-style-type: none"> Creating a digital story Presenting the digital story Participating in the online discussion <p>Note! The Webinar did not include questioners/survey/feedback options that could have been sent to attendees after ending the Webinar. Also, the students were not given a reflective task during the course, but their subsequent examination had elements that were relevant to the topic of the Webinar. The most visual evidence of students learning is provided by the digital stories. The stories reveal students' degree of digital competence, English literacy, subject knowledge and overall pedagogical and didactic consideration in conveying a message via digital media.</p>
7. Other related information	The Webinar is edited, subtitled and published on the Website DLR (https://hdl.handle.net/11250/2979449). The Webinar contributes to online collaboration amongst students and enhances the learning community's awareness of possibilities for exploring and exploiting available digital technology that could create new pathways to teaching and learning both locally and internationally.

TECHNICAL SUPPORT IN FACILITATING A WEBINAR

Several staff members from the teaching and learning sections supported the planning and execution of the Webinar. The following text is drawn from interviews conducted afterwards.

What was your general role in the Webinar?

- Planning
- Conducting meetings (level of ambition, coordinating technology and pedagogy)
- Preparing and adding comments in the film studio as Webinar host
- Controlling sound quality in digital stories
- Directing
- Responsible for sound – adjusting microphones
- Assisting main production

How did the specific technologies support or work against the implementation of the Webinar's learning activities?

- Media literacy education = developing students' professional digital competence (producing media expressions by creating, analyzing, collaborating and using media effects and digital artifacts to convey a message or raise awareness)
- Rich media: Higher quality = more immersive experience
- Zoom – broadcasting the Webinar
- Barriers: the dialog and discussion parts are divided into sequences and are limited by a tight time schedule
- Universal Design – unclear area of responsibility

What were some special instances related to Webinar participation that surprised/concerned you?

"Sound is always a concern. When you are sitting in the control room and [] notice a reduction in the sound quality – it will worry me! Always on the alert to maintain sound at once."

"We can allow lower picture quality as long the sound is good."

How would you characterize students and their attitude toward the learning activities required in the Webinar?

"The students made a good impression. They participated on equal terms and probably had a good experience of participating in a professional arena like this. They also gained insight into professional educational contexts from other countries. My impression is that they thought it was interesting."

Are there any areas you might modify for the future implementation so as to strengthen such Webinars?

"Invite students in the film studio."

"If the stories become more pointed, then it can also contribute to more engagement and room for discussion."

"Use Mentimeter, Word Clouds, polls etc. to motivate to even more online participation."

WEBINAR AS TRANSFORMATIVE EDUCATION

Modification transforms the classroom into a hybrid environment for teaching and learning.

It redefines student mobility by exploiting digital technology to explore virtual exchange.

Are there any lessons learnt (positive or negative)? What could be done differently or better with respect to the use of educational technology?

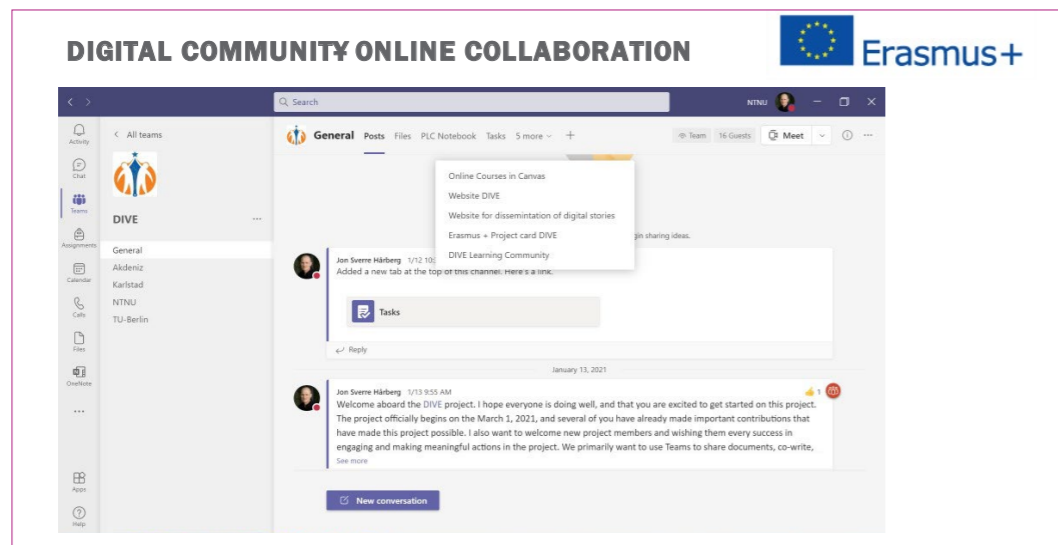
"Sound quality is important! And it's important to emphasize student engagement!" (technician)

What would work in your own teaching context?

"The choice of learning activities and methods depends on the teaching content and expected outcome. Digital technology (DT) can promote 21st century skills, but one should not use DT for DT's sake" (technician)

ONLINE COLLABORATION

The online collaboration has been carried out on the platform Microsoft Teams, Zoom and by email. Project members has exchanged information and ideas. Documents has been shared and created by each partner and through co-writing. Microsoft Teams has been useful in terms sharing and archiving files, making them accessible to every team member. And Teams has been useful for the project to document the development of the outputs in the project. Nevertheless, use of such platforms is dependent on each project members commitment to make contributions that makes the online collaboration productive and meaningful.



STUDENT ASSIGNMENTS IN DIVE (FROM CANVAS ONLINE COURSE)

TASK 1 (NATIONAL)

Thank you for taking part in the DIVE project. The learning activities in DIVE are aimed at motivating learners to gain a deeper and wider understanding of the complexity of local and global issues. In this task, the first step is to establish a local colloquium consisting of 3 to 10 teacher students. When you have established this group based on either common interests or facilitated by your teacher educator, work together and select one of the three DIVE themes⁸. At the same time, study the digital Canvas course⁹ related to the groups' chosen topic. These online courses are designed to help you develop knowledge and skills suitable for learning in both local and international colloquiums. The courses emphasise basic and general theoretical foundations that should strengthen your ability to reflect on a practice.

The second step of the task is to define current challenges and future opportunities, firstly in VET (vocational education and training) and secondly in VTE (vocational teacher education). We encourage each group to research, discuss and reflect upon **local, regional and/or national** issues related to the questions presented on the next page of this document. In the last step of the task, groups are expected to create Digital Stories. These stories should raise awareness of current challenges and suggest practical solutions for the future. You will find guidance on how to create a Digital Story at the end of this document. Best of luck!

TASK 2 (INTERNATIONAL)

In your local student colloquium group, begin to discuss and reflect upon one or more Digital Stories made by local teacher student groups from different national contexts, who are also involved in the DIVE project. Then connect with one or more of these external student groups and participate in international colloquiums using digital platforms such as Zoom. The primary goal of this learning activity is to extend your global awareness of the selected themes. Finally, create a global digital story in collaboration with your international teacher student colleagues from the colloquium groups. The story should help to raise awareness of the complexity of current challenges and future opportunities as you move from a local to global understanding of the chosen DIVE themes.

⁸ *Democracy and Citizenship, Sustainable Development or Values*

⁹ <https://www.ntnu.edu/dive/online-courses>

DIVE themes – questions:

Democracy and citizenship

- How might you define democracy and citizenship?
- How are democracy and citizenship practiced in VET?
- What are the present challenges in VET, and how are they being dealt with?
- How can VET contribute to the development of democracy and citizenship in the future?

