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FLED LEARNING DESIGN FOR FLEXIBLE EDUCATION

Team regulation and management in blended flipped classrooms

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Characteristics of the course

It is a first-degree course for about 70 students. The subject comprises 6 ECTS credits and 150 hours. The project comprises a dedication of 40 hours per student.

Context and main problem (or motivation) to be solved

This pattern is suitable for any course designed under the flipped model and in a blended mode (i.e., which combines in-person and online learning environments). In that context, students consult resources at home and perform associated activities half of the time, and in-class time is devoted to group work, problem-solving, and practice. However, a main problem has arisen: students do not collaborate properly in class or at home. **Students merely distribute the tasks and do not exchange their views or build knowledge[2] together. It is hard to ensure all students participate in a group and to monitor their group and individual contributions to the team.**

In the flipped class (FC), teachers invest much effort in designing meaningful learning[3] activities and resources and managing time dedication in and outside the classroom. The FC model prompts social interaction, especially in in-class activities. Evidence demonstrates university students prefer flexible teaching models that foster

[1] Consult the FLeD patterns glossary to learn more.

[2] Knowledge building involves students actively contributing, refining, and enhancing shared ideas through cooperative discourse, fostering a culture of collaboration and idea improvement. More information available at: https://www.isls.org/research-topics/knowledge-building/

[3] When the student uses their previous knowledge to acquire new one.

constructivist learning practices (Noguera et al., 2022). Nevertheless, it is fairly common to fail to pretend that students collaborate effectively without giving them indications of how to achieve that goal. When the unique guideline is to work in groups, some students may collaborate (I.e., exchanging ideas, negotiating, contributing equally to a joint task, and adopting roles and responsibilities), and others may not. Ultimately, these differences among groups generate inequalities in learning and results.

Collaborative activities can take many forms. In that case, we focus on collaborative activities that are complex enough to require several people to handle them (Kirschner et al., 2018), such as a project (similar methods could be case studies, problem-based instruction or challenge-based learning). A project in the university context takes time to be solved (about six to fifteen weeks). A long-lasting and open-ended activity might make students feel lost and experience problems with self and co-regulation. Furthermore, the degree of flexibility of the course and delivery mode (e.g., face-to-face or virtual) can add more difficulties in organising the time and work. In that case, in a blended course, students might need help managing their time and connecting the work done in and outside the class.

Main need to be addressed

Implement strategies to regulate and manage student collaboration in and outside the class and monitor individual and group work.

General learning outcomes to be achieved

Demonstrate the ability to work collaboratively in a team to build knowledge together and achieve a common/shared goal.

Pattern "Team regulation and management in blended flipped classrooms"

Solution that could solve the problem and need
To give instructions to: a) distribute the roles, responsibilities and tasks, b) manage time, c) define communication channels and shared spaces, and d) increase feedback and reflection on the group and individual progress. In a class, there are students with different regulation skills (i.e., a person's ability to manage and control their emotions, behaviors, and thoughts in response to various situations). Some might not need our help to organise their time or manage a project, while others might need help regulating their time and efforts. Even if students have high self-regulation skills, they must learn to work with others. The FC requires higher self- and co-regulation skills than other teaching methods. For that reason, it is essential to devote time to explaining what FC is and what will be expected from students in terms of regulation skills and teamwork. Here, we propose four ideas to help structure the collaborative process with a focus on co-regulation and giving options for flexible learning:

	• **In class**	• **Out of the classroom**
ACTION 1. **Distribute roles, responsibilities and tasks**	o Provide **guidelines** for conducting the project, eliciting, for instance, the objectives, tasks, evaluation criteria and deadlines. This can be presented as a checklist.	o Once the agreements have been settled, the **group** will virtually **decide** their **project's specific topic and focus** (e.g., using the communication tools

