

ERD 2022
Education, Reflection, Development**BLENDED LEARNING TOOLS IN PRIMARY SCHOOLS- A
QUALITATIVE STUDY**

Anca Ani-Rus (a)*, Horațiu Catalano (b)
*Corresponding author

(a) Babeș Bolyai University, Cluj-Napoca, Romania, anca.rus@ubbcluj.ro
(b) Babeș Bolyai University, Cluj-Napoca, Romania, horatiu.catalano@ubbcluj.ro

Abstract

Nowadays, the biggest challenge is to bring technology into the classroom and to use digital tools for academic purposes. Blended Learning can facilitate access to learning, but also the flexibility of learners, helping to emphasise the interest in active study and intrinsic motivation of students. Blended Learning environment highlights a special environment, in which the most efficient methods can be used, both face to face and the world mediated by technology. Using e-learning technologies in the classroom is the biggest attraction for students, there is an increase in their motivation to learn and get involved. In this study, we analysed different Blended Learning tools that we used during the lessons. Our analyses have shown that the use of technology in classrooms has increased students' motivation to learn and they become actively involved in the educational process. During a school year, we used, in different moments of the lesson, tools that encouraged students for a deeper understanding of the topics we studied. However, Blended Learning is not just about implementing technology-based teaching-learning strategies, but also about increasing students' access to education. The students developed critical thinking, problem-solving skills, leadership abilities and complex learning, having access to a larger wide range of online resources. It is important to underline that Blended Learning is born by homogenizing the face-to-face learning process with online learning, but this process needs to be integrated in such a way that these two complete each other perfectly to make the instructive-educational process more efficient.

2672-815X © 2023 Published by European Publisher.

Keywords: Active study, blended learning, digital education, e-learning

1. Introduction

Over the past years, the role of the teacher had changed. The educator becomes a facilitator - he is responsible not only for delivering information, but also to determine the students to search for knowledge, select, analyse, evaluate, ask questions and think. We promoted a student-centred education paradigm, which is now widely used in teaching and learning. There are multiple expressions associated with this paradigm such as flexible learning or experiential learning. The concept of student-led learning is characterised by ownership and empowerment, it refers to how educators can support students to achieve more, with different effective learning strategies. The most important aspect is that the students have an active role: peer/group work, reflections, having objectives, tracking progress, learning through collaboration, project-based learning. The students may feel really engaged in the learning process, teachers allowing them to make their own choices or to come up with suggestions.

Blended learning is a method of combining different types of teaching and learning throughout technology (Procter, 2003). Blended learning is a type of digital integration in teaching, different from online learning which is another type of digital teaching (Kumar et al., 2021)

The concept of Blended Learning (BL) is based on the idea that education must be a continuous process and not just a singular event (Niemi, 2009). The Blended Learning environment highlights a special environment, in which the most efficient methods can be used, both face to face and the world mediated by technology. Blended learning is proven practical in multidisciplinary but independent curriculum, and pedagogy redevelopment is mandated (Soon Tan et al., 2022).

This instructive educational process should be based on the knowledge of the group of students, to consider the particularities of the group and the environment they are part of. However, we cannot forget that Blended Learning is also based on students' previous experiences, but especially on previously acquired knowledge. Also, it is important to underline the fact that the teacher is no longer a deliverer of the information, but a co-partner in the learning process, guiding the students in their process of discovery (Lytras et al., 2020).

Blended Learning can increase access to education, but also the flexibility of learning and learners, helping to increase interest in active study and intrinsic motivation of students. Blended Learning is born by homogenizing the learning process face-to-face with online learning, but this process must be integrated in a way that the strengths of the two complement each other perfectly to make the instructive-educational process more efficient.

The biggest challenge for teachers who will embrace this process is to bring and promote technology in classrooms. However, Blended Learning is not just about implementing technology-based strategies, but about increasing students' access to education. The teacher's role is to insert critical thinking, complex learning, and active study in the learning process. Motivation in learning occurs when students are engaged in various, interactive activities aimed at their involvement in the instructional-educational process. According to the references, (Sardiman, 2016) motivation is defined as a force that guides the individual and manifests itself at the behavioural level. This motivation is manifested in the form of a desire to achieve a goal. In addition to achieving the goal, it is important to emphasise that motivation determines a person's behaviour (Lee & Hammer, 2011), which is important to achieve in the instructional-educational process.