Sustainable development

- How is sustainable development defined in VET?
- How is sustainable development practiced in VET?
- What are the current challenges for sustainable development in VET, and how are these challenges being addressed?
- How can VET contribute to sustainable development in the future?
- What kind of best practice examples or topics should be implemented in VET or would inspire VET students?

Values

- How might you define values?
- Which specific values are important in VET?
- What are the current challenges related to values in VET, and how are they being addressed?
- How can VET and VTE contribute to strengthening educational quality through emphasising values?

Requirements for the Digital Storytelling format:

- The storyline should build upon the DIVE theme questions.
- Duration: 3–6 minutes.
- Include illustrations/pictures/animations/video and/or other material.
- Audio: Use background music (with permission if necessary), but ensure that the relative levels of music and speech are evenly balanced. Choose music that helps to convey your message.
- The English language should be used for any voiceovers or subtitles. It is additionally possible to add subtitles in your own language or create a second version of the film in your language(s).
- Primary target group: Vocational students (upper secondary school, apprenticeship or equivalent).
- Secondary target group: VTE and VET stakeholders in general.
- Keywords for academic content: Critical and creative thinking (analytic, interpretive, dialogical and reflective).
- The DIVE project aims to promote the resulting digital stories to a wide range of audi-

ences, primarily on websites, but also at conferences, in schools, learning institutions and other learning areas. Therefore, please decide carefully what you are conveying and displaying in the stories. Do so in accordance with ethical principles and the General Data Protection Regulation (GDPR)¹⁰. Obtain informed consent from the participants if necessary.

- Acknowledgement: on the first and last visible slide/page/other, please add the PPT template¹¹ showing the EU-flag, DIVE logo and the following text: “This story has been made with the support of the Erasmus+ programme of the European Union to the KA2 strategic partnership project DIVE. It reflects only the views of the authors, and the European Commission cannot be held responsible for any use which may be made of the information contained therein”.

Discussion task: democracy and citizenship

In this exercise, discuss the challenges and strengths with the importance/role of vocational education and training in promoting democracy and citizenship in schools and/or companies/activities both locally and nationally. Share experiences and discuss how you, as vocational teachers, can make a difference in schools by preparing future professionals and fellow citizens to take part in working life and community in society (Opplæringslova, 1998, §1-1)¹². Feel free to discuss these ideas in accordance with the overall curriculum. Read in particular the values of education section 1.6 and section 2.5.2 on democracy and citizenship under principles for learning, education and development. Here are examples of concepts / subcategories that can be a starting point for exchanging experiences and discussion. The list is by no means exhaustive, and other equally important concepts may emerge during the discussions. Good luck with the task!

- | | |
|-------------------------------------|-----------------------------------|
| • School debates | • Equality / solidarity / respect |
| • Participation / Co-determination | • Human rights |
| • Inclusion / community / belonging | • Conspiracy theories |
| • Cultural diversity | • Radicalization |
| • Freedom of speech | • Fake news |
| • Values and attitudes | • Polarization |
| • Gender balance / equality | • Dilemmas in democracy |

¹⁰ Further information: https://europa.eu/youreurope/business/dealing-with-customers/data-protection/data-protection-gdpr/index_en.htm

¹¹ Ask your teacher – the project has a PPT template ready to be used.

¹² <https://lovdata.no/dokument/NL/lov/1998-07-17-61>

CRITICAL THINKING, ETHICAL AND ENVIRONMENTAL AWARENESS, AND DEMOCRATIC VALUES AND ATTITUDES IN VOCATIONAL EDUCATION AND TRAINING

In groups, you will work together to create a digital story. You will receive feedback and guidance on the work. In addition, individual tasks must be completed.

Create a digital story based on topic A or B:

A. Critical thinking, ethical awareness and environmental awareness in vocational training

- How can you facilitate vocational training that emphasizes critical thinking, ethical awareness and environmental awareness?
- What are the challenges of facilitating such training in vocational subjects?
- What benefits can such training have for work and social life?
- What significance can such training have for students' development, learning and education? (Overall part, principles for learning, development and formation)

B. Democratic values and attitudes in vocational training

- How can you facilitate vocational training for and through democratic participation?
- What are the challenges of facilitating such training in vocational subjects?
- What benefits can such training have for work and social life?
- What significance can such training have for students' development, learning and education? (Overall part, principles for learning, development and formation)

Try to create a story that is as close as possible to your/their vocational education program and/or professions, highlight authentic everyday life in school, work and social life, and minimize general and normative considerations. When you reflect on and discuss the questions or convey the message through other means of expression, draw in theory from curriculum literature (or other relevant sources), your own experiences as a teacher (or beginning teacher) and/or as a professional or professional practitioner. We encourage creative solutions.

Plan for the semester

1st student gathering on campus:

- Establish groups, discuss topics and clarify how you will collaborate between the study sessions.

Between student gathering 1 and 2:

- Complete one or more online courses on Canvas based on the chosen theme (democracy and citizenship, sustainable development or values. The online course on digital narratives can also be of great help).
- Write a reflection (1-2 pages) about the significance of theme A or B for your own de-

velopment as a vocational teacher, and the pupils' learning, development and education. Actively use curriculum literature in the reflection.

- Read chapters 3 and 4 in the book *To Build Bridges* (Utvær et al., 2022).
- Create a manuscript or other plan that documents how you intend to create the digital narrative.

On campus:

- Present preliminary work. The work should be summarized and presented in a poster (size A3).
- Prepare proposals for assessment criteria

Between student gathering 2 and 3

- Complete digital narrative

On campus:

- Present the digital narrative
- Give fellow students feedback according to assessment criteria
- Answer the evaluation survey

Course assignment emphasising student's feedback

In this assignment, you will complete an online course on sustainable development. An invitation to the course will be sent out. If you do not receive an invitation, you can contact your teacher. After you have completed the course, you will briefly answer the following questions:

1. What have you become more aware of after completing the course?
2. What was challenging (language, content, structure, relevance to vocational subjects or other)?
3. How can the course be improved?

The answers should be uploaded in a Word document no later than XX (date).

Assessment: Approved / not approved

Good luck with the assignment!

ASSESSING DIGITAL STORIES

Assessing digital stories can be a difficult task. Teacher students from the course “practical pedagogical education in vocational education at NTNU,” have been involved in making assessment forms used to evaluate each other’s digital stories.

Here are some examples made by the students:

Assessment matrix Digital storytelling	6-5 (high goal attainment)	4-3 (medium goal achievement)	2-1 (low goal scoring)	Comment
Construction of digital story	Has a clear thematic connection and a clear purpose	Has a thematic connection and a clear purpose	Has a certain thematic connection and purpose	
Actuality theme	The theme is clear and relevant in today's working and social life. Is relevant to the target group.	The topic is somewhat relevant in today's working and social life. Is somewhat relevant to the target group.	The topic is less relevant in today's working and social life. Is not relevant to the target group.	
Clear message	The message is communicated in a way that is intended for the target group and is presented in a good and orderly way, both visually and orally.	The message gets across, but questions are asked about its relevance to the target group. The presentation is perceived as neat.	The message is irrelevant or does not suit the target group very well. The message is conveyed untidily, and it is difficult to grasp the content of the presentation.	
Multimodal Tools	Very good use of audio and graphic tools. Informative, not intrusive impression	Adequate quality of audio and graphic tools. The impression of the video is neat.	Untidy use of audio and graphic tools. “Cheap” effects, noisy expressions.	
Relevance in relation to the task	Shows clear answers to task The narrative has good Structure. Sees an internal connection.	Answers most of the assignment. Adequate structure.	Only summarizes the assigned task. Indistinct structure.	

