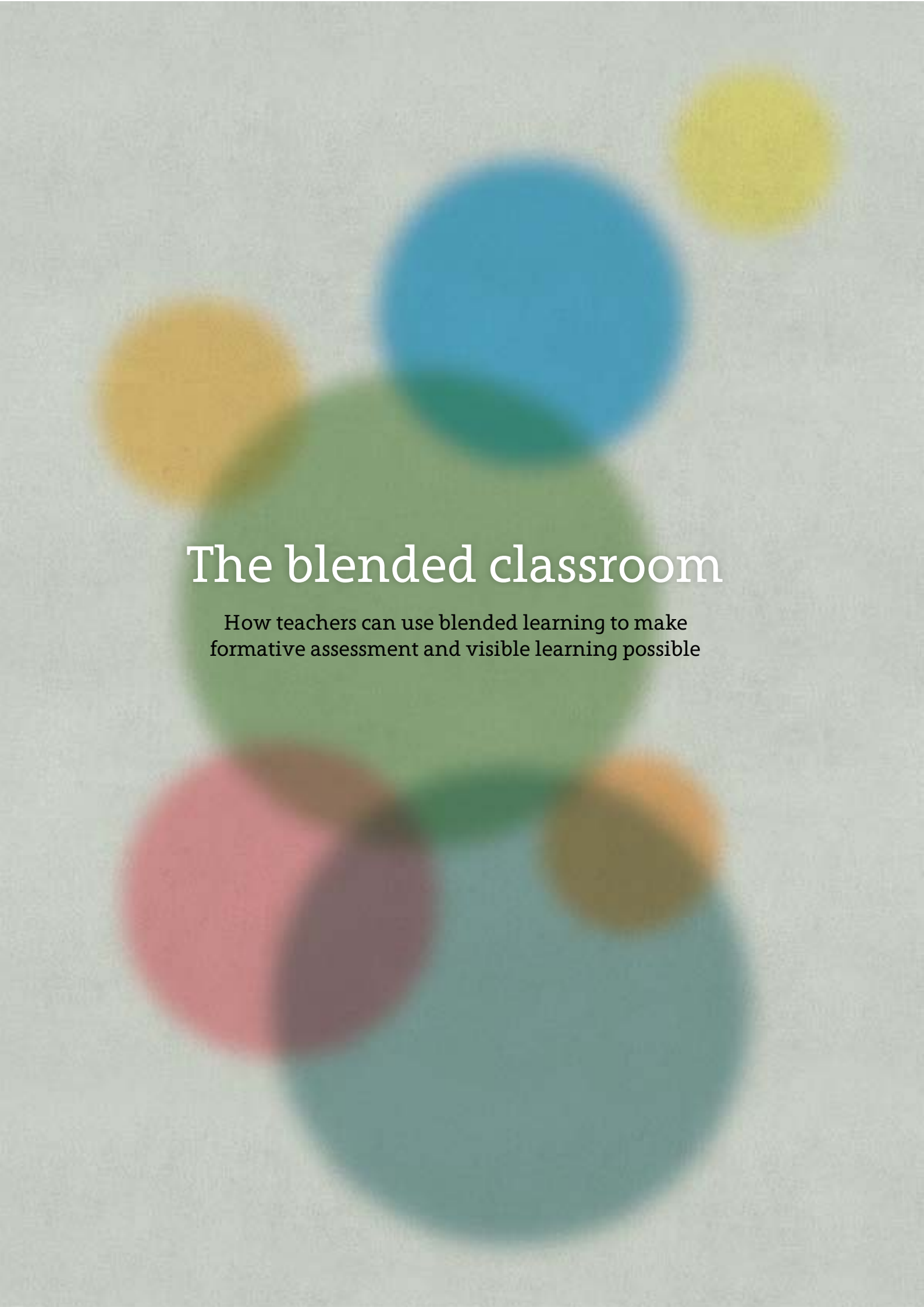


The blended classroom

How teachers can use blended learning to make formative assessment and visible learning possible

The blended classroom

How can teachers and students use the opportunities afforded by technology to improve the learning experience? And how can blended learning make assessment for learning and visible learning possible?

About the author

Morten Fahlvik is from Bergen, Norway where he works as an Educational Researcher at itslearning. Trained as a teacher, Morten has taught in primary schools, been a teacher trainer and investigated the pedagogical use of ICT at the Centre for New Media at Bergen University College.

Many people argue school classrooms have not changed from the old black and white photos that we see from schools in the 1950s. But while the basic set-up of the classroom remains the same – with students facing the teacher – teachers and students now have access to technology that gives them the opportunity to explore new teaching and learning possibilities.

This whitepaper aims to lay out some of the possibilities offered by technology. It shows how teachers are already applying this technology in a pedagogical setting in something we refer to as the blended classroom.

Developed by innovative teachers who see blended learning as a way to answer pedagogical needs, the blended classroom combines the physical classroom with an online learning space in order to improve education for students. As a result, it is a mix of blended learning, formative assessment techniques and visible learning.

Why use a learning platform in your blended classroom?

There are many online tools and services that teachers use, from systems specially designed for teaching to social networking sites, but the learning platform or LMS (learning management system) remains the most suitable alternative.

Learning platforms are used by teachers because:

- They are designed to suit the processes of teaching and help teachers manage the 'logistics' of teaching
- They give teachers a holistic view of student achievement across all courses, subjects and skill areas
- They organize work so that students can reflect on their progress and learn from each other
- They are secure. No student work or information enters the public sphere

In this whitepaper you will:

- See the potential of the blended classroom
- Learn how the blended classroom can make visible teaching and formative assessment possible
- Read two case stories – with detailed examples and how-tos – where a learning platform is an essential part of the blended classroom

Contents

The theory

The practice

The blended classroom

The two classrooms, the traditional physical classroom and the online classroom, both offer unique possibilities. In the blended classroom, the teacher uses the best properties of both classrooms. This means you must be familiar with the characteristics of both classrooms when planning your teaching.

The characteristics of the physical classroom

The physical classroom exists in the present. It gives you a good overview of where the class is and how they are progressing. You can respond immediately to any misconceptions your students may have, and re-align goals and correct understanding for the entire class. It is also useful for livening up the curriculum and focusing the entire group's attention.

The physical classroom also enables you and your students to see and respond to each other directly, not just in terms of what each person says, but also how they say it. As such, it enables you to observe how your students work and collaborate, and gives you the opportunity to teach in a collaborative manner that develops interpersonal skills.

