

Ahead

European Pupil Resource Pack

Student' Guidebook



Co-funded by the
Erasmus+ Programme
of the European Union

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1. Students, schools and businesses

This document aims to be a guide to lead the different parties involved in the integration of a student in a business context, namely: the student, the school and its teachers and the company and its employees. The process of integrating a student into the business can have at least two purposes:

1. To be a form of immersion of the student and that he experiences the real context and has the possibility of applying in real situation the knowledge, techniques, integrating attitudes and the social component that he learned and developed within the school. Test what you've learned and check your feasibility. At the same it is also possible to learn new skills and experiences that values the CV and the person as a professional.
2. Be a future launch pad and possible entry into the company, in case there is a need, or the student have created that need, which will be the maximum exponent of their business immersion. A launch pad for a job. The corollary of an initial investment of the school system and the daily investment within the business, with a view to continuous improvement.

With this document, the competencies of each party will be clear, in order to enhance the success of the student's work process in the business environment. It is important to clarify the role of each person involved, establishing their responsibilities, their way of being and the necessary monitoring.

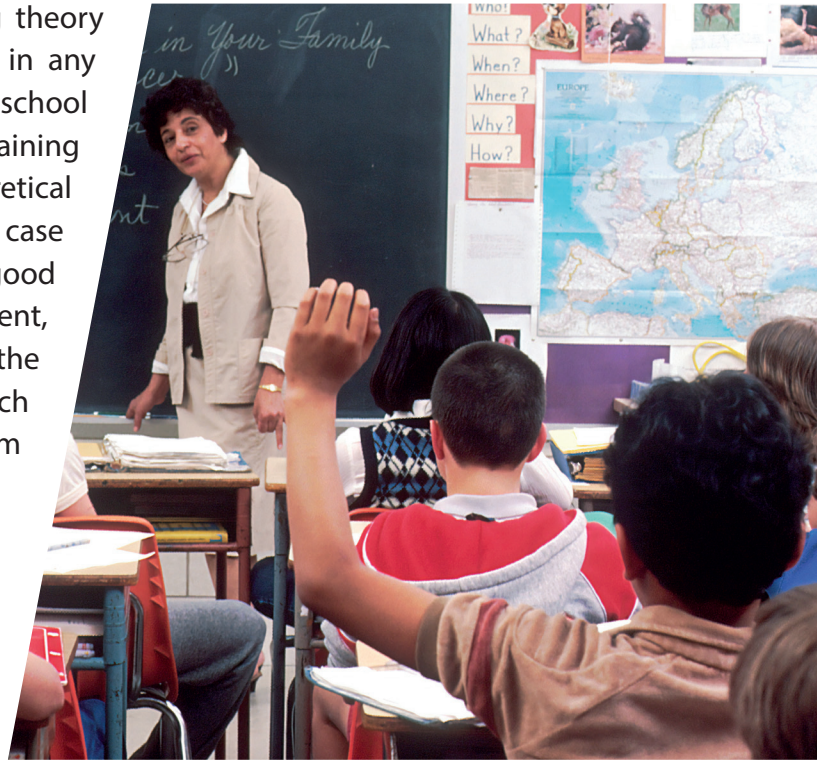
We will follow the methodology of Deming's plan, the PDCA, since we understand that this process should be implemented based on the principle of continuous improvement, and the PDCA is a good methodology for this to happen in practice.



1.1. The importance of the schools role in preparing students in the work of companies

A good school is not dedicated to just teaching theory and preparing its students to answer questions in any way: oral or written, individual or in team. A good school is concerned with ensuring the complete training of students. This means transmitting theoretical knowledge, preparing them for the future, in the case of being the university route, contributing to good citizenship and its good and adequate development, in the various facets, as mentioned in the profile of the student leaving obligatory school in Portugal, which also includes their ethical training and make them more prepared to face the labor market.

