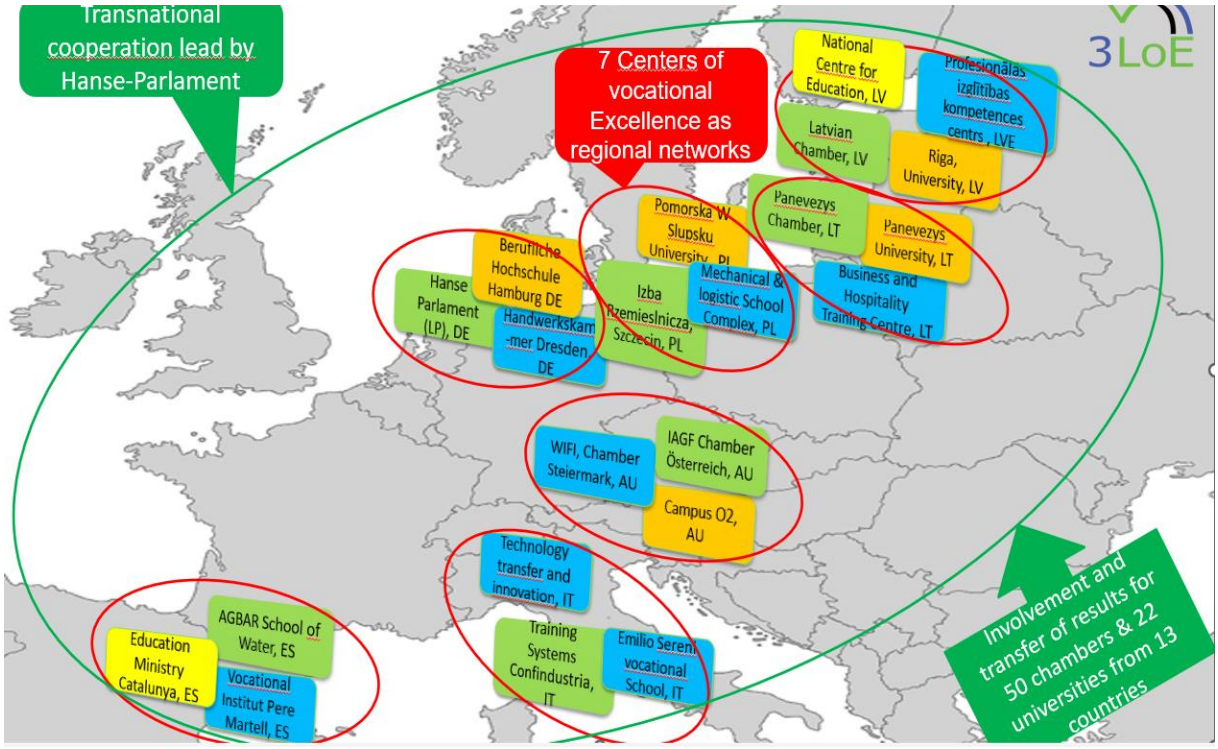
Result 3.4

Dual vocational training for people with special learning needs

Partner



Language

English

Content

1 Project Summary and Introduction

1.1 About the 3LOE project

Around 99% of all EU businesses are SMEs, creating up to 70% of all jobs. In general, SMEs have good growth prospects for the future and are particularly well equipped to solve environmental problems and to enhance the green economy. However, in most of the project countries, SMEs are confronted with a shortage of skilled workers and young entrepreneurs. This shortage of skilled workers is even more alarming taking into account that due to aging of current entrepreneurs, a large and growing number of companies will have to be handed over to the next generation. Furthermore, young specialists and entrepreneurs often lack the qualifications and skills needed in order to respond to contemporary developments in the fields of energy, climate and environmental protection. The following problems have been identified in SMEs working in the fields of green economy, energy and environmental protection:

- Blatant and growing shortage of skilled workers.
- Large qualification deficits, especially in the Green Economy.
- Loss of attractiveness and low qualification of school-based VET.
- Low rates of further training and insufficient orientation of offers to SME needs.
- Ageing of entrepreneurs and increasing shortage of young people (demographic change).
- Failure of business transfers and low rates of business start-ups.
- Low innovation rates and insufficient productivity.
- Not enough cooperation between universities and SMEs and a lack of teaching geared to SME needs.
- Comparably low internationalization of SMEs and vocational training providers.
- Lack of national level support for SMEs”.

To meet these challenges, work-based learning and new paths in vocational training must be provided through cooperation between educational institutions, economic chambers and SMEs. University graduates are often well-qualified in theory, but lack practical knowledge, skills and abilities that are crucial for SMEs. For this reason, VET reforms must also involve higher education, and should implement dual bachelor's degree programs that combine a bachelor's degree with vocational training and on-sight work in companies.

In the 3LOE project, an innovative and complex project structure with 22 project partners from 7 countries as well as 60 associated partners from 13 countries was designed. In each country, centers of vocational excellence (COVEs) in Green Economy will be established, managed and their permanent continuation ensured. A transnational cooperation of the centers will be developed, extended to 60 education stakeholders from 13 countries and operated permanently in an institutionalized form. The centers will offer a wide range of dual education measures in vocational training, further education and higher education, that are being developed, tested and evaluated in the project. These educational measures on EQF levels 3-7 focus on Green Economy, Digitalization and Entrepreneurship. Furthermore, vocational and educational consulting and innovation support for SMEs will be developed and implemented. In total, seven Train-the-Trainer programs will be developed and implemented permanently by the project partners. All results will be transferred to the 60 associated partners together with implementation advice.

The objectives and aimed outcomes of the 3LOE project can be summarized as following:

1. Foundation of a three-level Center in each project country

1.1 Building the "Green Economy" skills alliance for qualifications in SMEs with educational and economic actors from the 7 project countries; development of information and cooperation tools.

1.2 Expansion of the skills alliance to the 60 associated partners from 13 countries, comprising chambers of commerce, SME associations, as well as universities of applied sciences/colleges.

1.3 Development, testing and evaluation of a curriculum and teaching materials for Train the Trainer courses for personnel and center management (vocational school-teachers, trainers in SMEs and lecturers in further and higher education institutions).

1.4 Evaluation of the construction and operation of the seven centers of Excellence and of the transnational cooperation.

1.5 Development of business and financing plans and ensuring the long-term continuation of the seven centres and transnational cooperation.

1.6 Development, consulting and introduction of political strategy program.

2. Implementation and realization vocational training

2.1 Development and implementation of a tool for vocational and qualification counselling as well as a training for consultants and teachers to use the tool.

2.2 Implementation of the dual system, so that work-based learning is put into practice in the project countries.

Preparation and transfer of curricula and examination regulations for dual vocational training for different professions and implementations in Poland, Lithuania, Latvia and Spain.

Development, test and implementation Trainings for teachers to conduct dual vocational training as well as Training of trainers in SMEs.

2.3 Development political concept for the training and integration of young people with learning difficulties for young people with learning difficulties (EQF level 3).

Development, test and implementation of a dual vocational training "Specialist for Building Insulation”.

2.4 Development, testing and evaluation of education programme, teaching materials and examination regulations for the provision of sector-specific qualifications already during the initial vocational training for stronger learners. Implementation in the dual system, so that work-based learning is put into practice in the project countries.

2.5 Development and implementation five-year technician training „Ecologic Solutions in Logistics”.

3. Implementation and realization of further vocational training

3.1 Development and implementation of concepts and instruments for the management of continuing vocational training.

3.2 Development, test and implementation of a Train-the-Trainer program for teachers to conduct further training.

3.3 Development and implementation of a concept "SME-fair digitalization” as well as development, test and implementation of two train the trainer programs “Basic and advanced digital skills”.

3.4 Transfer and implementation of four further trainings Energy Saving and Renewable Energies.

3.5 Preparation, transfer and implementation of six further trainings in the Green Economy.

3.6 Development, testing and evaluation of different training programs and teaching material for owners, managers and qualified workers of SMEs (EQF level 5 and 6). The trainings are specifically tailored to SME needs and different qualification levels and combine the transfer of technical, professional and management know-how.

- Training Enterprise and Entrepreneurship in Green Economy
- Training Energy Service Manager
- Trainings vocational Master Carpenter and Electric
- Training Construction Technician
- Training Service Technician
- Training Sustainability in foodservice industry

3.7 Development of regulations for new continuing education occupational profiles with a focus on the green economy.

3.8 Development of an integration programme for the unemployed (EQF level 4) in order to be able to place the unemployed in permanent jobs through further training seminars and a further training qualification.

4. Implementation and realization of higher education

4.1 Preparation and transfer of curricula, evaluation and examination regulations for two existing dual Bachelor degree programmes "Management of Renewable Building Energy Technology" and "Business Administration for SMEs".

4.2 Development and beginning of implementation of new dual Bachelor degree programs

- Business Administration & Sustainable Management of SMEs
- Entrepreneurship and Innovation in Green Economy
- Logistics - Green Supply Chains
- Service technician
- Tutorial "Sustainable management Climate neutrality for companies"

4.3 Development, test and implementation of four study modules (EQF level 6) on SME management in the Green Economy sector, which will be carried out in the dual study system and integrated into existing Bachelor degree programmes.

4.4 Development and implementation of concept for innovation promotion Solutions for manageable R&D tasks of SMEs and conducting manageable R&D projects for SMEs-

4.5 Development, testing and implementation of Training program for university lecturers and SME advisors.

5. Dissemination, transfer and use of the project results

5.1 Development of a concept and summary evaluation of the dissemination results of all partners

5.2Transfer of all educational measures to 60 educational institutions in 13 countries and needs-oriented implementation consultations as well as realization of a bundle of measures for further dissemination of the project results.

5.3 Further dissemination activities such as presentations online, at third-party events, press releases and conferences.

5.4 Book with all results of the project and distribution via book trade.

For each of the three levels of educational measures there will be:

- Target-group-specific educational programs.
- Curricula, teaching materials, etc. developed in a leading role by the educational institutions of the respective level, whereby the educational institutions of the other levels (in particular universities) participate in an advisory and supportive manner.
- Representatives of the participant target groups involved in the development work.

All educational measures will be tested with the respective target groups under different national conditions in the countries, evaluated and completed on the basis of the evaluation results with application notes.

1.2 Dual vocational training for people with special learning needs

Every human being is a unique being and has the right to a unique training and life. The straight and fast training process is not necessarily the best for everyone. Detours promote local knowledge and enable a broad spectrum of lifelong learning. Education must appeal to all the senses, and where this does not happen, no real learning can take place. In a highly standardized, one-sided education system without individual learning goals and pedagogy, a growing proportion of young people fail because they try to deal with the nature of learning and do not meet common standards. Throughout their educational careers, they collect only failures and are then quickly excluded as failures. In some countries bordering the Baltic Sea, up to around 20 per cent of school leavers are regarded as insufficient and are unable to complete vocational training. Without vocational training, they often have no lifelong opportunities and are dependent on state subsidies from the cradle to the grave. In addition, each person has at least one strength. If this is recognized and supported, this person will make a valuable contribution to society.

Everyone deserves a second chance. Other ways, which may seem like detours at first, but are purposeful, can deliver good educational outcomes. This can be seen, for example, in craft training where young people are supported on a broad basis. This is only possible because in craftsmanship, more than elsewhere, the whole person is challenged, the head as well as the hand, humour as well as imagination, practice as well as theory, wisdom as well as common sense. The overestimation of the purely intellectual ideal of education must be contrasted with the general, eminent character of such craftsmanship. The uniform and harmonious development of all mental and physical abilities therefore takes on the form of a self-image.

Holistic education with individual talents also creates an urgent need for stronger learning. An elite education is not sufficiently pronounced in many countries, and it should no longer be a taboo. Systematic promotion of the strongest without the exclusion of the weakest is the decisive factor for the integration of all. Education must address all age groups. Lifelong learning must become the rule.

This requires an educational system in which many paths are opened, which allows detours and offers the greatest permeability from preschool to university, which is necessary with diverse, equal and versatile possibilities for change and integration. Such a system, which enables the shaping of individual educational careers, must pursue individual education with comprehensive training, thus enabling the promotion of both strong and weak learners.

Such a development of educational policy is the key to shaping a fulfilled life and to the social integration of every young person. The improvements are also important in the interests of the economy, which is undergoing a complete change in the labour market situation. The qualification needs of companies are high and continue to grow, while the educational level of school leavers tends to fall. In addition to a sound command of basic cultural knowledge and expertise, personal and social skills are becoming increasingly important. There are already major deficits in all areas. Education is becoming the biggest bottleneck for further economic development and at the same time the most important growth area.

The high number of dropouts and the risk of dead-end jobs will be significantly reduced. Vocational training must adequately take into account individual skills and capabilities and re-quire extensive differentiation. Through the introduction of different levels, young people from different educational backgrounds, with different competences and learning progress can have an opportunity to obtain education which matches their specific skills:

• Level 1: The specific vocational training for weaker learners for a period of 2 years, which enables practical learning, is concluded with an independent, recognized qualification.

• Level 2: Intermediate vocational training with the teaching of theory and practice for a period of 3 years and a recognized qualification as a skilled worker or journeyman.

• Level 3: Vocational further training courses for the study of skills with a duration of 3 - 3.5 years, which impart additional qualifications or training to be preferred in initial training and are concluded with recognized qualifications beyond the current vocational or journeyman's examination.

Such a differentiated vocational training system requires a high degree of permeability. Every graduate at a lower level must have an unlimited opportunity to reach a higher level in accordance with his or her learning progress and actual performance, taking into account parts of the training already completed. And vice versa, there should be an exchange of courses of a higher level for courses of a lower level, taking into account the training periods already covered.

In an open and transparent system gradual learning according to individual skills and potential is realized in every respect. Depending on the learning achievements and developments, each individual can achieve in principle the completion of education and training, although in different ways.

As part of the project "Skills Alliance Energy saving and sustainable Construction in Baltic Sea Region", a two-year initial vocational training "Specialist for Building Insulation" was developed in the dual system for Level 1, tested in Lithuania with great success, evaluated and completed on the basis of the evaluation results. This vocational training for young people with learning difficulties is being implemented in the 3LOE project.

• will first be implemented in Latvia and evaluated again.

• then transferred to all seven centres of vocational excellence and implemented.

In Austria, an apprenticeship for electrical practitioners was developed and implemented for level 1 training. This concept and curriculum will also be transferred to all seven centres of vocational excellence of the 3LOE project in order to offer the centres a second model for training young people with theoretical learning difficulties but with practical talents. It will continue to be implemented in Austria during the 3LOE project.

Based on the experience gained in the process and including experiences and solutions other partner countries a political concept for the training and integration of young people with learning difficulties were developed.

2 Political concepts for the training and integration of young people with learning difficulties[1]

2.1 Introduction

Many young people in Europe are going through tough times due to limited opportunities and job prospects. Their struggles are often linked to their backgrounds, school performance, and skills. The global economic crisis and Europe's economic troubles have made it even harder for them to find jobs and move ahead in life.

To address these issues, the European Union in Council Recommendation of 24 November 2020 on vocational education and training (VET) for sustainable competitiveness, social fairness and resilience invited member states to work towards implementing a vocational education and training policy which:

- equips young people and adults with the knowledge, skills and competences to thrive in the evolving labor market and society, to manage the recovery and the just transitions to the green and digital economy, in times of demographic change and throughout all economic cycles,
- fosters inclusiveness and equal opportunities and contributes to achieving resilience, social fairness and prosperity for all and
- promotes European vocational education and training systems in an international context so that they are recognized as a worldwide reference for vocational learners.

These plans aim to help young individuals facing challenges. They emphasize that difficulties in accessing vocational education not only make people feel left out but also prevent us from benefiting from everyone's unique skills. The main goal is to break down barriers, promote inclusivity, and make the most of the diverse talents within the population for the betterment of society.

Inclusive VET in the European Union is about fairness and making sure everyone has the chance to learn, find a good job, and succeed. This means developing and putting into action policies and plans that consider the different needs of learners. The goal is to make sure that all individuals, no matter where they come from or their situation, can easily get an education and find job opportunities.

2.2 Target Group

The target group of this paper is the learners who have entered vocational education after finishing basic education following the special educational programs for learners with learning disabilities, speech and language impairments, mental health problems, and others who have exhibited difficulties in learning and who needed support to succeed in learning, learners who for different reasons have not completed the compulsory basic education as well as learners with migrant background who have not yet mastered the Latvian language properly.

2.3 Policy Background

[1] The Latvian Sustainable Development Strategy until 2030 (Latvia2030) defines Latvia's long-term development vision. It is the highest national level long-term

[1] Prepared by National Centre for Education Latvia

development document and the main planning document that defines the spatial development perspective - an integrated view of the country's balanced and sustainable development.

[2] The National Development Plan for 2021-2027 (NDP2027) is Latvia's highest national-level medium-term planning document. It has been developed in accordance with the Latvia2030 and the UN Sustainable Development Goals (SDGs) so that the quality of life improves for each individual, and society as a whole over the next seven years.

NDP2027 states that inclusive education must provide an environment conductive to well-being and empathy among younger generations. To ensure this, education institutions need strengthening, and strategic and sustainable support systems need to be created. The system and conditions in all educational institutions must support the inclusion of children and young people with special needs and at socio-economic risk, as well as the elimination of emotional and physical violence.

Some of the measures implemented to support this will be:

- Prevention and interventions to reduce the risk of early school leaving and encourage social integration (cooperation between schools, support staff, parents and institutions; development of social life skills; involvement of support staff; individualized learning support; early diagnosis of educational needs; support for disadvantaged youth);
- Development and provision of individual and institutional support for children and young people at risk of socio-economic difficulties and abuse (young parents, students from poor and socially vulnerable families, children of return migrants and migrants) by: providing material support (scholarship funds, covering the transport, catering, service hotel expenses); and other types of support (language learning, psychological, mentoring, coaching).

[3] The Education Development Guidelines (Guidelines 2027) are a medium-term policy planning document that defines a unified state policy and development strategies in education from 2021 to 2027. The guidelines specify the overarching goal and objectives of education policy, the main directions of action and tasks for achieving the set goals, policy results and performance indicators. The guidelines cover all types and levels of education. The main goal of the Guidelines 2027 is to set Latvia's priorities in providing a high-quality and inclusive education and training system for all its citizens, and to support sustainable national growth.

Guidelines 2027 highlight the following essential future characteristics of the Latvian education system:

- individualized learning approach, where the educational offer meets the needs and capabilities of the individual;
- balanced learning of skills appropriate to future needs, which covers both general or interdisciplinary skills (including self-directed learning, civic participation, digital skills, etc.) and specific knowledge and skills relevant and useful for the labour market, which is ensured by effective cooperation between the education sector and economic sectors;
- functional transformation of educational institutions, with educational institutions becoming "learning organizations" that offer diverse learning opportunities, learning environments and approaches for diverse audiences - children, young people, adults;

- an improved education management system, in which, with the cooperation of interested parties, the activity of the industry is strategically planned, following the research identified future needs.

2.4 Vocational Education

In Latvia the task of vocational education is to prepare the learner for work in a specific profession and to promote personal development, to promote knowledge, skills and attitudes that lead to vocational qualifications and support competitiveness in changing socioeconomic conditions, to create motivation for professional development and continuing training, and prepare learners to continue education at a higher vocational education level.

Vocational education and training (VET) in Latvia is offered at three levels:

- vocational basic education (integrated primary and lower secondary).
- vocational secondary education.
- vocational higher education.

Most vocational education learners are at secondary level. This share has increased in recent years. VET provides learning opportunities for early leavers from education and training. With more investment in infrastructure and the development of new programmes, VET attractiveness is increasing. A validation system for professional competences acquired outside formal education has been available since 2011, allowing direct acquisition of professional qualifications at EQF levels 2 to 4. (Cedefop)

Alongside with investments in infrastructure the VET curriculum reform has been implemented. VET programs have been divided into modules based on learning outcomes to be achieved as an assessable and provable set of knowledge, skills and competences. This approach allows to be more flexible in meeting the rapidly changing needs of the labour market as well as to issue a state-recognized document not only for the completion of the entire professional education program, but also for the completion of certain parts of the program. VET programs include sector-specific and general competences.

In Latvia work-based learning (WBL) as an educational approach in vocational education was introduced in 2013 in the form of pilot projects, and in 2016 it was adopted by the regulation of the Cabinet of Ministers “Procedures for Organisation and Implementation of Work-based Learning”. Today it is a high-level education and employment policy priority in Latvia. WBL means that a student at a vocational school during the programme of WBL acquires theory and practice of vocational content of education programme in an education institution and in a company according to the individual plan of the appropriate education programme. Learning based in the work environment requires that at least 25 percent of the total educational program should be learned in the company. The company can organize not only practice of professional content, but also theory.

A VET school has the overall responsibility for the implementation of the WBL program. A tripartite agreement – school, student and company – has to be concluded. Additional bi-lateral agreement is concluded between the student and the company – on wage in case of job contract, or agreement on the allowance. Apart from the wage/ allowance also the individual labour protection means, and the civil liability insurance of the learner are ensured in accordance with the training contract. A training plan is agreed between the school, the employer and the apprentice. The programme (its

mode of delivery) is adapted at school and company level to meet the needs of apprenticeships.

2.5 Legislation Framework

Education Law in Section 2 of Chapter 1 states that the purpose of this Law is to ensure that every resident of Latvia has the opportunity to develop his or her mental and physical potential in order to become an independent and a fully developed individual, a member of the democratic State and society of Latvia.

Section 3 stipulates that everyone has the right to qualitative and inclusive education and 3^1 states that everyone have the right to acquire education regardless of the material and social status, race, nationality, ethnic origin, gender, religious and political affiliation, health condition, occupation, and place of residence.