However, the physical classroom can also be chaotic and even the most dedicated students often fail to retain all the information presented. It can also prove difficult for you to focus on small groups of students and find time to work with individuals.

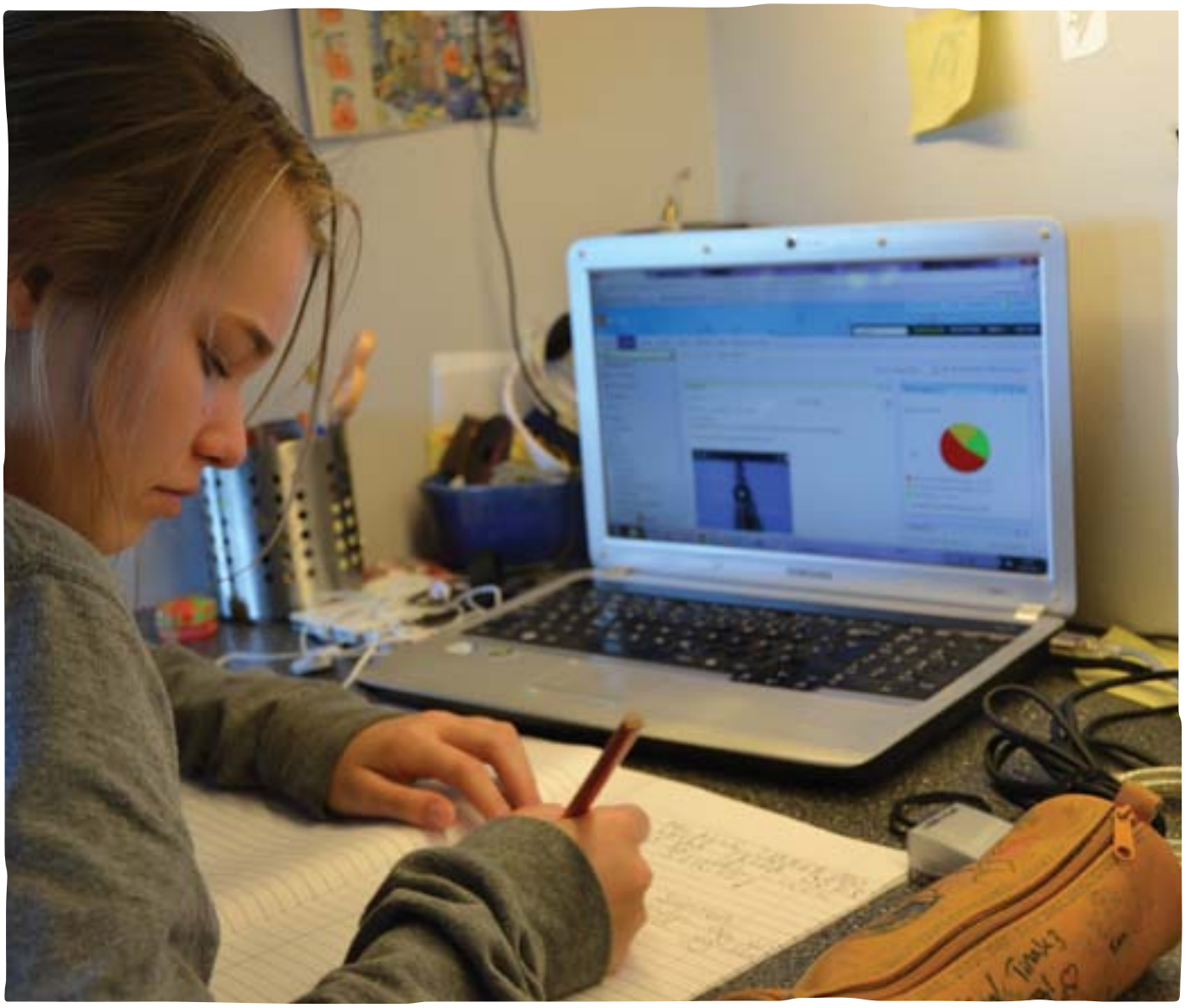
Photo: Juska Wendland

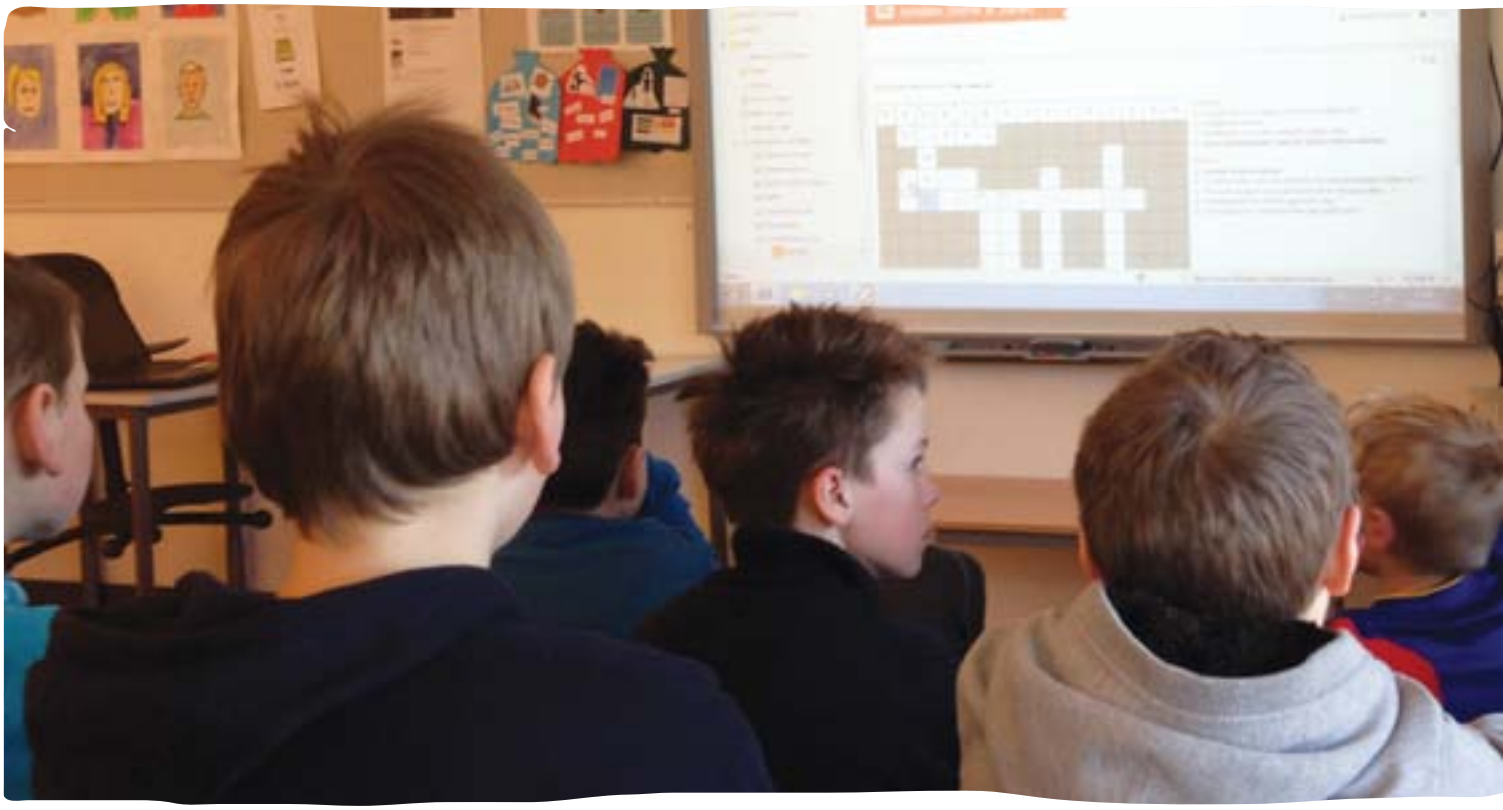
The characteristics of the online classroom

