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"Vet & Work" Leonardo da Vinci Programme TOI



EXPERIMENTATION OF SCHOOL-WORK PROGRAMMES FOR THE EVOLUTION OF TEACHING AND
THE EFFECTIVE PLACEMENT IN THE WOOD AND FURNITURE SECTOR



"THE PLANNING AND THE EVALUATION OF STUDENT'S PERFORMANCES IN THE COMPANY"

Guidelines to use the file

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INTRODUCTION

"The goal is to support a process leading to an increasing involvement of students in businesses' activities and to an evolution of the purposes of alternation from orienteering goals to objectives aimed at the acquisition of skills through experience, according to the concepts of being progressive and gradual" ⁽¹⁾.

The activities of "alternation" belong to the curricular sphere of the student, they combine the theory learnt in the classroom with the practice experienced in the company finalizing the learning processes. They constitute an "essential part of a student's school life (1) to learn during the work experience.

In this dimension the activity of designing and programming the experience of "alternation" must be contextualized and shared, that is the learning must be integrated according to the different working areas in which the student is introduced.

To this end, the planning must:

- ◆ provide a process of implementation, monitoring and evaluation based on cooperation and sharing of content and tools between the educational system and the world of production;
- ◆ be developed through the use of appropriate tools and systematized, to be transferred to companies;
- ◆ be connected to the repertoires of production processes and to the system of skills;
- ◆ be customized according to the different types of enterprises and different organizational arrangements;
- ◆ define a customized course aimed at effectively integrating the student's curriculum with functional modalities and its characteristics;
- ◆ establish a system of shared and integrated assessment into the final certification of learning.

¹ From "Costruire insieme l'alternanza scuola-lavoro (building together the alternation school-work)" taken from the Index in collaboration with *D. G. per l'Istruzione e formazione tecnica superiore e per i rapporti con i sistemi formativi delle Regioni*, which gathers the information and considerations of the National Committee to monitor and evaluate the alternation school and work.



1. OBJECTIVES

According to the training aims of company tutors for apprenticeship, as well as to the needs emerged during the research phase (WP2), the training is aimed at experiencing processes of shared educational planning and learning evaluation of young people in internships and / or workers in apprenticeship.

The activity is run through the organization of meetings with **companies** in the wood and furniture industry **between 1 or 2 school tutor/s and 1 company tutor in charge of training of young interns and apprentices**. In particular the experimentation course is composed of 2 meetings: 1 meeting for the participatory planning of the training project of internship and 1 meeting (at the end of internship) for the assessment of student's learning.

Specific activity:

The activity must be carried out through the use of a co-designing and co-evaluating instrument, developed and shared by the partnership during work meetings.

During the 1st meeting with the company tutor, the school tutor will share the instrument and will describe how to use it, in order to identify the "performances" allowed in the company and develop the personal training plan of the student.

The instrument must be "transferred" to the company tutor, so that it can be adopted for the student's results evaluation, and given back to the school tutor during the 2nd meeting. In any case, the school tutor must support the company tutor for the evaluation of the student.

Gli incontri sono registrati e certificati attraverso l'uso di apposita "scheda registrazione attività". Gli strumenti, completi della valutazione degli studenti, vengono raccolti alla fine dello stage e i risultati emersi sono registrati in apposito database.

The meetings between the school tutor and the company tutor have to be recorded and certified through the specific "format". The tools, with also the evaluation of the students, must be collected at the end of the internship and the results recorded into the database published on the project's web site.

All the formats are available on the project web site www.vetworkllp.eu. In particular:

- Tools for tutors
- Database of outcomes
- Activities registration form

The outcome of the experiment is in the end summarised in a proper report on the activities performed according to a shared broad chart.



2. 2 THE MAPPING OF THE PERFORMANCES IN THE COMPANY AND THE SKILLS AT THE END OF THE TRAINING COURSE (School Tutor)

2.1 The technical-professional skills at the end of the training course

The first operation of the school tutor is to draw up the list of skills expected at the end of the course.

This list can be built from the information which is present in the national documents (in Italy the recent reorganization of secondary schools) and Regional documents (in Italy minimum educational standards and QRSP).

Here you can see listed, as an example, the list of skills related to a wood operator.

