ERI SEE Education Reform Initiative of South Eastern Europe

EQET SEE

With funding from
Austrian Development Cooperation

Trainings of trainers for company instructors/mentors

5.2.2025. 11:07

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Work-based learning with didactics

Session 1 General aspects of mentoring/work-based learning

Session 2 Process of teaching and learning at Agricultural technician of traditional and organic cultivation

5.2.2025. 11:07

Igor Nikolov
External expert

Introduction of a trainer

- Igor Nikolov
- External expert
- Professor at Secondary School Koco Racin Sveti Nikole, Macedonia
- External associate of the Center for VET
- Author of more than 15 books for secondary education in the field of agriculture
- Licensed professional trainer
- Teacher of vocational subjects in the field of agriculture for more than 20 years
- .....

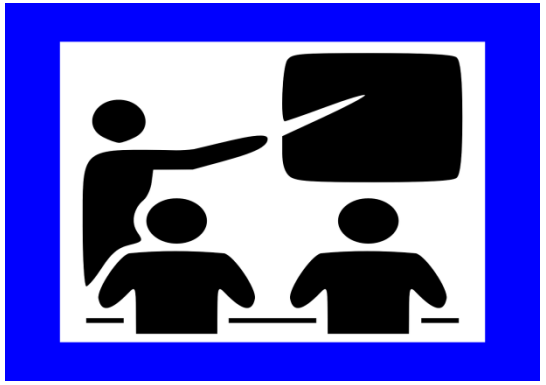
- Goals
- Goals will be given at the beginning of each session
- Methods
  - Interactive, Ex-cathedra , Roundabout, Group discussion, Individual work, Group work ....
- Rules during training

Experience in the implementation of Work-based Learning (WBL)

Group introduction – experience in the implementation of Work-based Learning (WBL)

- Brief introduction of the participants
  - Name and surname
  - Economy
- Explain your experience in the implementation of Work-based Learning (WBL)!

Presentation of the training goals



Goals of Session 1:

-Understanding the process of learning through work and the role of the teacher for practical training and the mentor,

-Identification of innovative approaches, principles and methods in the realization of the practical training of students,

-Identifying the assessment and documentation of the learning-by-doing process,

- Understanding the need for a pedagogical approach in practical training.

Work-based Learning (WBL)

Work-based learning (WBL) is ***a practical training*** that offers students to gain ***work experience in real workplace conditions in a company***, in a craft workshop and in other facilities.

Work-based learning (WBL) is a learning process that occurs when ***students do real work in a real work environment***.

Work-based Learning (WBL)

Work-based learning (WBL) is ***part of formal education in vocational schools.***

Work-based learning (WBL) differs from conventional training in that it involves the acquisition of ***professional competencies and experience in real working conditions at the workplace.***

Work-based learning (WBL) enables ***the acquisition of professional competences***, but also the ability of the student ***to understand how to develop key competences and learn how to learn***.

Work-based Learning (WBL)

Collaborative approach of all stakeholders: ***the business sector, local government, educational institutions, teachers, students and parents.***

Good coordination and a clear division of responsibilities between stakeholders (***employer, mentor, vocational education school/institution, teacher coordinator for practical training, responsible teacher for WBL, student, parent, municipality, chambers, educational institutions, employers' organization and local economic advice***) in the process of realizing learning through work, as well as from established mechanisms for feedback.

Work-based Learning (WBL)

A broader interpretation of work-based learning implies work-related learning that is guided by the needs of the individual and society.

The narrower interpretation refers to learning through work that is guided by the needs of the employer and is connected to the realization of learning through work according to the dual model of professional education.

Dual model of education - the student performs work and tasks for an employer in accordance with the curricula for UPR, prepared in accordance with the needs of an employer.

Role, rights and obligations of the responsible teacher for practical education and mentor in the company in the process of Work-based Learning (WBL)

The rights and forms of the responsible teacher for practical education and the mentor in the company, which are the key to the successful realization of work-based learning (WBL).

