Rotation stations for a blended approach

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Abstract
Last spring schools all over the world were forced to stop in-presence lessons and move teach and learn entirely online, which posed several problems both technical and also pedagogical in terms of how to engage and motivate young learners while teaching remotely. This paper reports the experience of using a blended approach based on the rotation stations model, which alternates pen and paper tasks with tasks using digital and online tools. This model has the advantage of streamlining the personalization of learning by proposing each student a different learning sequence of stations and thus of tasks. Furthermore, the rotation stations model also allows the introduction of collaborative practices between students and opportunities for the teacher to support weaker students in small groups for an inclusive classroom.

Keywords 1
Blended learning, personalized learning, rotation stations

1. Introduction

Recently, integrated distance learning or blended learning has attracted the attention of teachers as well as researchers, following the total lockdown due to the pandemics. Blended learning can be regarded as the natural evolution of learning able to respond to the need for personalization as well as for the development of digital skills, as Kaye Thorne [1] describes it

> …the most logical and natural evolution of our learning agenda. It [blended learning] suggests an elegant solution to the challenges of tailoring learning and development to the needs of individuals. It represents an opportunity to integrate the innovative and technological advances offered by online learning with the interaction and participation offered in the best of traditional learning. It can be supported and enhanced by using the wisdom and one-to-one contact of personal coaches.

Despite the huge potential of this approach, most literature focuses on the application of blended learning in higher education [2] or vocational training [3]; only teacher blogs [4] deal about the use of blended learning for early instruction in distance learning connected mainly following the Covid-19 emergency. The application of blended learning in primary and middle school has also been treated in special publications by private schools in the US, such as the Aspire Public Schools [5]. Some dedicated websites [6] also mention examples of blended learning in early instruction. Namely, the latter site features also guidelines for the different possible approaches to blended learning with relevant case studies in support of their application.

The experience presented here is a way to design a blended learning approach for early instruction which could be implemented both in a classroom setting and during online learning without causing much disruption to students' learning routine and integrating also traditional tools such as the textbook.

2. The context

Last spring schools all over the world were forced to stop in-presence lessons and move teaching and learning entirely online. This was true also for classes in primary and middle school. During that time, teachers worked online with young students, and their experience led to a reflection both on online

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and in-presence classroom practice and on the prerequisites needed to allow young students to "function" as learners when using digital tools remotely.

The first emerging problem was that students were not familiar with the platform they were using for online lessons, since an online learning environment had never been used regularly before to support face-to-face lessons.

Another problem was students' difficulty in understanding how online collaboration worked. Despite they are "digital natives" students are not used to working synchronously contributing to the same document or image or search. On average, it took almost three months to make them used to a different classroom routine where they could actively share with their friends even if they were at a distance, e.g. share the screen and write on the same board or document.

Another big issue was with weaker students who had more problems collaborating online and needed more support. These students were functioning better when they were in small groups, possibly at the same level, because more individualized support was possible.

Based on the above reflection, a classroom "routine" was designed which would:

- Be applicable both in face-to-face interaction and in distance learning;
- Allow differentiation of instructions, so that students can proceed at their own pace and not be afraid of "smarter" classmates;
- Allow work in small groups for better support to students;
- Adjust to the short attention span of most students;
- Teach students to collaborate and create together online, negotiating their ideas and respecting those of others while assigning tasks to team members.

All the above conditions can be met by the various blended learning models described in literature [7].

3. The learning station model

Blended learning can be defined as an approach allowing the alternation of face-to-face or traditional learning tools and methods to online learning and the use of digital tools, this latter being paramount for our students as reported by several studies carried out by UNESCO[2] [8]. Different models have been proposed to structure such alternation. The flipped classroom is the most popular among them and has been adopted by many teachers. In the flipped model, during face-to-face lessons students practice the content they learnt at home or apply it in projects under the supervision of the teacher. This is the model most used during distance learning; during video-conferencing lessons the teacher provided practice for the students and assigned content to study independently in the form of self-produced videos, text book materials, or research tasks. Unfortunately, this model worked well only for the best and most motivated students. The great majority of students did not complete the tasks at home or if they watched the videos, they were not concentrated and accomplished the task inattentively; the result was they did not participate actively in the practice the teacher provided. Overall, this meant that good students progressed, whereas weaker students worsened their performance and, in some cases, even lost the accomplishments reached during regular school time.