The online classroom gives you a chance to extend activities long after the class has finished, allowing you to stretch time and re-engage your students with the work that they have done in class. You can, for example, provide students with presentations or other classroom materials via the online classroom, or continue classroom discussions online. You can even add teaching videos or recordings of your teaching to the online classroom so that students can review what they learnt in class and reinforce their understanding.

In the same way, the online classroom can be an important tool if you want to pre-teach before a class or course begins, a concept that British educational expert James Nottingham calls 'previewing'. By adding learning resources such as videos or text, asking questions via polls and even engaging students in online discussions on a subject, you can raise student interest in a subject in advance of teaching. Previewing also enables you to assess how much students already know about a subject, allowing you to tailor your teaching to the correct level from day one.

The online classroom can also be used to give on-going feedback to students. Students can submit work online and receive comments and advice before the next class, for example, and they can see your comments on online discussions and blogs between classes. Although the online classroom can enhance the learning experience, it lacks the subtleties of face-to-face interaction.





The ideal blended classroom

The blended classroom gives teachers the ability to put visible learning and formative assessment into practice. There are a number of educational theories that people see as key to success in the modern world, but we rarely see examples of how these different theories can work together. The ideal blended classroom combines three of today's most popular teaching theories into one unified approach that can improve teaching and learning in the reality of today's schools.

1. Visible learning

Visible learning is a concept coined and developed by John Hattie, Professor of Education at the University of Melbourne. He says visible teaching and visible learning happen "when teachers see learning through the eyes of the student and when students see themselves as their own teachers."

In **visible learning**, you must design your teaching so that you understand what your students perceive and understand, and then give this information back to them so they know how to proceed in order to progress.

In **visible teaching,** you must make learning intentions clear for students, not just at the start of the learning process but throughout teaching, so that students can aim to exceed expectations.

Put learning first!

While the economic benefits of blended learning remain real, the 2012 NESTA report 'Decoding learning: The Proof, Promise and Potential of digital education', found that technology worked in the classroom when "putting learning first."

The report states:

"We have shown how different technologies can improve learning by augmenting and connecting proven learning activities."

This is what the blended classroom is all about: using the technology available to put learning first by combining blended learning, visible learning and formative assessment.

2. Formative assessment

In short, formative assessment involves giving the students continuous and timely feedback on their work, so they can clearly see where they are and what they need to do to improve.

Dylan Wiliam, Emeritus Professor of Educational Assessment at the University of London, has outlined five formative assessment strategies needed to improve student learning:

1. Clarify and share learning intentions and criteria for success with your students
2. Develop discussion, tasks and activities that elicit evidence of learning
3. Provide feedback to students that moves their learning forward
4. Activate students as instructional resources for each other
5. Encourage students to take ownership of their own learning

3. Blended learning

Blended learning is the combination of the physical classroom with an online teaching and learning space. One of the most comprehensive analyses comes from education researcher Michael B. Horn of the Clayton Christensen Institute. He defines blended learning as learning that takes place in the online and physical school environments. Students have some control over time, place, path and pace of their learning. Blended learning entails bridging online learning back into a traditional school setting.

One of the best-known examples of blended learning is the flipped classroom. See page 20 for more information about this.

Most blended learning models have been developed as a way for schools to cut costs or offer a wider selection of courses to students. As such, they focus on the school set-up and the technology required.

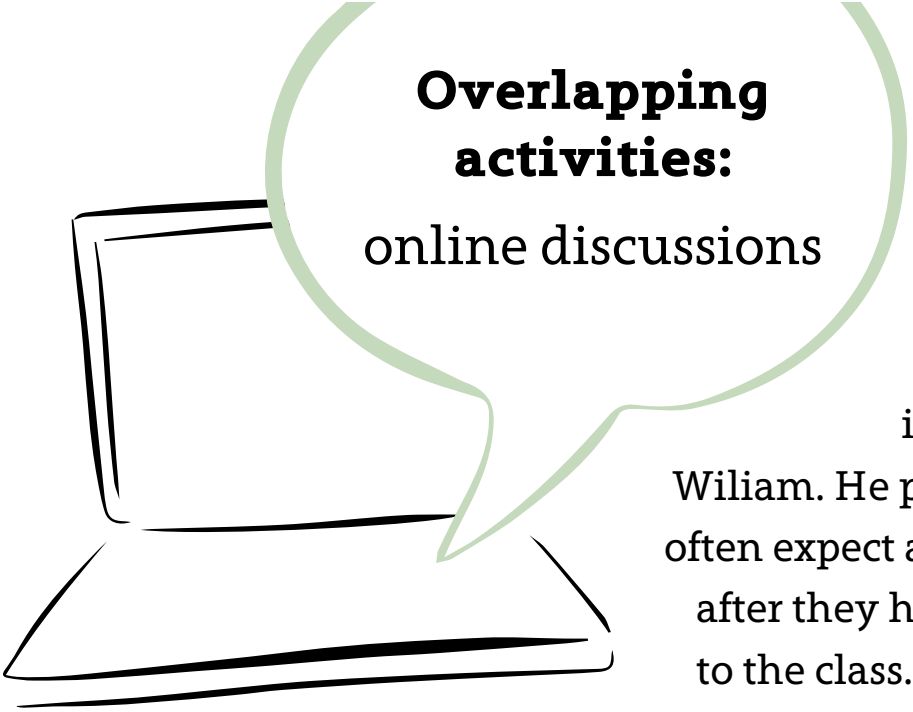
Choosing your blend

In traditional teaching, it is often difficult for teachers to follow up on homework. As a result, activities at school often get disconnected from homework. Teachers looking for ways to improve the overlap between classwork and homework often utilise an online classroom to bridge the learning activities at home and at school. This enables teachers and students to maintain contact when not in the physical classroom which, in turn, promotes the sharing of ideas, information and on-going/timely feedback – from teacher to student, student to teacher and between students. The key is to take advantage of the overlap between the learning spaces, as illustrated in the diagram below.