Section 55. of the *Law on the Protection of the Children's Rights* speaks about special care for children with special needs stipulating that the State and local governments should assist children with special needs to integrate into society and ensure for them education, health care, and social services in accordance with laws and regulations. This law also stipulates that Pedagogical and social workers should be specially trained for work with children with special needs and the Ministry of Education and Science and the Ministry of Welfare are responsible for drawing up special training programmes.

Section 44 (1) of Education Law describes vocational education programs as programs which provide an opportunity to acquire professional qualification at the appropriate level, to develop professional competence, and also to acquire academic qualifications and professional qualifications at the appropriate level.

Vocational Education Law governs implementation of vocational basic education, vocational secondary education and continuing vocational education and the award of a corresponding professional qualification.

The learners after graduation from the basic education can enter the secondary vocational education, but those who have not finished the basic general education can enter basic vocational education on graduation of which they are also receiving certificate of general basic education.

According to the law (Sec.6, §9) a learner who has completed a module or several modules of an accredited modular vocational education program that are recognizable in the labour market and identifiable as a set of assessable knowledge, skills and competences, but which do not certify the obtaining of a professional qualification, shall receive a certificate issued by an educational institution for the completion of the respective module or modules.

Section 1, $§7^1$ of the *Education Law* provides the definition of the education quality**:** educational process, content, environment, and management which provides everyone with **inclusive education** and the possibility to reach high quality results according to the objectives brought forward by the society and specified by the State.

The Amendments to *Vocational Education Law* entering into force from October 11, 2022, stipulate that each vocational education school develops its institutional strategy. The institution's strategy is a five-year development plan based on the strategic specialization of the school and includes specific achievable goals and tasks of the institution and vocational education.

VET institution development strategy is the document where schools can plan implementation of inclusive VET education together with action points how to integrate the students with learning difficulties.

In Latvia both policy initiatives and legislation with regard to inclusive education and support provision to students is in place and theoretically nothing hinders schools to make vocational education and training more inclusive for trainees with learning difficulties and other impairments. However, due to different reasons VET schools find it challenging to include students with learning difficulties. One significant obstacle lies in the limited experience that VET schools possess in effectively accommodating such students. This lack of familiarity can stem from a multitude of reasons.

Firstly, the traditional model of VET education may not have been designed with the diverse needs of learners with disabilities in mind. Consequently, educators and administrators may lack the necessary training and expertise to adequately support these students. The absence of tailored teaching methodologies and resources further exacerbates this issue, making it difficult for VET institutions to cater to the unique learning requirements of individuals with disabilities.

Moreover, institutional constraints, such as limited funding and resources, can impede the implementation of inclusive practices within VET schools. Adapting physical infrastructure, acquiring assistive technologies, and hiring specialized personnel all entail additional costs that many institutions may struggle to afford.

Furthermore, attitudinal barriers among educators and peers can hinder the integration of students with learning difficulties into VET programs. Preconceived notions about the capabilities of individuals with disabilities may lead to lowered expectations and inadequate support, ultimately perpetuating a cycle of exclusion.

Addressing these challenges necessitates a concerted effort to enhance the capacity of VET schools in accommodating students with learning difficulties. This may involve providing comprehensive training and professional development opportunities for educators, fostering a culture of inclusivity within educational institutions, and allocating sufficient resources to support the diverse needs of all learners.

2.6 Suggestions for Provision of Support in Vocational Education

In general education settings inclusive education practices and use of support measures is more developed than in VET education. For example, the Regulations of the Cabinet of Minister from November 19th, 2019, No 556 “Requirements for general education institutions to enrol students with special needs in their educational programs” envisage the provision of educational support to learners in basic education.

Section 53 §2 of the General Education Law speaks about the enrolment of students with SEN in General Education Programmes emphasizing that the educational institutions shall draw up an individual plan for the completion of an educational programme for each enrolled student with special needs.

However, education legislation does not envisage similar support for the above-mentioned target groups in vocational education.

Learners who have struggled to acquire the basic education programs also need support in further education, e.g., vocational education. They need the continuum for support both in academic studies and in acquiring professional skills.

Further we have identified some steps to start with (continue) in order to make vocational education and training in Latvia more inclusive for students with special learning needs.

2.61 Support Team at School

To start with and more successfully implement the goals of inclusive education and provide help for every learner to get quality education, educational institutions can create support teams. The support team is a group of specialists who within the scope of competence provides pedagogical, psychological and social assistance for learners, involving their parents, pedagogues, employees of educational institutions.

Some of the tasks of school support team may include:

- provision of systematic pedagogical, psychological, social support for learners, their parents, and teachers.
- creation and promotion of inclusive environment and students' socio-emotional wellbeing at school.
- promote students' socialization and better adaptation in a new school;
- inclusion of different learners in the educational process.
- promotion of the professional development of teachers and other employees, raising parents' awareness of inclusive education issues, etc.
- cooperation with companies/ tutors to inform about student's special learning needs.
- career guidance support.
- continuous monitoring and evaluation to make sure everything is working well as inclusive VET policies stress the need to always check and see how things are going.

2.62 Support During the Teaching Learning Process

The acquisition of theoretical subjects requires similar support measures to what the students have received in basic education and such support needs to be continued.

It may include:

- the use of ICT (relevant software programs, on-line applications, voice recorders, etc.).
- prompts which help to acquire and understand the context of learning.
- accessible learning materials (e.g., bigger font, more visuals, symbol language, etc.).
- provision of mentors.
- peer-learning groups.
- involvement of paraprofessionals (e.g., social workers, career advisers, psychologists etc.).
- extra time for completing tasks.
- reduced writing tasks.
- reduce classroom chatter to a minimum.
- visual aids and multi-sensory learning techniques.

As vocational education and training programs in addition to theoretical knowledge include also the development of professional skills a set of necessary support measures becomes more complex and apart from school involves more players.

2.63 Individual Learning plans

Currently, the number of companies and vocational education institutions that are involved in WBL training is increasing, thus the question of the quality of WBL is becoming more relevant. One of the prerequisites for high-quality practice is well-prepared workplace tutors and provision of an individual approach to each student, taking into account the student's professional interests, personal goals, career plans and abilities. Although the creation of an individual plan for students participating in WBL is a mandatory requirement existing practice shows that it is still a big challenge for many tutors due to a lack of knowledge and skills.

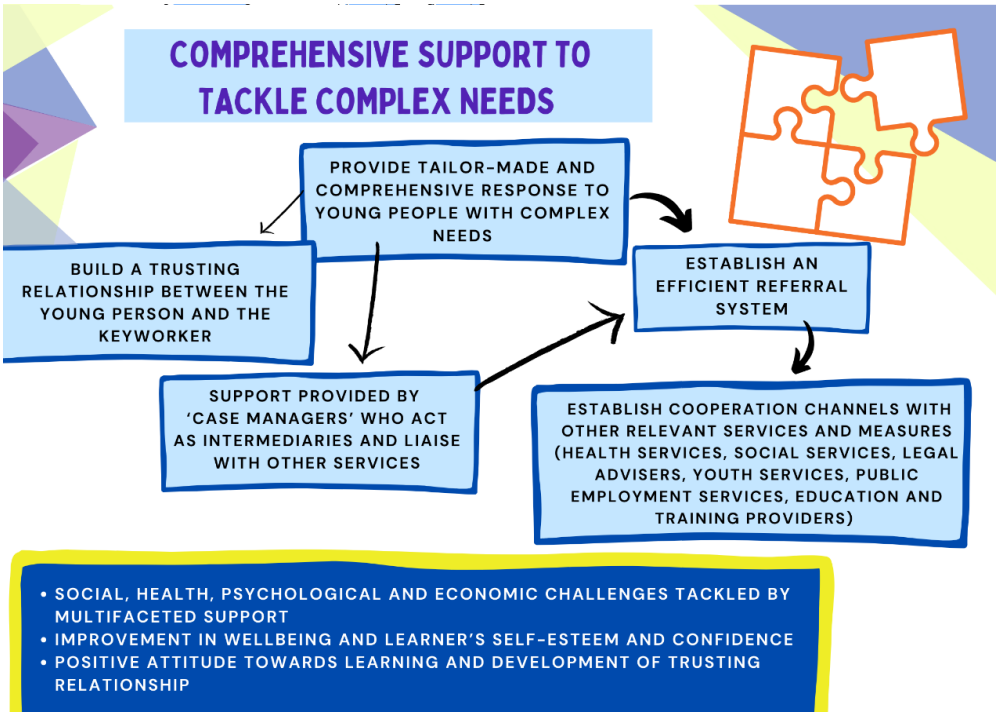
It is envisaged that during 2021- 2017 planning period significant funding will be allocated for the implementation of individual approach and student support in VET education.

As regards individual plans there already exist some good practice examples from previously implemented Erasmus + projects which may contribute to the development and implementation of Individual Learning Plans. E.g. Erasmus+ project “Individual Approach and Individual Learning Plan in WBL: Training for WBL Tutors (ILP4WBL)” No: 2018-1-LV01-KA202-047004. Implemented by the National Centre for Education of the Republic of Latvia from 2018 – 2020 aimed at improving the skills of school and workplace tutors to use the individual approach and develop individual learning plans in work-based learning.

2.64 Support during Work Based Learning periods

European Centre for the Development of Vocational Training (Cedefop) emphasizes the necessity “for comprehensive support to tackle complex needs as for many young people, an apprenticeship or work-based training as part of a vocational programme, is their first experience in the world of work. Finding a welcoming and supportive work environment, where there are good learning opportunities, can be very motivating and contribute to attaining a qualification.”

Such a comprehensive support can only be implemented by establishing a good cooperation and communication system between schools, employers and other stakeholders including, among other things, common professional development activities for school and company tutors who are the key persons in providing students with good first working life experiences. Below is an example developed by Cedefop describing the main steps in providing support to VET students.



Source: *Cedefop*

Work-based learning for students with special learning needs, also known as supported employment or vocational training, is an essential approach to help individuals develop job skills and gain meaningful employment. This type of training focuses on providing tailored support and accommodations to meet the unique needs of individuals with disabilities or learning challenges. Here are some key considerations and strategies for implementing work-based training for people with special learning needs:

- Individualized Assessment: Begin by conducting a thorough assessment of each individual's strengths, skills, interests, and support requirements. This assessment should take into account their cognitive abilities, communication skills, motor skills, and any specific learning challenges they may have.
- Tailored Training Plans: Develop individualized training plans that align with the strengths and goals of each participant. These plans should outline specific learning objectives, identify appropriate training strategies, and incorporate any necessary accommodations or modifications.
- Job Shadowing and Internships: Provide opportunities for job shadowing and internships, where individuals can observe and learn from experienced workers in their desired fields. This hands-on experience can help them understand the expectations of the job and develop relevant skills.
- On-the-Job Training: Offer on-the-job training in a supportive and structured environment. Break down job tasks into smaller, manageable steps, and provide clear instructions and demonstrations. Gradually increase the complexity of tasks as the individual progresses.
- Structured Learning Environment: Create a structured and predictable learning environment that includes visual supports, schedules, and clearly defined routines. This helps individuals with special learning needs understand expectations, reduce anxiety, and stay focused on their training.
- Assistive Technology and Tools: Utilize assistive technology and tools, such as screen readers, speech-to-text software, adaptive keyboards, and visual aids, to

support individuals with specific learning challenges. These tools can enhance their ability to access and participate in training activities.

- Job Coaches and Mentors: Assign job coaches or mentors who can provide one-on-one support and guidance to individuals during their training and employment. These professionals can help individuals navigate job tasks, address challenges, and build confidence.
- Collaboration with Employers: Foster strong partnerships with employers who are willing to provide inclusive work opportunities. Educate employers about the benefits of hiring individuals with special learning needs and collaborate on job modifications and accommodations that promote success.
- Ongoing Support and Progress Monitoring: Continuously assess and monitor progress throughout the training process. Provide ongoing support and interventions as needed to address any difficulties or barriers that arise. Regular feedback and evaluation help individuals improve their skills and adjust their training plans.
- Transition Planning: Prepare individuals for the transition from training to independent employment. Develop transition plans that include strategies for job retention, ongoing skill development, and accessing community resources and support services.

Every individual is unique, and their training needs may vary. Flexibility, patience, and a person-centred approach are crucial in supporting individuals with special learning needs on their journey towards meaningful employment.

2.65 Strengthening Inter-institutional Cooperation

Institutional cooperation is one of the most essential conditions for providing meaningful support to students with learning difficulties and preventing the risks of early school leaving.

In Latvia several interinstitutional cooperation models are already in place and they need to be strengthened in order to provide support to all students with learning difficulties and special needs.

Inter-institutional cooperation takes place on municipality and on the national level. However, not every municipality has established an inter-institutional cooperation model and defined responsibilities and duties of the participating institutions.

On a national level the National Tripartite Sub-council for Cooperation in Vocational Education and Employment reviews policy proposals and drafts legal norms for vocational education, human resource development and employment; it evaluates and proposes changes in management, funding and implementation of vocational education; it endorses occupational standards; it endorses annual student enrolment plans prepared by sectoral expert councils.

The Sub-council has been established to promote the cooperation of the Cabinet of Ministers, employers' and employees' (trade unions) organizations in the field of development and implementation of the national policy and strategy of human resources development, education and employment.

Sectoral expert councils (12) also operate on a national level and propose solutions for long-term human resources development in their respective sectors and ensure that vocational education provision is in line with labour market needs. This includes participation in development of sectoral qualifications frameworks (SQFs), occupational standards, education programmes, quality assessment procedures, work placements,

and apprenticeship-type schemes, make proposals for VET curricula, nominate experts for accreditation of VET schools and curricula.

Collegial advisory bodies (conventions) exist in each vocational education institution. Employers or representatives of employers' organisations, representatives from local government, and representatives from supervising ministries form these conventions. They help shape the development strategy of the education institution, and they contribute to its cooperation with local enterprises, to ensure students' work placements outside school and apprenticeship-type scheme opportunities.

All the above-mentioned cooperation frameworks could enlarge the scope of their activities and also address issues regarding support to VET students with learning difficulties for better integration into the labour market.

2.7 Good Practice Examples from Partner Countries on Integrating Young People with Learning Difficulties into VET

This Concept paper is developed in the frames of EU Erasmus+ program project “Three-level Centers of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy” (3LoE) No 620870-EPP-1-2020-1-DE-EPPKA3-VET-COVE. Throughout the lifetime of the project, the 3LoE consortium implemented a diverse array of vocational education, training, and higher education measures.

Some of the project partners possess significant expertise in delivering vocational education tailored to the needs of students with learning difficulties. Their extensive experience serves as a valuable resource for the project, offering insightful examples and best practices that can be adopted and adapted by other partners. These examples serve as practical demonstrations of effective teaching methods, curriculum design, and support strategies that have proven successful in empowering students with diverse learning needs. By leveraging the knowledge and experiences of these partners, the project can enhance its overall effectiveness and contribute to improving vocational education outcomes for students with learning difficulties across participating institutions. Project consortium partners have kindly provided good practice examples from their countries supporting integration of young people with learning difficulties into VET

2.71 Austria

Overview - Inter-company apprenticeship training

Austria has a system of inter-company apprenticeship training. This enables young people to complete dual vocational training (initial training), even if they have been unable to find an apprenticeship in a company "despite all their efforts". Instead of working in an apprenticeship company, young people are given the opportunity to complete practical training in an inter-company training-organization, a type of workshop within a school facility. Some school facilities offer practical and theoretical lessons in one, while others co-operate with specific companies.

Source: Inter-company apprenticeship " shortened apprenticeship | AMS; 20231222

The advantages of dual vocational training in an inter-company training-center are comprehensive training, which includes practical and theoretical lessons, with special support from highly qualified trainers to prepare participants for the final apprenticeship examination in the best feasible way:

Source: hAc training branches - Kroiss GmbH craft training centre. 20231222

The craft training centre (hAC for short) in Gloggnitz, can be cited as an example of best practice because it is run by a committed entrepreneur who has run his own business for many years. As an enthusiastic “master craftsman” he can give the apprentices the everyday life of an entrepreneur.

hAC - (Inter-company) Craftsmanship Training Centre, Gloggnitz – in Detail

The hAc - craft training centre in Gloggnitz was awarded the state prize for "Best Training Companies - Fit for Future" in 2015.

The aim of this training project is to provide theoretical and practical training for young people in accordance with the Vocational Training Act in the construction and furniture carpentry and tinsmithing. The young people are given the opportunity to complete their entire apprenticeship in a renowned training company. In addition, the young people receive socio-educational counselling and support from ***BFI NÖ*** (Vocational Training Centre, Lower Austria) concerning i.e.:

- ✓ Financial, legal, and personal problems,
- ✓ Motivation to achieve the training objective and enter the labour market,
- ✓ Special learning support to prepare for vocational school,
- ✓ Conflict resolution strategies and much more.

This successful establishment is preceded by a long history of tradition as a family business: Kroiss GmbH was founded in 1966 by Wolfgang Kroiss as a small construction and furniture joinery. His son Werner took over the business in 1988 and continued to expand it. After specializing in window construction for many years, the company broke new ground in 2006 and began a successful collaboration as the *Gloggnitz craft training centre* (*hAc*) on behalf of *AMS NÖ* (Public Employment Service, Lower Austria) and *BFI NÖ* (Vocational Training Centre, Lower Austria), offering a wide range of courses in the fields of construction and furniture carpentry and tinsmithing.

As part of the inter-company apprenticeship training programme, 78 training places are available for apprentices in the fields of construction and furniture carpentry and tinsmithing. Of these places, up to 20 % are taken up by women for technical-craft vocational training. Both occupational groups

- ✓ can be started every year,
- ✓ comprise an apprenticeship period of 3 years,
- ✓ including attendance at vocational school and
- ✓ the final apprenticeship examination.

Apprenticeship as a Tinsmith

Tinsmiths process all types of sheet metal as well as steel and sheet metal profiles. The work is conducted in workshops and on construction sites (assembly). Despite the use of modern machines, a lot of manual labour is required in this profession. The profession of tinsmith is a very traditional one, but in today's economy it is in short supply and therefore in high demand.

The tinsmith trade is a very extensive trade. The advantage of the Gloggnitz Craftsmanship Training Centre (hAc) is that it covers all specializations in this trade with its training opportunities. The training programmes cover the areas of building tinsmithing, ventilation tinsmithing, gallantry tinsmithing as well as façade technology, hall construction, apparatus engineering and insulation technology.

Apprenticeship as a Carpenter and Cabinetmaker

The carpentry trade includes the areas of construction and furniture carpentry, such as the manufacture of windows and doors, furniture, and staircase construction as well as flooring and structural timber construction.

Today, highly technical, and computer-controlled machines are used during training as a carpenter. Apprentices receive extensive training in the use of these machines during their apprenticeship. Manual work is also an essential part of the apprenticeship programme. The work is conducted from the start of production through to assembly. Carpenters employed in commercial enterprises produce customized products, although large companies also produce series. Taking the customer's wishes into account, carpenters produce design sketches and 3D drawings for the manufacture of the products. Nowadays, carpenters process diverse types of wood and plastics according to the latest technical guidelines.

(Inter-company) Craftsmanship Training Centre, Gloggnitz (hAc) – General Overview

In total - around 100 training places for highly qualified training and further education are available on a total of 1800m2. In the workshops, young people are taught theoretical and practical knowledge and skills as part of apprenticeship training in the fields of construction and furniture carpentry and tinsmithing. In addition, there is also training in specialized assistant training for wood and metal processing in adult education. Since 2018, adults have also been trained as bodywork technicians in an 18-month intensive training programme.

2.72 Germany

Approach to integrating and supporting young people tackling learning challenges in Germany.

In Germany, the following models and support measures are primarily used to integrate young people with learning and/or social difficulties into vocational training.

1. Vocational school and remedial teaching

In Germany, school attendance is compulsory until the age of 18. Anyone who is not integrated into a vocational training program (or a course of study) after completing general schooling must attend a vocational school (11/2 to 2 days a week or a corresponding block of lessons) until they reach the age of 18. The curriculum is designed to meet the needs of this target group. During the time when there are no vocational school lessons, various individual support measures are carried out, such as catching up on school-leaving qualifications, job application training, internships in companies, instruction in inter-company training centres, etc.

2. Specific vocational training courses with a recognised qualification

Normal vocational training in Germany lasts 3 to 31/2 years and the qualification is at EQF level 4. Young people who do not obtain a training place during this training or who drop out of a training program they have started (10 - 12 %) primarily fail because of the theory lessons at vocational school.

Specific two-year vocational training programs with a recognized EQF Level 3 qualification have been created for these target groups. If they successfully complete the programme, they can either start work or receive vocational training in a corresponding occupation with a qualification at EQF Level 4, whereby the training periods already completed, and skills acquired are taken into account.

This model leads to a high level of integration success but is only implemented to a limited extent in Germany (e.g. phased training in construction) because the trade unions in particular are against it, as they require all young people to obtain a qualification at EQF Level 4**.**

3. Hamburg model

The HM is the training offer for young people which have not found their training opportunity in the dual vocational training system despite the training maturity and the available multiple application attempts. In the PQ, the first training year of the HM, school age young people who reached training maturity are admitted; as a rule they are graduates of district schools who will not succeed or haven't succeeded to make a transition to the dual vocational training at the end of the 10th school attendance year (so called "market disadvantaged" young people).

The Hamburg integration model has been implemented with great success for many years in Hamburg and now also in many other federal states. The integration success rate is around 90 %.

This model has also been transferred to Lithuania, Poland and Hungary and successfully implemented there.

4. Assisted apprenticeship

The term refers to an extensive individual and needs-oriented support offer for young people who want to start or continue an apprenticeship.[2]

This target group often has greater difficulty starting apprenticeship directly on the primary labor market due to learning and educational deficits or a variety of social problems. Support for learning disabilities is an essential component.