Role, rights and obligations of the responsible teacher for practical education and mentor in the company in the process of Work-based Learning (WBL)

Role, rights and obligations of the mentor in a company
- Attends training for mentors and obtains mentor certificate - Participates in developing a program for the implementation of WBL with the employer, in collaboration with a vocational school teacher - Prepares and determines jobs and tasks for students, including students with disabilities, in accordance with the curriculum and the program - Presents the organizational structure and activity of a company to students - Introduces occupational health and safety regulations and measures to students - Assigns students to workplaces and informs the supervisor about the student's presence at that workplace - Notifies employees about the presence of students - Monitors the compliance with occupational health and safety regulations and measures - Mentors, monitors, evaluates and records student progress - Communicates with the teacher about students' work and progress - Participates in meetings with the teacher, the teacher coordinator and the parent - Controls and maintains documentation related to the implementation of the student's WBL - Participates in performing the final exam, - Informs the school and competent bodies of a company about all important issues related to the WBL of the student

Role, rights and obligations of the responsible teacher for practical education and mentor in the company in the process of Work-based Learning (WBL)

Role, rights and obligations of the practical education teacher
- Provides pedagogical and methodical support to a mentor in a company - Monitors the implementation of the WBL program - Expresses the need for professional upgrade and development in the company - Prepares students prior to their engagement by an employer - Checks readiness to learn about occupational health and safety - Performs the student control within a company during the program implementation. - Prepares a list of possible job positions for students during the implementation of the practical training, in cooperation with competent persons from companies - Develops an annual plan and program for implementation and monitoring of practical training of students - Develops an annual operational plan and program for the implementation of work-based learning with the mentor from a company, based on the curriculum - Participates in the implementation of the final exam - Develops and uses instruments to monitor, evaluate and record practical training/work-based learning - Monitors students' progress in the process of practical training/ WBL. - Determines a joint assessment with the mentor from a company - Maintains pedagogical documentation regularly

Innovative approach to work-based learning and practice

The aim of innovative approaches is ***to create opportunities for students from vocational education and training institutions to apply their knowledge in real working environments through cooperation with enterprises*** from the public and private sectors, and at the same time to achieve benefits for enterprises in the relevant sectors through training, evaluation and recruitment of potential employees without major costs.

Project-based learning

- Create projects that require students to develop and apply knowledge and skills related to traditional and organic production.
- ***Example: Planning, designing and planting a traditional or organic garden.***

Learning in real world working environments

- Organize visits to organic and traditional farms to learn about techniques used.
- Collaborate with local farmers to provide hands-on experience for students.

Digital technology and applications

- Use applications and digital tools to help manage farms, track crops, analyse data and identify plant diseases or perform various simulations.
- Use simulators and virtual reality for training actions on different agricultural techniques.

Problem-based learning

- Set a problem or challenge that students must solve through research and practice.
- ***Example: How to fight a certain plant disease in an organic way?***

Engagement of experts in the field as resources

- Invite experts in the field of organic and traditional agriculture to help train students and give lectures.

Interconnected learning

- Combine knowledge in different subjects, such as biology, chemistry and economics to develop a deeper understanding of agriculture.

Continuous and performance-based assessment

- Assess students' practical skills and knowledge through projects, presentations and demonstrations, not just through tests.

Principles/guidelines for the preparation and implementation of an innovative work-based learning

Practical teaching teachers and mentors should ***adapt innovative teaching and learning processes to the specific context and needs of students.***

When preparing and implementing an innovative work-based learning process, ***several innovative principles can be applied***.

Principles/guidelines for the preparation and implementation of an innovative work-based learning

Active learning:

- Encourage students to actively engage with the material through discussions, problem solving, group work, and hands-on activities.

Use of technology:

- Integrate appropriate technology tools and resources to enhance learning experiences.
- Ensure accessibility and usability for all learners.

Interdisciplinary approach:

- Promote connections between different topics and real-world applications.
- Cultivate creativity and critical thinking.

Collaboration and peer learning:

- Encourage collaboration among students through group projects and peer teaching.
- Encourage students to learn from each other.

Continuous improvement:

- Regularly evaluate and adapt teaching methods and materials based on feedback and outcomes.
- Stay up to date with current educational research and trends.

Principles/guidelines for the preparation and implementation of an innovative work-based learning

Real world appliance:

- Relate classroom learning to real-world problems and scenarios.
- Show the practical relevance of the content.

Critical Thinking and Problem Solving:

- Design activities that challenge students to think critically, analyse information, and solve complex problems.

Multimodal Instruction:

- Include a variety of teaching methods, such as lectures, discussions, multimedia and experiential learning.

Innovation assessment:

- Evaluate the success of innovative approaches and be willing to adapt or abandon them if they are not effective.

Learning Communities:

- Foster a sense of community among students and create opportunities for them to learn from each other.

Innovative methods for work-based learning

Innovative work-based learning methods encompass a variety of approaches where ***the focus is on equipping students with relevant, practical skills in an efficient and engaging way***.