ACTION 1. **Distribute roles, responsibilities and tasks**	o It is key to suggest an engaging activity or topic to prompt students' involvement in the task (e.g., a game, searching news related to the topic, or questioning about the topic). o Devote one face-to-face session to **establishing the basis of group work** regarding organisation, planning and distribution of roles based on teacher's guidelines. o Students can be grouped by themselves or by the teacher. We recommend **groups of five people** to ensure gender equity and an equal number of people per group. o Ensure that **SEND** (Special Educational Needs and Disabilities) students are **integrated** into a group and provide them with the assistance needed during the course. In case their special need is severe, alternative options can be given, or adaptations to the whole group must be offered to ensure the feasibility of the achievement. o **Clear instructions and predictable plans** can help to reduce anxiety for SEND students, especially on the autistic spectrum. o Once the groups are constituted, each team creates an **agreement document** where they define which role each one has, which are the responsibilities per each role, which are the tasks into which the project can be split (and who is responsible per each one and what is the deadline), how they will communicate, which will be the frequency of meetings, which shared digital	of the Learning Management System -LMS). The teacher defines the project's main topic (e.g., climate change), and we suggest letting students decide the topic of their specific project (e.g., water scarcity, polar ice melting, global temperature warming, fires, loss of species). The negotiation process to decide the name is the first step in creating a sense of belonging.

ACTION 1. **Distribute roles, responsibilities and tasks**	tools or spaces they will use, etc. Creating a **name for the group** can prompt the feeling of belongingness. This document may not be finished during the session or may need further development. Students may finish it the week after virtually, but the teacher needs to ensure that this task is performed before starting the teamwork. o This task can be done **in or outside the classroom**, but we propose doing it in class so that the teacher can solve doubts when they arise and insist on establishing these first agreements. o It is essential to highlight that attending team meetings and tutoring sessions is a key responsibility and commitment of the team.	

ACTION 2. **Manage time**	• **Out of the classroom** o Offer **clear instructions in advance** to students to let them organise their time, knowing the goals and the moments of delivery. We recommend giving the instructions one week in advance and informing students about the guidelines in the form of a visual product (infographic, video, presentation) or using diverse formats that they can consult at any time. We also recommend investing time in a session to explain the guidelines and agree on the deadlines and digital resources to be used. o Ask teams to create a **Gantt chart (a visual representation that illustrates a schedule)**, or a time-management table, where they define the tasks to be done during the project, the member responsible for each task, the deadline, and the achievement level (in process, done, pending) according to the project requirements (e.g., using Miro, GanttPro). o Inform students about the **time dedicated to the project, including autonomous time, in-class time,** and tutoring sessions. To help organise the autonomous work, define periodical goals so that all teams can determine phases to advance in the project and ensure the work is done progressively. Learning outputs (i.e., the specific knowledge, skills, abilities, or competencies that a learner is expected to demonstrate) can be developed and delivered in a shared space (e.g., Google Drive or OneDrive). o Define **moments to connect out- and in-class time** and to link the content and activities of the course with the project. For instance, after each periodical goal or a set of goals, you can review the work (including the content and process done) and invest some time at the beginning of a face-to-face or a virtual synchronous session to solve

ACTION 2. **Manage time**	doubts for the whole class or through group tutoring. It is also possible to record a video or produce a resource, offering solutions to the main problems or weaknesses. o Transmit the idea that **deviation in planning frequently occurs** and is not a problem. Sharing different views, negotiating and building knowledge together is time-consuming and can slow the learning process. Working on a project progressively and reflectively helps to detect deviations and deal with them during the process. o **Pre-class tasks can be made available for longer periods** to allow students with cognitive and physical impairments more time to engage in and complete tasks.

	• **Out of the classroom**	• **In class**
ACTION 3. **Define communication channels and shared spaces**	o A major issue in virtual settings is the **feeling of loneliness** and the lack of teaching presence (Chakraborty & Muyia, 2015). Suppose the project is mostly done virtually, combined with on-site sessions devoted to solving questions and tutoring. In that case, it is likely that students will not find a way to solve their questions and needs when they appear, and the teacher will lose control of group work. o Establish optional **periodical virtual solving sessions** that can be conducted via videoconference or chat tools. Furthermore, creating forum spaces in the LMS is desirable for sharing doubts and thoughts that the teacher or classmates can	o It is advisable to devote a face-to-face session to **tutoring and group work regularly**, for instance, every four weeks. This will help monitor group-class work and boost those groups that are lagging. Sessions should be oriented towards a moment, a topic or a specific