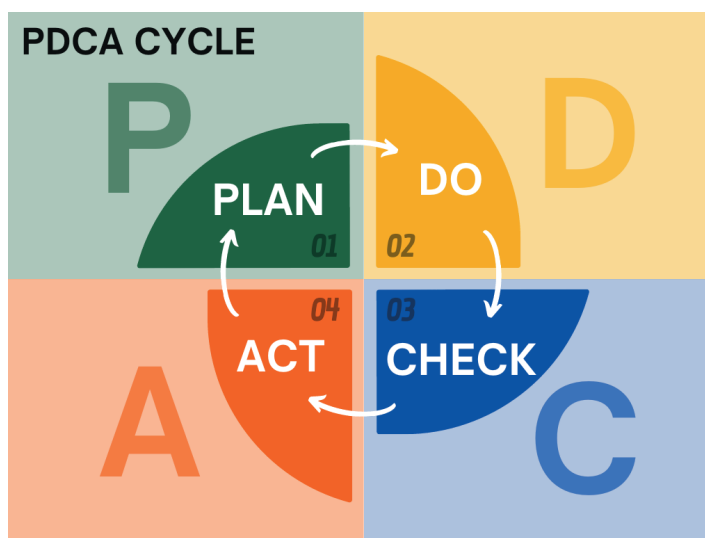
When this is not the case, students leave school unprepared as citizens and future professionals, with difficulties in dealing with the job market: preparing them for the future.



1.2. The PDCA cycle

Given that the methodology recommended in this script, that is based on the PDCA cycle, it is important to describe this methodology in summary form.

The PDCA cycle means: Plan, Do, Check, Act, i.e.



This process is an important prerequisite for the continuous improvement of people and processes. At the same time, it stimulates the continuous improvement of existing interventions and processes, allows everyone to standardize good practices and prevents the recurrence of errors in the future.

1.2.1. PLAN

In the planning phase it is important to develop a strategy, which begins by establishing objectives and goals for the process of integrating students into the business environment. It is important to establish a plan, which should consider the values to characteristics of the school, the student and the company.

The objectives of all parties should then be established. It then involves the establishment of the way forward in the process, as well as the methods to be used.

At this stage are also chosen the actors of the process.

This phase is carried out in several stages, including:

1. Identification of the problem

The problem here is the need to develop skills on the part of students, immersed in the business environment.

2. Problem notes

What details should you consider? What is needed to consider and what are the success variables of the process?

3. Problem analysis

What are the reasons that lead to the existence of the problem?

4. Draw up the action plan

What is the central problem we need to solve?

What resources are needed?

What resources are there?

What is the best solution to complete the process with the available resources?

Under what conditions will the plan be successfully executed? What are the objectives?

Once the variables are organized and in a planning document: the action plan, it is important to move on to the next phase, i.e. performance.





1.2.2. PERFORM

Put into practice the action plan defined in the previous phase. Record the results obtained.

Standardization is something that will definitely help the intervenients in the process to apply the plan with peace of mind. It is important to ensure that everyone knows their roles and responsibilities.

During the implementation of the action plan, its monitoring is essential, hence the next stage: verification.

1.2.3. CHECK

Is what has been planned to be achieved as supposed to? What are the deviations?

At this stage it is important to audit the implementation of the established plan and see if what was planned worked. In addition, the different actors should identify problematic parts of the process, in order to eliminate them in the future. If any phase did not work well during the process, it is important to analyze and detect the cause of the problem. It is not enough, nor is it appropriate to identify the problem that existed without discovering the causes and perspective of the changes necessary to eliminate the causes.

The mere identification of existing problems does not allow their elimination, they create feelings of frustration and discontent of the parties and do not solve, on the contrary, they can create a climate that is not conducive to future success.

It is therefore important to move on to the next stage: Action.

1.2.4. ACT

What is having results should be standardized and placed in documents of reflection and future action.

What has not happened must be examined in order to verify which ones, in order to eliminate them in the future.



1.3. The role of each actor in each PDCA phase

On Chart 1. we present the responsibilities of each intervening party in the process of integrating a student into the business environment, specifically in the planning phase of the process.

<h1>PLANNING</h1>	
SCHOOL	<ul style="list-style-type: none"> Establish with the student, their work plan in the company. Identify and develop the necessary skills for the student to succeed in the company. Draw up and sign the work plan, ensuring that the selection of its content is shared and coming from all parties involved in the process. Approach with the student the appropriate profile and way of being in the company, as well as their responsibilities. Teach how to write the curriculum of students. Hold lectures to show the various possible paths for students. Teach students how to write their letters of presentation and motivation. Prepare students for teamwork dynamics. Assist and guide students in achieving what is described in the line below this table.
STUDENT	<ul style="list-style-type: none"> Create linkedin profile and boost your presence on this social network. Prepare your CV, as well as the cover letter and motivation. Select a company based on your profile, skills and current life purposes. Contact former colleagues who have been through the same experience. Contact people who are working in companies. Research on the different companies that will be hypotheses and when you know, for which will deepen this research. Establish goals for its integration into the company, with the help of the school teacher. Know the skills most valued for the project you will embrace or in the company you are going to.
COMPANY	<ul style="list-style-type: none"> Prepare the company team to receive the student Define who will be the employee responsible for receiving the trainee on the first day Let the student know who will be in contact with the student of his entry into the company. Talk to the student about professional goals What is intended on the company side and for the success of the project where it will be integrated. Have informative materials to integrate the student (host manual, for example) Define and share company rules

Table one. Responsibilities of the School, the student and the company in the planning phase.