The blended classroom

Overlapping activities:

online discussions



One common limitation of the physical classroom is highlighted by Dylan Wiliam. He points out that teachers often expect an answer just seconds after they have posed a question to the class. But many students require time to process a question, reflect on it and formulate an answer before they dare express themselves in class. This is why a large number often fail to contribute to classroom discussions.

There are many techniques that can be utilised to give students a little more time to reflect and formulate answers. One of these is discussions using the online classroom. These are often most effective when a discussion starts in class and continues online (or vice versa). Teachers who practice this report that more students take part in the online discussions and that students are better prepared for the next class in the physical classroom.

Online discussions also enable the teacher to see how learning progresses between classes. Reading the comments allows you to assess exactly which topics and misconceptions should be clarified for the entire class. You can then deal with them in the physical classroom when you have everyone's attention.

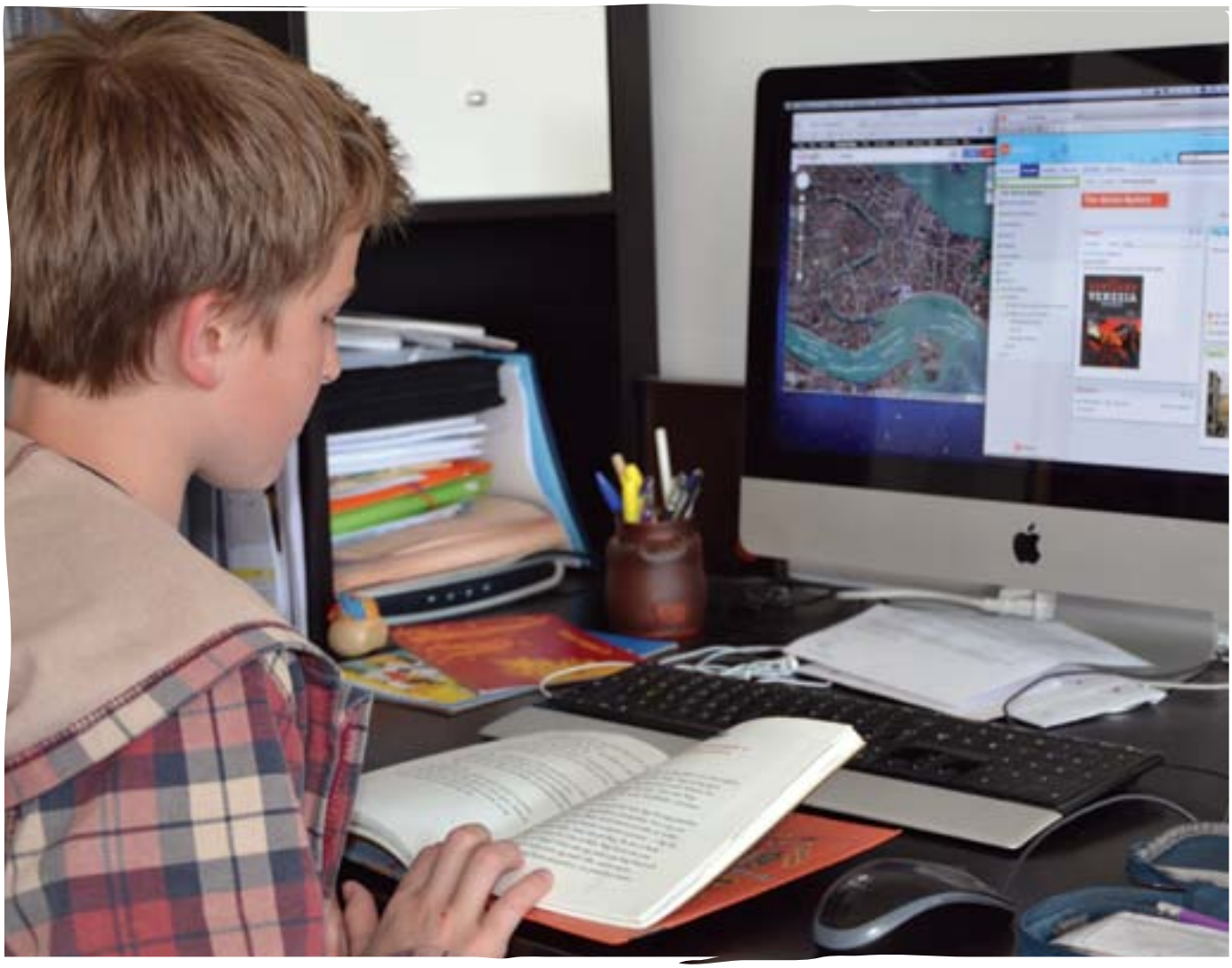
This enables you to address an issue pointed out by John Hattie in his book *Visible Learning for Teachers*. "One of the important understandings that teachers need to have about each student is his or her ways of thinking," Hattie states. Using discussions before or after class enables you to assess your students' opinions and feelings about the teaching and the topic on a regular basis.

> One of the important understandings that teachers need to have about each student is his or her ways of thinking.
>
> - John Hattie

Delving deeper

Online discussions are one example of how a teacher may use both the physical and online classrooms to improve the educational experience for the students. In the case studies in this paper, we look at two teaching practices that fully utilise the overlap between the classrooms.

Developing reading comprehension in the blended classroom



Stine teaches 11 and 12-year-old students at a primary school in Norway. This example uses the blended classroom to teach reading comprehension, vocabulary and writing skills.

Stine made a study plan for the unit which included strategies to assess student comprehension. While the class read the book *Veneziamysteriet (The Venice Mystery)* by Bjørn Sortland, Stine used a number of techniques to teach reading skills.

During a three week period, the students read, examined new vocabulary and discussed the concepts presented.