So-called "apprenticeship counsellors" are used to determine on a case-by-case basis what specific support the young person needs. The training support includes in particular:

- social-educational support,
- various measures to stabilize the vocational training relationship,
- offers to reduce educational and language deficits,
- offers to impart specialist theoretical skills, knowledge and abilities.

The young person receives individual and continuous support and social-educational support, including in the company. The counsellors of assisted training provides them with a permanent training companion for the entire duration of the funding.

The program also supports apprenticeship companies if they apprentice a young person as part of this funding measure. Funding for apprenticeship companies is e.g. possible before the start of training if their aim is to train a young person who is eligible for funding.

Operational support is provided, for example:

- by providing assistance with the administration, organization and implementation of training, with the creation of a company training plan,
- Conducting regular discussions in order to identify possible difficulties in training at an early stage,
- Coaching of trainers. Participation in assisted training can begin at any time during the training.

[2] Legal basis https://www.sozialgesetzbuch-sgb.de/sgbiii/74.html (only available in German)

The measure can also include a preliminary training phase in which the company can get to know the future trainee and receive further support from the training provider. The participants are selected by the responsible advisory specialist at the Federal Employment Agency (employment office). Companies that aim to train a young person who is eligible for funding can report their needs to the employer service of the Federal Employment Agency or the job center. Different providers (usually educational institutions with experience in supporting disadvantaged young people) can be selected by the Federal Employment Agency.

2.73 Italy

ITA EMILIO SERENI: a school and a farm is an agricultural and technical.

institute, with more than 800 students in two different sites (the main branch, the

second, smaller, one and the section based in Rebibbia Jail). Inclusion has always been a central theme in the school. We must ensure appropriate assistance to all our pupils, through collaboration with families, local health organizations and local communities; at the same time, we must develop the national curriculum of studies providing students an adequate training and learning, to give them the skills necessary to find a job or to continue studying. Through the collaboration with families, local companies, commercial and productive activities, the school has to give practical experience about work to all of the students (schoolwork alternance, work related learning, learning by doing).

Flexibility in programming and delivering curricula (adaptation when necessary, starting from individual strengths and weaknesses) is absolute necessary, through a personalization of assessment, giving importance to the entire learning process (not only to the final tests); promoting different teaching styles according to age and development, personality and learning styles; providing learning support (reasonable adjustments to learning and assessment materials).

Best practices in organizing teaching – learning activities in ITA EMILIO SERENI:

- Analyze training needs (strengths and weaknesses) and life context (family and class situation).

- Observe the strengths and weaknesses in the dimensions of relationships, interaction, socialization, communication, language, autonomy (semi-structured observation) also to prefigure possible obstacles to learning and prepare adequate strategies for intervention.

- Identify cognitive styles and learning methods (structured observation).

- Pay particular attention to the educational relationship and encourage a positive

classroom climate.

- Identify the prerequisites (the starting levels) in a perspective that is as shared as possible, promoting self-evaluation processes and through reality tasks.

- Plan short, medium and long-term objectives, starting from individual expectations, both with respect to what is required by the organization (school) and in collaboration with external stakeholders.

- Present the theoretical contents and practical activities through a problem situation, to trigger the lesson (it can be a video, a testimony, a problematic situation to be resolved that has arisen or could arise in the company).

- Identify and clearly explain the learning objectives and practical skills to be developed to solve the task or achieve the objectives, also through the use of images, symbols, slogans.

- Division of the task into sub-tasks and verbalization.

- Explanation of the steps to be taken to resolve the problem.

- Provide sub-objectives in a task analysis process (task analysis).

- Promote debate and sharing strategies. Ask students to make comparisons between the information and highlight any contrasts between them. Students can better remember what they learn if they have time to absorb it and the opportunity to talk about it, preferably in groups even with contrasting opinions (debate).

- Take breaks.

- Ask questions. When running a lesson, you can quickly go through many concepts at once. It is important to be able to assess how students absorb information. One way to do this is to try the pause, ask questions, pause, review technique. Plan the questions in advance and then ask these questions but give students enough time to think about them before answering (problem solving).

- Create a basic glossary, to be enriched according to each individual's abilities, with key words for the basic concepts that you want to convey, integrating the iconic language as much as possible. Highlight the more complex terms and use visual aids to explain them, if possible, showing links to the contexts with which you are more familiar with.

- Provide information and content using key words, graphic organizers, images, diagrams, maps to explain the basic concepts you want to convey, also thanks to the use of new technologies.

- Describe the concepts and activities performed and ask students to describe them, (this way, not only do students get a variety of ways to learn, but a teacher is also able to control what is understood).

- Promote tutoring and peer learning, also to promote the acquisition of SEL (Social Emotional Learning) skills.

2.74 Latvia

The career counselor tailors their approach to align with the career education objectives of the educational institution and conducts research to understand the interests and needs of the students. They develop a personalized work plan for the year to support career development.

For students facing learning challenges, the career counselor provides individualized assistance through one-on-one consultations. If ongoing support is needed, additional sessions are scheduled. These interactions help the counselor gain a deeper understanding of the challenges, and they collaborate with educators to address them effectively. This teamwork aims to help students overcome academic obstacles and stay motivated to learn, thus boosting their self-esteem and engagement.

In the counseling process, the career specialist assesses if a student is struggling in a specific subject and determines if they can manage independently or require additional support. They work closely with teachers to identify barriers to learning and assess if the difficulties extend across multiple subjects. The counselor then collaborates with

subject teachers to develop strategies tailored to the student's needs, ensuring they receive the necessary attention and support.

During discussions, the career advisor actively addresses the student's concerns, involving both the teacher and the student in finding solutions. They create a supportive environment where students feel empowered to take responsibility for their academic challenges and work towards improving their performance. The counselor also ensures that students have designated times to seek assistance and monitors their progress closely.

To promote equitable treatment, the career counselor identifies students who may need extra support during group activities to prevent disengagement. They integrate career support into the learning process to reduce the risk of dropout, collaborating with educators to assess student dynamics and strengths. Group sessions are used to model life skills and assist students in achieving their goals.

Career advisory services are available to all students, with teachers often recommending those with learning difficulties to seek assistance. The counselor also works with parents to support students effectively and may organize joint support groups to address challenges collectively.

2.75 Lithuania

In Lithuania there is no specific integration framework for young people with learning difficulties into VET. However, students with special needs are provided with the opportunity to learn together with other students in the framework of adapted VET programmes and to acquire qualifications or they can follow a training programme to acquire social skills. After completing a Social Skills Programme, the student acquires linguistic, cultural, social, general competences and the beginnings of vocational competences, according to his/her capacities and skills.

In 2020-2023 the National Education Agency implemented the project "If You Have a Profession – You Have a Future!" funded by the European Social Fund. It aims to provide opportunities for students from socially vulnerable groups to acquire profession. In order to achieve this objective, activities are being implemented to support the students at the level of vocational training (providing them with the necessary training tools and workwear, organising learning support (special educational assistance) and extracurricular activities (employment groups); improving the educational process in vocational schools (development of teaching materials and organization of trainings); expanding the vocational choices of pupils with special educational needs (purchase of tools for assessing the vocational orientation of pupils with special educational needs and training in their use).

Project target groups:

- Vocational students with special educational needs.
- Vocational students living in families at social risk.

Project results:

- Organising learning support and after-school activities groups
- Development of teaching materials for the modules of the Social Skills Programme
- Providing training on managing unwanted behaviour of pupils with special educational needs
- Sets of tools to assess vocational orientation.

- Training and supervision in the use of the Work Skills Diagnostic Toolkit
- Assessing pupils with special educational needs and making vocational recommendations

The Ministry of Education intends to implement the piloted project model into the general and vocational education systems.

2.76 Poland

At VET school in Szczecin students who obtained “Individual Educational and Therapeutic Needs Statement” are entitled to:

- remedial classes,
- additional Polish language and mathematics classes,
- extended time during written assignments: quizzes, tests, classwork, and exams,
- assistance in organizing sessions with a psychotherapist.

Additionally, students with an opinion (not a statement) on learning difficulties are entitled to:

- undergo meetings with a school counselor,
- extended time during tests and classwork,
- use of a separate grading system for written assignments,
- obtain assistance in organizing sessions with psychotherapists.

Students with opinions regarding physical disabilities are entitled to:

- physical exercises tailored to the student's needs and capabilities,
- additional School Sports Club activities on the sports field, if the parent has given their written consent.

2.77 Spain

One of the most important goals of education is to ensure that all students, regardless of their conditions and personal characteristics, can develop their abilities as much as possible.
Training centres for all imply that every student can participate and learn in the same school environment and obtain a response adjusted to their unique needs. This is a process of constant improvement in which the entire educational community must be involved.
We must live the difference as a positive factor and therefore look for more appropriate ways to respond to diversity, reducing the barriers that some students encounter when learning.
It is undeniable that there are different ways of learning and relating. Taking individual differences into account is essential for the educator. Recognizing and respecting each person’s own learning styles and interests is the basis for students to develop their potential to the maximum and be the protagonists of their own learning process, improving results in all aspects.
The gap between the student’s abilities and the demands of the educational context, which substantially affects development and learning, is considered a Specific Educational Support Need (abbreviated as NESE in Catalan).
Specific Educational Support Needs must be based on:
• the student’s areas of strength

• previously acquired skills and the most effective learning method
• the curricular challenges the student faces
• personal or social conditions that interfere with the student's ability to learn

The Regional Ministry of Education at the Government of Catalonia (PP18 DEGC) has identified different Specific Educational Support Needs with the aim of providing students with the necessary supports to promote their learning process under fair conditions.

Each NESE comes with a description, an educational response and a number of resources. For example, for visually impaired students:

The need to guarantee the inclusion of all students needs a task that often seems contradictory to the inclusive system: designating and defining the categories of educational support needs. However, these categories and definitions do not define the person. They define the temporary or permanent conditions in which the person finds himself or herself.

Disabilities and developmental disorders must be considered from the social model and addressed from the curriculum itself. Efforts must be made to ensure that students can access and participate in those activities that are essential for their development and learning in society.

Once the training centre has identified a NESE on a particular student, an Individualized Support Plan (known as PI in Catalan) will be designed in accordance with each specific case. The PI will also include the assessment and decision-making of the teaching teams (with the participation of the student and the student's family) regarding the planning of the measures and support activities that need to be adopted.

In the case of Institute Pere Martell, the steps to follow in order for a student to receive educational support are explained below.

1. A teacher identifies a certain difficulty on a student.
2. The teacher transfers it to the student's tutor.
3. The tutor interviews the student or his/her family (if under 18).
4. The tutor writes down the agreements of the interview and saves the document in the GDrive's "Individual tutoring" folder.
5. If the intervention of the school's Educational Counsellor is necessary, the tutor will complete the following documents, prior notice to the teaching team:

a) "Authorization sheet"
b) "Request for guidance"

In them, the tutor must explain the problem and the reasons why the student requires an educational intervention.

6. The documents that the tutor must provide to the school's Educational Counsellor will be uploaded into a GDrive's folder called "Guidance".
7. The school's Educational Counsellor will carry out the first follow-up on the student after the collection of basic information. If necessary, there will be an interview with the student's family, legal guardians, members of the teaching team and/or external services such as the Psychopedagogical Guidance Service, the Language and Hearing Support Unit, Social Services or the Child and Youth Mental Health Centre.
8. Then, the school's Educational Counsellor will meet the Psychopedagogical Guidance Service to monitor the student. There will also be a meeting with the Commission for Inclusive Educational Care according to their needs and demands.
9. Subsequently, the tutor and the school's Educational Counsellor will carry out, if necessary, the appropriate guidelines for psycho-pedagogical intervention based on the "Individualized Support Plan" or the "Curricular adaptation". This document will be drawn up by the tutor with the help of the guidance staff and will be taken into account at the teaching team meetings and the assessment sessions.

10. Finally, the school's Educational Counsellor will record the monitoring of the sessions with the student in the "minutes of the coordination meetings with the tutor".

2.8 Conclusions

- Integrating young people with learning difficulties into vocational education and training (VET) requires a comprehensive approach rooted in inclusive policies. These policies must prioritize accessibility, support, and tailored learning experiences to ensure equal opportunities for all learners.
- Successful integration relies on collaboration among various stakeholders including educators, policymakers, parents, and community organizations. By working together, we can identify barriers, develop effective strategies, and provide necessary resources to facilitate the learning process for young people with learning difficulties.
- Tailoring support to the individual needs of each learner is crucial for their success in VET programs. This may include specialized teaching methods, assistive technologies, mentorship programs, and counselling services to address academic, emotional, and social challenges.
- Creating inclusive learning environments goes beyond physical accessibility. It involves fostering a culture of acceptance, understanding, and respect for diversity. Educators should receive training in inclusive teaching practices to better accommodate the needs of all learners.
- Recognizing and celebrating the diverse abilities and achievements of young people with learning difficulties can boost their confidence and motivation. Highlighting success stories can inspire others and promote a positive perception of inclusion in VET.
- Integration efforts must be continuously evaluated and refined based on feedback from students, educators, and other stakeholders. This iterative process ensures that support mechanisms remain effective and responsive to evolving needs.
- Integrating young people with learning difficulties into VET not only enhances their employability and independence but also contributes to a more inclusive society. By tapping into the diverse talents of all individuals, we can build stronger communities and foster economic growth.
- Achieving full integration in VET requires sustained commitment from all stakeholders. Governments, educational institutions, employers, and civil society must prioritize inclusion as a fundamental value and allocate resources accordingly to ensure equal opportunities for all learners, regardless of their abilities.

3 Concept and Curriculum Specialist for Building Insulation[3]

3.1 Political, Economic and Educational Environment in Baltic Sea Countries

In January 2007 European Commission encouraged 27 EU states to set a goal and by 2020 reduce exhaust gases contributing to the greenhouse effect by 30% in mature countries and at least by 20% in the European Union. Later in Brussels it was agreed upon certain legally obligatory objectives, among them reduction of exhaust gases contributing to the greenhouse effect at least by 20% and production of 20% of energyfrom regenerative resources.
In 2007 the European Council adopted energy and climate change objectives for 2020.
Europe 2020 –20/20/20 targets:

- Reduction of greenhouse gas emissions by 20% as compared to 1990. Indicator–greenhouse gas emissions, base year 1990.
- Increase in the share of renewable energy sources in the final energy consumption to 20%. Indicator–share of renewables in gross final energy consumption.
- 20% increase in energy efficiency. Indicator – energy intensity of the economy (proxy indicator for energy savings, which is under development) Clearly, the EU is the main driver of renewable energy policy in the Baltic Sea Region. No major development in this area will happen without the active support of the EU.

The energy consumption of each country's economy is conditioned by many factors. The most important are:

- Macroeconomic policy –sector structure of the economy, including share in the domestic economy of those industry branches that are considered most energy consuming – production of steel, cement, paper.
- Energy policy – structure of fuel consumption in the economy, development of energy - saving technologies, organisation of production. Among the means of improving energy efficiency, there is mainly the change of industry structure but also the implementation of new, energy-saving technologies. In order to achieve the desired result in the form of reduced energy consumption, the stimulators of energy cost share in production costs, legal regulations (system of permits and consents) and the CO2 emissions trading system are used. The price of energy is an important factorthat not only constitutes a cost factor in the economy but is also decisive in making decisions on investments in energy-saving investments, both among individual recipients and in the industry. According to the worldwide policy, most countries of the Baltic Sea Region have adopted the concept of deregulation and liberalisation of the energy sector, which usually leads to an increase in price variability, depending onthe predominance of the raw material used to produce energy.

3.2 Electricity generated from renewable sources (RES)

The share of renewable energy sources in electricity production (measured as % of

[3] Prepared by Public Institution Vilnius Builder Training centre

gross electricity consumption) depends to a large extent on geographical conditions, as well as on implemented energy-saving technologies. The biggest share of RES in electricity production is observed in Norway, which is one of the world's largest producers of hydropower. The share of ca. 50% has been recorded in Sweden and Latvia, the indexes for Denmark and Finland being lower. Germany, with its dynamically developing renewable energy sector and the position of one of the world's biggest producers of wind energy is also the biggest energy market in Europe. Thus, despite the highest values of energy production based on RES, the percentage share in the gross energy consumption is 10%. The lowest share of RES has been observed in the Baltic countries – Lithuania, Estonia and Poland (below 5% of gross energy consumption). For the majority of the Baltic countries, the key renewable source used to generate energy is biomass.

3.21 Greenhouse gas emissions

Considering the tendencies of energy production and price, it is becoming urgent to reduce energy consumption in buildings. In 1997, the developed nations agreed in the Kyoto Protocol to limit their greenhouse gas emissions. The Kyoto Protocol sets the limits for carbon dioxide emission for each country individually, taking into account their phase of economic development. The biggest emitters of carbon dioxide in the Baltic Sea Region (million tons of CO_2 equivalents) are Germany – 956.1 and Poland 398.9. This results from a significant share of coal power plants in energy production. It should be remembered that the structure of transport in a given country also affects the amount of greenhouse gas emission. This rate juxtaposed with the data concerning energy intensity of the economy shows that the countries with highest energy intensity economies do not have the highest CO_2 emission rates at all.

3.22 Energy conservation in residential buildings and demand for skilled workers

The residential sector accounts for a significant part of the final energy consumption in the European Community and, therefore, the built environment is an important target of the governmental environmental policies resulting from the Kyoto Protocol. In almost all EU countries, the demand for labour and vocational training has been well-studied in the field of energy conservation.

The need for remediation in existing housing and of workers is important **in Latvia**. Most of residential buildings in Latvia (68%) were built in the period between 1958 and 1992. 22% of buildings were built until 1940, 9% in the period between 1940 and 1957, however, since 1993 only about 1% of buildings have been constructed. The majority of the current housing have served their time and are energy inefficient. When the building designs were created, the key attention was paid to fast construction and functionality as well as provision of a big number of apartments, however, no attention was paid to the consumption of energy resources and energy efficiency of the building. Energy consumption in a typical apartment building in Latvia is from 149 to 270 kWh/m2 per year. The residential buildings have a high energy efficiency potential up to 70 %. It can be forecast that in future for the employers in the construction sector it will be most difficult to find the lowest and middle level employees and employees doing specialized construction work as namely these groups have emigrated most. According to the future forecasts and targets of 2020, a rapid increase in the lack of construction specialists will be seen. The key weaknesses of the workers currently employed in the construction sector:

No understanding about the energy efficiency solutions.

- Lack of knowledge and skills.
- Lack of self-dependence. Considering the specific character of the projects under examination – the energy efficiency improvement in buildings, it is possible to determine the main kinds of construction work necessary for the implementation of the established target:
  - roof construction,
  - window replacement,
  - insulation of facade and basement ceiling,
  - electric installation,
  - plumbing.

Following the energy efficiency target of decreasing the energy consumption of buildings by 20 % until 2020 renovations are necessary for a half of the housing. This means additional 15,000 to 18,000 employees per year just for the renovation measures to achieve the established energy and climate targets until 2020.
In 2011 17,490 jobs were occupied in building construction and until 2020 vocational education institutions will be able to prepare 5,166 young specialists. There were three different development scenarios designed within the report. Depending on thescenario in 2020 the following numbers of employees will be necessary:

- Base scenario – 19,949 employees.
- Latvia 2020 scenario – 38,056 employees.
- Average growth scenario – 29,003 employees.
- Accordingly, it means that it is impossible to achieve the established climate and energy targets of 2020 because of the lack of workers.

The situation **in Lithuania** tends to be similar in Latvia. Directive 2010/31/EU of the European Parliament and of the Council on the energy performance of buildings and Lithuanian legislation for its implementation indicate that in a relatively short period of time it will be necessary to make significant changes to the requirements for building construction and engineering equipment. In order to maximize the chances ofefficient energy use in buildings, the thermal properties of building envelopes should be improved by about twice; efficiency of building engineering systems should be increased, and all possibilities of renewable energy use should be utilised. The implementation of these objectives requires preparation not only for the engineering staff to learn new technological decision-making, but also the vocational training has to be prepared in order to properly prepare and retrain workers. VET sector must respond to these changes, which means that curricula have to be updated, and supplemented with necessary knowledge and skills. During the last 20 years the requirements for energy efficiency in buildings increased, but they were implemented gradually, so that the labour market and vocational training system could be easily adapted to that, the missing vocational training programmes were upgraded, new professions were introduced, e.g. thermal insulation fitter of buildings.
However, the national qualification and certification system for workers in the construction sector has not been developed yet, particularly in relation to construction of energy efficient buildings (including almost non-energy using buildings). About 60 per cent of apartment blocks in Lithuania were built over the last four decades of the last century, they were mainly brick and typical panel apartment buildings. Thermal characteristics of exterior envelopes in these houses are poor. Heating energy consumption in apartment buildings constructed in accordance with construction

technical standards and legislation in force before 1993 are about 5,000 GWh per year. Lithuania has a big potential for building modernization, which is likely to have a significant impact on the demand for qualified labour force in the construction sector in the near future.
The recent analysis on the demand of occupations of blue-collar workforce with skills needed for the construction of energy efficient buildings and efficient use of renewable energy source technologies has revealed the following most lacking occupations (listed in the order of priority):

- installer of solar heating system;
- thermal insulation fitter;
- installer of biomass power plants;
- installer of ventilated facades;
- installer of plaster facades;
- installer of heating pumps and / or cooling systems.

Similar trends are obtained for **Poland**. In Poland, the building sector is responsible for 42% of the total energy consumption and up to 30% of this energy is consumed by the residential sector. Therefore, this sector should be more touched by activities towards energy efficiency improvement and RES sources deployment. Poland had approximately 13.8 million housing units in 2005 and this amount is constantly increasing coming in 2009 to the total number of 14.3 million units. Although there are measures to improve energy efficiency in Poland in the residential sector, its energy consumption is excessive, reaching 2-3 times higher levels than in Western countries with a similar climate.