These methods are based on the practical use of machinery, devices and equipment, as well as ***emphasizing interdisciplinary learning and a combination of individual and team work.***

Innovative methods for work-based learning

Integration of technology and mechanization	Using advanced tools and machinery in training programs allows students to gain hands-on experience with the equipment they will encounter in their respective fields. This method includes virtual reality simulations for training, industrial robotics for manufacturing or artificial intelligence-based systems for IT and data analysis.
Interdisciplinary approaches to learning	This method entails involving students in projects that require knowledge from multiple disciplines, which encourages a holistic understanding of real problems. For example, a project may combine elements of agriculture, the environment and business to address sustainability challenges.
Collaborative projects and teamwork	Team projects refer to real work environments where collaboration is the key. Students can work together on projects, sharing their different skills and perspectives, which improves problem-solving and communication skills.
Individualized learning paths	In this method, adaptive learning technologies are used, learning can be adapted to the capabilities and style of the individual. This method ensures that students are not overwhelmed and are sufficiently motivated, and can focus on areas where they need the most improvement.
Practical research projects	Involvement of students in practical research projects, in collaboration with industrial partners ensures the acquisition of practical experience in their field of study. This can range from conducting scientific research in a laboratory to developing a new business strategy in a corporate environment.
Gamification and interactive learning	Using game elements in education can make learning more engaging and memorable. This may include competitive challenges, reward systems, or interactive simulations that mimic real-life scenarios.
Tools for distance and virtual learning	Leveraging online platforms and virtual distance learning environments provide flexibility and access to a wider range of resources and expertise. This is particularly useful for students located in remote areas and students with special needs.
Solvingproblemsintherealworld	Projects that address real-world problems help students apply their knowledge in a practical context. This method may involve working with local businesses or community organizations, and aims to find solutions to the real challenges they face.
Apprenticeship and internship	Combining classroom learning with on-the-job training through apprenticeship or internship allows students to gain practical experience, build professional networks and understand workplace dynamics.
Feedback and reflective practices	Encouraging regular feedback and reflection helps students understand their progress, identify areas for improvement and develop critical thinking skills. This can be facilitated through peer reviews, mentoring programs and self-assessment tools.

Summative school and external evaluation of learning through work

Summative school and external assessment of work-based learning are essential ***to confirm that students have achieved the required level of competence and are ready for professional practice in their respective fields.***

Summative assessments ***should be aligned with the learning objectives of the work-based learning program, ensuring that they accurately measure the intended outcomes.***

The resulting scores must be **valid (measuring what they are supposed to measure)** and **reliable (consistent in their measurement).**

Summative assessments should provide feedback that allows students to understand their strengths and areas for improvement.

Integrated assessment

Summative assessments should integrate school and outside elements. This is especially significant when work-based learning is carried out with an employer under the mentor's guidance.

Summative assessment of work-based learning at school

Final projects or portfolios	Students may be required to complete a comprehensive project or compile a portfolio showcasing the skills and knowledge they have acquired. This may include research projects, practical assignments, case studies or a compilation of various smaller projects.
Written exams and tests	They can assess theoretical knowledge and understanding of principles and concepts learned during education.
Practical exams	Students demonstrate their skills in a controlled real-world environment.
Oral presentations	Students present their projects or research findings, demonstrating not only subject knowledge but also communication skills.
Peer assessments	Involving peers in the assessment process for group projects or presentations.
Teacher ratings	Comprehensive evaluations by teachers based on a range of criteria, including class participation, performance in practical tasks and overall progress.

External summative assessment of work-based learning

Estimates based on industry	Involvement of industry professionals in the evaluation of the learner's performance, during the internship or apprenticeship, focusing on their practical skills and behaviours in the workplace.
Standardized testing	Assessment through standardized tests administered by external bodies and aimed at confirming competence.
External Portfolio Review	External review of the student's portfolio by professionals to ensure an unbiased assessment of his/her skills and readiness for the labour market.
Skill competitions	Organized at a regional, national or international level, they can serve as a form of assessment where students demonstrate their skills under competitive conditions.
Licensing Examinations	For professions that require a license to practice, passing the licensing exam is a key summative assessment.
Teacher ratings	Comprehensive evaluations by teachers based on a range of criteria, including class participation, performance in practical tasks and overall progress.

Templates of documentation required for recording work-based learning

During the implementation of work-based learning, it is necessary to keep training documentation.

These documents help ensure that students are provided with ***necessary prerequisites*** during their practical training, so that they can ***achieve the necessary qualific***ations, but also that the ***educational institutions and entities***, where the practical training is carried out, have a ***clear record of the progress and performance of students***.

Templates of documentation required for recording work-based learning

Documents required for monitoring the learning process and work-based practice are:

Work-based learning contract. A document signed between a student, an educational institution, and the place where the student performs the apprenticeship, which specifies duties, responsibilities, and goals of the work-based learning.