At the end of the three weeks they wrote their own stories, which dictated their final summative assessment for the unit.

The project had a set of clearly defined goals. The students should be able to reflect upon what they read, demonstrate their understanding of concepts presented in the book and express their own point of view.

The Venice Mystery in the blended classroom

All students have access to the internet at home and there are a number of desktop computers and laptops to use in class. Stine uses the itslearning platform as an online classroom space, but the concepts can be applied with any learning platform. The timeline shows some of the activities that Stine uses when teaching reading comprehension to her students.

[PHYSICAL CLASSROOM]

The Venice Mystery in the blended classroom

Reading aloud

Stine reads the first section of the book with the children following along in their own texts. She records the reading and makes it available in the learning platform for students who missed class or want to hear it again.

Class discussion

Stine begins by initiating a class discussion based on the questions she asked in the online classroom. She then outlines the story of the book and asks: What do you think happens in Venice?

Preparation

Resources

Stine uploads all her electronic teaching content onto itslearning. She can choose which resources to make visible to students and which to hide until later.

Planning

Stine divides activities between the physical and online classroom and looks for places where the two spheres can overlap.

Pre-teaching poll

Before the first day, Stine asks all her students to answer a simple poll. The answers give her valuable information about how much her students already know.

Week 1

Online discussion

Students work online after class to continue the discussion initiated in class. Stine monitors the discussion, adding comments where she sees fit.

Vocabulary crossword

Students make, exchange and complete each other's crosswords to test their understanding of any new vocabulary.

Blogs

Students add the first entry to their blog, summarising the first chapters of the book. They are also required to comment on other students' blog entries. Stine can add formative comments if required.

[ONLINE CLASSROOM]

[PHYSICAL CLASSROOM]

Blog review

Stine shows a number of the students' blog posts on the big screen for all the students to see. As a class, they look at the comments on the posts, which leads into a full-class discussion.

Planning stories

Students work in pairs or small groups to discuss their stories. They refer back to their blog posts and the comments they received as they explore their ideas with their partner. They then work on their own to draft a final story outline.

Vocabulary revision

Stine displays the crosswords that the students worked with online and the class complete them together. As students have already attempted the crosswords in the online classroom, more of them are likely to take part in the group activity.

Multimedia

Stine selects some of the resources added to itslearning by the students and asks the students to present them in class, explaining why they chose them.

Week 2

Week 3

Multimedia

Stine asks the students to find information about Venice, including images, videos and interesting facts. Students add what they find to a shared page in itslearning that everyone in the class can see.

Online discussion

Stine starts an online discussion. She isolates one moment in the story and asks what other choices the characters had, and why the author made the decisions he did. The online classroom is useful here as the topic is complex and it gives students more time to consider their answers.

Blogs

The students outline their ideas for the story they will write at the end of the course in their blog. Students are encouraged to comment on each other's ideas and Stine can add formative comments.

Stories

The students write their stories. They submit them online, either as written pieces, recorded sound files or videos. Stine can decide whether to grade the story as it is or add formative comments and ask the student to make changes before the work is finalised. All the final grades and comments are automatically added to the student and class gradebook in itslearning.

[ONLINE CLASSROOM]

The Venice Mystery Summary

Stine carefully plans her teaching, dividing the activities into those best suited for the physical classroom and those best suited for the online classroom. In the physical classroom, she uses reading aloud and group and class discussions to engage her students' interest and develop general ideas that all her students will benefit from. She also uses pair and group work to fine-tune discussions and facilitate peer-to-peer learning.

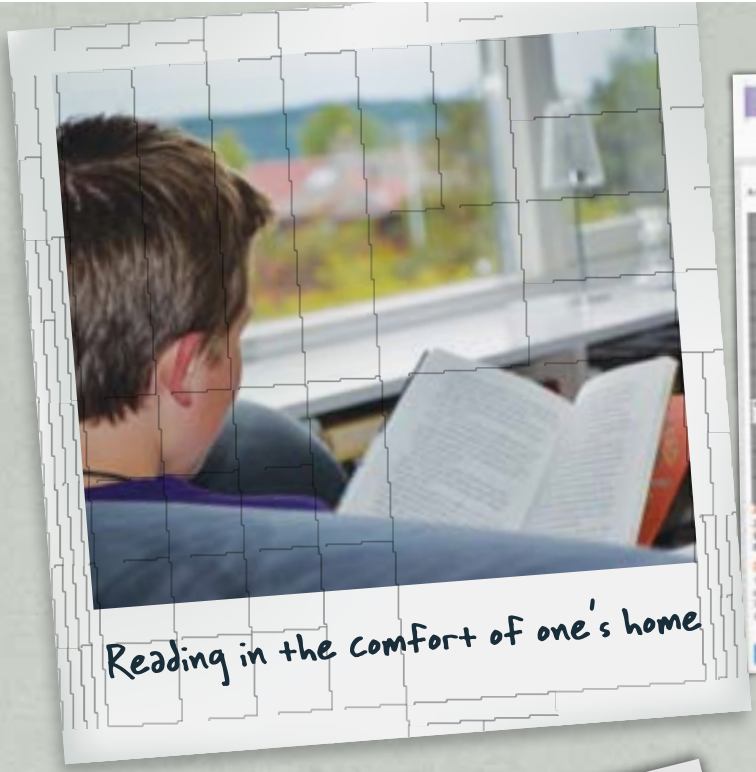
She mainly uses the online classroom to extend activities in order to give her students time to think about their answers before responding. These discussions, blogs and digital resources give Stine valuable insight into how far her students' understanding has evolved. They are valuable revision material for students.

Stine uses both spheres for teaching vocabulary. In the online classroom, students work on their own on vocabulary tasks. Stine then uses the information she gains from the results of this work to decide which vocabulary points to pursue in the physical classroom. This is an important element of visible learning. The feedback Stine gains from work in the online classroom allows her to gauge her students' understanding and progress more clearly and adjust her teaching accordingly.