3.3 Vocational education in Baltic Sea Countries

The initial vocational training duration is between 2 and 4 years. In almost all the Baltic Sea Countries training takes place at full-time schools. Practical elements are acquired by means of vocational practice, project works and training workshops.

An exception is the dual training in **Germany** (about 60 per cent of vocational training courses are conducted in this way). In this case the apprentice training contract needs to be made with one or more companies; the theory can be obtained in an external state vocational school.

In **Denmark** and **Norway**, there is a mixed form and the basic training is conducted at a vocational school, and then main training takes place in enterprises. If in Germany, Denmark and Norway not enough training places are available, also here vocational training is conducted at schools with integrated practice internships.

In **Poland**, apart from the school education, also a dual course is possible; it was introduced, however few students actually take it into account.

In **Sweden,** at least 15 per cent of the training has to be acquired in companies; an increase of this share to 20 per cent is being discussed.

The implemented vocational education system analysis leads to the conclusion that in the construction area the vocational education system of **Latvia** has to be supplemented in levels 1 to 3 with the elements and programmes of energy efficiency. A significant expansion of the practical training periods in companies, a further improvement of the theoretical teaching, and better coordination between practical

and theoretical training seem to improve the quality and increase the attractiveness of training which is particularly important. Majority of the countries have no entry requirements for vocational training. Some states, however, differ in this respect: in Estonia a high school diploma is needed to pursue vocational education. In Finland job-related requirements concerning the acquired qualifications are set for each profession at different levels. The introduction of uniform access conditions in the Baltic Sea Region which would be profession-specific should be examined.

In some countries, courses are offered at different levels (e.g. in Latvia and Lithuania). The lowest level is open to young people without qualifications, with duration of 1- 2 years and provides simple professional qualifications. The middle level encompasses 2 -3 years and provides practical and theoretical qualifications. Theupper level provides advanced skills for stronger students (e.g. for high-school graduates). In Denmark and Sweden there is a guarantee that each person can obtain vocational education regardless of their previous education.

In particular, the crafts are destined to train young people with learning difficulties. They are willing and committed to this social problem. But craft businesses may not be the sole specialist for the training and integration of weaker students. Crafts need also the best students to a large and still increasing extent. The creation of differentiated training courses with different entry requirements and different levels oftraining in an open, transparent system is a priority for targeted development of professional training.
The cooperation in education promotes sustainable economic cooperation. In most countries of the Baltic Sea vocational training with a recognised qualification examination on the basis of state examination regulations will be terminated. The entitlement to pursue technically oriented courses of study is connected with it especially in Denmark, Latvia and pronounced in particular in **Finland**. In Sweden such a university entitlement is valid for employees being at least 25 years old and having 5 years of professional experience. In exceptional cases (e.g. Estonia) vocational training is completed with a certificate of completion which is not a formalqualification.

3.4 Requirements for vocational training in Baltic Sea Countries

3.41 Lost of attractiveness

In all the Baltic countries, vocational training should be completed with formal degreeexaminations, which are based on comparable standards and mutual recognition. The right of ruling the vocational education as well as all intermediate and final examinations should be transferred as sovereign tasks to the chambers in all Baltic Sea states. Due to its closeness to the enterprises the economic self-administration canperform these tasks in a more proper and cost-efficient way. An appreciation of the professional education with strong gender equality in higher general qualifications and a higher permeability is needed between vocational education and studies. In the majority of the Baltic countries, training has lost much of its attractiveness; too low levels, poor quality and limited practical skills and experience are the subject of complaints. For example, in Poland only around 11 per cent of school graduated decided to pursue vocational training. In some countries (e.g. in Germany and the Scandinavian countries), efforts are intense in order to improve the situation. In Sweden the vocational schools are located exclusively on the upper secondary level. In addition to the appreciation, the vocational training and quality improvement of thetheoretical instruction in particular, expansion and optimisation of practical

training ispursued.

A major problem in all the Baltic States is the declining popularity of vocational education. For young people it is desirable to go to high school and pursue university education. Demographic trends exacerbate this problem. Craft businesses are especially affected in this case. Young people prefer a course of study or training in other sectors in the so-called "white collar" occupations. Any increase in theattractiveness and quality improvement of professional education are the overridingtasks for the promotion of crafts and SMEs within the Baltic Sea Region.

There are very differentiated systems within the framework of vocational training. In Germany, vocational training is not regulated predominantly by the state. The organisation of training and acceptance tests are principal task of the economic self-government (chambers). In most States there are public or private systems with vocationally oriented higher educational institutions like vocational schools, technicalschools, technical universities and colleges, which offer higher Professional qualifications and include more or less smooth transitions to universities and colleges.Vocational training should in the first place be the responsibility of the business andeconomic authorities and it should be regulated by the state in a very limited way.Very important, however, are the quality improvements, greater transparency, smooth transition to general education and study, as well as mutual recognition of qualifications based on comparable standards. The work of the EU on the creation ofa European education system within the Baltic Sea Region with the European Qualifications Framework (EQF) and Credit System (ECVET) could be a good basisfor the creation of innovative, non-bureaucratic systems with high quality.

3.42 Early leavers from education and training

Early school leavers are individuals aged 18 to 24 who have finished no more than a lower secondary education, and who have not been involved in further education and training. A high share of early leavers could lead to disadvantages for the economy, asthe demand for low educated people decreases in the course of the structural change. Against this background, the European Commission demands the percentage of early school leavers to be below 10 % in all member states in 2020 (Commission of the European Communities 2007).

3.5 The design of the vocational education programme "Specialist for Building Insulation"

The two-year vocational education programme "Specialist for building insulation" is for young people with predominantly practical talents and theoretical learning difficulties.

The vocational training programme "Specialist for Building Insulation" should involve tasks of saving energy, especially by isolation of old and new buildings (houses, apartments and commercial buildings). Thus, this professional training is based in the construction industry. The construction sector is of considerable economic and strategic importance: more than any other sector, construction accounts for use of raw materials and production of wastes. It provides more employment than any other sector. The outputs of the construction sector affect our landscape, our environment, our living and working conditions for generations. Buildings, the product of construction, account for about 42% of total energy consumption. Widely dispersed objects and high transportation costs are typical for production in construction. In construction, a high number of people operate. This results in further

expanding markets with a high demand for young workers.
It is assumed that the biggest proportion of work is the thermal insulation of the facade performed by workers doing the finishing which may constitute about 55% of the total volume of work, roofers' job may account for 14%, window and door fitter volume could be 20% and the rest of work – 11% might account for the fitting of the internal engineering networks.

On the basis of first mastering of skills and knowledge

- obligatory tasks can be conceived, to be learnt by every trainee, and
- optional tasks can be conceived, to be chosen depending on personal inclinations and skills as well as requirements of the intended related profession and can be combined within the two-year vocational training for the Specialist for building insulation.

Modules (including elements of ecological building). It is especially important to include some elements of ecological building in the curriculum for the profession of a specialist for thermal insulation, because there is a need to save energy, which results in reduction of heating in housing and, as a consequence, lower costs of building utilization. In Europe, 2/3 of energy used in building falls to heat and cooling. Thermal insulation is the most profitable method of improving energetic efficiency of buildings. In this way, we reduce energy consumption (financial savings) without decreasing the comfort and level of life, as well as we protect the environment and facilitate maintenance of continuity of energy delivery.

How much can we gain in the case of use of insulation of individual elements of abuilding?

Heating energy savings for individual elements are as follows:

- Insulation of walls and a roof – heat saving of 20-30%.
- Modernization of fittings – heat saving 10-20%.
- Proper windows – heat saving 10-15%.
- Improvement of the thermal centre – heat saving 10-15%.

Modular training and learning outcomes
The Modular Training structure and Learning Outcomes approach is flexible. The learning outcomes deal with output rather than processes and help to define the skills and knowledge that module participants should be able to demonstrate by the time these learning outcomes are assessed. Learning outcomes are the specific intentions ofa training programme or module, written in specific terms. They describe what a student should know, understand, or be able to do at the end of that module.

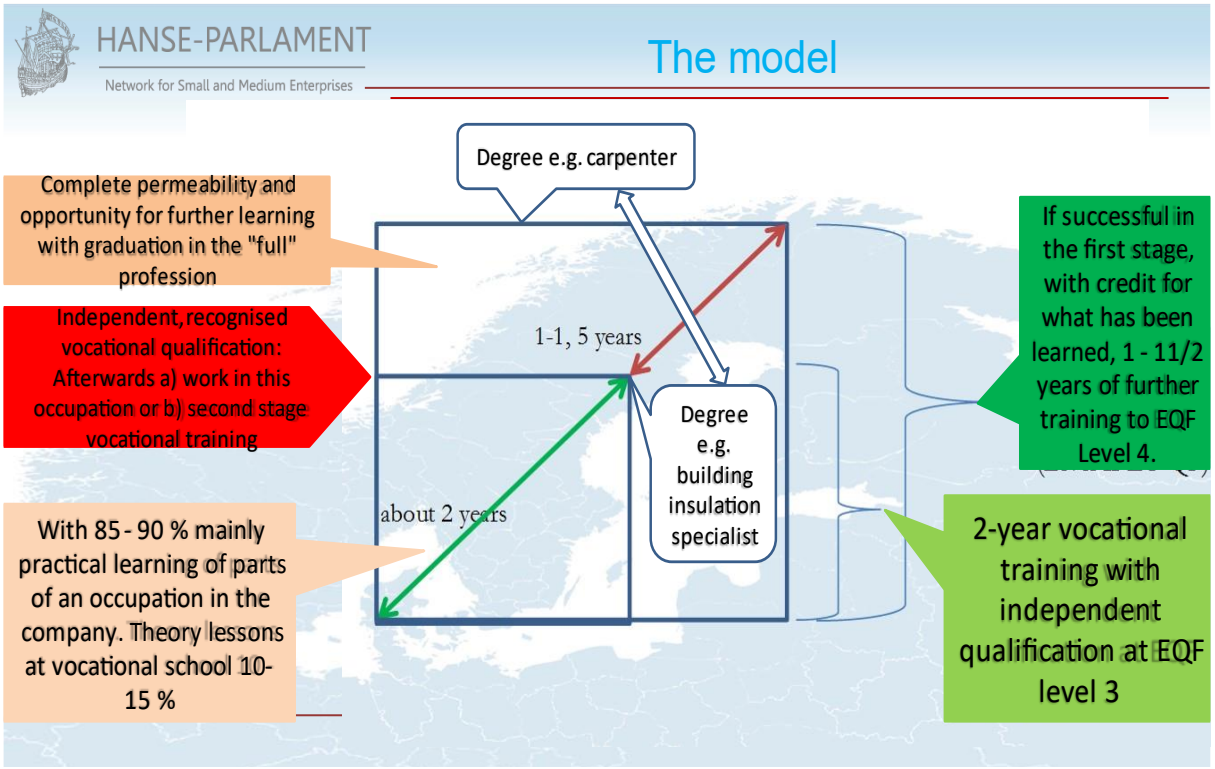
Quality criteria for the training programme:

- Sufficiently detailed learning outcomes
- Theoretical knowledge to be gained
- Practical skills to be obtained
- Defined assessment
- Pass-fail criteria

The Model

The training model is based on the following premises.

- The requirements of VET are high and growing. A growing proportion of school leavers cannot meet these requirements.
- 15-20% of school leavers cannot complete "normal" VET. They need long and expensive preparatory measures and assistance.
- Up to 30 % of trainees drop out of vocational training. Half of them change to training in another occupation. The other half drop out, are unskilled workers or remain in the expensive care of the state from the cradle to the grave.
- The permanent exclusion of such a high proportion of young people is a) anti-social and socially unjustifiable and b) economically nonsensical in the face of a high and growing shortage of skilled workers, because everyone is needed.
- In vocational education and training, most young people fail the theory classes at vocational school. But they are good practitioners and learn well and quickly in the practical training of the dual system.
- Every person has at least one strength that can be developed and is needed.
- Training programmes for those with learning difficulties must develop individual strengths as competences.
- Trained according to individual strengths and placed in the right place, everyone can contribute something valuable to society.
- Specific training for the practically gifted opens up a variety of paths: Detours increase local knowledge.
- It must be ensured that everyone can achieve everything on different paths (even detours).
- Therefore, specific training courses for young people with learning and/or social problems must be created that integrate all young people.



3.6 Concept of the 2 Year Vocational Education Programme "Specialist for Building Insulation"

3.61 Profile of the Training

Title of the qualification **Specialist for building insula-**

Duration of the training: 2 years

Delivering bodies: VET schools, VET centres, labour exchange training centres in collaboration with SMEs, intercompany training centres, VET competence centres in coop-

Level of the certificate National qualification level (3rd in Lithuanian and Polish NQF, 2nd in Latvian NQF),3rd EQF qualification level

Teaching and learning objectives of the training To provide professional skills for young people with practical talents to be able them to work in the energy and construction field doing practical activities in heating works, using work tools and choosing appropriate techniques and materials to providethe necessary temperature in the building, to save energy, especially by isolation of old and new buildings (houses, apartments and commercial buildings), to work on rehabilitation and modernization of the building stock as well as new construction of residential and commercial buildings.

Entry requirements

Training language

Target group: young people with practical talents (students who generally drop outof the training process due to learning difficulties in theoretical courses leading to the lack of motivation, poor attendance; young people without professional qualification because of learning difficulties; young people up to 25, former IVET students from construction sector without professional qualification lacking competences to enterthe labour market; young people up to 25 with good practical skills, who have workedin the building sector, but do not possess professional qualification and have lost jobs,drop outs of learning process.

Learning outcomes/Vocational skills and competences required for completion of the qualification:

Those who have completed the qualification shall:
be able to function in their working community and environment;
be capable of working safety, economically and a high quality standard; command the necessary data processing systems;
define types of thermal strata in buildings and causes of their existence;
differentiate types of thermal insulation;
use project documentation, technical specifications for performing building works and their acceptance, standards, catalogues and instructions for making thermal insulation; prepare a bill of quantities connected with insulation works and estimates their cost; choose methods of making thermal insulation;
choose and prepare materials, tools and equipment to make thermal insulation; perform auxiliary construction works connected with making thermal insulation; prepare groundwork for thermal insulation;
perform thermal insulation and protect heating fitting and hot water fitting against loss of heat;
perform works connected with protection of thermal insulation against damp, wind and mechanical damages;
perform works connected with repairing thermal insulation; assess the quality of performed thermal insulation;
prepare a re-measurement of quantities connected with performing insulation works and prepares a settlement of these works
be able to deal with the waste generated and their own tools and to perform.
the required final inspections at the worksite
check quality of insulation systems and vapor retarders.

Training contents:

Personal health and safety at the building site;

Proper localization of a building – a building should be fitted well in the existing surroundings and should not violate the landscape.

Basic construction materials: classification, features and application construction
materials, qualities of construction materials, kinds of building java, mineral and organic insulation materials, polymer insulation materials;
Application of ecological building materials. Avoiding resources burdensome to the natural environment.
Application of insulation building materials (e.g. glass wool, mineral wool, plaster, foamed polystyrene, styrodur, protective coating, thermal systems, aerogel, thermal insulation boards, polyfoam, cellular glass).
Fire protection properties of insulation materials (Euroclasses, REI classification).
Preparation of a bill of quantities and re-measurement of quantities of building works. Basics of thermal insulation:

- thermal transmission,
- thermal insulation,
- thermal resistance. Insulation technologies.

Environmental protection, energy saving and sustainable construction;
Preparing and clearing the working area, selecting tools and equipment, preparing materials for performing thermal insulation;
Preparing mortar, plaster and concrete;
Calculations of building areas, material consumption;
The main technology of heating (construction of heated walls, fire safety, plastering the surface);
Bricklaying basics, plastering works, basics in building heating, tiling works, painting works;
Working at heights and installation of work and safety scaffolds; Reading, using and preparing technical drawings and outlines; Inspection and assessment of the building structures before insulation; Finishing and decoration of the insulated facades;
Refurbishing and repairing insulated structures;
Energo-effective building;
Effective use of renewable energy, water and other resources during construction and utilization of a building;
Acoustic insulation;
Reduction of energy consumption through planting the terrains next to the building.
Reduction of emitted pollution.
Ecological modernization of already existing buildings. Modernization and renovation of insulation structures.
Construction Standards, fire safety, electrical safety, safety signs, action in case of accidents), Preparing surface, subfloors and application of materials
for surface protection, pasting heating materials, decorative plastering;

Performing demolition forms

Checking quality of insulated structures and vapor retarders;Making protective and special coatings;

Incorporating insulation materials for thermal, noise and fire safety;
Bringing in insulation materials by means of pouring, blowing, jamming and foaming;Manufacturing cleaners and floor finishes;
Mounting supporting and bearing structures; Manufacturing components for dry wall installation;Refurbishing and repairing dry wall constructions;
Mounting light walls and suspended ceilings and building in insulation materials;

Fitting refrigeration components and piping systems;

Responsibility for their own work, assessment of own work performance and develop their vocational skills;

Dealing with the waste generated and their own tools and performing the required final inspections at the worksite;

Performing thermal insulation and protects heating fitting and hot water fitting against loss of heat;

Performing works connected with protection of thermal insulation against damp, wind and mechanical damages;

Performing works connected with repairing thermal insulation;

Basics of economics and work law: types of enterprises, their establishment, rights of the employer and employee;

Special requirements. A person who wants to perform the profession "Specialist forbuilding insulation" must get used to constant changes of place of stay (it depends onthe place of a new construction), variable weather conditions and heights and not suffer from a fear of height.

Student's individual needs

The scope of changes in secondary schools also concerns adjustment of educational requirements to individual needs and abilities of students. Provisions in this area specify the target group of this process and how the process should be conducted. In order to conduct it, each school prepares a card of individual needs of a student and a plan of supporting activities.
Teachers teaching in a specific class, as a result of a group analysis of individual casesof students, may create a card of individual needs for a student who is especially gifted, has specific difficulties in learning (dyslexia, dysgraphia, cystography, dyscalculia) or has disorders of linguistic communication.
Individualization of teaching may also include a student chronically ill, being in crisis, neglected by their background or educationally (in connection with a hard living situation of a student and their family, way of spending free time, contacts within the background) and a student with adaptation difficulties (connected with previous education abroad) or cultural differences.

Concept of a separate acknowledged vocational training with a state final examination.

After the completion of a two-year vocational training a professional activity can be started in the studied profession.

The educational system is organized as a flexible and open model and must contributeto the reduction of the number of drop-out rates from vocational training. There should always be a possibility of change upon the condition of crediting the already passed training and studied contents, for example, beginning studying a qualified job which lasts three or three and a half years and switching to the qualified job which lasts two years, e.g. in case of excessive demand; studying a qualified job which lasts two years and switching to the beginning qualified job which lasts three or three and a half years, e.g. in case of low demand.

The two-year vocational training should not lead to a dead end. In an open system the graduates must be able to obtain all other certificates of completion of vocational training and further training which correspond to their initial profession.

On the basis of this first mastering of skills and knowledge a) obligatory tasks can be conceived, to be learnt by every trainee, and b) optional tasks can be conceived, to be chosen depending on personal inclinations and skills as well as requirements of the intended related.

profession, and can be combined within the two-year vocational training for the specialist for building insulation.

Recognition/exams and course degree

Each trainee is awarded a Qualification certificate of Specialist for building insulation which confirms the knowledge and skills of a qualified and sets out the topics learned and demonstrates that a person is qualified to perform the work envisaged. The certificate is awarded by the training provider, authorised by the *Ministry of Education* after the trainee ‘s successful performance in theory and practice exams.

In Poland a graduate from a school preparing for the profession of a bricklayer-plasterer after confirming qualification² B.18. Bricklaying and plastering works (an exam taken before an examination board) may be awarded a diploma confirming qualifications in the profession of a building technician after additional confirmationof the qualification B.33. Organization and supervision of construction works and B.30. Preparing cost calculations and tender documentation, and after completingsecondary education.

Access to the next level of education/training

The qualification confers eligibility to continue at higher education institutions (in general secondary school to graduate it, in vocational secondary education programmes, vocational programmes) in different in-service training programmes, in courses and seminars.
Related professions which can be studied within further one or one and a half years upon condition of crediting of already obtained knowledge and skills as well as already passed training are: Plasterer, Roofer, Tiller, Paver and Mosaic layer, Composition floor layer, Thermal and noise insulation fitter, House painter, Carpenter, Steel fixer and concreter Mason, Stove fitter, Bricklayer-plasterer, Specialist for building constructions, architecture renovation technician, Road and bridge technician, Specialist for pipe systems

Legal and financial conditions

Financing in the state system.
The proposed training programme could be legitimized following the established order. It will have to be assessed by external experts and recognized as suitable to be delivered in VET institutions. A VET institution needs to get a license for delivering of the programme by the authorised body which assesses its necessary teaching and material facilities. After the programme is recognized, the funding for its delivery is made from the state budget.
In Poland Core Curriculum of Educating in the Profession drawn up on the basis of the ordinance of the Minister of National Education as of 7 February 2012 on outline timetables of teaching in public schools.

Range of occupations accessible to the holder of the certificate. Those who have completed the qualification may work as **specialists for building insulation** in building maintenance technology enterprises, construction industry or enterprises.

Requirements for teaching staff. The statutory teaching qualifications required are upper secondary vocational education or higher education degree and pedagogical studies *(with a scope of 35 credits).* In addition, teachers of vocational studies are required to have three years of experience in their teaching field.