SKILLS LIST (at the end of training) <i>(Ex. "Wood Operator")</i>	
1	Preparing the intervention on the basis of the design and / or the outline of constructive detail and in relation to the artefact to be done
2	Performing the machining of parts and / or components in wood, using tools and machinery, according to the specifications indicated by drawings and models, respecting the safety rules
3	Finishing the restoration of the components of the artefacts using products and equipment, respecting the safety rules
4	Assembling wooden artefacts which consist of several parts and components and / or accessories, using equipment and machinery, based on specific designs, respecting the safety rules
5	Putting together, at the customer's office, artefacts which consist of several components and / or accessories, on the basis of technical documents and the instructions of the responsible, respecting the safety rules
6	Ensuring a continuous cleaning and maintenance of machinery / equipment and of the working environment by adopting the specifications for waste management, respecting the hygiene and safety rules



2.2 The list of the possible technical-professional skills in the company

Another school tutor's task is that of listing the performances that the business role (with this diploma) generally manages in a company that operated in this sector.

This list can be built from the documents that describe business processes and / or by comparison with witnesses.

Here you can see listed, as an example, the list of skills related to a wood operator.

LIST OF POSSIBLE TECHNICAL-PROFESSIONAL PERFORMANCES IN THE COMPANY (Ex. "Wood Operator")
Examining drawings or "sketches" of construction detail
Performing drawings of construction details
Recording the measurements in the appropriate scale
Take the material according to the notes of cut
Assessing the quality of wood
In the gap of the different materials, differentiating the parts to reuse
Preparing the working tools
Checking the efficiency of the machines and equipment
Doing the different processes: cutting, drilling, sanding, veneer, etc.
Checking the correspondence between the work performed and the design of implementation
Filling out the job boards (for "order")
Arranging the components of the artefacts on which to intervene
Collaborating in the preparation of equipment and materials suitable for each job
Planning your work on the basis of the technical documentation and the instructions of superiors
Performing simple operations of precised finishing
Finishing the artefacts precisely through the application of preservatives, dyes and paints
Checking your work with the touch and sight
Planning the work on the basis of reading / interpretation of technical documentation



LIST OF POSSIBLE TECHNICAL-PROFESSIONAL PERFORMANCES IN THE COMPANY (Ex. "Wood Operator")
Preparing the semi-finished materials needed
Carrying out the assembly operations
Packing the product (if necessary)
Arranging everything necessary for on-site assembly on the basis of technical documents
Upload artefacts and equipment
Carrying artefacts and equipment
Completing the documentation (POS, DUVRI, etc..) related to safety
Implementing procedures for on-site assembly of artefacts, according to deadline and technical indications
Making suitable arrangements for the safeguarding of assets (floors, furniture, etc.).
Performing surface cleaning machines
Proceeding to the small routine maintenance of machinery and equipment (oil lubrication)
Performing periodic maintenance of machinery and equipment (power chains and belts, etc.)
Placing waste processing depending on their nature, toxicity or hazard and the possibility of recycling
Working safely in accordance with procedures and rules



2.3 The mapping of the technical and professional skills and the link with the performance of the company

Starting from the list of skills and performance abilities, the school tutor builds the mapping of technical/professional skills; in the columns related to skills he/she has to enter the keywords of the skills at the end of the training. An example is here reported related to the operator of the wood.

The different backgrounds are **6 working processes which have been connected to the relating performances**, namely:

1. Analysis of the design for the preparation of the intervention
2. Realization of parts of artefacts
3. Decoration of artefacts
4. Assembly of artefacts
5. Installation on site
6. Maintenance of the workplace

The mapping performances-skills visualizes in this way the hypothetical training value of staying in the company

Performances		SKILLS					
		Programming	Wood carving	Finishing	Assembly	Mounting	Maintenance
T e c h n i c a l - P r o f e s s i o n a l	Examining drawings or "sketches" of construction detail						
	Performing drawings of construction details						
	Recording the measurements in the appropriate scale						
	Take the material according to the notes of cut						
	Assessing the quality of wood						
	In the gap of the different materials, differentiating the parts to reuse						
	Preparing the working tools						
	Checking the efficiency of the machines and equipment						
	Doing the different processes: cutting, drilling, sanding, veneer, etc.						
	Checking the correspondence between the work performed and the design of implementation						
	Filling out the job boards (for "order")						
	Arranging the components of the artefacts on which to intervene						