Assessment criteria	High goal attainment	Average goal attainment	Low goal attainment	Feedback
Conveying the message	The message comes across clearly to the recipient.	The message partially gets through to the recipient.	The message does not reach the recipient.	
Digital skills	Uses advanced technical aids in the production of the digital narrative.	Uses technical aids in the production of the digital narrative.	Uses simple presentation, with text in the production of the digital narrative.	
Creativity	Shows a high degree of creative solutions and thinks independently and “outside the box”.	Shows some creative solutions and a certain degree of independence.	Shows little/no creative solutions and little/no degree of independence.	
Academic content	Uses good and relevant curriculum literature	Uses some relevant curriculum literature.	Uses little/no relevant curriculum literature.	

Assessment form Digital story	Excellent	Good	Further development	Com- ment
Academic content	Very good use of subject material that creates a basis for wonder and reflection. Use of relevant curriculum literature links it to practice. Good interaction between curriculum literature and own experiences (has a common thread)	Uses subject matter and own experiences		
Curriculum literature				
Reflection				
Professional proximity				
VTE-relation				
Example and experiences				
Conveying the message	An active and reflective narrator who creates good insight into the topic.	Communicates the team in a relevant way		
Illuminate theme				
Common thread				
Voice				
Clear and precise				
Tempo				
Structure				
Engagement				

Answers the narrative assigned in the task	It is easy to understand which theme the group has chosen. Creates interest in the digital narrative.	Partially answers the assignment.		
How do you facilitate vocational training that emphasises the chosen topic?				
What are the challenges of organising such training in vocational subjects?				
What benefits can such training have for work and social life?				
What significance can such training have for students' development, learning and education? (Overall part, principles for learning, development and formation)				
Digital competence	Very good use of effects that reinforce the message between image and sound. Captures the attention of the audience.	Use of effects that match image and sound.		
Image use				
Video				
Effects				
Illustrations				
Aesthetics				
Sound				
Flow and pace				

ONLINE ACTIVITIES ON SUSTAINABILITY

STUDENT ASSIGNMENT ON SUSTAINABLE DEVELOPMENT (FROM CANVAS)

The teacher students are tasked to identify sustainability-related aspects and outline a teaching unit. This includes the following subtasks:

1. Choose a topic or learning field from your national curriculum you will teach in the future (e.g. German Rahmenlehrplan).
2. Identify possible links to sustainable development (see example).
3. Choose suitable approaches and methods and give reasons for your choices.

Example:

Sustainability-related aspects in learning field 7 "Würze kochen" (wort cooking) in the German curriculum of the vocational education of brewer/maltster:

- Energy and water uptake during wort cooking (heating systems, energy calculations)
- In this learning field, the raw material hops are introduced. The cultivation of hops requires a high amount of water. Although only 4g of hops are used to produce a litre of beer, hops contribute greatly to the water footprint of beer.
- Comparison of dried hops vs. hop pellets vs. genetically modified yeast with hop aroma
- Comparison of drying hops with and without the use of sulphur
- The isomerisation of alpha-acids of hops is energy-intensive and can be chemically enhanced by using catalysts and increasing the pH. Trade-offs can be discussed.

VALUES

There are values that permeate education in all grades and types of education. In Sweden, there is a specific word for that: värdegrund. Since teachers work with students with different backgrounds, life experiences and learning conditions, it is important that teachers relate to the värdegrund. Even though you might not have the same concept as the Swedes, there are still values permeating society and the school system.

The values concern human rights and democracy in general, and in the introduction video, we highlight things like freedom and the integrity of the individual, equity, gender equality, solidarity, and the inviolability of people. In this course, the students can choose one or more values to focus on. In one assignment, they are asked to organize conversations with two teachers and two students in vocational education to explore their views on what values mean to them in a school context. As in other courses in the project, the students form groups to create a digital story to share with students in collaborating countries.

When we created this course, our aim was that it should be possible to complete it within about six hours. One reason for this was that we wanted to be able to integrate the work in existing plans. There are online courses from Sweden, Norway and Germany. These are available in English, and it is possible to compare them with other writing on this subject. It may not be possible to compare how all countries work with values or related areas, but comparing a few countries can be a good start.



Foto: Elin Iversen/NTNU

DIGITAL STORIES AND IMPLEMENTATION: VIEWS FROM THE PARTNERS

EVALUATION – STUDENTS’ VOICES

General feedback from the students from all four countries mention that all three subjects (democracy, sustainable development, and values) are important and that the course work made them reflect on such ideas, which was a positive experience. Students perceived that working with the module has increased their ethical awareness and skills in critical thinking. They also mentioned that they learned a lot about how to inspire their future students to use critical thinking and reflect upon their role in both their private lives and future workplaces.

Students perceive the overall project as instructive and rewarding because of the various challenges, such as understanding what the project is about, using the English language, handling digital tools, making a film about values, collaborating with other students and reporting results. The Norwegians noticed that Swedish and Norwegian school systems have a lot in common when it comes to values but that it was also interesting to learn other perspectives.

“It was interesting meeting other schools from other countries online, and realizing we are working together to reach the same goals for our planet, and that we are not very different.”- (Norwegian student)

“Reflecting on the fact that we humans are the same in different countries, but we are also different individuals with different views of the world - respect for difference.” - (Swedish student)

“By working with values in International Vocational Education, I have learned that, as a teacher, it is very important to consider the human and democratic values, the equal value and rights of all people. Through discussions, we learned to connect curriculum and human and democratic values.”- (Swedish student)

“I learnt more about teachers’ possibilities and responsibilities.”- (Norwegian Student)

Other remarks concern the benefits of working with technology and the English language, and how they can use the competencies they develop within the project as future professionals. The content of the modules form a basis for international cooperation where matters such as similarities and differences are at hand for the exchange. This can develop intercultural competencies, which is one of the aims of the DIVE project. We have learnt that it is very important to keep it short and have a clear focus instead of thinking that we can cover everything. If the aim is internationalisation, it is important that the students are given time to really reflect upon and dig deep into a subject. If there is too much content, it may “split the vision”.



Simplicity – or rather focus – concerns not only the content of the subject but also practical matters such as time to complete the course, accessibility, structure, and user-friendliness. Practicing English at home can mean listening to native speakers (e.g. in films) or to other learners from the same language group (e.g. at school). Meeting second-language speakers from other language groups means listening to new ways of speaking (and sometimes pronouncing) English. This can be challenging. Practicing storytelling allows possibilities to communicate with more than just words.

FEEDBACK FROM THE PARTNER INSTITUTIONS

TU BERLIN

At TU Berlin, an elective module was designed and offered in the winter semesters 2021/22 and 2022/23. The module included virtual international colloquia and collaborative group projects in international groups, where the students developed short digital stories regarding the themes of the project DIVE. In winter semester 2022/23, international students could even enrol at TU Berlin and receive credits for the elective module.