3.62 Framework plan/curriculum for the company-based part of the training

The following contents have to be described in detail:

- Official recognition of the training (by state)
- Duration of the training
- Scope of the occupational field with basic education and vocational trainingobjectives
- Vocational training in VET schools
- Job description

- Framework plan for the training
- Training Plan
- Report portfolio
- Intermediate examination
- Final examination

The main focus lies on a detailed framework plan, which is structured according tothe years of the training and contains comprehensive description:

a) of the individual parts (modules) of the training

b) for each part/module
+ Skills and knowledge to be imparted by own planning, implementation andcontrolling
+ Time guideline in weeks for imparting the contents

3.63 Framework plan/curriculum for the school-based part of the training

At least the following contents have to be described in detail:

Education mandate, objectives and pedagogy of VET schools

- Methods, learning competencies and didactic principles
- Learning fields with time guidelines in hours structured in accordance to theyears of training
- Detailed description of each field of learning with
- Definition of objectives
- Content

3.64 Sample of exam regulations

At least the following contents have to be described in detail:

- Establishment, composition and appointment of examination committees, bias,Chairman, quorum, voting, management and confidentiality.
- Exam date, admission requirements for the final examination / the usual case of examination and in especial cases, registration for the exam, decision on admission tothe exam
- Subject of the exam, structure of the examination, examination questions, publicity,supervision, identity check and instruction, acts of deception and violation of examination procedure, withdrawal and non-participation.
- Evaluation of the exam and approval of the results, certificate of the exam andfailed exam
- Possibilities to repeat examination
- Rules for appeals as well as access and storage of exam documents.

Examples, versions, work material

Nr.	*Part of the Programme/ Theme Programme 1st year*	*Competences, skills, knowledge*	*Week*

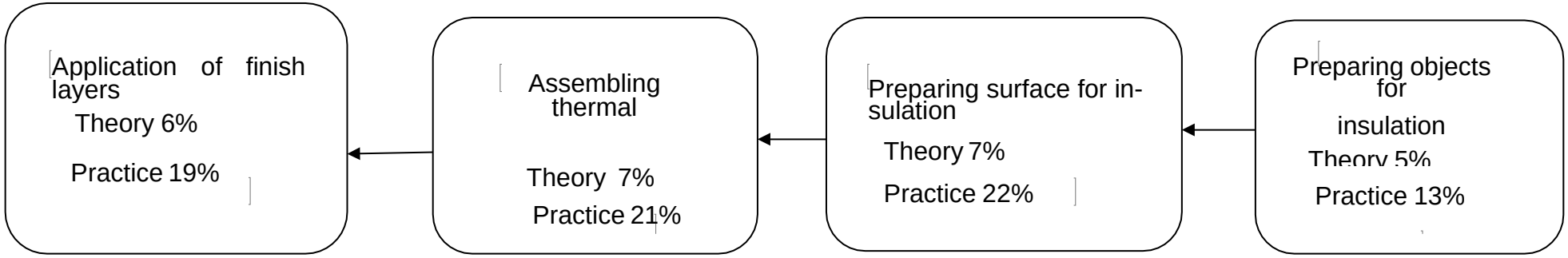
		(learningout-comes?)	
1	*Personal health and safety at the building site*		
2	*Basic construction materials: classification, features and application construction materi-als, qualities of construction materials,kinds of building java, mineral and organic insula-tion materials, polymer insulation materials*		
3			

***Version: The programme "Specialist for Building Insulation" will not represent a course syllabus or a list of topics to be covered**. Training providers are free to select course con-tent, training materials and delivery methods which will deliver the learning outcomes in a manner which meets their national/local/institutional and/or individual/group requirements.*

Module 1: National legislation ***Assessment criteria for a knowledge based learning outcomeAssessment will test for**:*	
Learning outcome	***Assessment criteria***
	The candidate should have retained the infor-mationthat s/he had been taught and be able to:

3.7 Module Map

Specialist for Building Insulation



3.8 Programme Description

Title of the vocational educationprogramme	**Specialist for Building Insulation**
Duration of training	2 years
Entry requirements	Basic education
Delivering bodies	VET schools, VET centres, labour exchange training centres in collaboration with SMEs, intercompany training centres, VET competence centres in cooperation with enterprises
Target group	Young people with practical talents (students who drop out of the training process due to learning difficulties in theoretical courses leading to the lack of motivation, poor attendance; young people without professional qualification because of learning difficulties; young people up to 25, former IVET students from construction sector without professional qualification lacking competences to enter the labour market; young people up to 25 with good practical skills, who have worked in the building sector, but do not possess professional qualification and have lost jobs
Level of the certificate	3rd EQF qualification level

Programme target	To use the process of education to train a specialist of construction industry 3rd EQF qualification level occupation "Specialist for Building Insulation" who understands components of buildings, independently performs the insulation ofbuilding foundations, outer walls, roof structures and communications, is able to insulate buildings from outside and inside, can interpret drawings, recognizes materials, knows the methods of operations to be performed, knows about work and environment protection and takes responsibility about the results and quality of his work.
Programme objectives	To use the education process to provide opportunities for acquiring the following knowledge and skills: 1. To plan one's own work in insulating buildings from outside and inside while adhering to nature, environment and work protection requirements; 2. To employ the appropriate principles for building insulation in one's own work while using prepared certification documents; 3. To know various types of thermal insulation, to select the appropriate materials for building components to be insulated and to employ them; 4. To select and employ work tools, accessories and mechanisms appropriate for the necessary insulation operations and materials; 5. To read and interpret drawing, to sketch insulation details and components; 6. To perform water proofing and sanitation operations; 7. To prepare the object for work, to perform disassembling, installing scaffolding, preparing construction object,

	earthwork; 8. To prepare the necessary surfaces for application of thermal insulation materials, to level and prime surfaces; 9. To form thermal insulations from outside and inside by gluing, strewing, blowing, assembling piping shells for outer walls, roofs, coverings, foundations, utilities, inner walls, window openings of various materials; 10. To calculate the necessary quantity of materials and use them economically; 11. To perform the finish of applied thermal insulation with plastering, paint, drywall, panelling, lining; 12. To comply with fire and electrical safety requirements and to act accordingly in case of emergency, to provide first aid; 13. To comply with work and environment protection requirements; 14. To work at the object individually or in a professional team while taking responsibility of own work result; 15. To follow behavioural culture and courtesy standards, to communicate with the employer and colleagues; 16. To communicate in the state language and one foreign language.
Assessment of programme	Students who have mastered the modular programmes "Preparing an object" and "Preparing surfaces" and have passed the concluding exam with a test and practical task continue mastering the professional qualification; Students who have mastered the modular programmes "Assembling thermal insulation" and "Application of finish

mastering quality	layers" and received the assessment of necessary knowledge, skills and competences as well as passing the state concluding exam – the exam of professional qualification, receive a certificate of professional qualification.
Opportunities for further education	Students who master the modules "Preparing an object", "Preparing surfaces", "Assembling thermal insulation" and "Application of finish layers" can receive the qualification "Specialist for Building Insulation". After mastering this qualification, it is possible to continue education in other specialities of construction field.
Special requirements	A person who wants to perform the profession "Specialist for Building Insulation" must get used to constant changes of place of stay (it depends on the place of a new construction), variable weather conditions and heights and not suffer from a fear of height.

3.81 Description for module ”Preparing object for insulation”

Module target	Creating an understanding of building components, basics of construction work, construction processes, construction terminology, safe work environment. Noting the application, installation and ergonomics of tools and accessories during the object preparation.
Module objectives	Understanding the building components and recognizing them in the object; Understanding the construction process and terminology; Understanding the object preparation operations; Interpreting object drawings; Knowing construction materials and their applications; Complying with work and fire safety regulations in the construction site, taking appropriate action if necessary by providing first aid; Communication with colleagues during the work process.
Module entry requirements	Basic education
Module assessment	After mastering the module, the student takes a theoretical knowledge test on: 1. Construction basics; 2. Construction terminology; 3. Construction processes; 4. Construction materials and a practical task: 1. Recognizing building components; 2. Performing the preparation and organization of construction site; 3. Interpreting drawings; 4. Recognizing construction materials.
Module significance and location on the map	Module "Preparing object for insulation" is a base module for mastering other modules in the field of building insulation.

CONTENT FOR MODULE ”Preparing objects for insulation”

Learning outcomes	Theme	Advisable content	Descriptions of acquirement levels for learning outcomes		Theory – practice ratio	
			Satisfactory	Good	Theory 164	Practice 434
Able: to explain building components, differences between elements and their uniting factors. To recognize them at the construction object. **Knows:** main building elements, building components, baseplates and their characteristics; **Understands:** the mutual relationsbetween building components.	**1. Introduction to building components**	1.1. Classification of buildings; 1.2. Building elements; 1.3. Building types; 1.4. Bases and foundations; 1.5. Walls, partition walls; 1.6. Coverings and floors; 1.7. Roofs and roof coverings.	Characterizes building classification. Recognizes building components, elements and types. Gets acquainted with building components and baseplates on location at the object.	Explains building parts, differences between elements and their uniting factors. Recognizes and explains differences between various building components and their mutual connection on location at the object.	8 4 2 6 8 6 8	8 8 16 24 16 24 24
Able: to plan the	**2. Construction**	2.1. Construction	Describes construction norms,	Plans the sequence of necessary	6	

sequence of necessary operations and arrangements for preparing the object before insulation; **Knows:** sequence of construction operations, terminology, maincomponents of abuilding, can explain the main characteristics of building sustainability andwhat actions to take for conserving resources in buildings; **Understands:** planning sequence of construction operations, the changes in construction caused by climate changes; The essence of sustainable	**basics**	terminology; 2.2. Sequence of construction operations. 2.3. Construction standards, norms, documents regulatingconstruction.	terminology and the planning sequence of insulation operations.	operations and the establishing of object while preparing it for insulation. Explains construction terminology and the significance of planning sequence for construction operations according to documents and standards regulating construction. Understands the significance of sustainable construction in conserving natural resources.	6 4	

construction.						
Able: to prepare the workplace for insulation according to thelayout of construction site. **Knows:** the technological preparation of utilities, the importance of accessories in establishing the object, groundcharacteristics; **Understands:** the principles and sequence of establishing the object.	**3. Establishing the construction site**	3.1. Organizing the work place; 3.2. Preparing communications; 3.3. Assembling scaffolding and pedestals.	Stacks and unloads materials, prepares scaffolding and utilities according to the superintendent's instructions.	Can establish a work place according to the construction site layout. Stacks and unloads materials according to the requirements and terms for storing materials. Independently prepares utilities and scaffolding for work while monitored by practice supervisor.	2 2 6	40 36 40
Able: to interpret simple building drawings; **Knows:** types of building drawings, visualization techniques, scales,the significance ofapplied symbols, building components and	**4. Basics of interpreting drawings**	4.1. Theoretical basics for composing drawings. Drawing as a tool for visual communication. Types of drawings. 4.2. Drawing technique and basic standards. Types of lines in drawings. Formats	Differentiates between drawings by their significanceand recognizes objects based on indications in the drawing. Understands indications and denominations in the drawing sketches.	Employs various drawings for performing operations in establishing an object. Explainsindications in the construction drawings. Determines the construction materials and parameters for building insulation operations in drawings. Explains drawing details.	8 16	 24

structures, the significance of detail drawings and the appropriate employment, measurement systems, types ofconstruction materials, symbolsand possibilities ofemployment; **Understands:** information depicted in drawings of simple buildings, linking elements of details, the visualized information regarding construction materials to be employed in building insulation.		and scales of drawings. Setting sizes, finalizing thedrawing. 4.3. Construction drawing. Material designations in drawings. Elementsof buildings and insulation in drawings and their established designations. Constructive elements and diagrams of buildings. Layout drawing. Building section drawing. Front drawing. Drawings of utility nets.			24	40
Able: to recognize the construction materials to be employed and to place them in the construction site accordingly;	**5. Construction materials**	5.1. Classification of construction materials; 5.2. Storage requirements for construction materials; 5.3. Utilizing construction material waste.	Recognizes and names construction materials necessary for preparing the object, differentiates betweenthem by external features. Describes construction materials to be used, the	Explains the structure and significance of construction materials necessary for preparing the object. Describes the difference between construction materials, the requirements for storing and	6 4	8 8

Knows: the employment of main construction materials; **Understands:** requirements for storing, placing and utilizing construction materials.			requirements for storing and placing construction materials.	placing them. Places construction materials in locations selected correctly. Utilizes construction waste correctly according to law and green skills.		
Able: to recognize construction machinery and mechanisms, to prepare and work with mechanical tools, electrical andmeasuring instruments. **Knows:** the employment of construction machinery in establishing the object and their zones of operation; **Understands:** the importance of construction machinery, mechanisms and measuring	**6. Construction machinery and mechanisms for establishing a construction object**	6.1. General information of construction machinery; 6.2. Machinery for preparing a construction site; 6.3. Lifting machinery; 6.4. Carrier machinery; 6.5. Earthwork machinery; 6.6. Machinery and equipment for packing materials; 6.7. Mechanized tools for construction; 6.8. Measuring instruments.	Differentiates between machinery for preparing construction site, lifting, carrying, earthwork, equipment for packing materials, mechanized and measuring instruments. Applies mechanical, electrical and measuring instruments according to the practice supervisor's instructions.	Understands the basic operations of machinery forpreparing construction site,lifting, carrying, earthwork, equipment for packing materials, mechanized and measuring instruments. Independently works with mechanized, electrical and measuring instruments for establishing a construction site.	8 2 2 2	 4 6 6 8 8 42 44

instruments in the construction process.						
Able: to prepare a construction site, toemploy individual and communal protection devicesaccording to the work hazards; **Knows:** work safety requirements for earthworks, heavy lifting, electrical and fire safety requirements at the object, first aid requirements at the construction object; **Understands:** work hazards during the preparation of object, the importance of employing individual protection devicesand mutual collaboration of the team in creating a safe work	**7. Work safety during the object establishing**	7.1. Work safety requirements in construction (fire and electrical safety in object establishing); 7.2. Work safety requirements in earthwork; 7.3. Terms for heavy lifting; 7.4. Individual and communal work protection devices.	Recognizes the hazards involved in object preparation operations. Employs individual and collective protection devices during object establishment. Complies with fire and electrical safety requirementsduring object preparation.	Characterizes the impact of construction object hazards on the safety and health of workers. Selects and employs individual and communal protection devices in accordance with the work objective. Complies with fire and electrical safety requirements during object preparation operations and acts accordinglyin the case of accident.	6 2 2 2	

environment.						
Able: to collaborate with colleagues and supervisor at the construction site; **Knows:** the conditions of interaction. Understands the diversity of social relationships; **Understands:** the importance of mutual collaboration on the construction site, the importance of positive attitude at work.	**8. Individual in social relationships**	8.1. Social perception, interpersonal perception effects; 8.2. Interaction; 8.3. Social relationships.	Understands terms: stereotype, prejudice. Knows and understands communication functions. Names the preconditions of effective interaction. Differentiates between various interaction situations on the construction site.	Differentiates between widespread stereotypes and personal characteristics. Appreciates the importance of using verbal and nonverbal interaction. Employs various techniques for effective interaction. Compares and analyses contrary arguments in the collective.	4 4 4	
After mastering this module the student can plan the sequence of construction operations, comply with work safety and environmental protection requirements, organize the work place according to construction territory establishing requirements and drawings. Assemble scaffolding monitored by practice supervisor. Select mechanical and electrical instruments and prepare them for work.						
At the module conclusion the student takes an exam consisting of a theoretical and practical part.Theory consists of a test which includes knowledge of: • Construction terminology; • Building classification; • Sequence of construction operations; • Construction standards, documents regulating construction; • Drawing technique and basic standards; • Construction material classification;						

- Requirements for storing construction materials;
- Construction machinery;
- Work safety requirements in construction;
- Mutual social relations.

Practical part is passed by performing the following operations individually or in a work group while complying with work safety requirements:

- Recognizes building components in the object and characterizes them;
- Establishes a work place;
- Assembles scaffolding, pedestals;
- Recognizes denominations of materials, indications and building components in drawings, sections;
- Correct storing and utilizing of construction materials;
- Recognizes construction machinery and instruments and characterizes them;
- Works with measuring instruments.

3.82 Description for Module ”Preparing surface for insulation”

Module target	Assessing and examining the surface meant for insulation. Preparing the surface for application of thermal insulation material adhering to work safety and environment protection requirements.
Module objectives	Understanding assessment criteria for surfaces to be insulated; Understanding the sequence of preparation operations for surfaces to be insulated and performing the preparation operations; Understanding and performing dismantling operations; Interpreting object drawings; Knowing the construction materials for preparing surface and their applications; Adhering to work and fire safety requirements in the construction site, taking appropriate action if necessary by providing first aid; To choose and apply working tools and accessories according to the respective surface preparation operations; Creating understanding of sanitation and water proofing operations, their implementation and the necessary materials.
Module entry requirements	Module „ Preparing object for insulation” has been mastered.
Module assessment	At the end of module mastering the student takes a theoretical knowledge test and practical task regarding: 1. criteria for assessing surfaces; 2. cleaning, leveling, strengthening of surfaces; 3. technological sequence for water proofing and sanitation operations.
Module significance and location on the map	Module "Preparing surface for insulation" is one of the base modules for mastering other modules in the building insulation field and should be mastered after the module "Preparing object for insulation".

CONTENT FOR MODULE ”Preparing surfaces for insulation”

Learning outcomes	Theme	Advisable content	Descriptions of acquirement levels for learning outcomes		Theory – practice ratio	
			Satisfactory	Good	Theory 214	Practice 719
Able: to assess the quality of surface to be installed, to recognize mechanical damages in communications’ isolation; **Knows:** indications of damaged and uneven surfaces: adhesion, horizontal and vertical plane, the presence of microorganisms on surfaces, recognizing damaged roof linking elements, determine the moisture level of walls and	**1. Assessing surfaces to be insulated**	1.1. Surface adhesion, examination of outer and inner walls; 1.2. Assessing surface plane on the vertical and horizontal axis forouter and inner walls; 1.3. Checking for the presence of microorganisms on outer and inner wallsurface. Inspection at the object; 1.4. Assessment of roof structural lining elements and covering; inspection at the object; 1.5. Assessment of	Recognizes the plane deviations of the surface to be insulated, the presence of microorganisms on surfaces, damages to theroof structural lining elements and coverings, damages to the isolation of buildings’ inner communications. Describes the adhesion power of the surface to be prepared. Determines the mechanical strength of foundations and names the damages to water proofing.	Explains deviations from the plane and the importance of not tolerating the presence of microorganisms during the preparations of a surface for insulation operations. Performs the inspection of surface to be insulated and assesses the surface compatibility with insulation operations while monitored bypractice supervisor. Characterizes the impact of adhesion on the quality of work. Explains the causes of surface and foundations damages. Characterizes water proofing damages. Performs the inspection of surface to be insulated and	3 3 3 3 3	18 28 21 24 24

foundations using measuring instruments; **Understands**: the significance of high quality preparation of the surface to beinsulated and theconsequences of not repairing thedamages.		mechanical strength and water proofing ability of foundations; inspection at the object; 1.6. Assessment of buildings' inner communications isolation; testing and inspection at the object.		assesses the surface compatibility with insulation operations while monitored bypractice supervisor.	2	12
Able: to prepare surfaces for insulation; **Knows:** technologies and methods for preparing surfaces andcommunications, methods for disassembling, mechanical chemical cleaningof surfaces, priming, leveling and treatment, sanitation operations; **Understands:** the sequence and	**2. Preparing surfaces to be insulated**	2.1. Disassembling the unnecessary elements and details from outer and inner walls; 2.2. Mechanical and chemical cleaningof surfaces. Treating areas affected by microorganisms; 2.3. Priming surfaces; 2.4. Leveling the surfaces to be insulated on the vertical andhorizontal plane; 2.5. Treating roof lining	Names the main operations in the preparation cycle for surfaces to be insulated. Understands the impact of climatic conditions on the operations necessary for preparing surfaces to be insulated. Describes the methods of dismantling damaged roof constructions and communications' isolation, unearthing, strengthening and waterproofing	Characterizes the main operations in the cycle of preparing surfaces to be insulated. Explains the impact of climate conditions on the operations necessary for preparing surfaces to be insulated. Explains the methods of unearthing, strengthening and water proofing foundations.	2 2 2 2 2	36 60 28 80 24

significance of preparation operations for surfaces to be insulated.		elements with antiseptics. Assistance in exchanging damaged elements,treating the exchanged constructions with substances for wood protection; 2.6. Unearthing and strengthening foundations, eliminating moisture. Sanitation operations. Renewing and forming water proofing; 2.7. Disassembling the old and damaged isolation of inner communications; 2.8. Assessing work quality, determining and eliminating defects.	foundations, treating elements with ground coat and antiseptics. Understands preparing constructions for sanitation operations Understands the importance of quality control for the necessaryoperations.	Explains the importance of sanitation operations in sustainable construction. Explains treating roof lining elements with antiseptics. Justifies the importance of self-supervision and quality control during the operations to be performed. Plans and executes the assessment of object surfaces and the stages of surface preparation operations according to their technological sequence. Repairs defects basing on supervisor's instructions.	4 2 4	48 38 32

