Agile2Learn Scenario

"A step-by-step guide on how to design a classroom workshop for a project entitled "How I imagine the Perfect Class" using agile methodologies"

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1 Purpose of the project

The purpose of the project is to make students imagine and define how a "perfect class" should be according to them.

Students will be divided into groups and each group will do its own research and it will identify the characteristics a perfect class should have. The topic is multidimensional, and each group can approach it from different perspective. For example, it can be approach from one or more perspectives such as:

- efficient class
- healthy class
- relationships between the students and teachers
- Quality of curriculum
- Encouragement and innovation
- Supportive environment
- Etc.

2 Learning Objectives

In this document, a practical project scenario is provided for those who want to practically apply agile learning at school. The learning objectives are:

- Development of the project vision and project strategy
- Development of the initial set project requirements using user stories
- Development of the core agile values and identification of agile methods and their usability and practicability
- Learn about available tools, ways, and complex solutions for collaboration and digital collaboration.
- Produce a solution how to organize team collaboration based on the needs, resources available and desired outcomes.
- Learn communication mechanisms in classroom.
- Understand the meaning of agility within the context of teamwork.
- Highlight the distinct roles within agile teams.
- Development of effective decision-making practices that combine as many as possible viewpoints of team members.
- Development of the ability to think creatively.
- Development of solution selling skills
- Develop critical thinking and creativity.

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- Learn to provide and accept feeedback

3 Related Learning Outcomes

✓ Select one or more agile methods for application based on the setup of the individual learning setting.
✓ Prepare the implementation of the selected method(s) in the classroom through a creation of a teaching scenario using agile methods.
✓ Understand the concept of user stories for capturing requirements.
✓ Create the initial product backlog using user stories.
✓ Understand how agile ceremonies are applied to a classroom environment.
✓ Acknowledge the role and usability of various agile artifacts and ceremonies in the process.

4 Pre-game

This phase includes all the all the preparatory steps that should take place before the project implementation begins. These are:

✓ **Introduction**: Start by introducing the concept of Agile methodologies and explain how it will be applied to the specific project.
✓ **Team Formation:** In this step, students divided into small teams of 4-5 members each, ensuring a diverse mix of skills and personalities within each team. Teacher inspects the entire operation and do not encourage team formation based on personal relationships.
✓ **Define the Project**: The teacher presents the project and in collaboration with his/her students sets the objectives of the project as well as the evaluation criteria that will be used for the assessment of each team's results. At this stage brainstorming techniques can be used that motivate students and make them share their ideas in the class about their vision of a perfect class. The approach should not be too detailed, but stay in a more abstract level mainly in defining the dimensions that define the perfect class. During this stage various tools can be used such as a whiteboard, or paper, or a digital tool suitable for brainstorming and teamworking.
✓ **Project inception:** Next each team, according to its vision about the project the project will define its strategy for the next step and will develop the initial project plan, as well as the initial set of project requirements that will lead to the creation of project backlog. Project requirements should have the form of "user stories".
✓ **Creation of the project Backlog:** A project backlog is list of requirements that each team should satisfy during project execution. If needed, it can be adjusted as the team moves

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through the project. The items on the backlog can be broken down into smaller tasks, and additional items may be added as needed. The goal is to keep the backlog flexible and responsive to the needs of the team.

A product backlog for this project can be based on the following general requirements and students can set more specific requirements for each item:

- o *Define what students mean by the term "Perfect Class*." (To do this the team can conduct a survey of student preferences. As such a more detailed approach in form of a user story can be " I want to conduct as survey among my colleagues to identify how they mean the 'perfect' class". The team will create a survey to gather data on what students consider to be the most important aspects of a perfect class. This action includes the steps of creating questionnaire, distribute it, collect the answers, and analyze survey results. Alternatively, interviews with students can also be done. The team will analyze the results of the survey and identify the key themes that emerged).

- o *Determine the key aspects of "Perfect class" as they emerged from students. (*The team will determine e.g., through brainstorming ideas, how to create the perfect class based on the survey results.

- o *Prioritize the ideas.* (The team will prioritize the ideas generated in the brainstorming session and select the most important ones to focus on. At this point students need to use time management aspects as well as prioritizing techniques. An interesting approach would be to use prioritization poker e.g.: https://airfocus.com/glossary/what-is-priority-poker/).

- o *Develop a plan for implementing the perfect class*. (The team will create a plan according to their vision for the perfect class using materials such as paper, cardboard, whiteboards, or e-tools. Miro.com or canvas.co are nice digital options.)

- o *Present the plan to the rest of the class.* (The team will present their plan to the rest of the class and receive feedback. Modules of agile2learn pilot raining such as Selecting digital tools, and digital problem solving can be used as source for appropriate tools for this purpose).

- o *Refine the plan according to feedback* (Based on the feedback received, the team will refine their plan and make any necessary changes).

- o *Finalize the design of the plan* (The team will finalize the design of the perfect class and present it to the teacher).