On Chart 2. we present the responsibilities of each party involved in the process of integrating a student into the business environment, specifically in the implementation phase of the process.

<h1>CONCRETIZE</h1>	
SCHOOL	<ul style="list-style-type: none"> • Assist the student in what is necessary to perform the tasks in the company.
STUDENT	<ul style="list-style-type: none"> • Implement the action plan. • Have a good attitude and level of commitment and involvement. • Be proactive, demonstrate initiative and be focused on what is needed to realize your internship plan. • Try to meet the largest number of people in the company (within the rules) • Try to learn from others.
COMPANY	<ul style="list-style-type: none"> • Welcome the student to the company on the first day. • Make known the organization of the company. • Show the facilities. • Deliver the Host Manual. • Present the team with whom the student and his team will work. • Explain where the student will work and the equipment are available. • Meet to review the Action Plan. • Collect feedback when finishing the first day of work and at some times periodically throughout the period of student integration into the company.

Table two. Responsibilities of the School, the student and the company in the implementation phase.

It is important to note that the reception that takes place on the first day in the company is crucial, as it will define the type of interpersonal relationship that the student will establish with the Tutor and the team, which will have an impact on how the experience will take place.

The good reception of trainees is essential to effectively transmit all the information necessary for the performance of their work, but also to make them comfortable to ask any questions, or to ask for help whenever they need to, to be able to perform best.

On Chart 3. we present the responsibilities of each party involved in the process of integrating a student into the business environment, specifically in the phase of continuous verification and monitoring of the process.

<h1>CHECK</h1>	
SCHOOL	<ul style="list-style-type: none"> • Monitor the progress of the student's work process in the company. • Meet periodically with the company's tutor to keep track of what is happening positive, what needs to be improved and the need for adjustments. • Meet periodically with the student to assess their involvement in the company, their degree of satisfaction with the process and what is going on positive, which has to be improved and adjusted.
STUDENT	<ul style="list-style-type: none"> • Record the positive aspects of the experience. • Record the tasks performed. • Perform reflections on the experience and the tasks performed. • Have a proactive attitude of identifying the causes of existing failures.
COMPANY	<ul style="list-style-type: none"> • Monitor student performance. • Identify the positive aspects. • Identify the aspects to be improved and adjusted.

Table three. Responsibilities of the School, the student and the company in the verification phase.

On Chart 4. we present the responsibilities of each intervening party in the process of integrating a student into the business environment, specifically in the action phase, in order to react to the unfolding and results of the process.

<h1>ACT</h1>	
SCHOOL	<ul style="list-style-type: none"> • Standardize procedures that were considered appropriate and successfully.
STUDENT	<ul style="list-style-type: none"> • Report the action plan in a reflected way and seeking to record the learning, skills developed and the strengths and weaknesses of the internship process and yourself.
COMPANY	<ul style="list-style-type: none"> • Give feedback to the student about their performance. • Standardize and integrate in the company the processes where there was success.

Table four. Responsibilities of the School, the student and the company in the action phase of feedback and feedforward.

2. Makerspace in the company

A MakerSpace in a company is an innovation space with comfortable armchairs, walls to desolate ideas and a set of equipment so that you can materialize and validate ideas so that they have more connection with the implementation process.

Currently the makerspace of schools and businesses are very different.



Image from a MakerSpace in a School



Image from a MakerSpace in a Company

It is important for the student to be in the notion that in a company he can find:

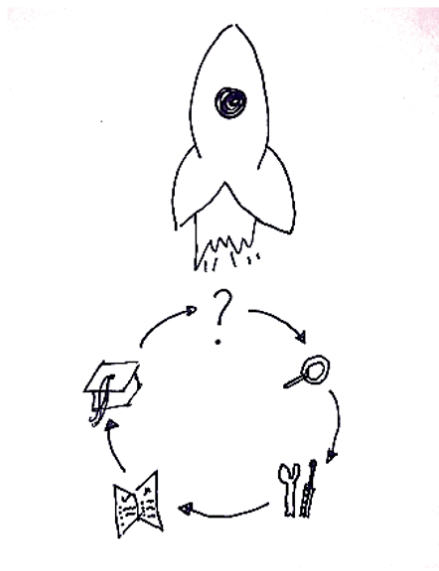
- 3D printers.
- Laser cutters.
- Cinyl cutter.
- Clipping plotter.
- Electrical and robotics equipment.
- joinery and mechanical tools, such as cnc milling machines (Computer numerical Command) of small precision and large precision.
- Welding and oscilloscope.
- Arduino, Lego and other kits.