Able: to read and employ drawings during the preparation operations of surfaces to be insulated; **Knows:** designations of materials in a drawing, how to determine details and linking elements of buildings highlighted in the drawing; **Understands:** indications anddenominations in drawings, sketches of drawings.	**3. Interpreting drawings for surface preparations operations**	7.3. Interpreting building drawings; 7.4. Lining elements and diagrams; 7.5. Sketching simple constructive details.	Differentiates between drawings by their significance. Recognizes details and objects by indications in the drawing. Understands indications and symbols in drawing sketches.	Employs drawings in performing operations. Explains indications in construction drawings. Identifies the location and surface to be worked on by using drawings. Sketches specific component details.	36 16 40	36 40
Able: to prime surfaces to be insulated, to level and treat them with protective	**4. Construction materials for preparing surfaces, employing these**	4.1. Priming materials, their types and characteristics, preparing for work and applying in	Recognizes priming materials, construction adhesives, materials for levelling surface, sanitation, water	Explains the significance of priming materials, construction adhesives, materials for levelling surface, sanitation, water proofing,	8	12

substances, to keep track of construction material quality and quantity while performing operations; **Knows:** priming materials, adhesives, levelling, sanitation, water proofing materials, construction chemicals. Knows work safety and instructions (for example, not to work on scaffolding during rain and wind); **Understands:** main conditions that influence the significance and role of construction materials in	**according to technological necessity**	accordance with technologies of the work to be implemented; 4.2. Adhesives in construction, their types and uses, preparing for work and applying in accordance with technologies of the work to be implemented; 4.3. Materials for levelling walls, types and uses, preparing for workand applying in accordance with technologies of the work to be implemented; 4.4. Sanitation materials, preparing for workand applying in accordance with technologies of the work to be implemented; 4.5. Water proofing	proofing, antiseptic materials and construction chemicals.Employs them. Differentiates between materials to be used for preparing surfaces before insulating by external features and indications on the packaging.	antiseptic materials and construction chemicals. Employs them. Characterizes differences between materials to be used for preparing surfaces before insulating. Uses construction material calculations in work planning.	8 10 8 12	16 16 16 20

preparing surfaces.		materials, preparing for workand applying in accordance with technologies of the work to be implemented; 4.6. Construction chemicals, preparing for workand applying in accordance with technologies of the work to be implemented; 4.7. Antiseptics for wooden structures, preparing for work and applying in accordance with technologies of the work to be implemented.			16 4	20 12
Able: to select and prepare mechanical, electricaltools and accessories for preparing surfaces before	**5. Tools and accessories for preparing surfaces**	5.1. Mechanical and electrical hand tools, preparing them for work and employing them; 5.2. Tools and mechanisms,	Recognizes mechanical, electrical, special work tools for preparing surfaces before insulation. Employs them.	Compares and selects mechanical, electrical or special work tools for preparing surfaces before insulation. Prepares tools for work, examines fastenings, performance of the tools, their	2 2	16 14

insulation and sanitation operations and employ these devices, to perform maintenanceofthe mechanisms according to instructions. **Knows:** the types and uses of tools and accessories employed in preparing surfaces for insulation; **Understands:** the methods for using the specific hand tools in performing operations		measuring instruments for preparing the surface to be insulated; 5.3. Special tools for sanitation work.		technical condition, employs them. Performs maintenance of the mechanisms according to instructions.	2	12
Able: to perform operations for preparing surfaces while complying with work safety requirements, to act responsibly in	**6. Work protection during surface preparation**	6.1. Work protection, fire and electrical safety during surface preparation. Performing operations according to	Recognizes hazards at work place. Employs individual and communal protection devices according to work objectives.	Characterizes the influence of hazards at the construction object on the safety and health of workers. Selects and employs individual and communal protection devices according	2	

dangerous situations, to inform about accidents in complicated situations, to perform first aid; **Knows:** requirements for electrical and fire safety and environmental protection at the object, requirements forwork safety whileworking at heights, performing disassembling operations, working with chemicals and dust. Diagrams for performing first aid at the construction object; **Understands:** hazards in the work place, the significance of employing		technological requirements and construction standards; 6.2. Work hazards during object preparations, working at heights,disassembling, working with chemicals and dust; 6.3. Individual and communal work protection devices; 6.4. Providing first aid in case of emergency at the object.	Adheres to using safe, environmentally friendly work methods, fire and electrical safety requirements in the workplace.	to work objectives. Complies with and employs safe, environmentally friendly work methods. Complies with fire and electrical safety requirements in the work place and acts accordingly in case of emergency.	1 2 2	16

individual protection devicesand the significance of mutual collaboration ofthe team, the necessity of work methods that are safe for the employee and preserve the environment in order to create a safe work environment.						
Able: to work in ateam, form andcritically analyze interactions with other people; **Knows:** mutual relations of team work; **Understands:** advantages of team work.	**7. Team work**	7.1. Team, its types and processes; 7.2. Social roles, status and norms; 7.3. Individual's conduct in the team.	Understands the terms "team" and "team work". . Recognizes processes in a team and knows the stages of decision making in the team.	Characterizes types of team work. Understands various processes in the team and characterizes them, participates in the team decision making process during a modeled situation.	2 2 2	
After mastering this module the student, following practice supervisor's instructions, can assess foundations, outer walls, inner walls, attic, roof and utilities, prepare them for insulation operations, can establish a work place, check for microorganisms on inner and outer walls. Performs the strengthening and treatment of weak areas and those affected by microorganisms. Examines surface planes on the vertical and horizontal axis, performs disassembling operations and prepares surfaces for sanitation, exchanges						

damaged parts of wooden structures, prepares foundations for insulation. Employs materials suitable for preparing the building before insulation in a correct technological sequence, applies them. Is able to act responsibly in dangerous situations. Complies with work protection and safety requirements in the construction object. Can provide first aid.

At the module conclusion the student takes an exam consisting of a theoretical and practical part.The-
ory consists of a test which includes knowledge of:

- Principles for assessing surfaces before insulation;
- Preparing surfaces before insulation;
- Interpreting building drawings;
- Priming materials, adhesives, materials for levelling surfaces, sanitation and water proofing materials, construction chemicals, antiseptics for wood structures, their types and uses;
- Work safety at the object;
- Individual in social relations;

Practical part is passed by performing the following operations individually or in a work group while complying with work safety requirements:

- Assesses the surface plane on a vertical and horizontal axis;
- Assesses surface adhesion and the presence of microorganisms on foundations, roof, walls and communications;
- Determines the mechanical strength of surface for foundations, roof, walls and communications;
- Prepares surfaces for insulation by unearthing, disassembling, levelling, cleaning, priming;
- Explains indications in construction drawings;
- Recognizes construction materials to be used in surface preparation, knows how to employ them;
- Selects tools for preparing surface and employs them;
- Correctly establishes a safe work environment, provides first aid in case of emergency.

3.83 Description for Moduele ”Assembling thermal insulation”

Module target	Developing thermal insulation form outside and inside by gluing, strewing, blowing, assembling pipeline shells for outer walls, roofs, coverings, foundations, utilities, inner walls, window openings of various materials.
Module objectives	Understanding the execution sequence of insulation works; Calculating the necessary materials; Understanding insulation detail drawings; Planning own work in building insulation from outside and inside while adhering to environment and work safety requirements; Applying building insulation principles by using prepared certification documents; Generating understanding of various thermal insulation types by using materials suitable for the building components undergoing insulation; Working on the object independently or with a professional working team, taking responsibility for the result of own work.
Module entry requirements	Modules "Preparing object for insulation" and "Preparing surface for insulation" have been mastered.
Module assessment	At the end of module mastering the student takes a theoretical knowledge test and practical task regarding: 1. technological execution sequence for insulation process; 2. calculation of necessary materials; 3. drawings of building components and insulation details; 4. selection of materials according to the type of insulation; 5. selection and application of tools.
Module significance and location on the map	Module "Assembling thermal insulation" is the third of base modules for mastering other modules in the building insulation field.

CONTENT FOR MODULE "Assembling thermal insulation"

Learning outcomes	Theme	Advisable content	Descriptions of acquirement levels for learning outcomes		Theory – practice ratio	
			Satisfactory	Good	Theory 236	Practice 683
Able: to prepare insulation materials according to thelocation of surface before insulation, thematerial of this surface and the type of deposition; **Knows:** types of insulation materials, methods of preparation. Knows that there are EU standards for selecting insulation materials; **Understands**: the mutual	**1. Preparing thermal insulation materials**	1.1. Preparing insulation materials according to EU standards. 1.2. Preparing insulation materials according to the location of surface to be insulated in the building (interior work, outside work, roof, foundations, communications); 1.3. Preparing insulation materials according to the material of surface to be insulated (wood, concrete, brick etc.); 1.4. Preparing insulation materials	Recognizes and names insulation materials according to the location and material of the surface to be insulated and type of deposition. Differentiates between thermal insulation materials according to external features.	Explains the employment of thermal insulation materials by the location and material of the surface to be insulated and the type of deposition. Explains the significance of insulation materials and the mutual compatibility of materials.	6 8 6 8	12 16 16 16

compatibility of thermal insulation materials and conditions ofpreparation.		according to the type of deposition (for gluing, strewing, blowing,shell etc.); 1.5. Calculating the consumption of insulation materials.			16	8
Able: to explain the impact of climate conditions on the insulation works, mechanical resistance of thefacade, use of fastenings; **Knows:** the conditions for the forming of facade zoning and cold bridges; **Understands:** the importance of heat conductivity coefficient in insulation operations and thesignificance of expansion joints	**2. Significant factors in insulation operations**	2.1. Preferable climatic conditions for performing operations; 2.2. Facade zoning; 2.3. Mechanical strength of the facade; 2.4. Using conditions for thermal insulation fastenings; 2.5. Heat conductivity coefficient and cold bridges, requirements forforming expansionjoints.	Determines the preferable climatic conditions for performing operations. Recognizes facade zoning. Generally describes the necessity of thermal insulation fastenings and expansion joints. Describes the heat conductivity coefficient.	Explains the influence of climatic conditions on insulation operations. Explains the façade zoning, examines it according to types of strength. Characterizes and selects the correct thermal insulation fastenings, the forming of expansion joints and the principles of forming cold bridges.	2 2 4 6 14	12 8

Able: to insulate foundations, theouter walls from outside and inside, to insulate various parts of buildings and inner communicationsadhering to work quality requirements; **Knows:** technological sequence of operations for insulating foundations, outer walls frominside and outside, windows and doors, attic, basement covering, roof structures and inner	**3. Technologies of thermal insulation assembling andthe sequence ofoperations**	3.1. Foundation insulation technologies; 3.2. Outer wall insulation technologies fromthe outside of the building. Plane assembling, choosing wall plugs and determining quantity, strengthening technologies, applying the reinforcing layer from outside of the building; 3.3. Outer wall insulation technologies fromthe inside of the building. Forming the frame, depositing the thermal insulation	Names the main operations in stages of foundation insulation, outer wall insulation from inside and outside, window and door insulation,attic, basement covering, roof structure and inner communications insulation. Performs thermal insulation assembly operations in technological sequence accordingto supervisor's instructions, assesses the work quality and eliminates defects.	Characterizes the main operations in the stages of of foundation insulation, outer wall insulation from inside and outside, window and door insulation, attic, basement covering, roof structure and inner communications insulation. Independently plans and performs the assigned thermal insulation assembly operations in technological sequence, assesses the work quality and eliminates defects.	8 12 8	56 86 45

communications . Innovations in the field of building insulation; **Understands:** the importance of insulation in ensuring power efficiency in sustainable construction		material, forming vapor isolation, assembling paneling materials; 3.4. Assembling windows and doors; technologies forinsulating openings; 3.5. Insulating attic coverings with blowable and strewable insulation materials, rollsand sheets; technological requirements; 3.6. Insulating roof structures from inside and outside (flat roofs); 3.7. Technologies for insulating inner communications in buildings; 3.8. Options for insulating basement			18 4 10 4 4 4	64 28 48 26 32 26

		covering, technologies andinsulation operations; 3.9. Mistakes and defects in insulating façade,determining and eliminating them.Operating conditions and eliminating defects; 3.10. Innovations in technologies for building insulation.			3	
Able: to determine details highlighted inbuilding structuredrawings, employthem in performing insulation operations, to sketch insulation structure details;. **Knows:** the denominations of surfaces and	**4. Employing drawings in surface insulation operations**	4.1. Building structure drawings; 4.2. Sections of building structural details and surfaces to be insulated; sketching details.	Differentiates between building structure drawings. Recognizes objects, indications, denominations in drawing details.	Employs drawings in performing operations. Understands indications and denominations in surface insulation drawings' details, is able to sketch them.	8 16	44

insulation materi-als in thedrawing; **Understands:** drawing as an instrument of visual communication.						
Able: to employ construction materials in insulation oper-ations; **Knows:** insulation ma-terials for insu-lating outerwalls from inside and outside, insulat-ing windowsand doors, insulat-ing attic,base-ment coverings, roofstructures and inner communi-cations , the use of auxiliary mate-rials. **Understands:** main	**5. Construction materials for insulation and applying ther-mal insulation**	5.1. Compatibility be-tween materials; 5.2. Materials for building structures to be insulated; 5.3. Adhesives, reinforcing mortars; 5.4. Polymer materials (wall plugs pro-files); 5.5. Reinforcing nets; 5.6. Construction films.	Recognizes and names insulation materials for foun-dation insulation, outer wall insula-tion from inside and outside, win-dow and door insu-lation,attic, base-ment covering, roof structure and inner communications in-sulation, reinforc-ing nets, construc-tion films, wall plugs. Able to se-lect and employ them. Differentiates con-struction materials by ex-ternal features.	Explains and employs insulation ma-terials for foundation insulation, outer wall insulation from inside and out-side, window and door insulation, at-tic, basement covering, roof structure and inner communications insulation, reinforcing nets, construction films, wall plugs. Able toselect and employ them. Characterizes differences between construction materials employed in insulation operations.	8 10 8 6 4 4	10 24 16 10 4 12

circumstances influencing the mutual importance andinteraction of insulation materials during insulation operations.						
Able: to select mechanical, electrical work tools and mechanisms according to therequired type ofinsulation work, to employ them; **Knows:** the types and use of mechanical, electrical work tools and mechanisms; **Understands:** the methods for using specific mechanical, electrical work tools and mechanisms for	**6. Tools and accessories for surface insulation operations**	6.1. Mechanical, electrical hand tools, preparing them for work andusing them; 6.2. Tools and mechanisms, measuring instruments for insulating surface.Preparing them for work and using them. 6.3. Small mechanization in the operations of gluing, blowing, strewing thermal insulation materials; workingwith it.	Recognizes mechanical, electrical work tools and mechanisms usedfor surface insulation, employs them.	Compares and selects the appropriate mechanical, electrical work tools and mechanisms for surface insulation according to the required type of insulation operations, employs them.	4 4 8	10 16 24

the required operations.						
Able: to perform surface insulation operations complying withwork protectionrequirements, to act responsibly in dangerous situation, to inform about accidents in complicated situations, to provide first aid; **Knows:** requirements for electrical and fire safety and environmental protection at the object, requirements forwork safety whileworking at heights, performing disassembling operations, working with chemicals and	**7. Work protection during surface insulation**	7.1. Work protection, fire and electrical safety during surface insulation; 7.2. Work hazards in surface insulation operations, during work at heights, with lifting devices and dust; 7.3. Individual and communal work protection devices. 7.4. Providing first aid in case of accidents at the object.	Recognizes hazards involved in insulation operations. Employs individual and communal protection devices during surface insulation operations. Follows fire and electrical safety requirements for insulation operations.	Characterizes hazards involved in insulation operations and their impact on the safety and health of workers. Selects and employs individual and communal protection devices during insulation operations. Follows fire and electrical safety requirements in the work place and acts accordingly in case of emergency.	6 1 6	12

dust. Diagrams for performing first aid at the construction object; **Understands:** hazards in the work place, the significance of employing individual protection devicesand the significance of mutual collaboration ofthe team, the necessity of work methods that are safe for the employee and preserve the environment in order to create asafe work environment.						
Able: to find and employ information; **Knows:** the types and methods of acquiring	**8. Information space**	8.1. Mass communications; 8.2. Using information technologies.	Knows the basic steps for selecting information.	Employs the available methods for selecting information.	2 4	

information; **Understands:** the possibilities of employing information for work.						

After mastering this model the student plans and performs insulation operations and organizing the work place according to the insulation technology of the surface to be insulated – foundations, outer walls from the outside, outer walls from the inside, window and door openings, attic coverings, basement coverings, roof structures, communications. Prepares instruments, mechanisms and insulation materials for work, employs them.

At the module conclusion the student takes an exam consisting of a theoretical and practical part.

Theory consists of a test which includes knowledge of:

- Selecting thermal insulation materials according to the location of surface to be insulated, the material of this surface and type of deposition;
- Calculating insulation materials;
- Climatic conditions for performing insulation operations;
- Facade zoning;
- Requirements for strengthening thermal insulation;
- Heat conductivity coefficient, the impact and significance of expansion joints and cold bridges;
- Innovations in building insulation technologies;
- Indications and denominations in building insulation drawings;
- Recognizes and describes materials employed in building insulation technologies;
- Tools, mechanisms and small mechanization for applying thermal insulation;
- Nature and environment protection, fire safety, electrical safety in surface insulation operations;
- Mutual social relations.

Practical part is passed by performing the following operations individually or in a work group while complying with work safety requirements:

- Correct selection of thermal insulation materials according to the location of surface to be insulated, the surface material and type of deposition;
- Insulating foundations, outer walls from the outside, outer walls from the inside, windows and doors, attic coverings, roof structures, communications, basement coverings, eliminating defects in insulation operations;
- Interpreting and sketching sections of building structural details and surfaces to be insulated;
- Selecting insulation materials and auxiliary materials according to the location of surface to be insulated, the surface material and type of deposition;
- Working with mechanical, electrical tools and small mechanisms;
- Providing first aid in case of emergency at the object.

3.84 Description for Module ”Application of finish layers”

Module target	Choosing the finish materials for thermal insulation surfaces and implementing them by applying a thermal insulation finish with plasters, paint, drywall, panels, cladding.
Module objectives	Understanding the technological sequence of finish operations’ implementation; Calculating the necessary amount of materials; Planning own work by adhering to nature, environment and work safety requirements; Understanding the finish of various thermal insulation materials and their applications; Knowing the tools and mechanisms necessary for creating a finish layer as well as their applications; Working on the object independently or with a professional working team, taking responsibility for the result of own work.
Module entry requirements	Modules „Preparing object for insulation”, „Preparing surface for insulation” and „ Assembling thermal insulation” have been mastered.
Module assessment	At the end of module mastering the student takes a theoretical knowledge test and practical task regarding: 1. technological sequence of finish operations’ implementation; 2. selection and calculations of necessary materials; 3. selection and application of tools.
Module significance and location on the map	Module "Application of finish layers" is the final module.

CONTENT FOR MODULE ”Application of finish layers”

Learning outcomes	Theme	Advisable content	Descriptions of acquirement levels for learning outcomes		Theory – practice ratio	
			Medium acquirement level	Optimum acquirement level	Theory 206	Practice 624
Able: to assess the base according to the applied thermal insulation; **Knows:** the technological sequence of applying finish layers; **Understands**: the importance of finish layers in insulation operations.	**1. Finish layers of thermal insulation systems**	1.1. Selecting thermal insulation finish materials by the location of surface to be insulated (interior work, external works, roof, foundations, communications) and technologies of applying coating layers;	Differentiates finish types by external features; Characterizes finish layers’ materials for interior works, external works, foundations, communications.	Explains the main types of finish to be applied. Explains the differences of materials for interior works, external works, foundations and communications.	20 22	32 24
		1.2. Selecting thermal insulation finish materials according to the applied insulation material;			12	12
		1.3. Calculating the consumption of thermal insulation systems’ finish materials.				