Thus, a different type of blended learning model was applied, the station rotation. In this model, the lesson includes several tasks (stations) and the students work in small groups on a task for the time decided by the teacher, before moving on to the next and finally, always in small groups, they meet the teacher for direct instructions and support. This model therefore can include different combinations of tasks accomplished either individually or collaboratively, online and offline; but in the end all students receive teacher attention in small groups, which allows the teacher to support and provide direct feedback in a personalized way and verify progress of each learner. Another important advantage of this model is the opportunity to build different learning paths (sequence of stations) for an individualized learning, without affecting the lesson flow. Indeed, each learner is assigned a different sequence of stations by the teacher on account of the learner's level and needs for improvement. This model allows great flexibility also in the arrangement of groups, which can change during the lesson

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[2] https://en.unesco.org/sites/default/files/education_in_a_post-covid_world-nine_ideas_for_public_action.pdf is an overview of the future of education following the school lockdown and online education all over the world. Further studies and articles can be found on the page https://en.unesco.org/covid19/educationresponse/globalcoalition.

period and be adjusted to different collaborative practices such as peer tutoring, think-pair-share or jigsaw techniques. Rotation stations can also provide dynamicity to lessons since students are not on the same task for too long; besides, when applied in regular school set-up, students could be made to move from one station (desks with computers) to another, which would stimulate their engagement. Finally, the model gives the teacher full control on the completion of tasks and, thus, on students' accomplishments and weaknesses since each station is associated to an exit assignment.

3.1. Applying the station rotation model to ESL lessons

The following design has been developed for English as a second language (ESL). A "station" is a sub-part of a unit. Each station lasts 10 to 15 minutes and always requires the student to complete an exit assignment. A lesson unit can be made up of several stations, 4 to 5. The planning is based on the skills needed for language learning: listening, speaking, writing, reading, vocabulary, grammar. A textbook can be very useful to provide the "theme" of the lesson and also possible graded exercise types, which can save a lot of time in planning.

For each skill the students need to practice, at least two similar tasks of different levels of difficulty are selected or designed, considering whether they are better accomplished on paper or digitally. In the regular school setup, this latter decision can depend on the availability of devices in the classroom; otherwise, if the teaching is done remotely, all tasks could be digitally based. An important element to consider in the decision between paper or digital is also how students feel more "comfortable" to accomplish a task; for instance, for writing practice paper is usually less distracting and students cannot use online translators which would dwindle the effectiveness of the practice.

Another important decision to be made beforehand is whether a task should be accomplished individually or in a group. Group work is very important to develop negotiation skills and can provide support to weaker students in completing some more difficult tasks. The grouping is done either by level of ability for tasks where a different learning speed would be disruptive, e.g. grammar or vocabulary; or with mixed abilities for tasks where a 'weaker' student can be supported and engaged by the presence of a 'stronger' student, e.g. reading and listening comprehension tasks.

Table 1 is an example of "station" planning for a lesson:

Lesson theme: The Environment						
Learning target:	**Grammar:** - Be going to future - WILL future	**Vocabulary:** - environment words - climate words	**Communicative functions:** - talking about future plans - reporting facts and data - taking notes		**Social skills:** - gaining awareness of climate action and possible solutions	
Skill	**Task description**	**Level**	**Online**	**Paper**	**Group**	**Indiv.**
Vocabulary	Associate the pictures with the words.	★	X	X	X	X
	Complete a cloze test in which you have to use the words.	★★	X	X	X	X
Grammar	Watch a video on the form and use of the "be going to" future.	★	X			
	- Complete a mind map of the verb form			X	X	X
	- Complete structural exercises on the verb form	★★		X		X

Skill	Task	Level				
Listening	Try		X			
	- Complete a True/false exercise	★★		X	X	
	- Answer questions on the video	★★★		X		X
Reading	Read about UN Sustainable Goal 13: Climate Action and		X	X		
	- Fill in a table with figures and facts	★★	X	X	X	
	- take note of important figures and facts reported in the text.[3]	★★★	X	X	X	
Writing	Use the notes from the reading activity and write - What you are going to do to act against climate change (80 words).	★★		X		X
	Write a text of about 120 words explaining: - What are the effects of climate on the environment and on economy? - What actions you are going to take.	★★★		X		X
Speaking	Record a video message in which you say what you are going to do to act against climate change.	★★		X		X
	After recording your message post a video comment to at least 2 classmates' messages	★★★		X		X
Support/ remediate	*This is a station in which a small group of students works directly with the teacher to revise a task and receive immediate feedback.*					