ACTION 3. **Define communication channels and shared spaces**	answer. In parallel, creating FAQs sources or using a chatbot to solve usual questions can help. Tutoring is essential in FC. o In the FC, it is relatively common to offer video lessons for students to gain knowledge on specific topics during out-of-class time. **Creating instructional videos (i.e., designed to guide through a specific process or task) or resources to clarify or give new instructions in a blended course is desirable**. This, and the use of forums, will contribute to maintaining the teacher's presence and avoiding the overuse of individual interaction through e-mail. o Several **virtual team meetings** must be established to ensure students share views, discuss and make decisions synchronously (i.e., real-time interaction). We recommend at least a meeting every week. These meetings need to be oriented toward solving issues or discussing ongoing tasks, exchanging viewpoints and sharing knowledge on content, and giving constructive feedback on teammates' processes and tasks (consult the "Exchange of constructive feedback pattern" to learn more). Students provide minutes per meeting indicating the main topics discussed and the decisions made. o Communication in collaborative processes is crucial. Encourage students to **communicate frequently** regarding management and knowledge building. Students commonly meet to distribute work. Ensure there are opportunities and guidelines for students to use synchronous time to learn with and from others, share views, negotiate meanings, and build knowledge together. Providing	phase in the project. Consequently, it needs to be ensured that all teams have accomplished **certain tasks or goals before the on-site** session and that the teacher has reviewed the advancements. Furthermore, asking students to **write** their **questions** or issues in advance is recommended. Both the review and the questions posted by students will serve to organise the session.

ACTION 3. **Define communication channels and shared spaces**	specific questions for reflection in meetings and asking for evidence of the knowledge-building process (e.g., providing minutes or other resources where the team elicit their group contribution) might help scaffold[4] the collaborative process (Clarà et al., 2018). o Suggest **that students use a shared storage space (e.g., OneDrive, Google Drive, Dropbox, Microsoft Teams) and give the teacher access** to monitor and consult the resources. Whenever possible, all students should use the institutional software; this facilitates the teacher's work as you don't need to access different accounts and can organise all folders in a unique space. We also recommend using videoconferencing tools for virtual meetings, such as Microsoft Teams, Google Meets, Jitsi, or Zoom. Furthermore, in the initial stages or brainstorming moments, it is recommended to use online whiteboards such as Miro, Canva, Microsoft Whiteboard or Google Jamboard.	

ACTION 4. **Increase feedback and reflection**	• **Out of the classroom** o Usually, students are task- and goal-oriented. In collaborative learning, **reflecting on the individual and group process** during the project is important. To that aim, define at least three moments for reflection where students analyse, individually and in groups, the teamwork process and the outcomes. Self-assessment (i.e., when learners

[4] Scaffolding refers to providing support (e.g., resources, demonstrations, questioning, clarifications, feedback) to students as they learn new concepts or skills. Scaffolding offers temporary assistance to students to help them achieve a level of understanding they would not reach independently.

ACTION 4. **Increase feedback and reflection**	evaluate their academic performance, skills, and progress) could be suggested during and at the end of the project to reflect on the learning process and her/his contribution to group work. o Devote one in-class session to **discussing the workgroup process**, the emotional climate and positive interdependence[5]. The agreement document could be reviewed, and amendments could be made if necessary. Before this class, the teacher can share some questions for individual or group reflection that could make the synchronous session more effective. o This reflection can be done virtually in a **videoconference and recorded** (or the main ideas collected in a document) or directly written. o Periodically offer **qualitative**[6] **and formative feedback**[7] on the content and group work process. This means that, apart from giving a mark to the deliveries if desired, teachers will offer indications in written, audio or video format about the weaknesses and strengths of the project and teamwork. The aim is to help students improve and learn from the work and process done. The project, therefore, should be divided into several deliveries or evidence where students receive feedback (be it linked to the delivery or during a tutoring session). The final delivery should add a section where students could explain the modifications made based on the feedback given, and the teacher should value this section in the final evaluation. o Individual and group **periodical tutoring meetings** are desirable for accompanying students during learning.

[5] Positive interdependence means that team members rely on one another in such a way that no one can succeed unless everyone succeeds, which fosters collaboration and mutual support.
[6] Qualitative feedback focuses on descriptive, non-numeric information that provides insights into the qualities or characteristics of a performance.
[7] Formative feedback is provided during the process of learning or development, rather than at the end. It is intended to inform and enhance ongoing efforts, focused on improvement during a process.

ACTION 4. **Increase feedback and reflection**	o Suggesting guidelines for using conversational agents during autonomous work can ensure periodic feedback and reflection. For instance, students could maintain a conversation with an AI agent to ask for feedback on specific parts of the project (e.g., objectives, brainstorming of ideas, interpretation of data) or to help them reflect (e.g., Ask me questions to consider if my proposal solves the problem stated at the beginning or Help me reflect on other aspects not considered in my solution that can have an impact in this context).