There are a number of opportunities for digital student exchange and internationalisation at home. Since students have a high workload and do not have much free time, digital technology facilitates international exchanges. Barriers to international exchange, such as time and cost, are overcome by online courses. The students can stay in their surroundings, continue their regular studies, keep their jobs and housing and stay with their family and/or spouse while taking part in digital student exchange and online courses where they improve and practice their English language skills and get in touch with students from other countries and cultures.

Challenges include the motivation of students to take part in the online courses. The courses are often elective and not mandatory. In addition, the students shy away from speaking English and fear a higher workload due to the foreign language.

In feedback at the end of the modules, the students stated that they enjoyed the international group assignment as well as the international cooperation. Additionally, they regarded the three themes addressed in the modules (as well as in DIVE itself) as important. They also indicated that they expanded their knowledge in using digital tools and techniques during the joint development of a digital story.

The teacher educators deemed both the courses in English as well as the cultural exchange as important. Learning about other educational systems, vocational education and teacher education across Europe and Turkey was especially valuable. Moreover, the three topics of sustainable development, values and democracy/citizenship are very relevant in teacher education. The consideration of these topics from the perspective of other countries, especially Turkey, was valuable for the students. In addition, the students showed an immense creativity in their digital stories.

International digital learning activities would, ideally, be included in mandatory modules and courses. Moreover, it would be beneficial to offer English language classes for both teacher students and teacher educators beforehand.

Benefits of international learning experiences include improvement of English skills, getting in touch with students from other countries and cultures and getting to know other educational systems and teacher training approaches. In addition, the perceived cultural differences initiate reflection processes. Furthermore, a positive digital exchange experience could motivate the students to study a semester or year abroad in real life.

As an example of how TU-Berlin dealt with student feedback, we present the following section on improving the Canvas course “Sustainable development” based on the feedback of students.

In order to shorten the course and decrease the amount of text, the following steps were taken:

- In the introduction to sustainable development (Chapter 1), the list of SDGs was deleted.
- The list of SDG 12 targets was deleted in Chapter 2.
- Chapter 3 “Local and global sustainability-related initiatives” was deleted (assigned to research stakeholders and put on a collaborative map).

In order to increase the level of proficiency and decrease the density of academic content:

- Sub-chapter “Strategies towards sustainability: efficiency, consistency and sufficiency” in Chapter 1 was deleted. The corresponding question 6 in the Chapter 1 quiz was also deleted.
- The introduction of Chapter 5 (now Chapter 4) was shortened.
- In Chapter 5.2. “Overview over key didactical approaches and methods” (now Chapter 4.2), an article from Journal of Cleaner Production was removed.

The mentioned mistake in the Chapter 1 quiz (economic is given twice as a possible answer) was shown to not be true. It is assumed that this perception was due to a translation app that must have translated “financial” and “economic” as economic in Norwegian.

KARLSTAD UNIVERSITY

At Karlstad University, vocational student teachers are professionals from different vocations studying and practicing the teacher profession in six courses offering 15 ETCS credits each. They can study the program either full-time or part-time. The DIVE project has been integrated into three of these six courses: 1) School as System and Idea, 3) Teacher Training Practice, and 4) Governing Learning. These are courses dealing with related subjects. Altogether, 142 student teachers have participated, spread across 4 courses, two cohorts of students from course 1 and one cohort each in courses 3 and 4. The first group

participated in the autumn semester of 2021, and the last group in the autumn semester of 2022, which finished in January 2023.

Participation at a local level was made mandatory in the courses. Our students have had access to the project courses, and all of them included material on the common project platform (Canvas NTNU). From our part, recorded lectures on values have been made within the framework of the DIVE project. All DIVE courses have been studied, depending on how they fit into the regular courses, and the students have been working together according to their future vocational programs. However, participation in the international colloquia has been voluntary. As a majority of our vocational student teachers already work in schools, they have limited possibilities to participate in extra-curricular activities, and only 20 students have attended the international events.

One challenge for us in this specific project has been that our program is already filled with subjects stipulated in the curriculum. In addition to this, many of our students already work in schools, due to teacher shortage. Since it is mandatory to have a vocational profession before entering vocational teacher education, many students start the program late in life and have to take care of their families. The average age for students starting the program in autumn 2022 was 39. As mentioned above, this means that student teachers have to prioritize carefully in their lives.

We have not been able to make the international colloquia mandatory in our program during the project period, but the idea itself could make internationalisation and the exchange of ideas between students from different countries possible. From our side, we need long-term planning for making the necessary decisions to establish this kind of exchange. To us, dealing with all the mandatory administrative procedures was not worthwhile given the short project duration, although we did what we could to integrate the DIVE courses into existing courses.

The digital part was not a problem to the students at Karlstad University. All our students already study online and meet on campus only three times per semester, so they are used to technology and meetings online. English is required to enter any teacher program at Swedish universities- this does not mean all students are fluent in English or are sufficiently confident in speaking it, but they all have basic skills. The themes of the project are also mandatory content in all teacher educations, but not in this form and certainly not in relation to other countries.

The preliminary results of the evaluation survey and the comments given to the teacher educators during the courses show that the students were inspired by their participation in the project. The students evaluate this way of working positively, and they mention that they have developed new ideas of how to work with their future secondary pupils.

Five students have given their consent to being interviewed about their participation in the project. The interviews will take place within the framework of a research project where we hope to be able to contribute more in-depth knowledge about the student teachers' experiences of the project.

Teacher educators claim they can draw several positive conclusions such as the joy of communicating in different languages, curiosity about working with professional subjects in other countries and the desire to make international contacts for the future. The workshops have provided excellent opportunities to work with subject integration. As teacher educators, we have been sharing our experiences from the project within our own university and within a national vocational teacher community. An example is our presentation in a local conference on teaching in higher education. Colleagues from other teacher training programs have been very interested in the idea itself – the possibility of exchanging ideas between student teachers from different countries. At our university, there is an aim to give more students opportunities to international exchange, but in teacher training programs, this has been extra difficult due to national regulations and curricula.

AKDENIZ UNIVERSITY

At the very beginning of the DIVE Project, Akdeniz University organised a local competition to design a project logo. The winner's logo design was shared with NTNU. Project partners voted for the suggested logos, and the Akdeniz University-designed logo was chosen as the logo of the DIVE project. The responsible student from Akdeniz University was given an award by NTNU. Moreover, this news was published in 12 different local newspapers in Antalya to announce the logo winner and present the project. The project has also been disseminated via Akdeniz University's International Relations Office's official social media accounts and in e-newsletters in English and Turkish.

As a first step, the core project team, including three research assistants and one academic staff (project manager), prepared an online module called Democracy and Citizenship on Canvas. As a second step, eight MA and PhD students studied and tested the online module. These group of students also studied the OPVET Digital Storytelling Module to prepare digital stories on DIVE topics. Afterwards, one research assistant prepared a presentation to explain the details of Digital Storytelling and demonstrated online applications on how to prepare digital stories. Next, the Project Manager organised a local colloquium with this group, obtained feedback, and analysed the results. The data from the feedback were collected via a semi-structured questionnaire prepared by the project coordinator from NTNU. In addition, the Project Coordinator from Akdeniz University attended a webinar organised by NTNU on 26.11.2021 and presented "Democracy and Global Citizenship from a Turkish Perspective," together with two digital stories prepared by Akdeniz University students.