Table1: Schematic of a lesson on "The Environment"

The above planned stations allow the teacher to create a personalized learning path for groups of students divided according to their abilities by alternating individual and group work. The path is assigned using the virtual learning environment; each student receives a daily schedule with links to the instructions for the activity. When they get to the station, identified by the above color codes they will also discover if they are going to work in groups or individually and who the members of the group are. Figure 1 below is an example of how the stations are proposed to the students, each image being linked to an online or printed page.

Each student receives a personalized path and works with different classmates during the lesson. Indeed, groups can be easily rearranged during the lesson. A lesson, that is the practice of all the skills reported above, can be completed over several classes depending on the duration of the teaching period. At the end of the lesson, a formal assessment can take place and students could select their best work to add it to a portfolio.

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[3] In face-to-face lessons the group receives one printed copy of the "Climate Action: Why it matters", they have to read it together and write their notes on an A3 paper sheet. In online classes each student in the group has the link to the document and the notes are recorded in a Google doc shared between the group members
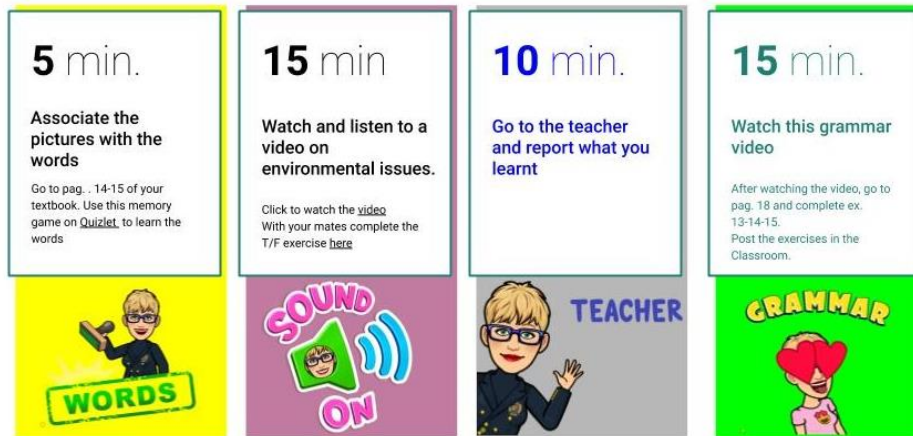
Figure 1: Example of stations proposed for one group of students.

4. Conclusions

The rotation station model has proven to respond to the initial issues remarked during online lessons; namely, the low engagement of students, the need for the teacher to work with small groups of students and the enhancement of collaborative and inclusive practices in the classroom. Furthermore, it is a way to integrate digital tools in lessons based on the expected pedagogical outcomes and can work in regular school setups and be continued without much disruption in distance learning.

On the teacher's side it requires some time for planning and it usually takes several tries before it is finalized, so it might appear complex at the beginning. But after streamlining the first lesson planning, the teacher will realize how easy it is to shuffle between tasks and change them according to the situation or lesson topic. Text books and the material available online can streamline work and might only need to be adjusted to create the different learning tasks.

Students might need some onboarding with the model particularly if they are not used to working online. A much bigger issue could be the respect of the scheduled time; the teacher could use a timer that goes on every five minutes, so students can understand how much more time is left to complete the task. On the positive side, stations and mini-tasks stimulate student's accountability for completing the tasks and keeps students steadily engaged without the lagging moments that sometimes happen during traditional classes. The greater engagement can be assessed looking at the performance of students in the exit tasks of each station as well as through observation of students' attitude to learning with the help of a rubric accounting for the interaction with classmates, the concentration level while carrying out the task and the proactiveness during the revision phase with the teacher. As far as inclusion is concerned, this model can prevent weaker students from feeling isolated or inferior to their classmates since they work on similar tasks and sometimes also together with "stronger" students, and not on separate ad hoc worksheets.

The design described here is applied to language learning, but it can be easily transferred also to other subjects with little adjustment on account of the specific skills and competences.

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