Work Based Learning Plan (WBL).It defines learning objectives, skills that a student must develop and tasks that he/she will perform during the apprenticeship period.

Student's log of experience. A diary that a student fills in with notes on daily activities, challenges, achievements and reflections on their experience.

Performance evaluation. Forms used by supervisors to evaluate student performance based on predetermined criteria.

Templates of documentation required for recording work-based learning

Daily feedback. Forms completed by the supervisor to provide feedback on the student's work each day or week.

Apprenticeship Final Report. A document that a student prepares at the end of the practice period, reflecting on the experiences gained, tasks performed and the connection between practice and theoretical knowledge.

Certificate of completed training. A certificate confirming that the student has successfully completed the apprenticeship period.

Time registers. Documents in which hours worked, completed tasks and all special remarks about the student's work are being recorded.

Portfolio of experience. A collection of work, projects and assignments that a student has completed during the apprenticeship period.

Peer evaluation. In some cases, the assessment may also be done by a student's peers to have a more complete perspective of his/her performance.

Pedagogical approaches/challenges in the teaching process

Pedagogical approaches/challenges in the teaching process

Question:

What challenges do we face when implementing work-based learning?

Motivation of students

Student motivation is an individual characteristic that a student comes with or possesses.

Motivation is built and developed by the teacher with his behavior during the teaching process and through it he ***gives a goal and direction to the ambitions, needs and behavior of the student.***

The teacher must ***implement quality teaching***, realistically evaluate and continuously stimulate the students to work, in conditions of a creative environment and motivate the student to learn because it fulfills and pleases him/her, not because someone asks for it and expects it from him/her.

Elements of motivation

Elements of motivation are:

- ***the student's attention,***
- ***his trust in the teacher,***
- ***the relevance of the contents and***
- ***satisfaction from achieved goals.***

To attract the ***student's attention***, especially at the beginning of the lesson, the teacher should do something unexpected for the students (set a quiz, trick or other kind of stimulating question).

Building ***trust*** among students is achieved by successfully defining teaching goals, clear teaching and examples of good practice.

Ensuring ***relevance*** is by linking to real-life content using simulation demonstrations, analogies and case studies.

Satisfaction with the goals achieved is through a system of rewards that are in line with the students' value system through verbal praise, recognition of quality and others.

Factors affecting motivation

The most common factors on which motivation depends are:

- **the level of satisfaction of students' needs,**
- **learning objectives and**
- **the student's personal beliefs about failure.**
  - **Failure as a lack of ability**
  - **Failure as a lack of effort**
  - **Failure as a lack of motivation**

Pedagogical approaches/challenges in the teaching process

The level of satisfaction of students' needs indicates that they will be able to develop their self-confidence without fear and underestimation, acquire knowledge and independence only in a stable and secure environment.

Learning objectives must answer the questions: "Where am I now?" and "Where do I want to get to?".

Students' personal beliefs about the reasons for failure can mainly be divided into three categories:

Failure as a lack of ability is the assurance of students who often use the statements: "I can't work.", "I'm not responsible.", "I'm not trying." and so on.

Failure as a lack of commitment is the assurance of students who often use the statements: "I can influence.", "I am responsible.", "I am trying." and so on.

Failure as a lack of motivation is characteristic of students:

- who ***don't have a goal*** and often ask themselves: "Why should I study this, when I don't believe I will need it?“
- who ***doubt themselves*** and often say, "This is too hard for me, there's too much material, and I'll never learn it.“
- who ***doubt others*** and often use the statements: "I get low grades, but I know more.", "Only I am asked difficult questions." and similar;
- who are ***lazy*** and often say: "I'll do it tomorrow, there's time."

Strategies for motivating students

- Wake up the students
- Apply different organizational forms of teaching, different teaching aids, tools, different places for teaching.
- Encourage students to think about the problem
- Provide students with: choice, a sense of control, opportunities for success and quality feedback
- Encourage students to self-assess

Pedagogical approaches/challenges in the teaching process

Wake up the students

- Start the lesson with a question, rather than an answer. Let the question be provocative, problematic and above all, related to life experience.
- Offer students a variety of experiences.

Apply different organizational forms of teaching, different teaching aids, tools, different places for teaching

- Encourage students to debate, create visual aids, presentations, diagrams, decorations, etc.
- Create a pleasant, stimulating environment.Use the flipped classroom technique.
- Use video content

Encourage students to think about the problem

- Ensure that student learning is about curious discovery, bold thinking and finding a way to a solution.
- Say "yes" to every idea that the student offers to solve the problem, but also ask him to convince others of the functionality and correctness of the idea.