It is argued that the blended learning classroom could be useful in promoting innovative teaching strategies which will involve students in sharing, interacting and collaborating discussions and enable cognitive development of students (Islam et al., 2022)

Even if students are exposed to new teaching-learning methods, the teacher must exercise the motivation of students to learn actively, effectively. People have three types of motivation: the motivation for success, the motivation for power and the motivation to make friends. A person's character is guiding him in his actions (Johnson & McClelland, 1984), following the motivation: (1) he prefers to perform a task with a moderate level of difficulty; (2) the desire to be the best (perseverance); (3) prefers to have clear responsibilities; (4) need feedback and (5) creative-innovative in performing tasks. The distinction between intrinsic and extrinsic motivation has proven viable not only as a framework for anticipating and interpreting behaviour in general, but for understanding children's behaviour, especially in education. Regarding the classroom context, the researchers raised the question of whether a particular child's motivation to learn is determined by an intrinsic interest in the subject, curiosity; or through an extrinsic orientation in which someone is motivated by the desire to obtain grades, to gain the approval of teachers, to meet the external requirements of the school system. Following studies on school motivation (Harter & Connell, 1981), three components have been identified: (a) preference for challenge over preference for assigned light work, (b) curiosity or intrinsic interest as opposed to learning qualities / teacher satisfaction and (c) autonomous learning versus teacher dependence. Some cases have been identified: (a) the child who works hard vs. the child who wants easier tasks in the form of school subjects; (b) the child who works to satisfy his own curiosity vs. the child who works for the teacher, wanting to get the desired grades, and (c) the child who prefers to figure out how to solve difficult problems vs. the child who relies on the teacher for help and guidance, especially when it comes to solving difficult problems. According to a study involving 30,377 K-12 students, it is shown the effects of blended learning on K-12 student performance compared to traditional face-to-face learning (Li & Wang, 2022).

The effectiveness of Blended Learning classrooms is studied more and more, finding new methods of teaching and learning. According to Azmin et al. (2021), more than 50% of students can accept the online classroom approach, but also an inappropriate selection of video materials may lead to a low quality of the lesson. Moreover, Low et al. (2021) highlight the advantages of the flipped classroom, taking into account self-regulated learning, active communication.

To achieve the instructional-educational process using online methods, teachers can combine face-to-face methods with e-learning (offline or online). By combining them, the Blended learning process is born. Learning how to use e-learning technologies in the classroom is the biggest attraction for students, there is an increase in their motivation for learning and involvement. It is considered that the implementation of blended learning is an advantage for teachers, implementing interactive, attractive, diverse, and meaningful activities. The research results showed that the use of technology in classrooms increased the motivation of students to learn and be actively involved in the instructional-educational process.

2. Preparation of the School for a Blended Learning Approach

Implementing a Blended Learning approach implies courage and organization. Bin et al. (2021) pointed out some challenges for the integration of Blended Learning strategies in the classroom include digital knowledge of the teacher; self-discipline of the students; readiness and determination of the teacher, but also the financial and technical aid of the school.

It is also a process that can be seen as a challenge for all the people involved in this process, teachers, admin staff, students, and parents. The teachers need to learn innovative technologies and think about how to implement them in the classroom. Also, the school makes a huge effort in preparing the school for a Blended Learning approach. Blended Learning implies both the time and disposition to learn new things and to admit that the teaching can be better with some new strategies.

According to Hashim and Shaari (2020) teachers declare that a flipped, blended classroom has more advantages than a traditional one. However, it is important to take into account the administrative support offered to the teacher because these types of strategies need sufficient resources and much more preparation. Using diverse types of technology during the lesson (virtual classroom, apps, platforms) determines a higher level of engagement in the learning process.

2.1. Adequate Equipment

It is particularly important to be prepared with the suitable equipment in school if we want to implement a Blended Learning approach. First, the school needs to provide all the technologies that are needed to be possible to use technology during the lesson. Here, we need to underline that the school needs to have an e-learning program, implemented in the school, but also to have technology friendly classrooms. That means having in each classroom an internet connection, projectors/smart boards, laptops/computers for the teachers and iPads for the students. These are essential equipment for a school to implement a Blended Learning approach. Moreover, a monitoring system is useful, to have control and to see what children are doing on the iPads when they must complete work. This kind of system.

2.2. Planning a Blended Learning Curriculum

Getting ready for a Blended Learning approach is a long-term process that implies a lot of work, courage, and resilience. After we ensure that the school is ready, from an equipment point of view, we need to move to the next step, planning a Blended Learning Curriculum. As teachers, we already have a curriculum that needs to be followed, but the biggest challenge is to adapt the teaching strategies by integrating Blended Learning Tools.

2.3. Integration In The Lesson

There are different approaches to integrating these tools in our lessons. According to Alammary et al. (2014), he underlines an approach that has three levels of impact:

1. Low-impact blend: adding extra activities to an existing course;
2. Medium-impact blend: replacing activities in an existing course

3. High-impact blend: building the blended course from scratch.

Firstly, it is important to know the group of the students very well: year, size of the class, the knowledge of the subject; challenges and opportunities. After that, what are the learning outcomes? Here, we need to talk about resources, teaching approaches, what went well in previous lessons and what you could improve. For integrating Blended Learning tools, it is important to establish what may be delivered using technology, following the learning outcomes. Before going to the lesson, the teacher needs to be sure that he/she knows exactly how to use different tools. In this way, the impact of it is certain. Moreover, as teachers, we need to establish a lesson plan, when is the best time to use the apps: as a starter, assessment or for giving feedback. After the lesson, it's important to have a reflection moment to analyse and monitor the impact and engagement of the students. It can be done in many ways: analysing their results on a quiz, observing how students interacted during the activity.