The project was also disseminated at the Mapping Teacher Education in Europe Project's International Congress on 6.07.2022. One of the project team members presented a paper called "Canvas as a Free Online Course Management System and Usage Examples" and gave detailed information about the DIVE project's aims and activities on Canvas at this congress.

Feedback from eight students who prepared Digital Stories was also used for an academic paper called "Examining the Opinions of Teacher Candidates on Dive Modules: A Case

Study," which was presented at the International Congress of New Horizons in Social Sciences on 25.11.2022 in İstanbul.

As a third step, 43 students from the English Language Teaching Program at the undergraduate level (3rd Year/5th Semester) who took the "Project Development in Education" course given by the project manager from Akdeniz University studied three DIVE Online Modules and OPVET digital Storytelling Module on Canvas. These students did group work and prepared eight digital stories (3 on Democracy and Citizenship, 3 on Values, and 2 on Sustainable Development) as a course assignment. This homework will be a part of their final assessment (20%) in the "Project Development in Education" course. These students also gave feedback via the same semi-structured questionnaire. The analyses were done by the project manager and shared with the coordinator from NTNU.

In the fourth step of the implementation of the DIVE project, these 43 students attended three international colloquiums organised by project partners. One was hosted by TUB on 13.11.2022, the other was organised by NTNU and Akdeniz on 16.12.2022, and the last one was organised by Karlstad University on 20.12.2022.

Finally, 16 Digital Stories were prepared by teacher candidates from Akdeniz University. The challenges in DIVE were mainly related to motivating students to engage with online courses, since they feel isolated in these situations. Students mostly prefer physical mobility exchange rather than digital exchange, as they want to go to other countries and live the culture. In fact, the literature shows that engaging students in online courses is a common problem in distance learning (Heflin et al., 2017; Coates, 2006; Reeve, 2013; Vezne, et al. 2022).

The opportunities for students were mostly related to online courses. Students expressed that they learnt about the DIVE topics and the importance of teaching DIVE topics in VET. Moreover, they stated that they learnt how to prepare digital stories, the purpose of DIVE project, and working with a team and being a part of it. They also said that they learnt the current situation of VET in other countries, especially in Germany. However, they are more eager to see other countries in person and live the culture through face-to-face cooperation and interaction. Internationalisation at home and digital exchange are less appealing for Turkish students.

From the teacher educators' side, they stated that DIVE topics (Democracy and Citizenship, Sustainable Development, Values) should form the most important part of teacher education programs as they do in Norway. On the other hand, it is understood that it is more difficult to motivate and engage teacher candidates in online courses and digital exchange. Because of this, teacher educators gave extra credit (20% of assessment) to students in one of the current courses ("Project Development in Education" Course) to motivate them to attend DIVE project activities.

For Turkey, the objectives of DIVE can be mostly achieved via international projects. Within projects related to DIVE, there will be more online courses, whilst students can also study

and do group work with their local peers and international peers. This will also improve their social and soft skills as well as their digital and English language skills. This will be beneficial for academic staff, research assistants, VET teacher candidates, and, of course, the ultimate beneficiaries will be VET students. This is especially important in Turkey, since the VET track is, for young people, the least desirable form of upper secondary education, and is undervalued by society. Improving the scope and quality of VET teacher education is therefore a significant benefit to VET in Turkey.

NTNU

The project themes democracy and citizenship, values, and sustainable development, correspond well with the core curriculum, values, and principles applicable to primary and secondary education in Norway (Udir, 2022). Vocational teacher education plays an important part in emphasising these themes and developing vocational teacher students' teaching competence in the integration of relevant topics within the themes of occupational training and learning in vocational education at the secondary level (NTNU, 2018). The complexity and breadth of the themes have provided opportunities to implement the selected topics related to students' vocational professions within a wide range of pedagogical, didactic and core subject courses. The online courses developed in OPVET and DIVE have been implemented in students' courses in the form of tasks, assignments, and digital learning resources.

This will support teacher students' development of subject knowledge, awareness and competence to integrate the themes in their current and future teaching and learning for vocational education in upper secondary schools and apprenticeships. Furthermore, they help to prepare the students to reflect on global conditions and seek dialogue with teacher students abroad. The aim is to strengthen VTE-students' English literacy, digital competence, intercultural competence, and to prepare them for international collaboration, critical thinking, creativity, and local and global awareness within the project's themes of democratic values and citizenship.

The online modules and other local and international learning activities have been implemented in the following courses:

Vocational Teacher Education (VTE) courses YFL4306, 4307 and 4308 (pedagogical and vocational training of practice). As an incentive, students were offered the alternative of attending international colloquia held by TU-Berlin in the fall of 2021 and 2022.

- VTE course YFL2003 (the school and society): Completion of the online courses democracy and citizenship and values was made an obligatory task and an option to the exam topic. The students made and shared local digital stories at the project's international webinar.
- VTE course YFLF1005 (Professional Knowledge): Integrating subjects related to sustainable development goals in course examination text, adjusted to VET-pupils prior knowledge and occupational relevance.
- VTE course YFLF2002 Energy Efficiency: Integrating learning tasks related to sustainability goals 7, 9, 11 and 12, adjusted to VET-pupils' prior knowledge and occupational relevance. Using the online course sustainable development and creating digital stories, podcasts and vocational didactic teaching planning.
- The course DID3202 (vocational didactics and pedagogy - practice and reflection) in the Practical Pedagogical Education for Vocational Subjects: Implementing democracy and citizenship and values. Making local digital stories (semester fall 2021) and making and sharing digital stories with students from Akdeniz (semester fall 2022).
- The course DID3203 (Vocational didactics and pedagogy – practice and reflection) in the Master's degree in vocational didactics: Students work, make and share digital stories at the project's international webinar.
- Master students from social studies, together with students from Akdeniz, explored virtual exchange in Zoom meetings and discussion in the LMS Canvas.
- Altogether, 8 students from NTNU attended the international colloquium organised by TU-Berlin: Integrating all Outputs.
- NTNU organised a logo contest in collaboration with the project partners and established a project website (<https://www.ntnu.edu/dive>) displaying information about the DIVE project, digital stories, online courses and guidebooks from OPVET and DIVE. We also published a chapter on the international journey for VTE at NTNU from OPVET to DIVE in the course syllabus list (Utvær et al., 2022).

VOCATIONAL STUDENTS' FEEDBACK ON THE ONLINE COURSE "DEMOCRACY AND CITIZENSHIP"

In the students' feedback on the online course "Democracy and citizenship," the students expressed that they have developed their knowledge of the historical foundations and development of democracy and citizenship, and that they also gained a further understanding of the concept by acquiring knowledge of citizenship and democracy in the digital age. The following is a quote from one student: "For me, this was a very useful and great course that I have read through several times." Many of the students remarked that they could use this knowledge as a future vocational teacher to apply democratic principles in their pedagogy and facilitate pupils' citizenship learning in order to develop their knowledge, skills, attitudes and values in various areas. One student wrote, "In order to learn citizenship, pupils shall learn to interact actively and constructively with others, think critically, act in a socially responsible manner and in a democratic manner." Nevertheless, several students wrote that they miss more specific learning about how different vocational teachers work with democracy and citizenship, as well as a desire to gain more insight into vocational teacher education and vocational training in other countries. The following are two more quotes from students: "I had expected the course to include a little more academic stuff directed to vocational teacher, there was a bit too much history" and "I read a bit what the others wrote under various questions, but did not get into any discussion with the others. Can't see I got any better insight into vocational teacher education in several countries."