Provide students with: choice, a sense of control, opportunities for success, and quality feedback

Encourage students to self-assess

- Allow them to independently answer the questions: "Am I closer to the solution?", "Is this better than what I've been doing before?", "How can this be improved?"

Communication

Desired communication during the class implies when the communication will be ***multidirectional,*** which means that the communication should take place on ***a teacher-student, student-teacher, student-student relationship.***

The teacher's expression should be ***clear and correct***.

The teacher should ensure the questions and instructions are ***correctly understood by all students***.

During the lesson, in addition to verbal communication, the teacher should also use ***visual contact with the students***, use of voice, gestures, facial expression, sense of humor.

Teaching material should be ***presented clearly, comprehensibly and easily for students to remember***.

The teacher should encourage students to express their ***opinions and suggestions freely***.

Communication

After asking a certain question to the student, he should give him ***enough time to think***, and when giving the answer, he should be patient enough and allow him to fully express himself, and of course, by asking questions, he should maximally extract all the knowledge from him. in relation to the request made.

When communicating with students, the teacher should address them with ***a certain respect*** without using insulting and obscene words.

The teacher ***should pay attention to the communication of the student-student relationship***.

At the beginning of the school year, he should establish certain ***„rules of communication in the classroom“*** and make sure that they are respected.

Summarizing the knowledge gained from the session

Mentimeter

- Open menti.com or use QR code
- Enter the code
- Enter a name
- You have to answer 6 questions.
- Each question has 4 answers, of which only 1 is correct.
- You need to click on 1 answer. Mark the correct answer to the question!
- You have 20 seconds to answer.
- Apart from the answer, the time is also measured. Be quick!

Enhancements in the quality of education and training in SEE - EQET SEE

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Session 2 Process of teaching and learning at Agricultural technician of traditional and organic

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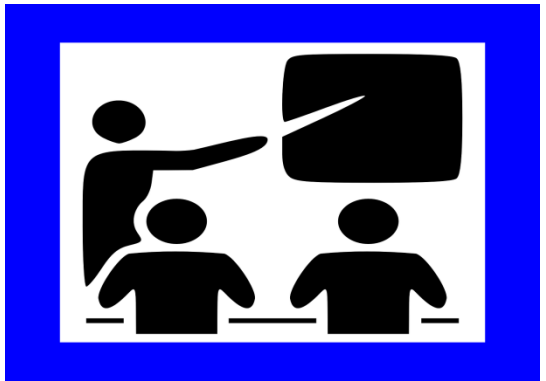
Session 2 Process of Work-based learning at Agricultural technician of traditional and organic cultivation



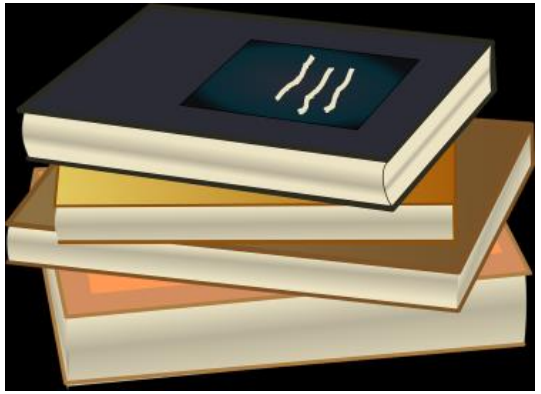
Goals of Session 2:

-Understanding the processes of planning and realization of the practical training of students for the technologies of traditional and organic production,

-Identifying the principles on which to base the process and the resources required,

- Understanding the methods, the way of working, monitoring and evaluating the progress of the students in acquiring the necessary skills.

Approaches to the teaching in agriculture



Approaches to the teaching in agriculture

The practical training of the students should ***connect the professional-theoretical knowledge with the practical skills and complete the process of obtaining the necessary competencies of the students***.

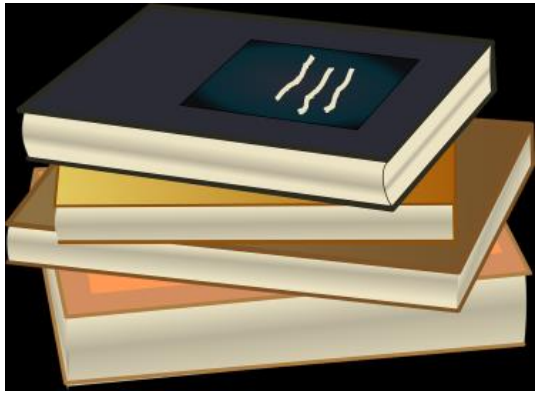
The realization of the practical training will ***follow the technological process***

Work-based learning approaches

Principles on which the Work-based learning for raising annual crops will be based.