Able: to apply finish layers to the insulated surfaces, to perform the finish for insulated foundation structures and inner communication isolation, to eliminate defects originated during the work. **Knows:** the sequence of finish operations, technologies for applying decorative plastering and facade paint; **Understands:** the importance of work planning and the technological processes involved in finishing the insulated parts of a building.	**2. Technologies for applying finish layers for thermal insulation systems**	2.1. Technologies for applying decorative plastering; 2.2. Technologies for applying facade paint; 2.3. Finishing structures of insulated foundations; 2.4. Finishing inner communications isolation; 2.5. Mistakes and defects in applying finish layers, terms of use and eliminating defects.	Names and performs the work objectives for applying of decorative plastering, applying of facade paints, finish of insulated foundations structures and inner communications isolation finish as well as the technologies for applying in accordance with the type of insulation. Following the teacher's instructions, plans and applies finish layers while observing the technological sequence of operations. Recognizes defects originated in the applying of finish layers.	Explains and performs the applying of decorative plastering, applying of facade paints, finish of insulated foundations structures and inner communications isolation finish objectives and application technologies. Independently plans and applies finish layers while observing the technological sequence of operations. Understands the causes of defects and is able to eliminate them.	16 14 10 2 10	120 90 64 48 52
Able: to recognize and employ primers,	**3. Materials of finish layers for thermal**	3.1. Priming materials, their types, features, uses;	Recognizes and employs primers, decorative plastering,	Explains the features and importance of priming materials,	4 12	16 26

decorative plastering, materials for painting surfaces, plate materials; **Knows:** the features and uses of priming, painting materials, decorative plastering and plate materials; **Understands:** the esthetic importanc e of finish layers for insulated surfaces.	**insulation systems**	3.2. Decorative plastering, their types, features, uses; 3.3. Materials for surface painting, their types, classificatio n (walls – outer, inner, foundation s, roofs), working with them; 3.4. Plate materials, uses.	materials for painting surfaces, plate materials. Differentiate s between finish materials by external features. Describes finish materials to be used.	decorative plastering, materials for painting surfaces, plate materials. Characterizes the difference between various types of finish materials. Characterizes the use of finish materials in a specific area of application.	16 4	32 16
Able: to select work tools, instrument s and accessories for applying finish layers to insulated surfaces, to employ them; **Knows:** the types and uses of tools, mechanis ms and accessories employed in finishing surfaces to be insulated;	**4. Tools and accessories for applying finish layers on thermal insulation systems**	1 Mechanical hand tools, preparing them for work and employing them. 2 Electrical hand tools, preparing them for work and employing them. 4.1. Machines for applying plastering and paint.	Recognizes, prepares for work and employs various mechanical, electrical tools used for applying finish layers on insulated surfaces as well as machines for applying plastering and paint.	Compares and selects mechanical, electrical tools used for applying finish layers on insulated surfaces as well as machines for applying plastering and paint. Employs them.	4 6 16	24 16 36

Understands: the methods for using mechanical, electrical tools and machines for applying plastering and paint.						
Able: to select individual protection devices for applying finish materials, to act responsibly in dangerous situations while performing the finish operations for insulated surfaces; **Knows:** electrical and fire safety requirements at the object, first aid requirements in finish operations, work and environment protection requirements; **Understands:** hazards in the work place, the significance of employing	**5. Work and environment protection while applying finish layers**	5.1. Work protection, fire and electrical safety in surface finish operations and working with mechanisms, following requirements at the construction object; 5.2. Work hazards in the operations of applying finish layers, working at heights, disassembling, working with chemicals and dust; 5.3. Individual and communal work protection devices; 5.4. Providing first aid in case of emergency at the object.	Recognizes hazards involved in applying finishing layers, hazards for work at heights and with machinery and mechanisms. Employs individual and communal protection devices while applying finish layers. Follows work safety, fire and electrical safety requirements nt the work place.	Characterizes the impact of hazards involved in applying finish layers on the safety and health of workers. Selects and employs individual and communal protection devices according to work objectives. Complies with fire and electrical safety requirements in the work place and acts accordingly in case of emergency	6 4 2 8	16

individual protection devices and the significance of mutual collaboration of the team, the necessity of work methods that are safe for the employee and preserve the environment in order to create a safe work environment.						
Able: to resolve conflicts and make decisions; **Knows:** indications of arguments and conflicts, ways of resolving them; **Understands:** the importance of conflict resolving and the role of compromises at work.	**6. Conflicts, arguments and compromises**	6.1. Conflicts, their causes, ways and methods of resolving them; 6.2. Interpersonal and group conflicts; 6.3. Evaluating and making decisions; 6.4. Compromises and their role in interactions.	Recognizes conflicts and arguments, names their types; Knows the ways of resolving conflicts; Names the methods of decision making; Recognizes the method of compromises in mutual collaboration.	Characterizes the types of conflicts and arguments; Resolves conflicts and makes decisions; Explains the factors influencing decision making; Employs the method of compromise for promoting further collaboration.	4 4 4 4	

After mastering this module the student can plan own work, prepare coating materials for work and apply decorative plastering, facade paints, apply coating to insulated foundations and communications, employ various mechanisms and tools. Repairs damaged areas. Complies with work protection and safety requirements according to construction norms, can provide first aid.
At the module conclusion the student takes an exam consisting of a theoretical and practical part. Theory consists of a test which includes knowledge of: • Finish materials by the location of surface to be insulated and type of deposition; • Calculating the consumption of finish materials; • Basic requirements for finish layer's application technology – for decorative plastering, painting, isolation; • Finish materials, their features and uses; • Tools, accessories and small mechanization for applying finish materials on insulation; • Nature and environment protection, work safety. fire and electrical safety in surface finish operations and working with mechanisms; • Ethical attitude towards environment and society. Practical part is passed by performing the following operations individually or in a work group while complying with work safety requirements: • Preparing base and applying finish layers according to the surface location and type of insulation materials; • Applying finish layers of decorative plastering, facade paint, foundation structures, communication isolation; • Determining and eliminating mistakes and defects; • Selecting and applying finish coat materials; • Employing tools in applying finish coats; • Providing first aid in case of emergency at the object.

4 Training guideline for electrical practitioners[4]

In order to improve the integration of disadvantaged individuals with personal placement obstacles into working life, there has been the possibility of completing integrative vocational training (IBA Integrative Berufsausbildung) in Austria since 2003. This possibility is regulated in the Vocational Training Law (Berufsausbildungsgesetz, BAG) in § 8b, whereby the "extended apprenticeship" is regulated in § 8b (1) and the "partial qualification" in § 8b (2).

These two training options are part of a very comprehensive and differentiated support system available in Austria to persons with disabilities or at risk of exclusion. (for more information on the respective offers see Netzwerk Berufliche Assistenz in the link collection

4.1 Target Group

The following persons are considered for integrative vocational training according to § 8b (1) and (2):

Persons whom the Public Employment Service was unable to place in an apprenticeship relationship as an apprentice pursuant to § 1 ("regular apprenticeship") and to whom one of the following conditions applies:

1. persons who had special educational needs at the end of compulsory schooling and were at least partially taught according to the curriculum of a special school, or

2. persons who did not graduate from a lower secondary school or a new secondary school or who graduated negatively from one of these schools, or

3. disabled persons within the meaning of the law on the employment of disabled persons or the particular regional law on the employment of disabled persons, or

4. persons for whom it must be assumed on the basis of the results of a counseling, guidance or orientation measure ordered by the Public Employment Service or the Social Ministry Service that the conclusion of a "regular" apprenticeship contract (pursuant to Section 1 of the Vocational Training Act) is not possible for them for reasons exclusively related to their person and determined by a professional assessment in accordance with a four-eye principle to be specified in the relevant guidelines of the Public Employment Service or the Social Ministry Service.

As a case example from practice, psychiatric diagnoses, for example, are recognized as "exclusively personal reasons".

4.2 Training opportunities

Both the "extended apprenticeship" (according to § 8b (1) BAG) and the "partial qualification" (according to § 8b (2) BAG) can be completed in any company with authorization for apprenticeship training. In addition, as in the case of "regular" apprenticeship training (according to §1 BAG), it is also possible to complete integrative vocational training in training facilities or cooperation companies within the framework of "inter-company vocational training".

[4] Prepared by Institut für angewandte Gewerbeforschung der Wirtschaftskammer Österreich

Vocational training according to § 8b (1) and (2) BAG is possible in every apprenticeship occupation. In individual cases, however, it should be clarified whether partial qualification in the particular apprenticeship occupation makes sense.

4.3 Equality under the law

Young people who complete this vocational training are legally equal to apprentices. The same rights and obligations apply with regard to, for example, apprenticeship free use of public transportation, probationary period, retention period, vacation entitlement, etc.

4.4 Vocational training assistance

According to the Vocational Training Law §8b (6), an extended apprenticeship and partial qualification must be accompanied by the vocational training assistance. In addition to psychological, socio-pedagogical and didactic support services, it acts as a hub before and after the apprenticeship and coordinates and acts as an intermediary between the various actors such as apprentices (and, if necessary, their legal guardians), persons authorized to teach at the training company or training institution, the employment market service, the education authority and the (regional) vocational school, etc. In the case of partial qualification, the vocational training assistant has to organize the final examination together with experts in the respective occupational field.

4.5 Financial support for training companies

The Austrian Public Employment Service (Österr. Arbeitsmarktservice) provides financial support of 400 euros per month for the entire training relationship for training companies that provide training within the framework of integrative vocational training.

4.6 Evaluation study

In an evaluation study by the Institute for Educational Research of the Economy (ibw) on labor market integration and employment histories, graduates of the two models "extended apprenticeship" and "partial qualification" were considered to have integrated very well into the first labor market. These good results refer not only to the period immediately after completion of training, but also 5 years after the end of training. ("Berufseinmündung von AbsolventInnen der Integrativen Berufsausbildung -Eine Analyse der Beschäftigungsverläufe," ibw Research Report No. 167)

4.7 Number of trainers

The number of trainees in integrative vocational training has been rising steadily since its introduction in 2003. In 2020, the number of apprentices in integrative vocational training was 8314, with the vast majority completing an "extended apprenticeship" (6910 apprentices). (Source: Apprenticeship statistics 2020, Austrian Federal Economic Chamber).

4.8 The extended apprenticeship

At the beginning or in the process of an apprenticeship relationship, it is possible to extend the apprenticeship period in the apprenticeship contract and thus give the apprentice more time to be able to achieve all the training goals envisaged for the apprenticeship occupation.

This extension can be up to one year in addition to the period of training regularly provided for in the apprenticeship occupation (only in really exceptional cases up to a maximum of 2 years).

Apprentices of the "extended apprenticeship" are given the opportunity in the Vocational Training Law to change to a "regular" apprenticeship relationship (according to BAG § 1). This means that flexibility has been created here by law in order to be able to take individual learning curves and development potentials into account.

The "extended apprenticeship" (according to § 8b para. 1) ends with a "regular" final apprenticeship examination and final apprenticeship certificate.

4.9 Partial qualification

In the case of partial qualification, a training contract (in contrast to an apprenticeship contract) defines, among other things, the duration and content of training individually depending on the trainee's skills.

The duration of training can be between one and three years.

The training content is arranged individually. These can be partial areas from a specific apprenticeship trade, but can also come from other apprenticeship trades. The criterion for determining the learning objectives is that economically usable knowledge and skills are taught as a whole in the process of partial qualification.

In contrast to the "extended apprenticeship", there is no compulsory vocational schooling within the framework of partial qualification. (From practice: as a rule, trainees are given the opportunity to try out attending a vocational school in order to then be able to decide whether further attendance is possible in accordance with the trainee's skills).

Trainees in the partial qualification program also have the right to switch to an apprenticeship in accordance with Section 1 of the Vocational Training Law ("regular apprenticeship") during the course of their training. It is also possible to start an apprenticeship according to § 1 BAG ("regular apprenticeship") after completing the partial qualification. In the case of an apprenticeship that is related to the content of the partial qualification, parts of the partial qualification can be credited, under the condition that parts of the vocational school have been successfully completed.

The partial qualification ends with a final examination (not apprenticeship final examination!), which is taken in the training company or another suitable institution (from practice: other institutions are for example the business advancement institute "WIFI") by an expert of the respective occupational area and a representative of the responsible vocational training assistance. In the final certificate (not an apprenticeship certificate!) the determined skills and knowledge are documented in detail. The final certificate is issued by the responsible apprenticeship office of the chamber of economics of the respective state.

4.10 Useful links

- Austrian Federal Economic Chamber

https://www.wko.at/service/zahlen-daten-fakten/daten-lehrlingsstatistik.html

- Federal law on the vocational training of apprentices (Vocational Training Act - BAG) https://www.ris.bka.gv.at/GeltendeFassung/Bundesnormen/10006276/BAG%2c%20Fassung%20vom%2014.07.2021.pdf

- Vocational Assistance Network: https://www.neba.at/

- Institute for Educational Research of the Economy, "Berufseinmündung von AbsolventInnen der Integrativen Berufsausbildung": https://ibw.at/bibliothek/id/248/

5 Implementation Training "Specialist for Building Insulation"[5]

5.1 Main information about course

The general aim of the study is to evaluate the effectiveness of the implementation of dual vocational trainings (first centre level), realised within the Project titled "Three-level Centres of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy" (3LoE). The total of five dual vocational trainings are implemented by four project partners from Poland (2 trainings), Lithuania (1 training), Latvia (1 training), and Spain (1 training). The conclusions of the evaluation research will contribute to improving the quality, and especially the effectiveness of trainings, show the limitations of the training model, and indicate the direction for further activities and curriculum revision (if necessary).

The implemented vocational education system analysis leads to the conclusion that in the construction area the vocational education system of Latvia has to be supplemented in levels 1 to 3 with the elements and programmes of energy efficiency. A significant expansion of the practical training periods in companies, a further improvement of the theoretical teaching, and better coordination between practical and theoretical training seem to improve the quality and increase the attractiveness of training which is particularly important. Majority of the countries have no entry requirements for vocational training. Some states, however, differ in this respect: in Estonia a high school diploma is needed to pursue vocational education. In Finland job-related requirements concerning the acquired qualifications are set for each profession at different levels. The introduction of uniform access conditions in the Baltic Sea Region which would be profession-specific should be examined.

In some countries, courses are offered at different levels (e.g. in Latvia and Lithuania). The lowest level is open to young people without qualifications, with duration of 1- 2 years and provides simple professional qualifications. The middle level encompasses 2 -3 years and provides practical and theoretical qualifications. The upper level provides advanced skills for stronger students (e.g. for high-school graduates). In Denmark and Sweden there is a guarantee that each person can obtain vocational education regardless of their previous education.

In particular, the crafts are destined to train young people with learning difficulties. They are willing and committed to this social problem. But craft businesses may not be the sole specialist for the training and integration of weaker students. Crafts need also the best students to a large and still increasing extent. The creation of differentiated training courses with different entry requirements and different levels of training in an open, transparent system is a priority for targeted development of professional training.

The cooperation in education promotes sustainable economic cooperation. In most countries of the Baltic Sea vocational training with a recognised qualification examination on the basis of state examination regulations will be terminated. The entitlement

[5] Prepared by Liepaja State Technical School, Latvia

to pursue technically-oriented courses of study is connected with it especially in Denmark, Latvia and pronounced in particular in Finland.

There are very differentiated systems within the framework of vocational training. In Germany, vocational training is not regulated predominantly by the state. The organisation of training and acceptance tests are principal task of the economic self- government (chambers). In most States there are public or private systems with vocationally oriented higher educational institutions like vocational schools, technical schools, technical universities and colleges, which offer higher Professional qualifications and include more or less smooth transitions to universities and colleges. Vocational training should in the first place be the responsibility of the business and economic authorities and it should be regulated by the state in a very limited way. Very important, however, are the quality improvements, greater transparency, smooth transition to general education and study, as well as mutual recognition of qualifications based on comparable standards. The work of the EU on the creation of a European education system within the Baltic Sea Region with the European Qualifications Framework (EQF) and Credit System (ECVET) could be a good basis for the creation of innovative, non-bureaucratic systems with high quality.

The design of the vocational education programme "Specialist for Building Insulation"

The two year vocational education programme "Specialist for building insulation" is for young people with predominantly practical talents and theoretical learning difficulties.

The vocational training programme "Specialist for Building Insulation" should involve tasks of saving energy, especially by isolation of old and new buildings (houses, apartments and commercial buildings). Thus, this professional training is based in the construction industry. The construction sector is of considerable economic and strategic importance: more than any other sector, construction accounts for use of raw materials and production of wastes. It provides more employment than any other sector. The outputs of the construction sector affect our landscape, our environment, our living and working conditions for generations. Buildings, the product of construction, account for about 42% of total energy consumption. Widely dispersed objects and high transportation costs are typical for production in construction. In construction, a high number of people operate. This results in further expanding markets with a high demand for young workers.

It is assumed that the biggest proportion of work is the thermal insulation of the facade performed by workers doing the finishing which may constitute about 55% of the total volume of work, roofers' job may account for 14%, window and door fitter volume could be 20% and the rest of work – 11% might account for the fitting of the internal engineering networks.

On the basis of first mastering of skills and knowledge

a)obligatory tasks can be conceived, to be learnt by every trainee, and

b)optional tasks can be conceived, to be chosen depending on personal inclinations and skills as well as requirements of the intended related profession, and can be combined within the two-year vocational training for the Specialist for building insulation.

Modules (including elements of ecological building). It is especially important to include some elements of ecological building in the curriculum for the profession of a specialist for thermal insulation, because there is a need to save energy, which results in reduction of heating in housing and, as a consequence, lower costs of building utilization. In Europe, 2/3 of energy used in building falls to heating and cooling. Thermal insulation is the most profitable method of improving energetic efficiency of buildings. In this way, we reduce energy consumption (financial savings) without decreasing the comfort and level of life, as well as we protect the environment and facilitate maintenance of continuity of energy delivery.

How much can we gain in the case of use of insulation of individual elements of a building?

Heating energy savings for individual elements are as follows:

- Insulation of walls and a roof – heat saving of 20-30%.

- Modernization of fittings – heat saving 10-20%.

- Proper windows – heat saving 10-15%.

- Improvement of the thermal centre – heat saving 10-15%

Modular training and learning outcomes

The Modular Training structure and Learning Outcomes approach is flexible. The learning outcomes deal with output rather than processes and help to define the skills and knowledge that module participants should be able to demonstrate by the time these learning outcomes are assessed. Learning outcomes are the specific intentions of a training programme or module, written in specific terms. They describe what a student should know, understand, or be able to do at the end of that module.

Quality criteria for the training programme:

• Sufficiently detailed learning outcomes

• Theoretical knowledge to be gained

• Practical skills to be obtained

• Defined assessment

The pilot programme trained 16 students in the first year and 16 students thereafter. The programme runs for 4 semesters or 2 academic years, but training is still ongoing, because LSTS programme is 6 semesters or 3 academic years.

5.2 Curriculum topics

The programme runs for 4 semesters or 2 academic years, but training is still ongoing, because LSTS programme is 6 semesters or 3 academic years. As part of the project, LSTS has integrated the topics covered in the training modules developed under the project.

As the integration of these modules started with the 2022/2023 academic year, the two curricula - the LSTS accredited and the project-developed curricula - were accordingly compared from the outset. Given that the LSTS programme did not and does not include a number of topics that are in the modules of the project curriculum, the modules in the LSTS accredited curriculum were accordingly considered for inclusion at the start of this academic year. It should also be noted that there are topics in the modules of the LSTS-accredited programme that are not covered in the modules of the curriculum developed as part of the project.

There are differences in the structure of the two training programmes, as the LSTS programme has modules divided by title, e.g. “**Building Facade Insulation**”, whereas the project programme has modules based more on activities, e.g. “Introduction to building components”.

A more detailed comparison of the two programmes focusing on programme content, goals, tasks, and structure is presented below. The first programme is a project-developed training programme “Specialist for Building Insulation”, while the second is an LSTS - accredited training programme “Finishing Works Technician”.

1. Goals and Objectives:

1.1. Specialist for Building Insulation

Goal:

Prepare professionals in energy efficiency, particularly in building insulation, to reduce greenhouse gas emissions and promote sustainable construction.

Develop skills aligned with green economy demands, such as using modern insulation materials and technologies.

Objectives:

Acquire theoretical knowledge of energy efficiency standards and principles.

Learn practical skills in installing thermal insulation systems.

Gain an understanding of work organization and team management in construction projects.

1.2. Finishing Works Technician

Goal:

Prepare professionals capable of performing finishing works and planning and supervising construction processes.

Provide knowledge about construction standards, safety, and quality requirements.

Objectives:

Develop and oversee work schedules.

Lead finishing work teams, including workers.

Select materials and organize logistics on construction sites.

2. Program Content and Modules

2.1. Specialist for Building Insulation

Theoretical Component:

Principles of energy efficiency and construction standards (green construction).

Properties of materials and insulation technologies.

Basics of climate policies and environmental protection.

Practical Component:

Insulating facades and roofs.

Working with modern insulation materials such as mineral wool and polystyrene.

Window and door replacement with a focus on energy efficiency.

Implementing renovation projects according to energy efficiency standards.

2.2. Finishing Works Technician

Theoretical Component:

Detailed planning of construction and finishing processes.

Specifics of finishing materials and their use.

Workplace safety and organization at construction sites.

Practical Component:

Organizing ceiling, wall, and floor finishing works.

Decorative techniques, such as painting and wallpapering.

Collaboration with other construction professionals and material suppliers.

Quality control and defect resolution in finishing works.

3. Program Structure

3.1. Specialist for Building Insulation

Duration: Two years.

Education System:

Dual training: split between theoretical lessons at school and practical training in companies.

Tailored for students with learning difficulties to enhance workforce integration.

Focus:

Achieving climate and energy efficiency goals.

Preparing workers to handle specific insulation technologies and modern materials.

Skills for working with the latest technologies and equipment.

3.2. Finishing Works Technician

Duration: 3 years (can be adjusted).

Education System:

Modular education, combining theoretical knowledge with practical work.

Practical workshops simulating real working conditions.

Focus:

Broad preparation for various finishing works.

Combining managerial skills with technical knowledge.

Leading workers and coordinating construction tasks.

4. The basic differences in both programmes:

Aspect	Specialist for Building Insulation	Finishing Works Technician
Focus	Energy efficiency and sustainable construction.	Versatile finishing works manager and specialist.
Specialized Modules	Insulation, energy saving.	Finishing techniques, material selection, team management.
Practical Work Proportion	In companies (dual training).	In workshops and simulations.
Sustainability Aspect	Highly significant, integrated in all aspects.	Less emphasized, focused on technical precision.
Career Opportunities	Specialized role in the green construction sector.	More generalist role in construction and finishing.

The **Specialist for Building Insulation** focuses on niche competencies in energy efficiency and sustainable construction, matching modern environmental protection needs.

The **Finishing Works Technician** offers broader preparation in finishing works, with opportunities to assume leadership roles, but it is less specialized in energy efficiency.

In LSTS programme "**Finishing Works Technician there are module "Building Facade Insulation", further will be little comparison:**

5.3 Programme “Specialist for Building Insulation” and “Building Facade Insulation”

1. Goals and Objectives

“Specialist for Building Insulation” programme:

Comprehensive specialization in building energy efficiency.

Emphasizes insulation of the entire building, including facades, roofs, windows, and doors.

Provides theoretical and practical knowledge on using modern insulation materials and methods.

“Building Facade Insulation” Module:

Focused on skills for insulating facades, which is part of broader finishing work.

Covers work technologies and material selection, such as mineral wool and polystyrene.

Teaches preparation and execution of facade insulation work.

2. Program Content

“Specialist for Building Insulation” programme:

Broader content covering various building parts and technologies.

Includes theory on climate policies and sustainable construction.

Practical experience extends to roof and window insulation.

“Building Facade Insulation” Module:

Concentrated on facade insulation techniques.

Practical experience in creating protective layers and plastering facades.

Less emphasis on overall energy efficiency theory.

3. Training Structure

“Specialist for Building Insulation” programme:

Two-year dual education program with training in companies.

Suitable for students seeking a specialized career in green construction.

“Building Facade Insulation” Module:

A shorter module, typically part of a broader curriculum.