The students liked how the modules in the online course were structured and that it was so varied. They gained a better understanding and knowledge of the material through reading, watching the videos, participating in quizzes and sharing knowledge and experiences with other participants. Through the course, they read what other participants wrote, and it appears that regardless of country, they all wanted to gain a greater knowledge of democracy and citizenship across national borders. One student wrote: "The fact that we have technological tools that make it possible is exciting and important for sharing knowledge between us." One suggested that it would be nice if they could have made contact with other participants during the various topics so that they could share future experiences with one another. Another suggested that if the course had been digital across the different countries over one or two semesters, they could have better collaborated on the assignment through both written and oral work.

From the standpoint of vocational teacher educators at NTNU, internationalisation at home via virtual exchanges is considered to be educational, democratic, environmentally friendly, and innovative. It is perceived to be educational in that it develops students' global competence. This could be described as building the capacity to "to examine local, global and intercultural issues, to understand and appreciate the perspectives and world views of others, to engage in open, appropriate and effective interactions with people from different cultures, and to act for collective well-being and sustainable development" (OECD, 2018, p. 7). Educational opportunities to gain global competency have previously been limited to identifying local and national issues related to vocational education and training,

subsequently giving attention to global conditions and international collaboration. Also, it has been educational in terms of rethinking and modifying pedagogical and vocational didactics to justify the importance and meaning of cross-disciplinary collaboration, the core curriculum (Udir, 2022) and DIVE themes in vocational education and training.

Furthermore, we see virtual exchange as a democratic act, making international education accessible and inclusive by giving students equal opportunities to participate in local and international learning activities. These activities emphasise democratic values as practical guidelines for communicating and developing global perspectives on vocational education and training through dialogue and critical reflections. But the project has shown us that it has been challenging to facilitate learning activities on a local level. This is partly due to differences in the descriptions of the learning outcome in students' courses. To some extent, the international student assignments were additional to obligatory tasks and were given as compensatory work.

Furthermore, it takes time to create an academic culture that gives extensive attention to the value of internationalisation in the students' education. The typical vocational teacher student is characterised as an adult student (average age 39) who is an experienced professional worker employed in e.g. health care, industry, construction or upper secondary school, with family obligations and an established life. Vocational teacher education attracts applicants from all over the country, so the students meet only 3 times a week over one semester. These circumstances also make it difficult to motivate students to attend activities over and above their obligatory tasks. Even so, and on the bright side, we have succeeded in implementing learning objects from the project in both obligatory assignments and examinations in courses that allow different teaching and learning approaches to developing knowledge, skills, attitudes, and values. At the same time, it has been difficult to coordinate virtual exchange with all partners in the project, due to their different semester dates, course contents or curricula.

When it comes to the environmental impact, virtual exchange, as we see it, has obvious potential to reduce carbon footprints by reducing the need to travel at home and abroad. In our previous project OPVET, coordinated by NTNU, we learned that physical student mobility consisting of shorter stays abroad, lasting for only 2 to 3 weeks, provided rich experiences and learning outcomes to those who travelled abroad. However, the majority of students did not have the opportunity to embark on such journeys due to work, limited financial support, and family circumstances (Utvær et al., 2022). Our experience with exploring virtual exchange as part of internationalisation at home shows that students need considerable preparation time, and teacher educators also need to be trained and be granted sufficient time to strengthen the quality of virtual exchange. In light of such circumstances and experience, the DIVE project has shown us that virtual exchange would only benefit as a supplement to internationalisation and student mobility, but also has the potential to grow into hybrid modules where physical and virtual exchange complement each other.



Due to the devastating consequences of the Covid pandemic, one might say the DIVE project is innovative in attempting to change the traditional understanding of student mobility by exploiting digital technology and changing how we communicate and interact. The golden mean between possibilities and opportunities is to acknowledge that the process of changing, exploring, and/or modifying existing practises requires time, critical reflection and deep consideration.

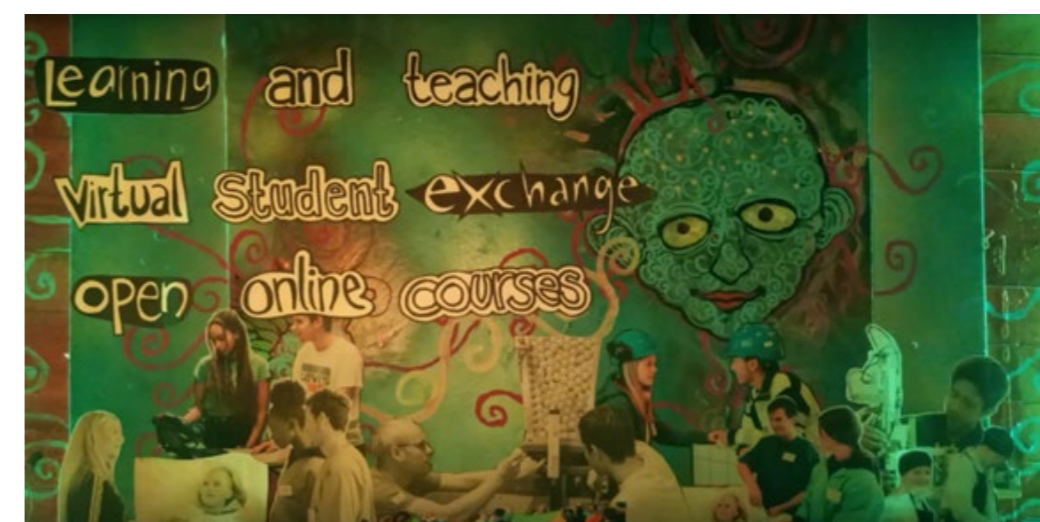


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APPENDIX

APPENDIX 1: VIDEO INTRODUCTION

The video introduction to DIVE has the following text as a voice-over:



What is the first thought that crosses your mind when you read or hear the words Democracy, Values, Citizenship or Sustainable Development? How would you define these words? How are they being practiced in your local environment? How do you relate to these topics in a professional manner – at your worksite or at school? And how would you address current challenges and propose practical solutions that meet the needs of present and future generations?

The project DIVE is developing vocational teacher students' competences to discuss and reflect on the complexity of such questions. DIVE is adapting current perspectives on democracy and sustainability to teaching and learning in vocational education and training. It is encouraging prospective vocational teachers to reflect, be creative, have courage and

use their vocational experience and knowledge to modify how vocational didactics and pedagogical considerations would benefit their students' learning. This will result in a significant impact on vocational teacher students' and vocational students' awareness of human rights and sustainable choices. Overall, it will also teach them how to prepare the upcoming generation to become responsible citizens and reflective workers- to think globally and to act locally.

To reach these goals, educators at four universities, Akdeniz University, Karlstad University, TU Berlin and NTNU are facilitating local and international learning activities – integrating these overarching themes into vocational teacher students' courses. Due to the detrimental effects of the Covid pandemic on student mobility, the DIVE project is exploring the possibilities of learning and teaching through virtual student exchange by emphasizing the concept of internationalisation at home, the use of massive open online courses, and digital international student collaboration. This overcomes physical barriers, reduces climate footprints, includes each and every student and provides equal opportunities to collaborate with other teachers abroad. DIVE is thus transforming student mobility and highlights the special values inherent in vocational education and training.