Performances	SKILLS					
	Programming	Wood carving	Finishing	Assembly	Mounting	Maintenance
Collaborating in the preparation of equipment and materials suitable for each job						
Planning your work on the basis of the technical documentation and the instructions of superiors						
Performing simple operations of precised finishing						
Finishing the artefacts precisely through the application of preservatives, dyes and paints						
Checking your work with the touch and sight						
Planning the work on the basis of reading / interpretation of technical documentation						
Preparing the semi-finished materials needed						
Carrying out the assembly operations						
Packing the product (if necessary)						
Arranging everything necessary for on-site assembly on the basis of technical documents						
Upload artefacts and equipment						
Carrying artefacts and equipment						
Completing the documentation (POS, DUVRI, etc..) related to safety						
Implementing procedures for on-site assembly of artefacts, according to deadline and technical indications						
Making suitable arrangements for the safeguarding of assets (floors, furniture, etc.).						
Performing surface cleaning machines						
Proceeding to the small routine maintenance of machinery and equipment (oil lubrication)						
Performing periodic maintenance of machinery and equipment (power chains and belts, etc.)						
Placing waste processing depending on their nature, toxicity or hazard and the possibility of recycling						



2.4 The cross skills at the end of the training course

Together with the technical-professional skills, there is a list of “cross skills”.

These skills have been identified by analyzing the results of recent research focused on the skills a worker should have, irrespective of the kind of job.

N.	LIST OF CROSS SKILLS
1	Ensuring the implementation of the tasks: the work must be done precisely, by respecting the deadlines, preserving the functionality of the tools, as well as by observing the procedures
2	Collaborating and participating in the work group
3	Checking work processes: checking and controlling the work given, recognizing the mistakes

2.5 The list of student’s operational, organisational and relational skills in the company

Please see below the list of the “cross performances” irrespective of the business profile taken into consideration.

LIST OF CROSS SKILLS IN COMPANY	
Operational	Performing a task in a comprehensive manner and without anyone's help
	Working in a precise and accurate way
	Performing the assigned task by respecting the deadline
	Running the task in accordance with the procedures
	Documenting the activities carried out by adopting the typical company procedures
	Maintaining order in the workplace and equipment efficiency
	Signalling processing problems and helping to identify corrective actions
Organisational & Relational	Observing the pace of work, deadlines and handle production emergencies
	Working in a group
	Adhering to work schedules
	Understanding roles and functions
	Being sure to present themselves in an appropriate manner in the workplace (dress code, etc.).
	Communicating effectively and positively (verbal and non-verbal communication) with colleagues, managers, customers
	Applying for new tasks or new initiatives
	Taking part in tasks which also not desirable and / or not under your responsibility
	Participating with a proactive approach in business activities, sharing its objectives
	Socializing with colleagues and company contacts
	Accepting comments and criticism about behaviour and the conduct at work
	Keeping up with the pace of work, deadlines and managing production emergencies
	Recognizing the mistakes and dealing with the company contact



2.6 The mapping of the cross skills and the link with the performances in the company

Starting from the list of the cross skills and of the performances, this is the chart representing them:

PERFORMANCES		SKILLS		
		Ensuring the implementation of the tasks	Collaborating and participating	Checking work processes
O p e r a t i o n a l	Performing a task in a comprehensive manner and without anyone's help			
	Working in a precise and accurate way			
	Performing the assigned task by respecting the deadline			
	Running the task in accordance with the procedures			
	Documenting the activities carried out by adopting the typical company procedures			
	Maintaining order in the workplace and equipment efficiency			
	Signalling processing problems and helping to identify corrective actions			
O r g a n i s a t i o n a l R e l a t i o n a l	Observing the pace of work, deadlines and handle production emergencies			
	Working in a group			
	Adhering to work schedules			
	Understanding roles and functions			
	Being sure to present themselves in an appropriate manner in the workplace (dress code, etc.).			
	Communicating effectively and positively (verbal and non-verbal communication) with colleagues, managers, customers			
	Applying for new tasks or new initiatives			
	Taking part in tasks which also not desirable and / or not under your responsibility			
	Participating with a proactive approach in business activities, sharing its objectives			
	Socializing with colleagues and company contacts			
	Accepting comments and criticism about behaviour and the conduct at work			
	Keeping up with the pace of work, deadlines and managing production emergencies			



3. STUDENT'S PERFORMANCES IN THE SINGLE COMPANY (School Tutor and Company tutor)

Starting from the list of the potential activities in which the trainee can be involved and the year the student is attending, the school tutor has to talk to the company tutor to verify what performances will be allowed to the trainee during his/her stay in the company.