3. Benefits for Successful Learning

Blended Learning offers opportunities for students, but also for teachers to be part of learning in different and interactive ways. The teacher gives the students the opportunity to improve learning skills by encouraging them to learn independently and in pairs/groups. By using Blended Learning tools, it allows students to continue their learning process outside of the classroom too.

There are numerous opportunities and benefits for students, even if in some studies, not all the opinions underline a positive effect. It may be considered a distraction for students having access to an infinite amount of information and various entertainment possibilities. Beside this aspect, if the technology is well integrated in the lesson as a routine, monitored by the teacher, the technology has a remarkable impact on students' development. Using these tools, we can increase the active engagement of the students. The use of technology during the lesson encourages student engagement. Integrating technologies such as Power Points, games, online assignments, or online grading systems can be signs of students' growth in the classroom. Also, having access to different teaching strategies, the teacher can individualise the learning process for each student, because each student is unique and has a personal way to learn and to retain the information, not in the same way or speed. Technology offers the opportunity to differentiate the work for students and to adapt the materials to the learning capabilities of each student, allowing them to solve the tasks at their own pace.

Accessing various resources that are connected to the real world, the students will develop their critical thinking, problem-solving skills, collaboration, curiosity, and independence in the learning process. Technology can help educators to reach new levels of teaching by accessing

4. Integration of Blended Learning Tools in Primary Classrooms

For primary students it can be a challenge at the beginning. For them, technology can be used to develop basic and fundamental skills, to be prepared for future independent learning. In primary school, students can use interactive games, spelling and reading platforms, to reinforce maths, reading, and writing. Moreover, it is important for the students because they are getting used to common vocabulary and exercising the use of technology for searching information. From the very beginning they understand

concepts such as: email address, platform, login in, passwords. Also, they develop the basic skills in using technology, how to access a web page or the virtual classroom, how to write an answer on a platform, how to use a reading platform. All these skills prepare them for future acquisitions when the tasks will be much more complex. According to Kundu et al. (2021) study, blended learning environment increased students' engagement in an elementary classroom when teachers were supported with necessary proficiencies. Also, the time spent in a blended learning classroom has a positive effect on children, bringing positive changes in students' learning engagement.

4.1. Research Methods

We wanted to have a big picture of how it is implemented and used the Blended Learning tools in primary. For this, during this school year, we did a qualitative study in Transylvania College, a private school that has an iPad learning program that has been functioning for over 10 years already. The primary department, composed by class tutors (teachers, assistants, co-teachers) and specialists (music, art, PE, Computer Science, Religion, Wellbeing, English teachers), both Romanian and International lines, tried to innovate this program, by using more Blended Learning tools in the lessons. We created a list with teachers who volunteered to use more digital tools during this school year. We had a collaboration with the IT department from the school and designed some training for the teachers to help them in the integration of those digital tools. First, the teachers started their journey by learning what Blended Learning is and how it can be applied in the school. After this stage, the IT department delivered specialised training for teachers to use these tools during the lessons. After all the training, the teachers applied in their lessons everything they learned and at the end we analysed the results, using the SWOT analysis, for 10 tools that were efficient during this school year. We used the brainstorming method in a department meeting, asking the teachers to work in groups to answer four questions about their experience with Blended Learning tools. In the end, the teacher chose the 10 most relevant tools that helped them during this school year and completed the SWOT analysis for each of them.

4.2. Findings

The most difficult part of this process was to make every teacher interested and involved in this Blended Learning approach, but also to have a theoretical preparation of the concept. The most meaningful aspect that the teacher learned was to have a good integration of the subject: in the planning, having clear lesson objectives, suitable activities, to use those tools in assignment and assessments. We discussed Blended Learning and the impact that it has on our students. We designed an analysis with four questions and a SWOT analysis for one online tool that was useful during this school year. For each question we had various answers that came up from brainstorming, during one of the primary meetings. In groups, the teachers were asked to answer the questions below and to reach some conclusions.