Aimed at acquiring specific skills in a focused area

5.4 “Specialist for Building Insulation” programme

Program Length: Two years.

Theoretical to Practical Ratio: Approximately 1/3 theory and 2/3 practice.

Theory: Covers topics such as energy efficiency principles, building materials, and environmental standards.

Practice: Focuses on real-world applications, such as roof, wall, and foundation insulation.

Weekly Training:

Four days of practical training in companies.

One to 1.5 days of theoretical lessons in vocational schools.

Adjustments: Seasonal considerations (e.g., practical work aligned with warmer months for outdoor activities) allow flexibility in the schedule;

“Building Facade Insulation” Module

Module Duration: Specific teaching hours are not fully quantified but are part of a broader curriculum.

Proportional Focus:

~10% of time allocated to understanding facade insulation processes.

~25% of time on post-insulation facade finishing tasks (e.g., plastering, painting).

Remaining hours focus on safety, defect prevention, and equipment usage.

Learning Objectives:

Prepare facades for insulation and finishing.

Apply insulation materials efficiently and safely.

Address quality issues and rectify defects during the insulation process

Key Differences

Scope of Training:

The "Building Insulation Specialist" program is holistic, addressing various building components and sustainability principles.

The "Building Facade Insulation" module focuses exclusively on facade-related insulation tasks.

Duration:

The Specialist program spans two years, integrating multiple modules.

The Facade module is a shorter part of a larger qualification path.

Practical Application:

Specialist training provides extensive real-world exposure in different settings.

The Facade module concentrates on specific techniques within the controlled environment of a course.

The **"Building Facade Insulation"** module is narrowly specialized, focusing solely on facade insulation aspects. In contrast, the **Specialist for Building Insulation** program covers a broader scope, providing in-depth knowledge of overall building energy efficiency, aligning with green construction goals.

5.5 Evaluation report

Consultations with employers and those working in the building sector helped to find the best solutions for implementing the training. The trainers are practising experts in the field to provide both theoretical and practical examples.

After two Years learning, students filled the questionnaire, which were summarised. The pilot programme trained 16 students in the first year and 16 students thereafter.

In the final survey were 21 questions (some of them are in 1. table and 2.table below).

1. table

Answers to the student survey

The study programme content is in line with the latest technological development trends	The environment required for studies (auditoriums, computerized auditoriums, laboratories) is comfortable and properly equipped	Necessary academic literature and access to information sources is provided	There are enough spaces in the educational institution where it is possible to study individually after lectures	I have a possibility to submit suggestions for improving this study programme	The study programme prepares me for the future in the working life	The experience I gained will be useful in my work	I will recommend this study programme to others
Agree	Agree	Neither agree nor disagree	Neither agree nor disagree	Agree	Agree	Agree	Agree
Strongly agree	Agree	Agree	Neither agree nor disagree	Agree	Agree	Strongly agree	Agree
Agree	Agree	Agree	Agree	Agree	Strongly agree	Strongly agree	Strongly agree
Agree	Agree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Agree	Agree	Agree
Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree
Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree
Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Agree	Neither agree nor disagree	Agree	Agree	Agree
Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Agree	Agree	Agree
Strongly agree	Strongly agree	Agree	Strongly agree	Agree	Strongly agree	Strongly agree	Strongly agree
Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree
Agree	Agree	Agree	Agree	Agree	Agree	Agree	Agree
Agree	Agree	Neither agree nor disagree	Agree	Neither agree nor disagree	Agree	Agree	Agree
Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree
Agree	Agree	Neither agree nor disagree	Agree	Agree	Agree	Agree	Agree
Agree	Agree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Agree	Agree	Neither agree nor disagree
Agree	Agree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Agree	Agree	Agree

The questionnaires are a good way to find out. The table above shows that respondents may have completely opposite answers to the same question, e.g. “Necessary academic literature and access to information sources is provided”. But as You can see in table Nr.2 (below) may also answer very similarly, e.g. “The training process was flexible”, percentage split between agree and strongly agree is very similar, totalling 88%.

2. table

Answers to the student survey

Results and objectives of study programme are clearly defined	The content was organized and easy to follow	The content of the subjects of the study programme was not repetitive	The materials distributed were helpful to achieve study programme results	The training process was flexibile	While studying I gained enough theoretical knowledge	There are enough practical / laboratory classes
Agree	Agree	Neither agree nor disagree	Agree	Agree	Agree	Agree
Agree	Strongly agree	Agree	Strongly agree	Strongly agree	Agree	Agree
Agree	Strongly agree	Agree	Agree	Strongly agree	Agree	Agree
Neither agree nor disagree	Agree	Neither agree nor disagree	Neither agree nor disagree	Agree	Neither agree nor disagree	Agree
Agree	Agree	Agree	Agree	Agree	Agree	Agree
Agree	Agree	Agree	Agree	Agree	Agree	Agree
Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Agree	Neither agree nor disagree	Agree
Agree	Agree	Neither agree nor disagree	Neither agree nor disagree	Agree	Neither agree nor disagree	Neither agree nor disagree
Strongly agree	Strongly agree	Agree	Agree	Strongly agree	Agree	Strongly agree
Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree
Agree	Agree	Agree	Agree	Agree	Agree	Agree
Agree	Agree	Agree	Agree	Agree	Neither agree nor disagree	Agree
Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree
Agree	Agree	Agree	Agree	Agree	Agree	Agree
Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Neither agree nor disagree	Agree	Agree	Neither agree nor disagree
Neither agree nor disagree	Neither agree nor disagree	Agree	Neither agree nor disagree	Agree	Neither agree nor disagree	Neither agree nor disagree

The survey also included questions for students to answer by providing their answers. As can be seen in Table 3, respondents didn't give a very original answer.

3. table

Answers to the student survey

What you liked most in this study programme?	Which specific difficulties you encountered during the studies?	If the training was repeated, what should be left or changed?
Practical lessons.	I wanted to learn more about some topics.	No suggestions.
All	-	-
I liked all the topics	None	Don't need changes
Everything	I need more practical trainings	Do not change anything
All	There were no problems	Nothing
Everything	None	Let everything stay ar it is
I liked all topics	None	Don't change anything
All	Nope	Nope
All	None	Nothing
I liked all	i do not know	Nothing
I don't know	I don't know	I don't know

The project included not only surveys, but also interviews with students and teachers. Although the project required both to submit their answers in writing, the interviews were conducted face-to-face and the answers were recorded during the conversation.

Both the teacher and the student found it important to learn something new that was not part of their daily routine. For example, in LSTS there are two programmes in which are many modules where are included themes about insulation. But there isn't a special programme just for insulation. Teacher agreed that insulations isn't very easy speciality, and students don't like these works, and he believe that this wouldn't be a popular speciality.

The biggest differences between programmes are that programme **"Specialist for Building Insulation"** focusing to energy efficiency and sustainable construction and **specialized in modules** such as insulation, energy saving. But in the same time LSTS - accredited training programme **"Finishing Works Technician"** are focusing to the versatile finishing works manager and specialist and **specialized in modules** such as finishing techniques, material selection, team management.

As the programme is still ongoing, the students will take the exam and obtain their diploma in 2025.

Conclusion. In order to introduce a completely new curriculum and be accredited, it must be different from the existing ones. The best option adopted in this pilot was to compare the two programmes and to integrate into the existing programme topics that are not already covered by the existing programme. Although the main comparisons are presented in Chapter 2, the teachers involved in the project also recognise that the two programmes are different - and what will definitely be taken from the proposed programme are the different topics that are not in the LSTS program.

6 Evaluation Concept[6]

6.1 Objectives and Methods of Evaluation

6.11 The Aim of the Evaluation

The general aim of the study is to evaluate the effectiveness of study program „Specialist for Building insulation" realized within the Project „Three-level Centers of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy". The following purposes of evaluating study program „Specialist for Building insulation" are defined:

- To determine whether the objectives of the study program were achieved.
- To see how the knowledge and skills learned in the study program are put into practice.
- To assess the results of the study program.
- To assess the effectiveness of the study program.
- To assess whether the study program were properly implemented.
- To identify the strengths and weaknesses of the study program.
- To assess whether the study program were suitable in terms of the training contents, timing, participants and other aspects.
- To find problems of the study program and solutions for improvement.

The conclusions of the evaluation research will contribute to improve the quality and especially the effectiveness of training, show the limitations of the training model and indicate the direction for further activities.

6.12 The Methods of the Evaluation

The four level evaluation are chosen for the study program „Specialist for Building insulation"assessment. The four-level evaluation is one of the most commonly used methods for evaluating study programs. The four sequential levels of evaluation were originally proposed by L. D. Kirkpatrick, Professor Emeritus at the University of Wisconsin. According to his concept, capacity development is realized by the four sequential steps: **I. Reaction**; **II. Learning**; **III. Behaviour**; and **IV. Results** (Figure 1).

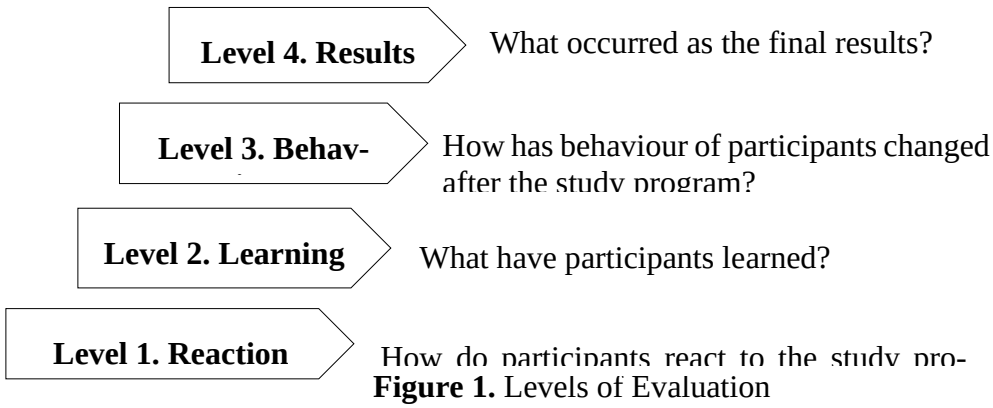


Figure 1. Levels of Evaluation

6.13 Evaluation Tools

Evaluation tools are selected depending on the purposes and methods of evaluation (Table 1). Survey is one of the ways to provide feedback. For the **Level 1. Reaction** surveys are used:

- Online survey of students using an identical questionnaire (Section 2).
- Online survey of the teachers using an identical questionnaire (Section 3)

[6]Prepared by Panevezys University of Applied Sciences

- Online survey of the training company using an identical questionnaire (Section 4).

For the **Level 2. Learning** and for the **Level 3. Behaviour** structured interview are used:

- Personal open-ended interview questions with selected participants "Specialist for building insulation" (Section 5)
- Personal open-ended interview questions with selected teachers "Specialist for building insulation" (Section 6)

For the **Level 4. Results** implementation report of partner is used. This report provides study program's statistics, for example number of participants, dropouts of students, student's exam results, etc.

Table 1. **Evaluation Tools According to Levels of Evaluation**

Level 1. Reaction	Online survey of students using an identical questionnaire (Section 2). Online survey of the teachers using an identical questionnaire (Section 3). Online survey of the training company using an identical questionnaire (Section 4).
Level 2. Learning	Personal open-ended interview questions with selected participants "Specialist for building insulation" (Section 5) Personal open-ended interview questions with selected teachers "Specialist for building insulation" (Section 6)
Level 3. Behaviour	
Level 4. Results	Implementation report of partner

6.14 Data collection:

Testing partner PP23 LVT will forward the online surveys for participants and teachers twice – in the first/second week of the training and in the last week of the training. Furthermore, one online survey for the training company will be forwarded by PP23LVT in the last week of the training. Personal interviews with 3 participants and personal interviews with 3 teachers will be carried out by PP23 LVT in the last week of the training.

6.2 Survey for Students

The objective of the survey is to evaluate the study program "Specialist for building insulation". The questionnaire is part of the project „Three-level Centers of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy". We would appreciate you taking a few minutes of your time to complete this evaluation form. Your comments and suggestions will help us to improve the study program.

	Background information

1. Please indicate your gender:

❍ Woman ❍ Man ❍ Prefer not to answer

2. Please indicate your age:

❍ Under 20 ❍ 20–29 ❍ 30–39 ❍ 40–49 ❍ 50–59 ❍ 60+

	Evaluation of study programme content and teaching quality

1. Results and objectives of study program are clearly defined

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

2. The content was organized and easy to follow

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

3. The content of the subjects of the study program was not repetitive

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

4. The materials distributed were helpful to achieve study program results

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

5. The training process was flexibile

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

6. While studying I gained enough theoretical knowledge

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍Strongly disagree

7. There are enough practical / laboratory classes

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

8. The study program content is in line with the latest technological development trends

❍ Strongly agree □ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

9. The environment required for studies (auditoriums, computerized auditoriums, laboratories) is comfortable and properly equipped

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

10. Necessary academic literature and access to information sources is provided

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

11. There are enough spaces in the educational institution where it is possible to study individually after lectures

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

12. I have a possibility to submit suggestions for improving this study programme

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

13. The study programme prepares me for the future in the working life

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

14. The experience I gained will be useful in my work

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

15. I will recommend this study programme to others

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

16. Do you have any comments about any of your answers to the questions in this section?

.....

.....

.....

	Comments on Strengths and Ways of Improvement

17. Please also provide an overall assessment of your studies on a five-point scale (5-highest, 1- lowest rating)

	5	**4**	**3**	**2**	**1**
Content of the study program (theoretical and practical classes of subjects, internship)	❍	❍	❍	❍	❍
Management of study program (human and material resources, organization of the study process and assessment)	❍	❍	❍	❍	❍

18. Do you have any comments about any of your answers to the questions in this section?

.....

.....

.....

19. What you liked most in this study program?

.....

.....

.....

20. Which specific difficulties you encountered during the studies?

.....

.....

.....

21. If the training was repeated, what should be left or changed?

.....

.....

.....

Thank you for Your answers!

Electronic version of the survey available at https://forms.gle/QucMT6LV99AL2U8K8

6.3 Survey for Teachers

The objective of the survey is to evaluate the study program "Specialist for building insulation". The questionnaire is part of the project „Three-level Centers of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy". We would appreciate you taking a few minutes of your time to complete this evaluation form. Your comments and suggestions will help us to improve the study programme.

	Background information

1. Please indicate your gender:

❍ Woman ❍ Man ❍ Prefer not to answer

2. Please indicate your age:

❍ Under 25 ❍ 25-29 ❍ 30-39 ❍ 40-49 ❍ 50-59 ❍ 60+

3. Please indicate how long have you worked as a teacher:

❍ This is my first year ❍ 1–2 years ❍ 3–5 years ❍ 6–10 years ❍ 11–15 years ❍ 16–20 years ❍ More than 20 years

4. What is your employment status as a teacher:

❍ Permanent employment ❍ Fixed term contract for a period of more than 1 academic-year ❍ Fixed term contract for a period of 1 academic-year or less

5. What is the highest level of education you have completed:

❍ Barchelor´s degree or equivalent qualification ❍ Master´s degree or equivalent qualification ❍ Doctor´s degree or equivalent qualification ❍ Other

	Evaluation of study programme structure and description

6. Do you agree that the study programme objectives are clear and well defined?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

7. Do you agree that the study programme objectives meet the needs of the labor market?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

8. Do you agree that the study programme objectives meet the level of the certificate?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

9. Do you agree that the scope of the study programme is sufficient to achieve the study programme objectives?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

10. Do you agree that the target group is clear and well defined?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

	Evaluation of the study programme content

11. Do you agree that the scope of the modules is sufficient to achieve the learning outcomes of the study programme?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

12. Do you agree that the order of the modules within the study program plan is appropriate?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

13. Do you agree that all modules are relevant to study program?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

14. Do you agree that the balance between theory and practice within the study program is appropriate?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

15. Do you agree that the study program content is modern?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

16. Do you agree that the assessment of study program mastering quality is appropriate?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

17. Do you agree that the assessment of modules is appropriate?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

	Evaluation of the study programme resources

18. Do you agree that the tools, equipment and/or supplies listed for practical components of the curriculum (if applicable) are satisfactory for study programme delivery?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

19. Do you agree that the textbooks are adequate for study programme delivery?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

20. Do you agree that the learning resources (e.g., print media, audio-visual materials) provided for study programme delivery and to actively engage students are adequate?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

	Evaluation of the study program implementation

21. Do you agree that the dual vocational training objectives were met?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

22. Do you agree that the dual vocational training prepares student for the future challenge in their the working life?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

23. How well do you evaluate collaboration between school and training partner?

❍ Extremely well ❍ Very well ❍ Somewhat well ❍ Not so well ❍ Not at all well

24. How do you evaluate students` theoretical training at vocational school?

❍ Very satisfied ❍ Somewhat satisfied ❍ Neither satisfied nor dissatisfied ❍ Somewhat dissatisfied ❍ Very dissatisfied

25. How do you evaluate students` practical training experience at training partner in a company?

❍ Very satisfied ❍ Somewhat satisfied ❍ Neither satisfied nor dissatisfied ❍ Somewhat dissatisfied ❍ Very dissatisfied

	Comments on strengths and ways of improvement

26. Overall, are you satisfied or dissatisfied with study programme?

❍ Very satisfied ❍ Satisfied ❍ Neither satisfied nor dissatisfied ❍ Dissatisfied ❍ Very dissatisfied

22. Could you name the main advantages of this study programme?

.....

.....

.....

23. Could you name the main disadvantages of this study programme?

.....

.....

.....

24. What changes would you recommend to improve this study programme?

.....

.....

.....

Thank you for your answers!

Electronic version of the survey available at https://forms.gle/3cWQLaCX6cjA2qnS6

6.3 Survey for Training Company

The objective of the survey is to evaluate the study program "Specialist for building insulation". The questionnaire is part of the project „Three-level Centers of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy". We would appreciate you taking a few minutes of your time to complete this evaluation form. Your comments and suggestions will help us to improve the study program.

	Background information

1. Please indicate your gender:

❍ Woman ❍ Man ❍ Prefer not to answer

2. Please indicate your position in the company / organization:

❍ Owner ❍ Construction Manager ❍ Project Manager ❍ Construction Worker ❍ Other (please specify) .....

3. Please indicate the number of employees in your company / organization:

❍ Up to 10 employees ❍ From 11 to 50 employees ❍ From 51 to 250 employees ❍ Over 250 employees

4. Please indicate how long you have worked for the company:

❍ This is my first year ❍ 1–2 years ❍ 3–5 years ❍ 6–10 years ❍ 11–15 years ❍ 16–20 years ❍ More than 20 years

	The assessement of the readiness of the students for professional activities

5. Do you agree that the students have sufficient theoretical professional knowledge?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

6. Do you agree that the students have sufficient practical professional skills and abilities?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

7. Do you agree that the students have the necessary knowledge and skills of general competencies (computer literacy, foreign languages, etc.)?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

8. Do you agree that the students have enough required personal qualities and abilities (initiative, communication, teamwork skills, etc.)?

❍ Strongly agree ❍ Agree ❍ Neither agree nor disagree ❍ Disagree ❍ Strongly disagree

	Comments on strengths and ways of improvement

9. Overall, are you satisfied or dissatisfied with study program?

❍ Very satisfied ❍ Satisfied ❍ Neither satisfied nor dissatisfied ❍ Dissatisfied ❍ Very dissatisfied

10. Could you name the main advantages of this study program?

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11. Could you name the main disadvantages of this study program?

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.....

.....

12. What would you recommend to change for the improvement of this study program (study program content and implementation process, etc.)?

.....

.....

.....

13. How would you evaluate cooperation and coordination between school and your company / organization?

.....

.....

14. What are the main benefits implementation of study program for your company / organization?

.....

.....

15. What is needed to make the dual vocational training in your company / organization more effective (material and financial resources)?

.....

.....

Thank you for your answers!

Electronic version of the survey available at https://forms.gle/iyxzTCucfVSUoVHA7

6.3 PERSONAL INTERVIEW QUESTIONS WITH PARTICIPANTS

The objective of the open-ended interview is to evaluate the study program "Specialist for building insulation". The interview is part of the project „Three-level Centers of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy". We would appreciate you taking a few minutes of your time to complete this evaluation form. Your comments and suggestions will help us to improve the study program.

1. What you liked the most participating in the study program?

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.....
.....

2. Which specific difficulties you encountered during participating in the study program?

.....
.....
.....

3. Which theoretical knowledge you mostly lacked during the studies?

.....
.....
.....

4. Which part of the training was the most useful for you?

.....
.....
.....

5. How does participating in study program prepare you for the future?

.....
.....
.....

6. If the training was repeated, what should be left out or changed?

.....
.....
.....

7. How satisfied were you with this training?

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.....

8. How does participating in study program prepare you for the future: what has particularly changed in your life after the studies?

.....
.....
.....

Thank you for your answers!

6.4 PERSONAL INTERVIEW WITH TEACHERS

The objective of the open-ended interview is to evaluate the study program "Specialist for building insulation". The interview is part of the project „Three-level Centers of Professional Excellence: Qualification, Entrepreneurship and Innovation in the Green Economy". We would appreciate you taking a few minutes of your time to complete this evaluation form. Your comments and suggestions will help us to improve the study program.

1. Please indicate the main benefits of the study program „Specialist for building insulation".

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.....

2. How would you evaluate content of „Specialist for building insulation"?

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.....

3. Please indicate knowledge and skills of which subject the trainee needs the most for the technician´s job?

.....
.....
.....

4. Which main difficulties you encountered during training process?

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.....
.....

5. How and why is the training beneficial for trainees in their future working life? Explain.

.....
.....
.....

6. How satisfied were you with participating in this program/project?

.....
.....
.....

Thank you for your answers!