The mapping performances-skills visualizes in this way the **hypothetical training value of staying in the company**

PERFORMANCES	ALLOWED
Examining drawings or "sketches" of construction detail	
Performing drawings of construction details	
Recording the measurements in the appropriate scale	
Take the material according to the notes of cut	
Assessing the quality of wood	
In the gap of the different materials, differentiating the parts to reuse	
Preparing the working tools	
Checking the efficiency of the machines and equipment	
Doing the different processes: cutting, drilling, sanding, veneer, etc.	
Checking the correspondence between the work performed and the design of implementation	
Filling out the job boards (for "order")	
Arranging the components of the artefacts on which to intervene	
Collaborating in the preparation of equipment and materials suitable for each job	
Planning your work on the basis of the technical documentation and the instructions of superiors	
Performing simple operations of precised finishing	
Finishing the artefacts precisely through the application of preservatives, dyes and paints	
Checking your work with the touch and sight	



PERFORMANCES	ALLOWED
Planning the work on the basis of reading / interpretation of technical documentation	
Preparing the semi-finished materials needed	
Carrying out the assembly operations	
Packing the product (if necessary)	
Arranging everything necessary for on-site assembly on the basis of technical documents	
Upload artefacts and equipment	
Carrying artefacts and equipment	
Completing the documentation (POS, DUVRI, etc..) related to safety	
Implementing procedures for on-site assembly of artefacts, according to deadline and technical indications	
Making suitable arrangements for the safeguarding of assets (floors, furniture, etc.).	
Performing surface cleaning machines	
Proceeding to the small routine maintenance of machinery and equipment (oil lubrication)	
Performing periodic maintenance of machinery and equipment (power chains and belts, etc.)	
Placing waste processing depending on their nature, toxicity or hazard and the possibility of recycling	

In this way the school tutor will be able to reconstruct the mapping of professional performances/skills by relying only on the “allowed” performances in the specific manufacturing context.

Therefore the chart will make it visible the training value in that specific company before starting the traineeship.

Moreover the chart represents in a synthetic way the customization of the traineeship of the single students.

The allowed performances are then checked and updated underway, but also at the end of the traineeship, to evaluate the performances as actually performed during the alternation period in the company.



4. COMPANY TUTOR'S ASSESSMENT (Company tutor)

Once completed the stage of the planning of the alternation, the company tutor's responsibility consists of assessing the trainee's performances by using the section of the form you can see below (the example is always that of the wood operator). The tool has been conceived to assess the cross skills.

The mapping of the allowed performances/skills visualizes the **actual training value of staying in the **specific** company.**

Performance assessment by the company tutor (type in the box corresponding its value)						
		0	1	2	3	
OPERATOR OF WOOD - STUDENT PERFORMANCE (use different backgrounds to highlight different work processes)	PERMITTED (select YES or NO - filtering YES you get all the allowed activities)	has difficulty in performing the service, even when helped	has carried out the performance in partial coaching	has carried out the performance in total autonomy	has carried out the performance with innovative solutions and not usual ones	TOTAL
Examining drawings or "sketches" of construction detail			1			1
Performing drawings of construction details				2		2
Recording the measurements in the appropriate scale					3	3
Take the material according to the notes of cut					3	3
Assessing the quality of wood					3	3
In the gap of the different materials, differentiating the parts to reuse				2		2
Preparing the working tools				2		2
Checking the efficiency of the machines and equipment						0
Doing the different processes: cutting, drilling, sanding, veneer, etc.						0
Checking the correspondence between the work performed and the design of implementation						0
Filling out the job boards (for "order")						0
Arranging the components of the artefacts on which to intervene						0
Collaborating in the preparation of equipment and materials suitable for each job						0
Planning your work on the basis of the technical documentation and the instructions of superiors						0



Performance assessment by the company tutor (type in the box corresponding its value)