The video introduction ends with the standard disclaimer:

This story has been made with the support of the Erasmus+ programme of the European Union to the KA2 strategic partnership project DIVE. It reflects only the views of the authors, and the European Commission cannot be held responsible for any use which may be made of the information contained therein.

APPENDIX 2: ADULT EDUCATION PRINCIPLES

Adult Education and Distance Education

Introduction

With the global acceleration of technology and informatics and the transition to distance education at all levels of education, especially during the COVID-19 pandemic, e-learning and virtual learning have gained importance. The possibilities of contemporary communication technology question the necessity and effectiveness of the classical lecture style (Weller, 2011). Buchem and Hamelmann (2010) state that developing technologies increase the need for new concepts and strategies to support lifelong learning. Long before these developments, much research was conducted on the effects of formal, non-formal and informal lifelong learning, in which learning is not limited to schools, continues throughout life, and can take place in all areas of life on top of classroom environments (Illich, 2014). Informal learning activities support lifelong learning outside the formal curriculum. Informal learning can also involve gaining knowledge through conversations, TV and newspapers, observing the world, or having an accident or embarrassing experience. This view takes learning outside the classroom and embeds it into everyday life, which is supported by mobile technologies (Epignosis LLC., 2014).

In the context of lifelong learning, the concept of andragogy suggests a different relationship between teachers and students (Meer et al., 2015). Andragogy posits that university students are adults and the relationships of these adults with their teachers will involve dynamics different from the relationships of young learners with their teachers. In particular, andragogy regards students as self-directed and autonomous learners (Knowles, 1970).

The concept of heutagogy goes beyond andragogy in expressing contemporary relations between students, knowledge and teachers (Hase and Kenyon, 2000; 2007). Heutagogy extends the scope of autonomy in students' learning processes and includes formal and informal learning opportunities. In particular, students should take a greater role in deciding which resources to use. Inquiry-based- or problem-based learning offer opportunities for students to take the initiative (Meer et al., 2015). Therefore, the current role of technology in higher education and adult education should question assumptions about the role of teacher, student and knowledge in traditional lessons.

Due to technological developments and the Covid-19 pandemic, open and distance learning, which can easily reach spatially-separated learners through a wide variety of resources such as video, audio and hypertext, has been increasingly used by educators as an alternative to face-to-face education. Open and distance learning, being more learner-centred, provides a flexible learning opportunity by providing freedom from time and space constraints (Buckley, 2003) and the opportunity to participate in learning activities from a variety of educational institutions (Yildirim, 2017).

Grovo (2015) suggests that whilst the average attention span is decreasing in today's world, the amount of available information is constantly increasing. Traxler (2005) states that mobile learning can be defined as any educational service where the technologies used are handheld devices, including smartphones, tablets and laptops.

The use of m-learning is also preferred by adults who work in a job and want to improve their skills. Adults have less time to devote to face-to-face education because they have multiple roles such as working, being a parent, doing housework, or caring for elderly parents. In addition to these roles and responsibilities, adults have to develop their skills and acquire new competencies in order to respond to the demands of the information society. As a tool for distance education, m-learning enables learner mobility and facilitates productivity and effectiveness by allowing learners to be more flexible, have access to learning materials and personalize their learning activities (Kim and Kwon, 2012).

Characteristics of Adult Learners

In any training where adults are the target audience, instructors/trainers should be informed of the characteristics of adult learners, since the educational needs of adults are different from those of young people (Merriam, 2001). According to Knowles, adult learners are autonomous, independent, confident and self-directed. For this reason, educators should actively involve learners in the learning process and be facilitators of this process. They should be reminded that they only serve as guides and providers of appropriate environments for learning.

In addition, adults feel the need to connect new information to prior experiences. Kolb (1984) states that learning is a continuous process based on experience. Lieb (1991) states that learners' accumulated life experiences and knowledge are related to work or family responsibilities as well as their previous education. Therefore, in adult education, teachers should consult learners, make a needs analysis, and link the syllabus to prior learning. Adult learners usually know what they want to learn and expect the training to be tailored to their personal goals. Lieb (1991) states that adult learners are goal-oriented; therefore, the purpose of the learning activity and its aims and objectives should be outlined at the beginning of the course. Merriam and Caffarella (1999) emphasise that adults are problem-centred learners rather than subject-centred. Therefore, it is recommended that teachers ask learners to think about what they expect to learn and how they can use it in the future.

In addition, memory, which helps to establish a connection between new and old information, weakens with age (Merriam and Caffarella, 1999), and such biological changes affect the learning process. Therefore, e-learning videos should use large, easy-to-read fonts, colourful graphics, pictures and tables. In addition, videos should be kept short in order not to bore the learners and waste time.

Frey and Alman (2003) state that there is no single adult learning theory that has been successfully applied to all adult learning environments. For this reason, education designers must examine learners' backgrounds and then use adult learning theories in order to design more meaningful learning experiences for them.

Moreover, according to Smith (1982), adult learners have four distinctive features. The first feature is that adults' learning orientations are different from children because they choose to take part in education and value the time spent in learning. Secondly, adults have accumulated experience that forms the basis for new learning, and as a result of these experiences, the path each person chooses in their learning life becomes more personal as they get older. Third, different developmental tasks await adults at different points in their lives, and education takes place during these transitional periods. Finally, adult learning is characterized by anxiety and bidirectional emotions related to previous negative school experiences, the paradoxical state of being an autonomous adult versus a dependent student, and other emotional difficulties.

To sum up, Cercone (2008) lists the characteristics of adult learners participating in online education as follows:

1. Adults may have limitations in prior understanding, and these should be taken into account when designing online media and content.
2. There will be a wide range of individual differences in any adult group, so individualization of learning experiences is important.
3. Adults need to be actively involved in the learning process.
4. Adults need scaffolding from the instructor. Scaffolding should encourage self-confidence and allow students to perform activities they would not be able to do without this support.
5. Adults will need support to work in a student-centred way.
6. Adults need the trainer to act as a facilitator.
7. Adults' previous experience should be taken into account. The instructor must acknowledge this previous experience, as adults need to link new information to past events.
8. Adults need to see the connection between what they learn and how it applies to their lives. They want to apply their new knowledge immediately and are problem-centred learners.

9. Adults should feel that their learning is focused on issues that directly concern them and will want to know what they will learn, how the learning will be conducted, and why it is important.
10. Adults should receive formative assessment throughout the learning process.
11. Adult learning requires a collaborative, respectful, reciprocal and informal learning climate.
12. Adults need to reflect on their learning processes and receive support for transformative learning.
13. Adults need dialogue and social interaction in collaboration with other students.

APPENDIX 3: ICEBREAKERS FOR ONLINE MEETINGS

We assume that the online platform in use (e.g. Zoom) has a chat function (i.e. on-screen messages in a sidebar).

1. **Dance-Dance-Dance (Can be split into breakout rooms, by country or individually)**

Each group finds a popular dance song in their language on Youtube/Spotify or other platform and sends the link from the chat. Facilitator will play the songs one by one, and everyone will dance, sitting or standing up.

2. **How do you feel?**

From the chat, everyone sends a GIF or emoji which expresses their mood at that moment.

3. **Mirror**

Each participant does a funny face, with cameras on.

4. **Guess the desk?**

Each participant takes a photo of their desk or remote working set-up and sends it to the facilitator, who then puts them on a shared whiteboard or Google Doc. Don't tell anyone whose desk is whose! Take turns guessing which workspace belongs to who and why.