4.2.1. Brainstorming

A. What is your opinion about using online tools/blended learning tools in the classroom?

- 1.Children are more engaged during the lessons, active, curious, interested. It is a way to make sure everyone is involved, and everyone is making progress. Using online tools is making keeping track of everyone's progress easier.
 - 2.Using Maths tools for teaching, assists teachers in making the lessons more engaging and interactive. They are especially useful and necessary, and they help students to make progress.
 - 3.We believe that online tools are helpful up to a point. They offer a lot of support to students both in terms of visual cues and accessibility. However, constant use can lead to children being unable to deal with tasks and challenges without those support systems.
 - 4.They are extremely useful and necessary, if you understand them well enough to make them a successful learning tool. Blended learning means using various tools in the classroom making it both an analogue and digital work environment, not a mix of students in various locations.
 - 5.We find out that technology is best used with any reliable resource, sparingly and creatively to supplement the students' learning experience rather than being the centre of every activity. The downside of using it is that students can then be reluctant to use more traditional resources and depending on their age can have trouble differentiating between technology as a tool and a toy. It can also be extremely time-consuming for students in their early years to have to enter email addresses and remember passwords. We need more child friendly tech in these instances and more understanding that what students can do easily in year 5 or 6 doesn't translate so well in years 2 or 3. As a side note, while we like the use of technology in class, we didn't like the way the phrase "blended learning" was misappropriated during the pandemic to talk about a combination of students being online at home while the teacher also had a class full of students to deal with, it was not a satisfactory way of replicating the classroom experience for the student at home. It drew attention away from the students in the classroom while leaving the student at home feeling isolated and the teacher having to plan for both (often with little notice). It also gave parents unrealistic expectations as the technology is not yet at the point where the classroom experience can be replicated when so much is kinesthetic, and student based.
 - 6.We strongly believe teaching should be in line with today's technologies and global ways of learning. Also, in the context of the pandemic, access to learning should be easy and open to everyone, regardless of the location of the learner.
- B. Do you recommend the use of technology in the classroom? Why/Why not?
- 1.We recommend the use of technology because the kids love to learn through interactive games, videos, quizzes and to do research for different projects. Besides that, online learning can offer personalised instruction and self-paced learning, fun and engagement.
 - 2.We recommend using technology in the classroom because it is so present in our lives anyway and it will not go away. It is easier to keep track of what children are learning and make children more engaged. So yes, because technology provides additional opportunities for students to see and interact with different concepts.
 - 3.Technology should be used in the classroom to supplement what is not available in the real world. For example, videos and pictures of animals, landmarks or historical figures are helpful

in providing visual support to learning. However, experiential learning and hands-on activities are essential to a good understanding of abstract concepts by linking the theoretical knowledge (most difficult for younger students to assimilate) with the fun and practical ones. Older students spend more time in front of the screen than younger ones, so they should be encouraged to use technology less and remember to use real-world materials and resources. There needs to be a balance between technology use and applying knowledge to deal with real world experiences.

4. We strongly recommend the use of technology in the classroom, because it helps the students improve the communication, collaboration and creativity skills that are necessary for 21st century learners. Not only is it important for the future as much of what our students will do in the future will involve technology, but in the current society and culture it is a sure-fire way to keep them engaged and learning.
5. We would recommend the use of some technology in each classroom since this is the age that students are growing up in and there is no sense operating in a bubble as if the classroom and society in general has not evolved since the 1980's (when, even then, computers and early forms of early tech were present in UK classrooms). Technology can also help fill gaps in available resources and offer students access to practice at home that would otherwise not be provided. For example, the RAZ-kids app was instrumental in providing a wealth of properly levelled reading material to students allowing them to make progression at their own level and pace, instead of the traditional and outmoded idea that every student in the class can read the same novel at the same level without difficulty when the reality is often far from that. It helped provide access to books for children who otherwise would not have had any at home and provided an alternative to a book-free classroom (which should not be the case but traditionally always seems to be in schools).

C. How does the blended learning approach affect students' performance?

1. When using technology, kids are incredibly involved and engaged. They work enthusiastically and they monitor their work/progress better especially when they use games on different apps or do different online activities (Kahoot, Worldwall, Blooket). They learned better multiplication tables through different games.)
2. It usually aids their performance. If children use too much technology at home too, they have difficulties paying attention in the classroom during discussions and group work and it affects their performance in a negative way. A balanced approach needs to be implemented in school and at home so that children benefit from the blended learning tools.
3. In our experience, blended learning can have a negative impact on a student's performance when used constantly. A lot of blended learning tools support students in giving their answers and most do not ask them to speak about what they have understood or explain a concept. We have found that students in Middle School perform worse on written or speaking tasks because they are less used to a lack of structure and instruction (usually provided by a blended learning platform or tool) when answering questions or resolving tasks. Therefore, balance is

particularly important when using blended learning to allow students to handle real-life challenges by themselves.

4. The blended learning approach affects students' performance in a positive way, because the students can continue their learning outside of the classroom. The students will be less stressed knowing that they can choose their pace, which makes them more comfortable.

5. If used properly it can be used to support different learning styles, abilities, and capabilities. Blended learning can be used to support students in many ways to help them understand and succeed in their learning. Having access to learning tools on their iPad means they learn to be independent rather than asking the teacher to constantly answer the same questions.