		0	1	2	3	TOTAL
OPERATOR OF WOOD - STUDENT PERFORMANCE (use different backgrounds to highlight different work processes)	PERMITTED (select YES or NO - filtering YES you get all the allowed activities)	has difficulty in performing the service, even when helped	has carried out the performance in partial coaching	has carried out the performance in total autonomy	has carried out the performance with innovative solutions and not usual ones	
Performing simple operations of precised finishing						0
Finishing the artefacts precisely through the application of preservatives, dyes and paints						0
Checking your work with the touch and sight						0
Planning the work on the basis of reading / interpretation of technical documentation						0
Preparing the semi-finished materials needed						0
Carrying out the assembly operations						0
Packing the product (if necessary)						0
Arranging everything necessary for on-site assembly on the basis of technical documents						0
Upload artefacts and equipment						0
Carrying artefacts and equipment						0
Completing the documentation (POS, DUVRI, etc..) related to safety						0
Implementing procedures for on-site assembly of artefacts, according to deadline and technical indications						0
Making suitable arrangements for the safeguarding of assets (floors, furniture, etc.).						0
Performing surface cleaning machines						0
Proceeding to the small routine maintenance of machinery and equipment (oil lubrication)						0
Performing periodic maintenance of machinery and equipment (power chains and belts, etc.)						0
Placing waste processing depending on their nature, toxicity or hazard and the possibility of recycling						0
Working safely in accordance with procedures and rules						0
					MEDIA	2,29



Obviously the elements to be assessed are the performances that have been identified as "allowed" during the stage of planning.

During the stay in the company, it may also happen that the list of skills exercised by the student (as identified ex ante) may change because of:

- ✓ Manufacturing processes variations;
- ✓ The level of student's skills is below expectations;
- ✓ The level of student's skills is above expectations;

In case of changes the company tutor will take only the actual skills emerged into consideration.

The review/rebuilding of the mapping performances/skills will visualize therefore the actual training value of the traineeship in the company.



5. TOOLS AND REPORT ON THE OUTCOMES

Together with the assessment chart of student's performances, a **database of the outcomes** of the research has been put forward in order to record the average assessment of students/trainees in relation to the different areas of competence. In this way the data can be gathered and compared to those of other schools and or considering other years and courses, etc. The database gives the opportunity to develop charts.

The database of the outcomes is divided into 3 sections, in which different information concerning the student/trainee is recorded:

1. **General information about the host company** (company name, size, location, company tutor's details)

COMPANY GENERAL INFORMATION							
PARTNER (SELECT IT FROM THE PULL-DOWN MENU)	COMPANY NAME	SIZE OF COMPANY	TOWN	PV	Company tutor	Phone number	E-Mail

2. **General information about the student/trainee** (name, course, school of origin, school year, duration of the traineeship, school tutor's details)

STUDENT'S GENERAL INFORMATION					
STUDENT'S NAME	TITLE OF THE SCHOOL COURSE	STUDENT'S SCHOOL OF ORIGIN	DURATION OF THE APPRENTICESHIP	SCHOOL YEAR	SCHOOL TUTOR

3. **Final Assessment of the "allowed performances in the company"**, as shared between the school tutor and the company tutor on the basis of the manufacturing processes in which the student/trainee has actually taken part and their correlation to the "skills".

PERFORMANCE ASSESSMENT (insert the average assessment you can see in the graph)			
Average assessment of technical skills	Average assessment of the operational and transversal skills	Average assessment of organisational and relational skills	Notes



6. FINAL REPORT ON THE ACTIVITIES

At the end of the experimentation activities each company tutor analyzes the data and assesses the results of the experimentation in order to put forward a “final relation” according to the scheme here below. It is essential, but not complete:

- Numbers of companies involved:
- Numbers of students involved:
- Professional profiles involved in the experimentation:
- Number of meetings:
- Total number of hours :
- Average hours for every meeting:
- Companies satisfaction: liking on instrument, judgment of effectiveness and efficiency, relevance of the design of the internship in relation to needs, increase in skills of the company tutor
- School tutor satisfaction: liking on instrument, judgment of effectiveness and efficiency, increase in skills of school tutor
- Experimentation results: eg. integration of the evaluation by company tutor in school evaluation, adoption of the tool and implementation of the methodology in school practice, improvement of the design process of the internship, and so on.