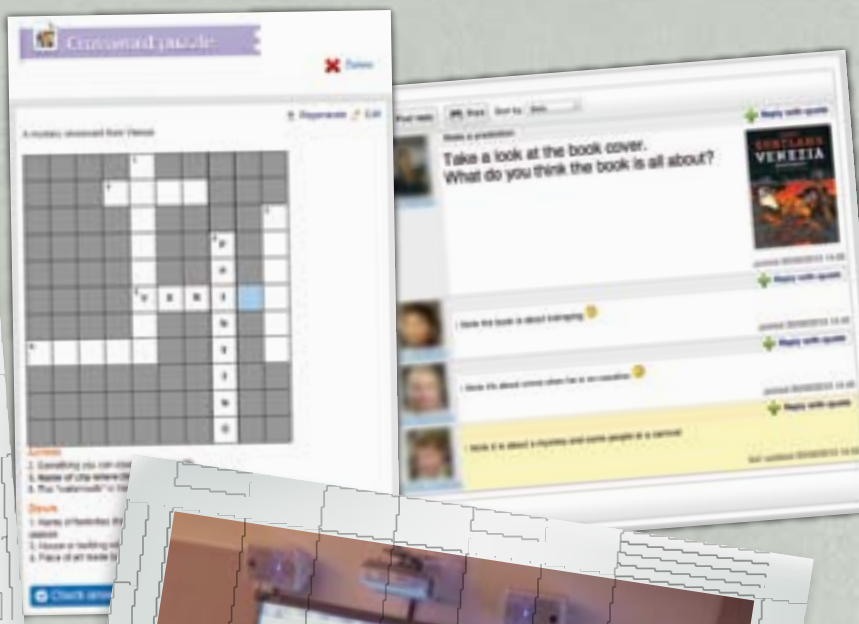
Formative assessment occurs in both spheres. In the physical classroom, Stine gives feedback to the entire group. In the online classroom, she gives feedback via blogs and discussions to individuals that every student can see. She also uses the first draft of the students' assignment to give specific and private feedback to students. This enables her to deliver constant feedback during the teaching.

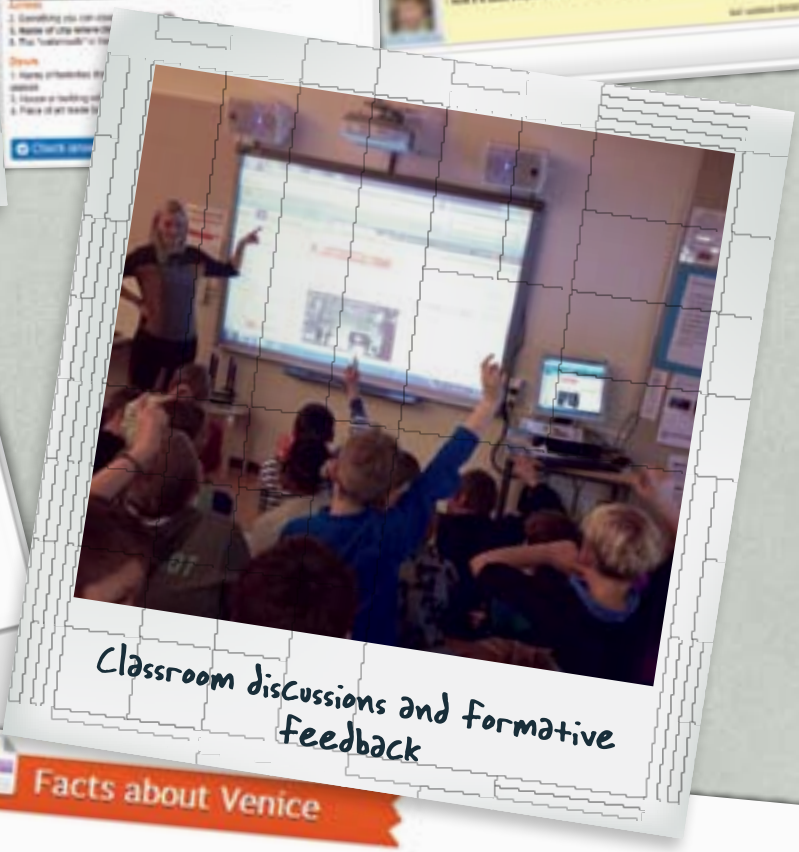
According to Stine, the students switch without problem from the physical classroom to the online classroom. In many cases, the students are familiar with the online world from Facebook, blogs and other websites, and they readily transfer these skills to their education. They also use the online classroom to share resources, ideas, opinions and materials – something many already do online.

Stine also feels that working in this way enables her to engage with her students on a deeper level than if she was just using one classroom. Some of her less committed students work harder than usual, and she is able to give time, attention and feedback to individual students.