Active learning	Encouraging students to actively engage in activities through discussions, problem solving, group work and practical activities.
Use of technology	Integrating appropriate technology tools and resources to enhance learning experiences. Ensuring accessibility and usability for all students.
Collaboration and peer learning	Encouraging cooperation among students through group projects and learning from each other.
Real world appliance	Connecting classroom learning to real-world problems and scenarios.
Critical thinking and problem solving	Designing activities that challenge students to think critically, analyse information, and solve complex problems.

Planning the process of work-based learning



Planning the process of work-based learning

The planning of the work-based learning process should be based on the ***learning skills and work skills*** that the student will develop during the work-based learning.

Work-based learning skills

Learning skills you will develop through work-based learning are as follows:

- developing solutions to workplace problems based on theory and practice.
- managing yourself and others.
- transfer of existing knowledge, skills and competences in new contexts.

Work related skills

Work skills you will develop through work-based learning:

- action planning,
- goal setting,
- project management,
- self-evaluation,
- team work.

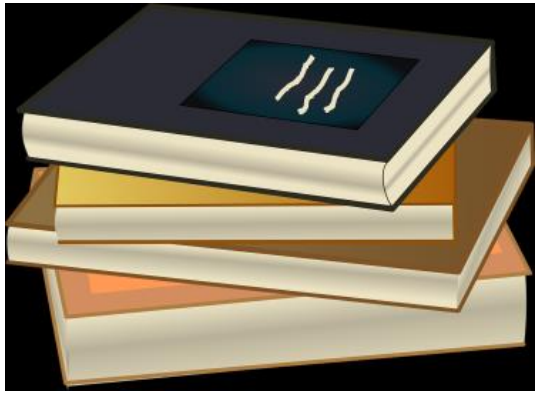
Specific aspects of mentoring/work-based learning facilitation with respect to annual plant cultivation

The practical training of students for the cultivation of annual crops should connect vocational-theoretical knowledge with practical skills and round up the process of obtaining necessary competencies of students. The implementation of the practical training will follow the technological process of cultivation of annual crops, by implementing the agrotechnical measures, work operations, activities in production technologies, which are given in the previously prepared production plan.

The practical training will include:

- preparation of the areas for growing annual crops,
- sowing, planting and seedling of crops,
- taking crop care measures,
- harvest, transportation, storage of agricultural products,
- processing and obtaining simple products.

Required resources and students’ needs



Required resources and students’ needs

To implement practical training of students in annual crop cultivation, it is necessary to identify and provide ***required resources*** to meet the educational and practical requirements of students.

Required resources and students' needs

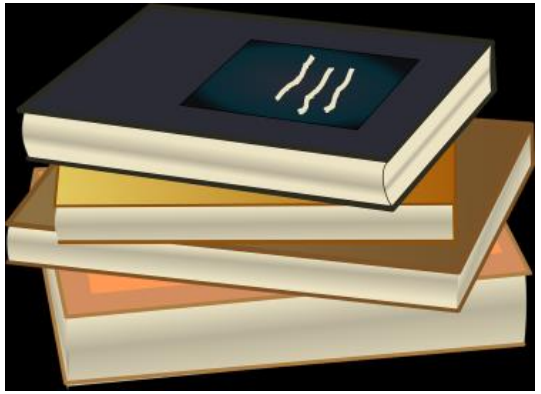
Resources required for the implementation of the students'practical training for annual crop cultivation:

- Farmland or greenhouse: for hands-on growing experience.
- Farming machinery, tools and equipment.
- Seeds, seedlings and planting material.
- Agricultural laboratory: for analysis and practical demonstrations.
- Means for crop care.
- Equipment for transportation and storage of agricultural products.
- Equipment for processing agricultural products.
- Farm Management Software: Helps in planning and monitoring activities.

Students' needs in terms of the implementation of practical training for annual crop cultivation:

- Specific training in the use of tools and equipment.
- Clear and structured instructions.
- Ongoing mentoring and support from experts in the field.
- Educational materials (tutorials, videos, case studies, etc.)
- Self-study materials and resources.
- Safety training.
- Education about sustainable and eco-friendly gardening practices.
- Developing critical thinking skills in agricultural contexts.
- Opportunities to work in teams, improve communications and collaboration skills.
- Constructive feedback from mentors and instructors.
- Adaptability and resilience.

Assessment of achievements



Several instruments are used to assess student achievement.

