

Jennie Harland reports on new research into flipped learning and identifies what this approach can offer students in terms of more active and personalised learning and improved progress

Flipping their learning

Another teacher explained how flipped learning had encouraged students to take responsibility for their learning and develop independent learning skills.



As this teacher reported: "Flipped learning is a really good way of getting students to be more independent. It encourages a culture of independence as the other students see those who 'get it' doing well and getting ahead and they want to do the same."

In addition, as a result of students coming to lessons with prior knowledge, lessons moved at a faster pace allowing students to deepen their knowledge

for the initial instruction their students receive on a topic. They prefer to retain responsibility for ensuring consistent explanations of topics and concepts and for tackling misconceptions.

Flipped learning can also be less successful if students are not used to participating in homework and independent learning. In this case, any potential saving of time in lessons can be lost if the teacher has to spend time recapping content for students who have not completed the preliminary homework task.

In addition, some students may lose confidence and interest if they do not understand a topic they are meeting for the first time at home, where they are unable to ask the teacher questions to clarify their understanding along the way.

The report concludes that, where flipped learning is implemented effectively and the challenges it presents are surmounted, there are a range of positive effects for teaching and student learning.

Most teachers in the study saw flipped learning as just one approach in a varied repertoire of teaching strategies and intended to continue using it in this way.

Implementing flipped learning

In addition to the practitioner's guide, produced as part of the research project, any teachers considering flipped learning and the issues and challenges it poses can turn to the research report itself for some "top tips". For instance:

- Consider the attitudes and capabilities of students: where students are less confident with taking responsibility for their own learning outside of lessons, teachers can first introduce the online resources in class in a more supported and guided environment.
- Encourage peer-to-peer learning: students who have not completed the homework, or are struggling to understand concepts, can be paired in lessons with those who have completed the preliminary homework or have a more secure grasp of the topic.
- Identify appropriate video/digital resources: resources that provide teachers with feedback and

data on student participation and performance can be used to plan and structure lessons, including differentiated activities for pupils with varying levels of understanding.

As a result of students coming to lessons with prior knowledge, lessons moved at a faster pace allowing students to deepen their knowledge and understanding

- Ensure access to technology: where pupils are unable to access the resources at home, school computer facilities should be made available in break or in after-school clubs.
- Encourage homework participation: teachers may need to place greater emphasis on homework completion, which is essential preparation for subsequent lessons in a flipped learning approach
- Manage the change to flipped learning: teachers need to plan for how they will capitalise on additional lesson time gained through students coming in more prepared.

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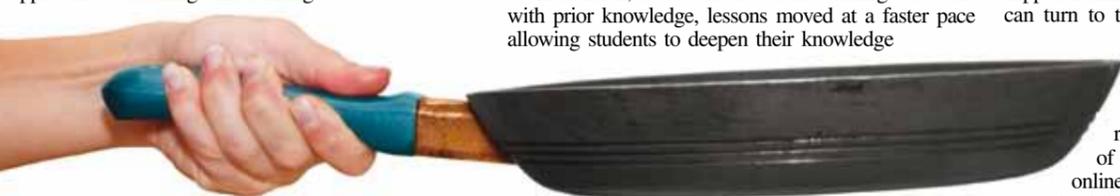
Further information

To download the report, practitioner guide and Khan Academy companion handbook and curriculum resources, visit <http://bit.ly/1RSIMDE>

With increasing and more demanding curriculum content, teachers face the challenge of how to make the best use of the time they spend with their students.

Some pioneering teachers have been harnessing digital technology to "flip" the direct instruction of new concepts from lesson time to homework time, thus freeing up lessons for more active learning, extension activities and individual support.

The National Foundation for Educational Research (NFER) and Nesta were keen to understand more about the pros and cons for schools of using this innovative approach to teaching and learning.



To this end, they supported nine schools in England and Scotland to trial a flipped learning approach in mathematics with one of their classes of 11 to 14-year-old students.

The schools were provided with support and materials including, if they wished, free Khan Academy videos and exercises to incorporate into their mathematics curriculum teaching for half a term.

Researchers worked with the schools to qualitatively evaluate their experiences and explore the impact of flipped learning. What came out of this research was a report and a practitioner guide to support schools implementing a flipped learning approach.

Impact of flipped learning

The report concluded that, where flipped learning was implemented successfully, there were a range of benefits for teaching and learning. The time that students spent at home undertaking online instruction resulted in them coming to lessons with a higher level of understanding and knowledge of concepts and topics than in traditional approaches. This freed up time for teachers to spend on a range of other beneficial activities for students including:

- Practising and applying knowledge and skills.
- Collaborative learning.
- Independent and student-led learning.
- Individualised coaching support from the teacher.

One of the case study teachers explained how flipped learning helped her to make the best use of her time with students during lessons: "It makes better use of me. Rather than sitting here while they copy stuff off the board, they can ask questions about things they are struggling with and there is more discussion as a result of flipped learning."

and understanding, increase their confidence and, ultimately, make faster progress.

As one of the case study students explained: "The flipped learning approach means that you get more out of the lesson because you already have a bit of knowledge before you go in. The teacher would usually have to explain for most of the lesson if she's starting a new topic, so she doesn't have to do that as much, so we get more done and get onto harder questions."

Challenges of flipped learning

The report also sets out the challenges associated with flipped learning. Insufficient and inadequate access to technology is an obvious barrier to the success of this approach, which relies upon all students being able to access digital technology effectively at home, or out of scheduled lesson time.

There is an impressive wealth of digital resources available to support a flipped learning approach, particularly in mathematics (such as those used by schools in this study – Khan Academy, Hegarty Maths, MathsWatch, MyMaths, YouTube, BBC Bitesize, the National Centre for Excellence in the Teaching of Mathematics, and Mathsrevision.com).

However, teachers have a significant job to do in identifying which of these are appropriate to the curriculum they are teaching and to their students' learning needs, and which match their teaching style.

Another challenge that emerged was that some class teachers feel uncomfortable delegating responsibility

All change: A diagram from the NFER/Nesta practitioner guide showing flipped learning vs traditional classroom approaches

Traditional classroom	
<ul style="list-style-type: none"> • Teacher prepares and delivers instruction on concept/topic to the whole class • Students listen in class and make notes • Students complete tasks to develop their understanding • Homework is assigned mainly to consolidate understanding • Teacher's role is to lead the lesson/pass on knowledge • Learning activities are predominantly offline (textbooks and worksheets) 	
Flipped classroom	
<ul style="list-style-type: none"> • Teacher prepares/selects materials for students to access instruction on concept/topic outside of class • Students watch online/digital videos/do exercises as part of homework to prepare for lessons • Class time is devoted to active learning, extension activities and supporting individual students • Students receive support from teacher and peers as needed • Teacher's role is mainly to facilitate student-led learning 	


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