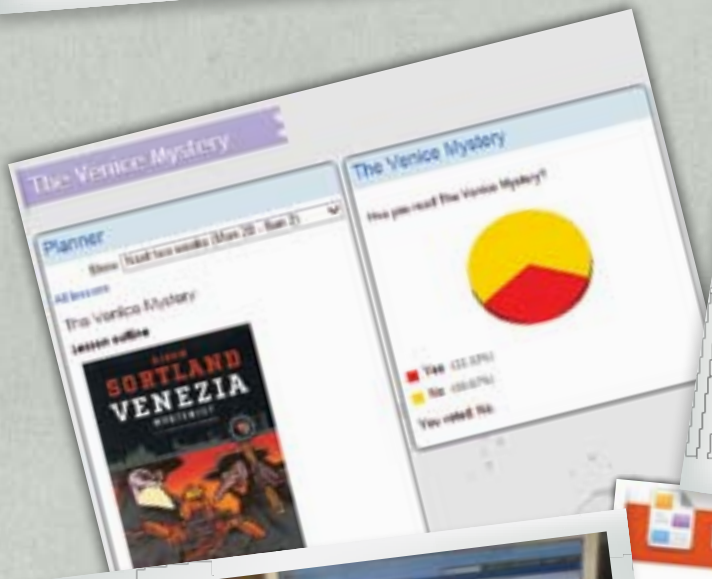


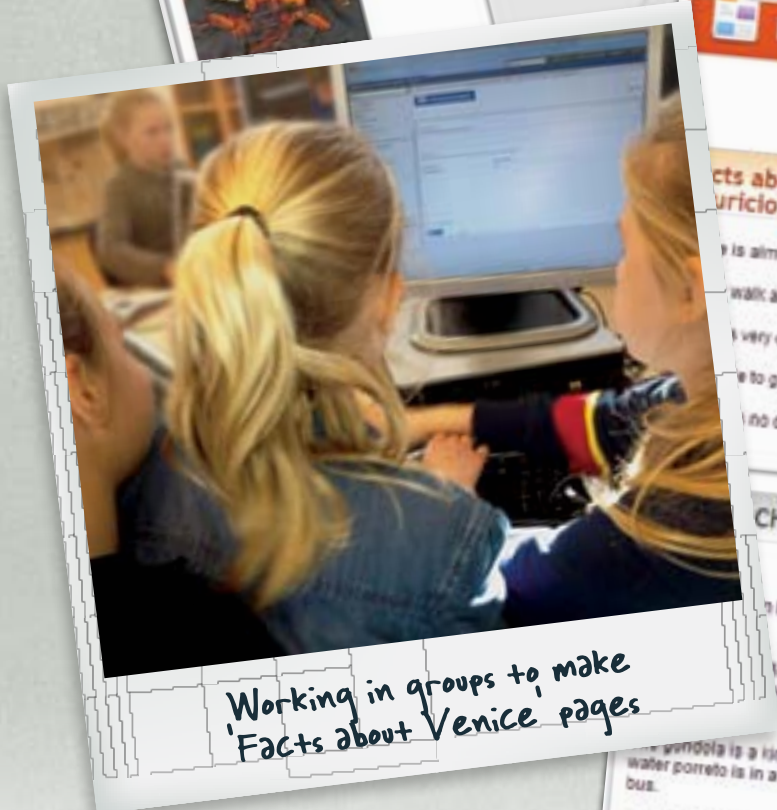
Reading in the comfort of one's home





Classroom discussions and formative feedback





Working in groups to make 'Facts about Venice' pages

Generating momentum with the blended classroom

Mattias teaches 15-year-old students at a secondary school in Sweden and uses the blended classroom to help his students develop the skills required to perform experiments and deliver lab reports.

Mattias teaches each group of students twice a week. This means that he needs to make the most of the classroom time he has with his students. He uses the online classroom to help ensure his students remain focused when they are not in class and to enable them to study physics on days when they do not attend classes with him.

In the example here, we show the first three weeks of the course combining a number of the techniques and activities Mattias uses throughout the course.

The students analyse lab reports by previous students and develop their understanding of new concepts and words. They design and carry out their own experiments and practice creating a lab report for the first time. At the end of the course, each student receives a grade based on a number of lab reports that they've produced.

Teaching physics in the blended classroom

All students have access to the internet at home and most have laptops that they bring to class. There are seven desktop computers available in the classroom. Mattias uses the itslearning platform as an online classroom space, but the concepts here can be applied with any learning platform. The timeline shows a selection of the activities that Mattias uses when teaching mechanics to his students.

[PHYSICAL CLASSROOM]

Teaching physics in the blended classroom

Objectives and assessment criteria

Mattias explains the learning objectives and assessment criteria to the entire class. As the main work will be a lab report, he asks his students to work in groups to analyse example lab reports from previous (anonymous) students and give them a grade.

Video presentations

Mattias shows the roller-coaster video in class. He asks students to name the relevant physics concepts as they watch. He refers back to the list of words from the survey and then explains the mechanics behind a roller-coaster.

Preparation

Planning

Mattias has limited time with his students, so needs to make the most of his time in the classroom and his students' time in the online classroom. He divides activities into the physical and online classroom.

Preparation

Mattias uploads all his electronic materials onto itslearning, including videos to be viewed by his students before the first class. He can choose which resources to make visible to students and which to hide until later.

Pre-teaching videos

In the week before the first class, Mattias adds a video of a roller-coaster to an anonymous survey in itslearning. Students are asked to watch the video and then write down the physics words or concepts that they think are relevant to the video.

Week 1

Online vocabulary and concept check

Mattias takes the list of new physics words and concepts and creates an online test. Many of these concepts have been covered in previous years, so he can re-use many test questions (with modifications if required). The students complete the test in the online classroom. They see their results immediately and are encouraged to check anything they got wrong.

The first lab report

Students write and hand-in a lab report as an assignment in itslearning on the experiment they conducted in class.

[ONLINE CLASSROOM]

[PHYSICAL CLASSROOM]

Peer-to-peer teaching

The students work in small groups to create digital test questions about the new vocabulary/concepts inside itslearning.

Crossword

Before the class, Mattias also creates a crossword inside itslearning using the vocabulary and concepts presented the week before. Students work in pairs with itslearning to complete the crossword.

Vocabulary revision

Before the class, Mattias reviews the results of the vocabulary and concepts test. He then reviews any concepts that proved difficult to the majority in front of the entire class.

Videos

The students record their experiment using simple web cameras. These are then uploaded onto itslearning so they can watch them when writing their lab reports. The videos are often shared with parents and students often watch other students' experiments.

Experimenting

Students complete their experiments in class. They then work in small groups to discuss their successes – and failures – and to look into the reasons behind them.

Week 2

Digital test

Mattias uses the students' test questions to create a single digital test for everyone in the group. If he chooses, he can create two tests to differentiate the activity. Weaker students can complete a test using questions 1-10, for example, and stronger students complete a test that uses questions 5-15.

Feedback on lab reports

Mattias gives feedback to the students on their first lab report via the online classroom. Although the report is finished, he concentrates on what students need to improve in order to deliver a better report next time.

Week 3

Writing the report

Students complete and hand-in their lab reports in the online classroom. When writing, they refer back to the video of their experiment, as well as other teaching resources on itslearning. Mattias assesses the reports and gives feedback via the online classroom. All the grades and comments are automatically added to the student and class gradebook in itslearning.

[ONLINE CLASSROOM]

Teaching physics in the blended classroom summary

Mattias uses the physical classroom to establish the learning objectives and assessment criteria for the entire class. To cement this, he asks his students to analyse and grade examples of work from previous (anonymous) students, which forces them to look at the work from the eyes of the teacher.

The physical classroom is also used to teach concepts and ideas to the entire class. To ensure this information is relevant to the majority of the class, Mattias uses information gained from exercises completed by students in the online classroom.

The physical classroom is also a space for group work, where students can share ideas, and experiments that can only be done with the correct lab equipment and supervision. In the physical classroom, the formative feedback comes immediately from the teacher or in discussions with other students. In the online classroom, the feedback can be immediate (in tests for example) or delayed. However, all feedback in the online classroom is collected and can be reviewed by the student when needed.

As Mattias only sees his students twice a week, he uses the online classroom as a bridge between classes. This way, his students maintain focus on the course, even on days when they study other subjects. This includes concept and vocabulary work that confirms that learning has taken place and preparation for the next lessons – in the form of watching videos or preparing and submitting experiment plans.