The assessment of the students' achievements ***depends on the work operations and tasks*** performed by the student during the practical training.

Assessment of achievements

Form: Score form for evaluating student's work by the mentor

Number	Valuation elements	Points you cans core	Score by a mentor
1.	Independence in planning during work and creation of assignments	0 - 10	
2.	Timeliness of work	0 - 05	
3.	Order and correctness of procedures and handling of tools	0 - 10	
4.	Quality and accuracy of production	0 - 30	
5.	Aesthetic appearance of the product	0 - 10	
6.	Use of technical-technological documentation	0 - 05	
7.	Application of measures for safe and secure work	0 - 05	
8.	Implementation of regulations and procedures for environmental protection	0 -05	
9.	Rational use of resources and materials	0 -05	
10.	Communication at work with colleagues, superiors and clients	0 -10	
11.	Ability to analyse the work that was performed	0 -05	
Total		**100**	

Оценување

NUMERICAL EVALUATION	NUMBER OF POINTS
Excellent (5)	90 – 100
Very good (4)	75–89
Good (3)	62 – 74
Sufficient (2)	50 – 61

Checklist for evaluation of practical training "Wheat sowing"

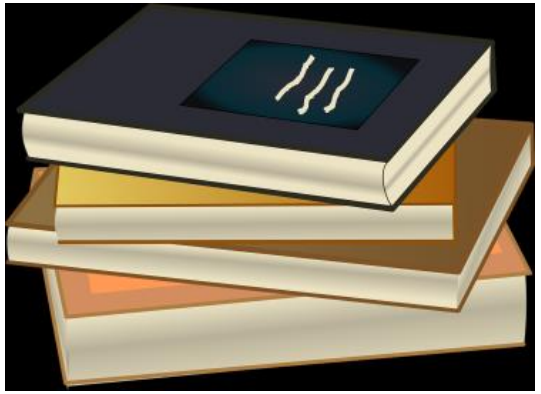
Explanation

A checklist that will be used to evaluate the student's activity in carrying out the wheat sowing assignment is provided below. The evaluation is performed by simply indicating whether the student has completed all the steps in the activity. If a student failed to take any of the steps, "**no**" should be marked and the teacher gives an explanation in a note.

Activity/indicator	Yes	No	Note
A detailed wheat sowing plan was developed			
Protective clothing used and protective measures taken			
Adequate variety selected			
Accurate amount of seed material measured			
Seeders regulation checked			
Wheat sowing has commenced properly			
Inspection of the operation during the sowing was carried out			
Adequate reaction to certain setbacks during sowing			
Inspection of sowing quality was done			
Cleaning and storage of machinery and equipment after sowing			
Recorded completed activities			

Digital resources that can be used during WBL and its evaluation

Digital resources that can be used during WBL and its evaluation



Digital resources can greatly enhance Work-Based Learning (WBL) experiences, providing ***interactive, accessible, and up-to-date information***.

When selecting digital tools for evaluating a WBL program, it's important ***to consider the specific goals of the program, the skills and competencies being developed, and the level of technical support available.***

Digital resources that can be used during WBL and its evaluation

Online Course Platforms	Platforms like Coursera, Udemy, or edX offer courses in agriculture, botany, and environmental science which can supplement on-the-job learning.
Agricultural Databases and Journals	Access to scientific databases like JSTOR, ScienceDirect, or the USDA's Agricola for the latest research in plant cultivation.
Mobile Apps	Apps such as Plantix or Agrobase for identifying plant diseases and pests. Gardening companion apps that track planting schedules, growth, and watering needs.
Interactive Software	Crop simulation software to understand the effects of different variables on plant growth. Garden planning tools like GrowVeg or Smart Gardener to design and plan crop layouts.
Virtual Reality (VR) and Augmented Reality (AR)	VR experiences for virtual tours of diverse agricultural environments. AR apps for overlaying information on real-world cultivation scenarios.

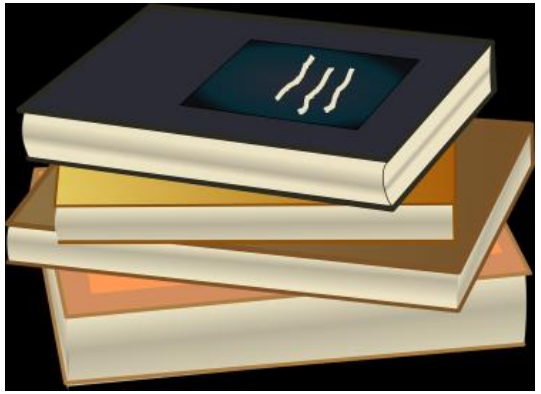
Digital resources that can be used during WBL and its evaluation