D. What is the impact of those tools on your students? What changes did you observe?

1. We use Doodle apps for English, Maths, Spelling Reading comprehension. Doodle apps use stars and have a shop where they can buy stuff for their avatars. The doodle apps really impacted the progress and their engagement, they have a lot of fun while playing and learning and they are always ready to practice, no matter if it is a challenging task. The app generates exercises that are appropriate to their level and insists on what they don't know, so they can practice more. It even has explanations that are part of the exercises. We also have another tool to keep track of their reading progress, where they have books, they can choose to read from each of their levels.

2. Younger students benefit from the support platforms, games, and apps offered, especially when it comes to language learning. Because of the ease of access, it is easier to assimilate information such as vocabulary and fixed grammar forms. Older students are more able to navigate the online world, so it allows them to research and find information by themselves (assuming they have been taught how to).

3. With apps like Pear Deck, we found that students were more engaged with presentations when viewing them via their own iPads than looking at the projector and the addition of interactive elements such as questions and polls also kept them engaged. This resulted in them being quieter and more focused instead of what can sometimes be a chaotic attempt to all be heard and validated during a discussion. With others such as Gimkit I found less success as students were too focused on the complexity of the game and were not really paying attention to the questions, just trying to guess their way through it to get to the "fun" part. As with my other comments, balance is important with these apps and students do not always have the maturity in early years to understand that the point of the game is still to learn something.

4.2.2. Swot Analysis

Each group of teachers discussed the most useful tool that each of them used during this year. They chose one tool and completed the SWOT analysis for it.

4.2.3. Strengths

4.2.3.1. Pear Deck

- 1.great tool to combine slide presentations and interactive questions (See Figure 1 for Pear Deck assessment example)
- 2.it's great for teaching in class or remotely
- 3.promotes inquiry-based learning
- 4.it can be used across all subject areas
- 5.formative assessment occurs when Pear deck is being complete
- 6.all students' responses can be exported as a spreadsheet.
- 7.interactive, discussion prompting, built in revision
- 8.user friendly for both teachers and students.
- 9.It has many functions for making the content of a lesson more interactive.
10. Gives you the possibility to save the students work and send them as takeaways.

In Figure 1 it is presented a Pear Deck assessment example. Students need to be connected to the platform, having the question and being able to offer an answer in real time.

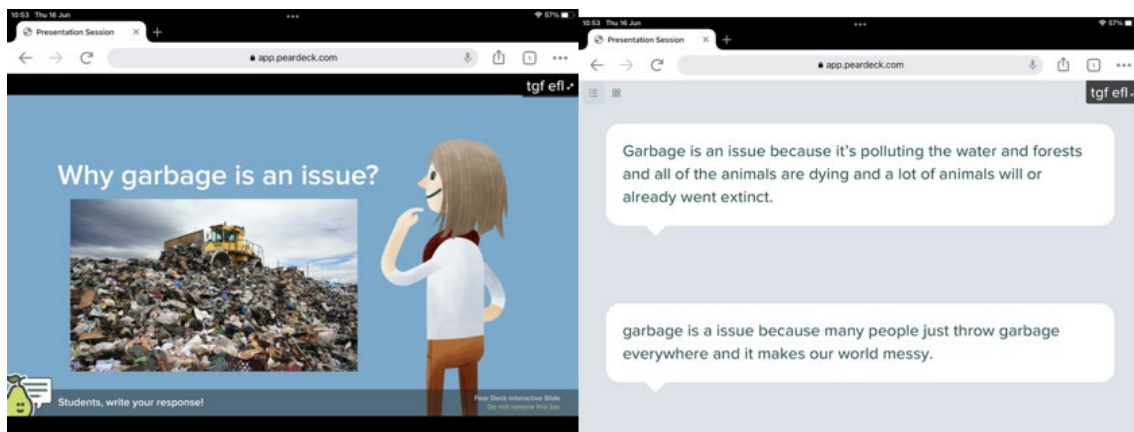


Figure 1. Pear Deck assessment example

4.2.3.2. Doodle

- 1.levelled activities (See Figure 4 for Doodle students' tracking progress)
- 2.easy to use
- 3.It offers explanations.
- 4.Children can skip questions and ask adults for help.
- 5.Easy to understand
- 6.Covers the curriculum

4.2.3.3. Reading A-Z

1. A wide range of reading materials
2. Option to listen to the materials
3. Quizzes for each book
4. Allows for differentiation based on reading level. (Figure 3 for Reading A-Z assessment)
5. Levelled (students are tested and assigned a reading level)
6. Each book has a comprehension quiz attached
7. Huge book collection to choose from
8. Interactive, motivating- rewards
9. Students are aware of the progress they make

4.2.3.4. Blooket

1. A variety of games with high student engagement so boredom does not come with repetition.
2. Concepts can be easily found and placed into a premade game allowing quick practice activities to be created. (See Figure 2 for Blooket exercise example)
3. Multiplayer competitive games can also be played or solo assignments set

In Figure 2 there is an example of exercises that can be used in primary classroom for Maths, English and Reading.