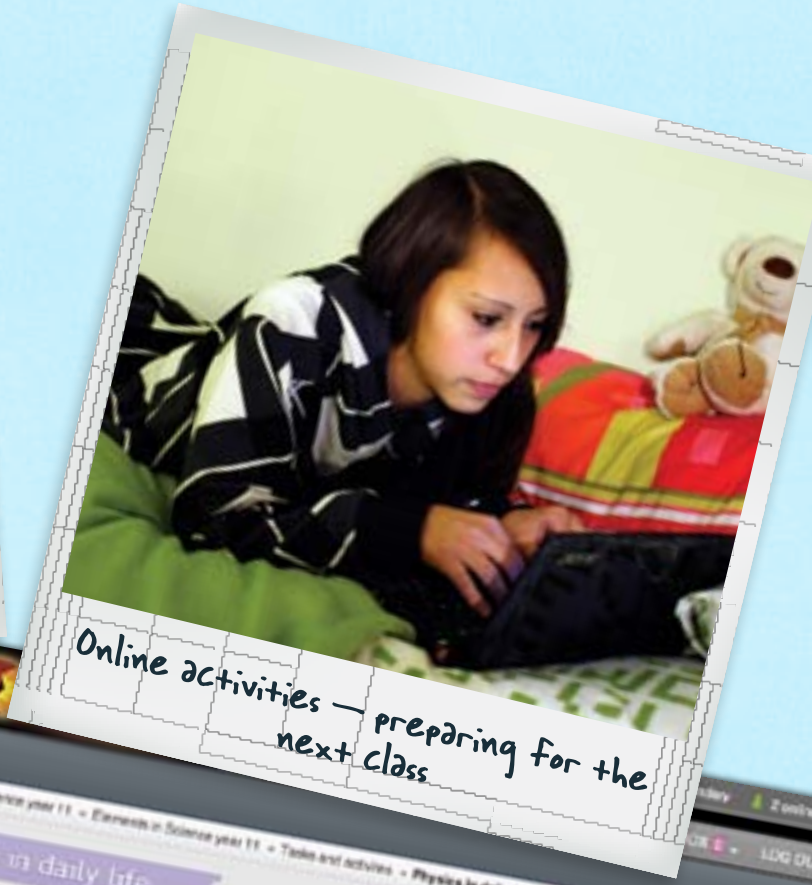
Mattias looks for opportunities where the two teaching spheres can overlap. For example, students prepare questions for other students in the physical classroom. Mattias then sorts these questions and includes the best ones in a test that everyone takes at home using the online classroom. He also records videos of experiments done in class and shares these on the learning platform so students can watch them at home. In this way, his students can clearly see the link between work done in the two teaching spheres.

The flipped classroom

Both Stine and Mattias use elements from one of the most popular blended learning models, the flipped classroom. One of the main purposes of the flipped classroom is to give teachers more time to work with individual students in the physical classroom, and to ensure that students are better prepared for work in the physical classroom.

In the flipped classroom, the teacher makes teaching material – most often video but also other learning materials such as PDFs – available in the online classroom that the students work on at home. The teacher then uses the physical classroom to work with any issues students may have.

Utilising classroom time for feedback



Online activities — preparing for the next class

Students expressing their pre-knowledge of the topic

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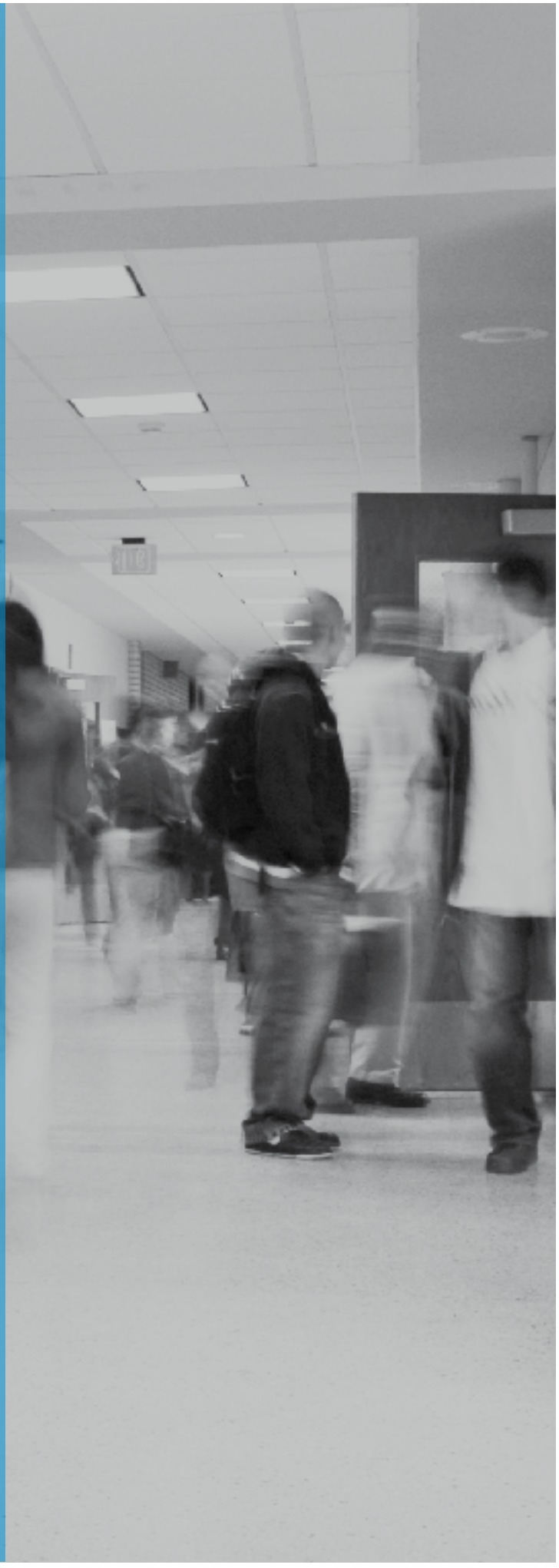

Designed for teachers and how they want to teach, itslearning is a cloud-based learning platform that connects teachers, students, parents and school leaders – both in and outside the classroom. It gives teachers countless ways to create engaging lessons and resources, makes sharing materials easy, and automates routine tasks so teachers have more time to focus on their students.

A cloud-based platform that's easy to set up and maintain, itslearning is used by millions of teachers, students, administration staff and parents around the world. It can be found at all levels of education, from primary schools to universities, helping teachers make education more inspiring and valuable for today's students.

At itslearning, we pride ourselves on understanding the needs of education. More than 20% of our staff have worked as teachers and we can often be found in the classroom, learning from teachers.

We provide a full range of services to educational institutions, from simple training sessions to full-scale implementation projects. Established in 1999, we are headquartered in Bergen, Norway, and have offices in London, Birmingham, Berlin, Paris, Mulhouse, Malmö, Enschede, Helsinki and Boston.

Helping teachers
collaborate with colleagues

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A PASSION FOR TEACHING