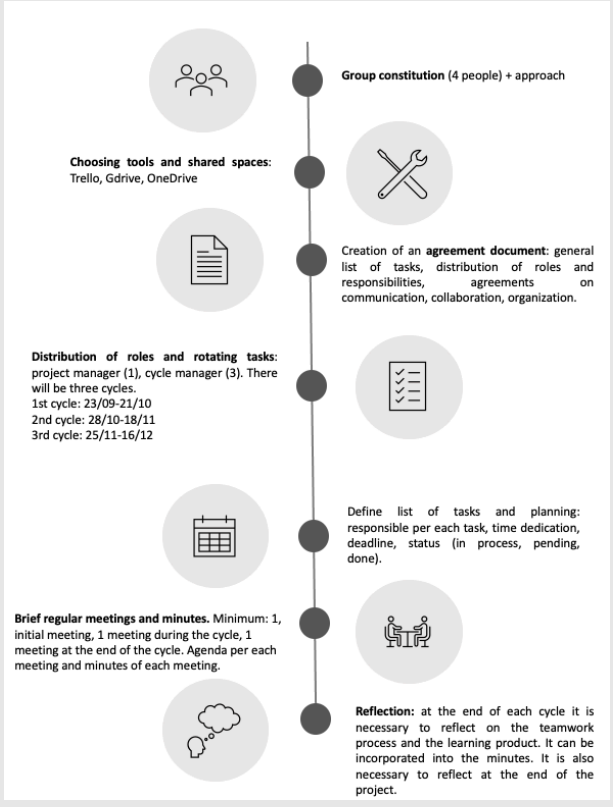
Challenges	Solutions
It is usual that some students **drop the course** (and the team) for several reasons. In virtual and blended learning, those situations occur more frequently than in face-to-face education due to the profile of students (with family or job responsibilities) and the self-regulation skills needed.	We recommend asking students to **agree on the solutions** to that situation in the agreement document. If the situation occurs, and students do not know how to solve it, we propose listening to the parts and agreeing on a joint solution.
Interpersonal communication and positive interdependence are key aspects of **group work**. Although they are hard to achieve (Johnson & Johnson, 2009).	In virtual environments, communication and collaborative processes require **clearer instructions, planning and tools** to minimise conflicts. Giving strategies for conflict resolution can be helpful for teams.
Blended learning offers possibilities for flexibility of time and place. However, students may experience some troubles with **fixed times** for face-to-face instruction or synchronous sessions.	To handle this situation, inform or **agree** with your students in advance about the **specific days and time slots for synchronous meetings.**
At times, **video conferences** may face technological issues.	You can establish some **rules** for students **to connect virtually**, such as: being in a quiet place, not connecting on the go, or having access to a microphone and camera.
In online communication and group work, it is crucial to give guidelines to generate **safe spaces.**	Regarding **cyber security, data protection, gender inclusion**, etc.
Digital tools can lead to **inequalities** regarding digital skills, special needs or economic means.	Teachers must **be aware of the students' digital needs**, assist them and offer them options to follow the course with similar conditions.

Challenges	Solutions
Students might be reluctant to use apps or digital tools and to facilitate their data.	Alternative options should be given to ensure those students have equal options to follow the course. For instance, a forum could partially substitute a social network or a shared space could replace a project-management team tool.
Not all students have equal regulation skills.	It is recommended to envisage the needs for self- and co-regulation and offer diverse sources oriented to different degrees of regulation and in different formats to meet their needs. Providing specific resources with increased scaffolding, facilitating questions for reflection, or generating resources with schemas, summaries, or annotations might be helpful for students with less regulatory skills.
Improving time and project management may facilitate the collaborative process and make it more agile.	However, you must ensure students not only focus on organisation aspects but also the knowledge-building process. Teachers must give indications, opportunities, tools and support for sharing views, negotiating meanings, building knowledge and reflecting.

Examples and/or related patterns

- **Related patterns**
  - Key decisions for an effective flipped classroom.
  - Enhancing constructive feedback exchange and self-regulation in the face-to-face flipped classroom.
  - Generalized feedback (Köppe et al 2015)
  - Following is an example of an infographic with instructions for team regulation and collaborative project management in higher education:

Pattern "Team regulation and management in blended flipped classrooms"



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