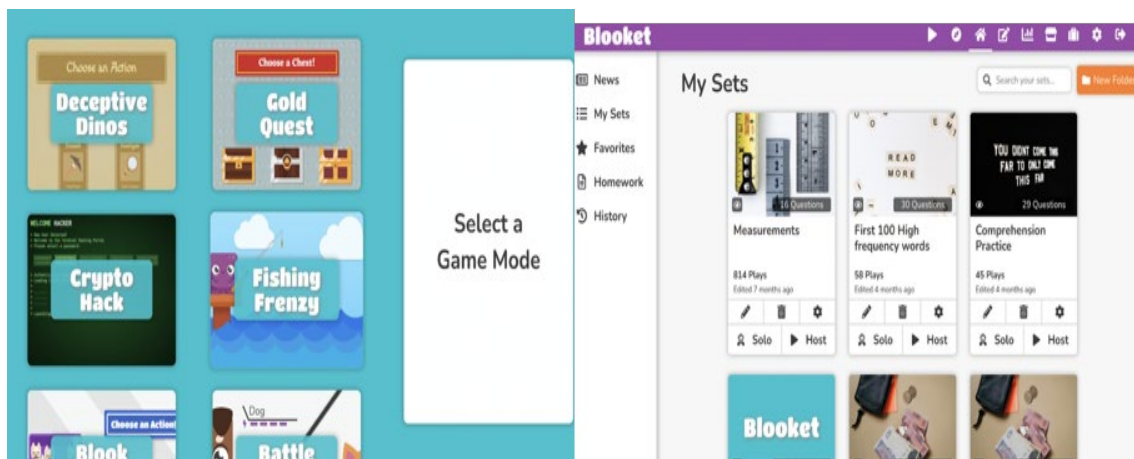


Figure 2. Blooket exercise example

4.2.4. Weaknesses

4.2.4.1. Mote

1. limited use through a free account

4.2.4.2. Active Learn

1. not updated to the new British curriculum

4.2.4.3. Khan Academy

- 1.Content restriction
- 2.One sided learning
- 3.One source of income

4.2.4.4. Blooket

- 1.Students can buy their own app and this leads to them becoming bored with the school content as they would rather play unrelated games.
- 2.It often removes the “magic” of a teacher tool if the student can freely access it at home.

4.2.5. Opportunities

4.2.5.1. Doodle

- 1.Children get a change to practise what they don't know and don't get discouraged if they don't get the answers right the first time, they have more changes to correct their mistakes and then the app generates different kinds of activities but with similar learning purpose

Doodle can offer the opportunity of tracking the progress of the students as it is presented in Figure 3, having the opportunity to share them to the parents and students in order to create a progress challenge.

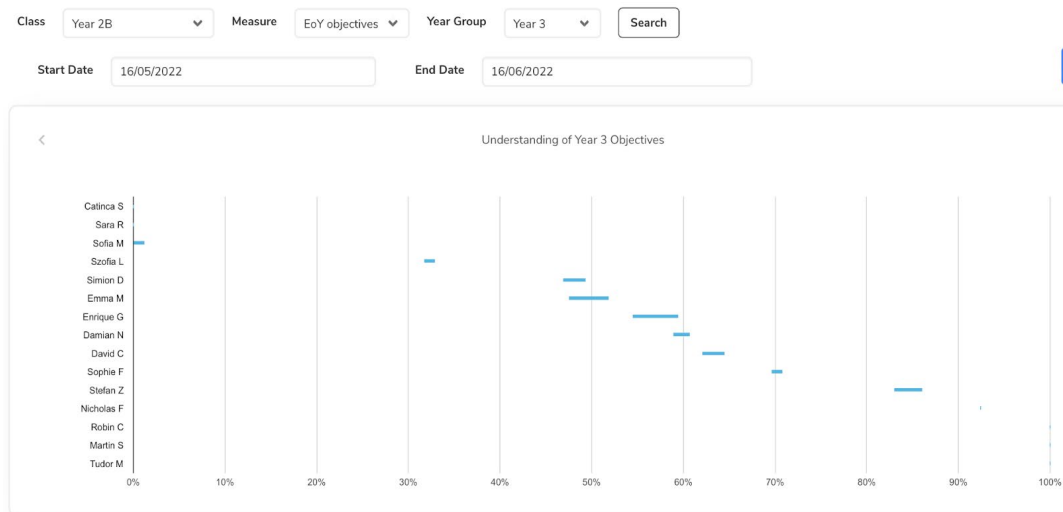


Figure 3. Doodle students' tracking progress

4.2.5.2. Active learn

- 1.allows the students to communicate more effectively
- 2.allows the students to be aware of the progress they make

4.2.5.3. Reading A-Z

- 1.To track student's reading time per page to make sure they are not skipping
- 2.To ask for more written answers in quizzes
- 3.Students develop reading skills
- 4.Different types on texts broadens their reading interest
- 5.Students learn to self-assess their reading progress

4.2.5.4. QR Code Reader

- 1.You can integrate as many codes as you want.
- 2.Students can work in groups and solve the task together
- 3.It increases collaboration among students.