3. Student Script

3.1. A Design Thinking Framework for Education

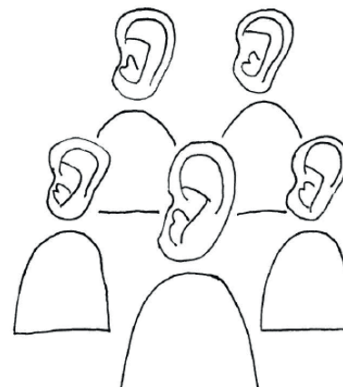
Design thinking is a flexible framework to get the most out of the creative process. It is used in arts, engineering, the corporate world and social and civic spaces. It can be used in all disciplines with all age groups. It works by creating digital content or building things with duct tape and paper.

While there are many design thinking templates, we have developed a template for you and your team! Here's how it works.



In the first phase, you and your coworkers look, hear and learn. The goal here is awareness. It can be a feeling of wonder in a process or an awareness of a problem or a sense of empathy towards an audience.

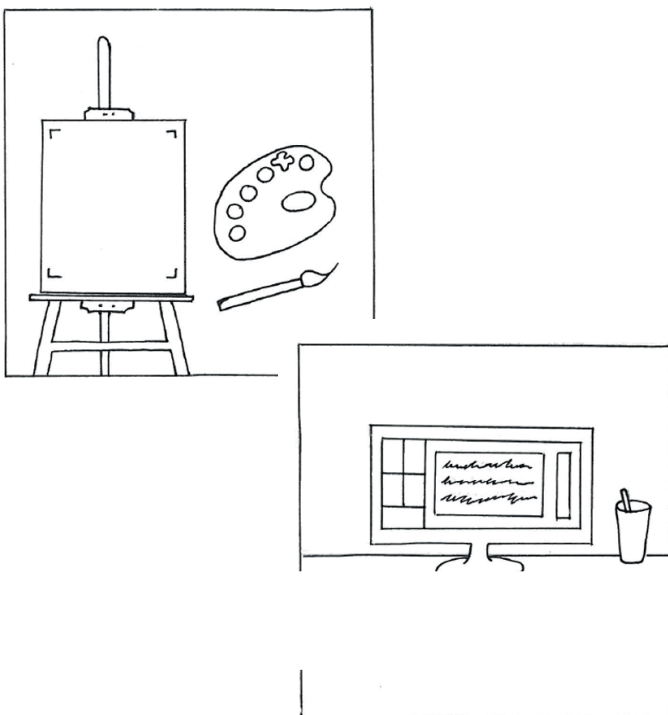
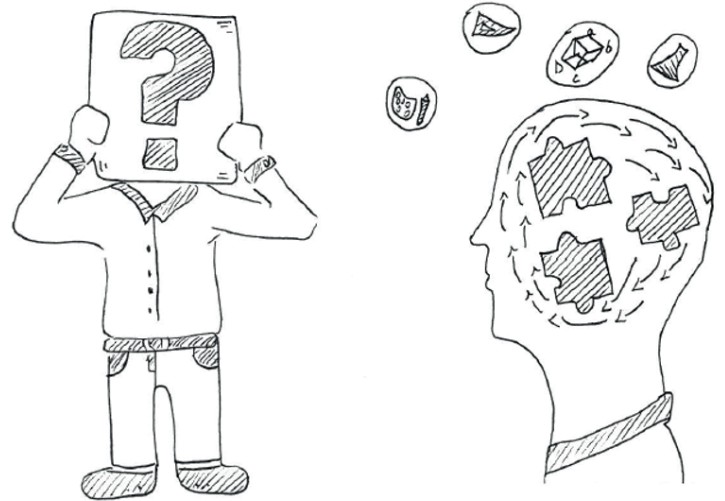
Now that you are all full of curiosity, you can move on to the **second phase**, where you ask many questions. This leads to understanding the process or problem through an authentic research experience. You may conduct interviews or needs assessments, research articles, watch videos or analyze data.