Digital tools for evaluating a WBL program

E-Portfolio Platforms	Mahara or Portfolium: E-portfolios allow learners to document and showcase their learning journey, including projects, skills, and competencies acquired. These can be reviewed to evaluate learner growth and the applicability of skills learned.
Customizable Evaluation Platforms	Qualtrics or Typeform: These platforms can be customized to create detailed evaluations and assessments that align with the specific objectives of the WBL program.
Learning Analytics	Analyze data from LMS or other digital platforms to identify patterns in learning behaviors and outcomes.
Comparative Analysis	Compare outcomes of WBL with and without the integration of digital resources to assess the added value.

Presentation of a developed example

Presentation of a developed example



Modular units, learning outcomes, assessment criteria and place of implementation of work-based learning with an employer/practical teaching of students with an employer

Occupation/Sector: Agricultural-Veterinary/Agriculture, Fisheries and Veterinary Medicine

Educational Profile/Qualification: Agricultural technician of traditional and organic cultivation

School year

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Modular unit	Learning outcomes	Evaluation criteria	Place ofrealization	Achieved	
				Yes	No
Modular Unit 1: Preparation for work-based learning	1. Applies documentation during the work-based learning process	Lists rights and obligations in accordance with the contract for the performance of work-based learning with an employer	Office		
		Keeps a work log	Office		
		Identifies achievement assessment tools	Office		
	2. Develops soft skills while learning by doing	Applies appropriate communication in the workplace	Work area/station		
		Applies learning styles while working in the work place	Work area/station		
		Acts in accordance with the requirements for the application of the regulations and ICC standards for environmental protection and occupational safety	Work area/station		
	3. Identifies work place and host company	Describes work organization	Work area/station		
		Describes jobs	Work area/station		
		Chooses a company and a job	Work area/station		
Modular Unit 2: Sowing and planting	1. Calculates the amount of seed, determines the method of sowing and sows agricultural crops	Identifies seed quality properties	Work area/station		
		Demonstrates a procedure for testing seed quality	Work area/station		
		Prepares seed for sowing	Work area/station		
		Compares sowing methods	Work area/station		
		Determines the optimal time, depth and seed rate for sowing agricultural crops	Work area/station		
		Sows and plants crops	Work surface		
		Checks the qualityofseeding/planting performed	Work surface		

Presentation of a developed example

Form: Score form for evaluating student's work by the mentor

Number	Valuation elements	Points you cans core	Score by a mentor
1.	Independence in planning during work and creation of assignments	0 - 10	
2.	Timeliness of work	0 - 05	
3.	Order and correctness of procedures and handling of tools	0 - 10	
4.	Quality and accuracy of production	0 - 30	
5.	Aesthetic appearance of the product	0 - 10	
6.	Use of technical-technological documentation	0 - 05	
7.	Application of measures for safe and secure work	0 - 05	
8.	Implementation of regulations and procedures for environmental protection	0 -05	
9.	Rational use of resources and materials	0 -05	
10.	Communication at work with colleagues, superiors and clients	0 -10	
11.	Ability to analyse the work that was performed	0 -05	
Total		**100**	

Presentation of a developed example

Оценување

NUMERICAL EVALUATION	NUMBER OF POINTS
Excellent (5)	90 – 100
Very good (4)	75–89
Good (3)	62 – 74
Sufficient (2)	50 – 61

Presentation of a developed example

Opinion of the mentor about the quality of performance

The mentor gives an opinion on how the student has implemented the activity according to the steps.

Mentor's notes

Mentor's notes are entered.

Evaluation of the student's achievements:

An assessment is given of the entire performance of the activity.

Mentor

Presentation of a developed example

Form: List of readiness to start work-based learning at an employer / practical training of the student with an employer

Ordinal Number	Readiness elements	Fulfilment of requirements ("√"or "-")	Remarks
1.	The activity of the company where the student will per form the training is appropriate in terms of the direction where the student is enrolled.		
2.	Finalized contract – signed by the parents, the school director and the company director.		
3.	Sanitary inspection provided.		
4.	The student is familiar with the activity of the company, the location, the mentor as well as the work policy of that company.		
5.	The student is familiar with the way of dressing - wearing a work uniform, the time for breaks, as well as the time and method of transportation for employees from the station to the workplace and vice versa.		
6.	The student has a work log prepared where he/she will write down all work tasks he/she will perform in the company.		

Mentor: _____
Company where he/she works: _____
Date of lecture: _____

The floor is yours dear colleagues for comments questions and notes!