4.2.6. Threats

4.2.6.1. Pear Deck

- 1.to create a deck takes la lot of time
- 2.Not many threats as there is little chance of sensitive information being leaked. Students can be inappropriate or mess around with certain question types though and be distracted.
- 3.Kids not knowing how to use the features of the app.

4.2.6.2. Reading A-Z

- 1.Students get used to having multiple choice questions and can't answer by themselves
- 2.Time spent online on devices

In Figure 4 an example of assessment for Reading A-Z is presented, students having the possibility to listen the pronunciation, but as it is, students can only choose a multiple answer.

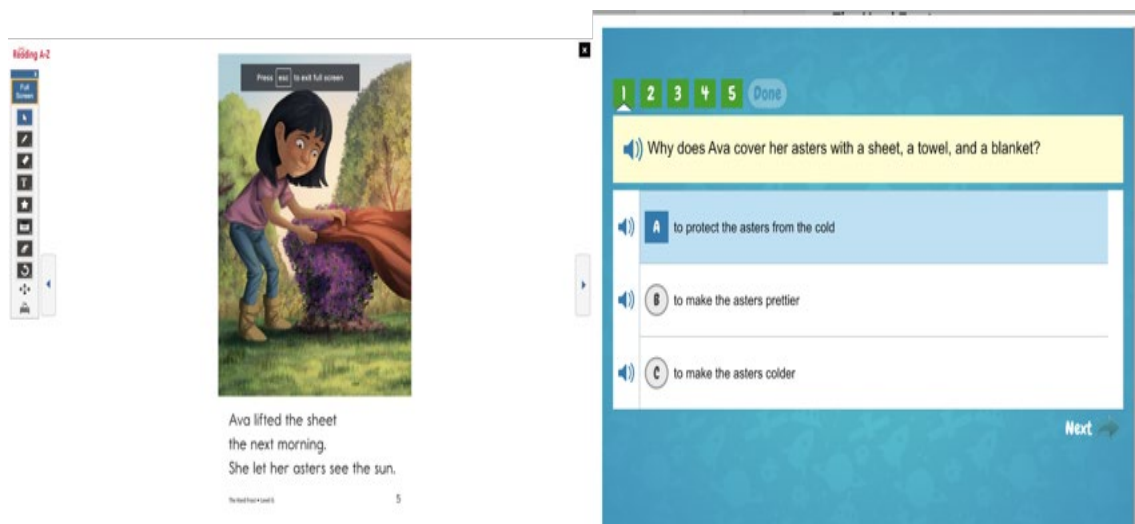


Figure 4. Reading A-Z assessment

5. Conclusions

The most meaningful answer to the first question underlines the fact that technology in our classrooms is very good as long as the teacher knows exactly what to do with it and what the purpose is. It cannot be used without thinking about the big picture, outcomes and steps. For the second question, it is important to underline that technology needs to come as a helper for providing visual support to learning. The next question is related to the fact that we, as teachers, observed support in using technology to help students with different learning styles, abilities and capabilities. So, even if we use technology, do not forget to pay attention to the student's individual needs. While and after getting used to technology, the students are much more aware of their capabilities, they are responsible for the use of technology, and they are able to select the information they need.

We tried and used various apps and platforms during this academic year. Each of us came up with different ideas and suggestions and we even tried to teach each other new tools and ways to implement those in the classroom. Now, at the end of the year, we completed a SWOT analysis for 10 of them, 10 that we find interesting and useful at the same time.

We identified various strengths for all the apps that we used. We appreciated the apps because they are interactive, they combine multi-sensory tasks, easy to use in the classroom, safe for students from an added point of view, and can be used for assessments. As for weaknesses, we found out that some apps have limited use though a free account, take a lot of time to prepare, students need to wait for all the others to move to a next step or some of them are quite difficult to use in the classroom. All the apps have great opportunities if we consider students' progress, but also all of them can be improved to help us more. For example, for the Reading A-Z platform, it could be a clever idea to record reading time per page, to make sure they are not skipping the reading. Also, all these apps require minimal materials and preparation required by the teacher (gluing, cutting). We need to pay attention to the threats...because in the case of the apps, we need to make sure that the students are completing their work appropriately. There is an effortless way for students to create inappropriate content, even if the creator is identifiable.

Anyway, the use of technology implies some limits too. It is important to encourage a balance in the use of technology, in school, but also at home, to give the chance of each student to be involved in the lesson and to complete the work, learning by doing principle. Also, we need to see Blended Learning as a mixture of technology and traditional teaching strategies.