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✓ The **Trello tool** can be used to support the **product backlog creation.** Since Trello tool is basically a general purpose collaboration tool, the corresponding Trello template should be used. The configuration of the board should be done in such a way that there is a direct supervision of the pending and completed requirements. It is advised to create 4 basic lists:

- The Product Backlog that contains all the project requirements.
- The Sprint Backlog which contains the requirements included in each sprint.
- The In Progress list which includes the Sprint requirements whose work is in progress.
- The Complete or Done list which contains the sprint requirements that have been completed.

Duration: 2-4 hours
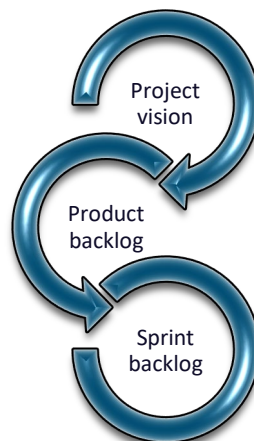
Picture 1: The steps of the project

5   The game

The second or main game phase includes the "Sprint" phase, where is the phase the project is executed. This phase includes:

Sprint Planning: Teams will attend a sprint planning meeting, where they will prioritize the items on their estimate of the effort required to complete each task and agree on which tasks they will complete during the sprints, forming the Sprint backlog. Usually at least three sprints should be implemented. (More details about sprints can be found at the module Agile Ceremonies)

An example of the three sprint structure is the following:

Sprint 1:

Conduct a survey of student preferences.

Gather ideas for creating a perfect class.

Sprint 2:

Prioritize the ideas based on student feedback.

Develop a plan for implementing the top ideas.

Sprint 3:

Refine the plan according to feedback and adjust as needed.

Finalize the plan of perfect class.

Sprint Execution: Teams will begin working on the tasks agreed upon during the sprint planning meeting. They will hold daily stand-up meetings to share progress and identify any obstacles.

Dailly sprint: Team members should have a quick (max 5 min) meeting at the beginning of each day during the sprit to discuss the progress and set the daily plan.

Sprint Review: At the end of the sprint, teams will review the work completed and demonstrate the results to the rest of the class.

Note: The acceptance criteria that must be met for a User Story to be accepted as completed have been set by the teacher at the beginning of the project. They reflect the requirements set by the teacher for students during the sprints. At the end of each sprint, the students´ team must demonstrate the relevant knowledge that accumulated during the sprint.

In the Figure below the Scrum process is presented.
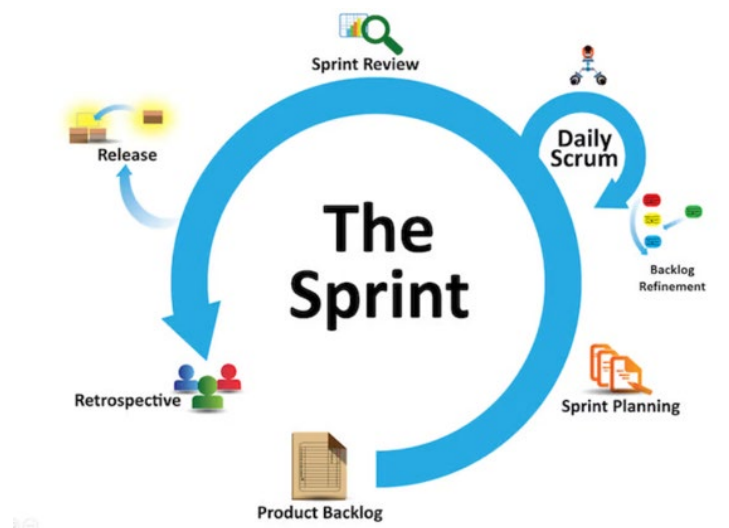
Picture 3: Scrum process

6 Post- game

At the thirs or postgame phase a presentation of the entire project, and a general review (retrospective) take place. It is the phase where each team evaluates its performance, reflects on good or bad practices applied during the previous phases, identify good practices and identify what competences they felt that developed of improved during the Sprints. Specifically, they can focus on:

- What they learned (knowledge related to the subject they dealt with)
- What they learn from the process - collaboration (emphasis on competencies)
- Whether their collaboration improved from Sprint to Sprint
- If not, what was at fault?
- What should have been done?
- What would they like to improve on (competencies)?

The evaluation criteria that we can take into account when applying the agile methods are the following:

- the active engagement
- the successful execution and fulfillment of the objectives
- the ability to solve problems and take initiative.
- the development of social skills (dialogue, communication, collectivity, conflict management, etc.)
- the personal creative expression and integration of each student into the whole transformative learning and changing attitudes
- the evaluation of the results of the project by the students themselves

The above is an example outline of how a the specific classroom project can be executed through the implementation of agile methods but it is not the only alternative. Teachers can adjust the previous approach or use their own approach as long as they respect the steps of agile methodologies and follow the guidelines described within the modules offered in the pilot training of Agile2Learn project.