5. **First Job/worst job**

Ask everyone to describe their first job using sticky notes and images in a doc. Take turns telling stories about how you got the job, what you liked/hated about it, what you learnt from it, etc. Alternative: Describe your worst job and what made it so bad.

6. **Genie in a Bottle**

Ask the following question: "If you had three wishes, what would they be?" (choose either personal or professional wishes). Everyone can discuss their wishes to the group, optionally adding three images representing their wishes.

7. **Where Are We? (Group Work-Breakout Rooms- requires whiteboard facility on Zoom)**

Ask people to write their name on a sticky note and place it on the world map (posted by the facilitator) according to where they are located. Participants take turns sharing how long they have lived there and what they like about the city/country. Suggest a place or tourist attraction to visit in that place. Optionally, talk about time zones and how these impact the way we work remotely with colleagues and clients.

8. Blast from the past

Facilitator: before starting the meeting, ask all the participants to send you a photo of when they were younger in a private message. Upload them onto a mural before the warm-up. Give everyone 1-2 minutes to add sticky notes to guess who is who in the mural. Go from photo to photo and ask each person to reveal themselves and share one good memory they have from that time in their lives.

9. Favourite Dish from Your City/Country (Group Work-Breakout Rooms)

Facilitator: before starting the meeting, ask all groups to send you a photo of their favourite meal in a private message, avoiding well-known dishes like pizza. Show the meal photos and ask everyone to guess who cooked the meal, and/or what the ingredients are, on sticky notes. Once everyone has finished, reveal the cooks, and ask them to verify the ingredients they used.

10. Name That Sound

Ask everyone to turn their webcams off. Call out someone's name and ask them to imitate a sound (for example: an old dial-up modem, the sound of a printer, Christopher Walken, a Star Wars lightsaber, ocean waves, a sports announcer, etc). Have the others guess what sound they're imitating.

11. Two Truths, One Lie

Everyone makes three statements about themselves: two of them must be true, and one should be false. Optionally, ask each person to add their statements on sticky notes. Let others guess which statements are true and which one is false.

12. Whose ... is it?

Tell participants to send you a photo of their fridge, pet, a piece of cloth, etc. Put these pictures in a collage and during a session, show the pictures and ask participants to guess whose picture it is.

13. Eyeball Yoga <https://www.youtube.com/watch?v=BBTQvMXFb7s>

Take two fingers and slowly massage your eyeballs, then rub your eyes with your palm. Close, open, then close your eyes. Move your eyeballs to the left, right, up, and down.

14. Triangle-Square

Raise the index fingers of both hands and point them towards the camera. Draw two squares with your two fingers. Shake your hands. Then draw two triangles. Shake your hands. Finally, draw a square with your one finger and a triangle with your other finger at the same time.

15. The Flail

*Everybody gets up from their seats and performs six moves. 1. Both arms up 2. Left direct right down. 3. Left down right up. 4. Left up right down 5. Left direct right up 6. Both down
https://www.youtube.com/watch?v=NQ1_sThxbRE*

16. What is going on?

Show some pictures and ask participants what is going on in the picture, e.g. where are people going? What are they laughing at? ... Use pictures from pexels.com.

17. Would you rather?

If you choose number one, hold up one finger, if number two, hold up two fingers. Examples: Would you rather watch 1) a comedy or 2) a drama? Would you rather drink 1) juice or 2) coffee? Would you rather 1) read a book or 2) watch a film? Would you rather travel by 1) plane or 2) ship? Would you rather eat 1) pizza or 2) a hamburger? Would you rather use 1) Zoom or 2) Teams? Would you rather use 1) iOS or 2) an Android?

18. Scavenger Hunt

Tell the participants to find a list of items from their homes and bring them to the meeting, e.g. 2 rolls of toilet paper, swimming outfits, shampoo, conditioner, toothbrush etc.

19. What is something you know really well?

Before I tell you something, I want you to tell me something you know about very well.

20. What is something kind that someone else has done for you recently?

A POSITIVE, BUT CRITICAL, VIEW OF DIVE

Vibe Aarkrog
Danish School of Education, Aarhus University

In an age in which digitalisation and internationalisation are core competences in education, the idea of DIVE (Digital Internationalisation in Vocational Education) and the results of trying out activities in DIVE are important contributions to further developing education and training that strengthen these competences.

It is important not to perceive DIVE as a substitution for travelling abroad; rather, it should be looked upon as a particular learning environment offering particular opportunities for learning and developing competences. Actually, digital internationalisation could be combined with physical international activities offering two different learning opportunities or hybrid learning. In other words, digital internationalisation should be assessed on its own terms.

As a critical friend in the project, I will point to two issues that might be taken into consideration in the further development of DIVE. The first issue concerns the students' learning outcomes, the second the learning environment of DIVE

Learning outcome

DIVE intends to develop a number of competences e.g., digital competence, literacy competence, critical thinking, and competences in pedagogical and didactical planning and reflection related to training VET students in democracy, sustainability, or values. Thus, the ambitions concerning the teacher students' learning outcome are high, and perhaps unrealistically high.

How can these competences be assessed? The answer in DIVE is that the students produce digital stories, which are the concrete products of the training in DIVE. Furthermore, the students present the digital stories and participate in online discussions. Thus, the digital stories are estimated to be the "most visual evidence of students' learning". Being concrete outcomes, the digital stories are central for developing the students' transfer of learning.

Competence "refers to the capacity of an individual (or a collective) to successfully (according to certain formal or informal criteria, set by oneself or by somebody else) handle certain situations or complete a certain task or job" (Ellström and Kock, 2008). The important word in this definition is 'handle'. The assessment of the students' learning outcome could focus more on what the students should be able to specifically handle after having participated in DIVE. A focus on 'handle,' i.e. on the students' actions, may lead to reflections on the students' actual needs for global competences, e.g. intercultural and literacy competences: Which competences do VET teachers need? Which global actions do VET teachers need to perform? How do global competences relate to the competences that the VET students need to develop?

Returning to the digital part of DIVE, one might consider whether the future core global competences will be interwoven with digital competences, anticipating that intercultural activities will mostly take place in digital settings. Having this perspective, it is not only important that the teachers teach VET students topics of democracy, sustainability, and values, but VET teachers should also be able to train VET students' digital global competences.

Learning environment

In DIVE, much of the focus has been on establishing a conducive learning environment for the students, including things like icebreaker activities. DIVE also has a focus on feedback and evaluation, emphasizing that "feedback and evaluation should be integral and formative parts of the process".

Feedback and evaluation are different activities, the first encouraging the students' learning process, the second assessing their competences. One may ask whether feedback can be expected to be more beneficial for the learning environment than evaluation. In future DIVE activities, there should be specification on how to use feedback, as well as evaluation. Research points to the importance of regular contact with a teacher or supervisor in virtual learning environments. Research shows that the students miss contact with the supervisor, and they ask for individual face-to-face supervision (Bang-Larsen and Qvortrup, 2021). Likewise, another study about digitalisation in relation to vocational adult education concludes that it is important that the teachers have time to establish and maintain a relation with their students. The teacher should be available and give feedback regularly (EVA, 2019). Further development of the learning environment in DIVE could include regular contact with a supervisor.

Assuming and hoping that DIVE is here to stay, the above considerations are meant as reflections that could be included in further development.

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