In conclusion, we need to focus on students' development when choosing teaching strategies and to have in mind the punctual purpose of the activity, what students will achieve from this activity, what is the end in mind. It is important to adapt teaching strategies to the students' age even if we talk about blended tools. If the game/app is too easy for them or too hard to use, it is not efficient. In the end, we need to constantly increase motivation and involvement in the lesson. Resilience is a key aspect of using technology in class. We need to admit that activity can have a significant impact, but some of them do not. Also, we need to focus on the students, not only on the fact that we spend a lot of time preparing. Some students may not understand how to use that app, or it is difficult for them and we, as teachers, need to show empathy and support them to try repeatedly. Here comes the big question: how do we encourage other schools to start this journey too, to do all the steps to implement Blended Learning tools in primary classrooms?

References

- Alammary, A., Sheard, J., & Carbone, A. (2014). Blended learning in higher education: Three different design approaches. *Australasian Journal of Educational Technology*, 30(4). <https://doi.org/10.14742/ajet.693>
- Azmin, N. F. M., Wahab, M. F. A., Ahmad, F., Asnawi, A. L., Jusoh, A. Z., Ibrahim, S. N., & Jimat, D. N. (2021). Engineering Students' Perceptions and Acceptance of the Online Flipped Classroom for Learning during the COVID-19 Pandemic. *IJUM Journal of Educational Studies*, 9(3), 52-62. <https://doi.org/10.31436/ijes.v9i3.407>
- Bin, A., Latif, A., Wahida, F., Mohd, B., Nazarudin, A., Bachok, F., & Othman, Z. (2021). Issues and challenges of online learning during COVID-19. *GADING*, 24(04), 43–48.
- Harter, S., & Connell, J. P. (1981). A model of children's achievement and related self-perceptions of competence, control, and motivational orientation. In J. Nicholls (Ed.), *Advances in motivation and achievement* (pp. 219–250). JAI Press.
- Hashim, N. A., & Shaari, N. D. (2020). Malaysian teachers' perception and challenges toward the implementation of flipped learning approach. *Asian People Journal*, 3(2), 62–76.
- Islam, M. K., Sarker, M. F. H., & Islam, M. S. (2022). Promoting student-centred blended learning in higher education: A model. *E-Learning and Digital Media*, 19(1), 36-54. <https://doi.org/10.1177/20427530211027721>
- Johnson, E. W., & McClelland, D. C. (1984). *Learning to achieve* (Teacher's ed.). Glenview, Ill.: Scott, Foresman.
- Kumar, A., Krishnamurthi, R., Bhatia, S., Kaushik, K., Ahuja, N. J., Nayyar, A., & Masud, M. (2021). Blended Learning Tools and Practices: A Comprehensive Analysis. *IEEE Access*, 9, 85151-85197.
- Kundu, A., Bej, T., & Rice, M. (2021). Time to engage: Implementing math and literacy blended learning routines in an Indian elementary classroom. *Education and Information Technologies*, 26(1), 1201-1220. <https://doi.org/10.1007/s10639-020-10306-0>
- Lee, J. J., & Hammer, J. (2011). Gamification in education: What, how, why bother?. *Academic exchange quarterly*, 15(2), 146.
- Li, S., & Wang, W. (2022). Effect of blended learning on student performance in K-12 settings: A meta-analysis. *Journal of Computer Assisted Learning*, 38(5), 1254-1272. <https://doi.org/10.1111/jcal.12696>
- Low, M. C., Lee, C. K., Sidhu, M. S., Lim, S. P., Hasan, Z., & Lim, S. C. (2021). Blended Learning to Enhanced Engineering Education using Flipped Classroom Approach: An Overview. *Electronic Journal of Computer Science and Information Technology*, 7(1). <https://doi.org/10.52650/ejesit.v7i1.111>
- Lytras, M., Sarirete, A., & Damiani, E. (2020). Technology-enhanced learning research in higher education: A transformative education primer. *Computers in Human Behavior*, 109, 106350. <https://doi.org/10.1016/j.chb.2020.106350>
- Niemi, H. (2009). Why from Teaching to Learning? *European Educational Research Journal*, 8(1), 1-17. <https://doi.org/10.2304/eej.2009.8.1.1>
- Procter, C. (2003). *Blended learning in practice. Education in a changing environment*. University of Salford.
- Sardiman, A. M. (2016). *Interaksi dan Motivasi Belajar Mengajar* [Teaching and Learning Interaction and Motivation]. Rajagrafindo Persada.
- Soon Tan, C., Zakuan, N., & Ismail Abd Aziz, M. (2022). Recent Trends of Blended Learning and Flipped Classroom in Malaysia. *Arab World English Journal*, (2), 290-301. <https://doi.org/10.24093/awej/covid2.19>