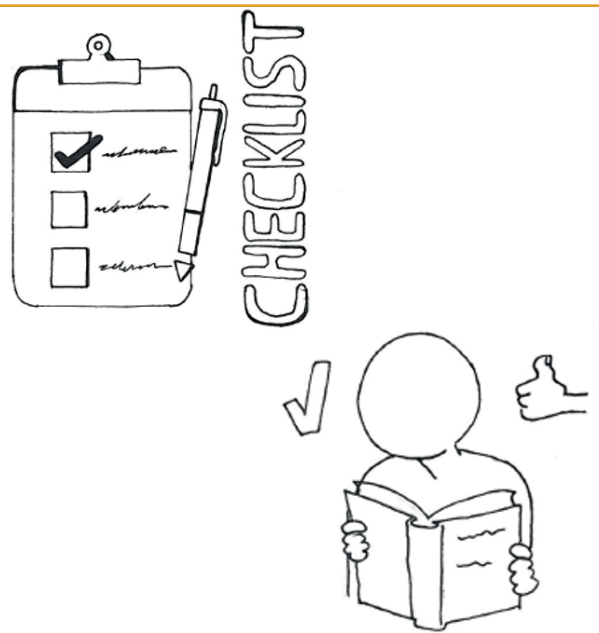
The team can apply this newly acquired knowledge to potential solutions. At this stage, you are sure to navigate in ideas. Not only do brainstorming, but you also analyze ideas, combine ideas and generate a concept for what they will create.

In this **next phase**, you must create a prototype. It can be a digital work or a tangible product, a work of art or something that you can design. It can even be an action or an event or a system.



Then begin to highlight what is working and correct what is failing. The goal here is to view this review process as an experience full of iterations, where every mistake brings you closer to success.

While in the conventional educational environment the act of failing is a low grade, in these spaces it is related to learning and continuous improvement. Learning from mistakes and working to overcome them, in addition to improving the project, creates in your team an experience of extreme involvement and the feeling of personal development.



So when you're ready, it's ready to be released. In the launch phase, they send to an authentic audience. Share your work with the world!



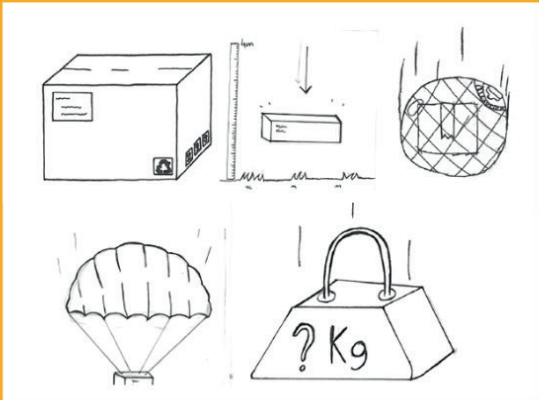
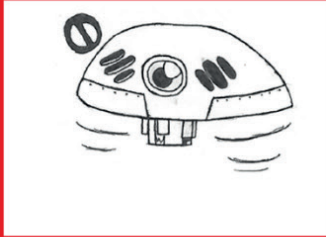
3.2. Makerchallenge – Design the Drone Delivery System



Your work team has been hired for a delivery company that uses drones to deliver packages to people. Unfortunately, drones are being stolen and broken and people complain about drones landing on private property.

Reality

Here's the reality. You can't fly drones near the ground no longer.

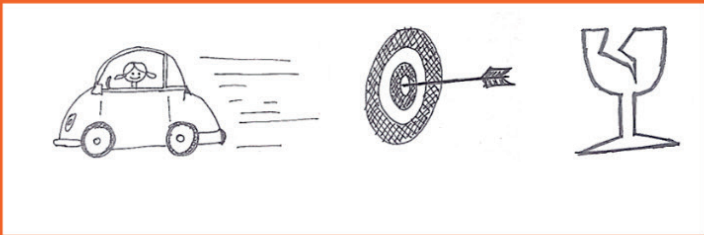


Mission

Your mission is simple. You need to find out how to leave the packages at least 4 meters above the ground without breaking what is inside. Are you going to wear stuffing? If so, what kind? What kind of container are you going to use? A box? A pyramid? A sphere? How do you slow down the speed of the fall? Maybe a para-falls? If so, what shapes and sizes will you experiment with?

Resources

Your features will include: cardboard, duct tape, plastic bags, straws and ropes.



Testing

You must develop a way to test your method for speed, accuracy and ability to prevent fragile items from break.

Don't forget to experiment and make ton of mistakes. It's going to be spectacular because it's yours and it comes from your creative mind!



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