



Digital Transformation in IB World Schools



Introduction

Over the past decade, technology has enabled undeniable progress. It's hard to imagine not relying on our smartphones for both important and trivial notifications, not reading the news or shopping online, not communicating with family, friends and colleagues via email, instant messaging or video calls.



The rapid growth of the IoT¹ has made technology ever more present in our homes and offices. We all seem to embrace the change and show little concern for the digital transformation of our daily lives, and yet, anything to do with digital transformation in schools rings alarm bells.

Some schools have struggled to keep up with the younger generations' high level of technology adoption. After all, most 5 to 16-year olds haven't known a world without the internet, so why shouldn't they expect to utilise technology in their schools? And, as technology is so valuable to learning and essential to students' lives, why would some governments take a step back and prohibit or conditionalize its use, like France's recent announcement to ban mobile phones in the classroom??

Because education is important. Because schools care. Because the pedagogy school leaders decide to

implement in their school will define and impact on students' lives and the decisions they will make. It's because of all this that schools are understandably hesitant to make sudden, large-scale changes. But they are adapting – slowly.

As a secondary education technology provider, Pamoja has had direct experience accompanying IB World Schools on their digital transformation journey for 10 years. We've learnt a great deal about the challenges they face and the opportunities that arise. This report aims to share the insights we have gathered and to offer some recommendations to secondary school leaders.

¹Internet of Things, defined on Wikipedia as “the network of physical devices, vehicles, home appliances, and other items embedded with electronics, software, sensors, actuators, and connectivity which enables these things to connect and exchange data, creating opportunities for more direct integration of the physical world into computer-based systems, resulting in efficiency improvements, economic benefits, and reduced human exertions.”

²www.theguardian.com/world/2018/jun/07/french-school-students-to-be-banned-from-using-mobile-phones



Key insights from our research

Defining a digital strategy may be daunting for any school. Hardware provision, student experience, teacher training and teaching methodology all need to be considered.

Our research shows that digital learning is almost entirely used in a supporting capacity, **with only one in 10 IB World Schools using it to change existing pedagogies.**

So, is it worth it? Should schools review their priorities and start planning for their digital transformation?

Research says so

Many governments have been focusing on improving their population's digital skills to meet productivity goals. Schools seem to be the obvious starting point to upskill a population. So far, so good. Consumer digital indexes

show improvements year-on-year in the digital skill levels of 15-24-year olds. However, school leaders may need more evidence to convince their board and their community of parents that learning online is no riskier than learning in the more traditional classroom environment.

Here at Pamoja, we know from both experience and research that introducing students to digital resources early in their learning significantly helps them prepare for life after school; whether they go on to higher education or start their career.

The academic research on *pre-tertiary engagement with online learning*³ that UCL’s Institute of Education conducted on Pamoja’s behalf, suggests that online learning helps students prepare for university in two distinct ways – through the use of technology and through the development of behaviours.

Interview participants described how they developed in terms of their ability to study online, their ability to work with learners from other cultures, and their capacity to direct and manage their own learning:

- IB DP online students surveyed said that, prior to university, they had gained experience in a range of online learning tools that they are now using as part of their university learning.
- Once in university, the IB DP online learners surveyed were less likely than other students to rely on print resources and more likely to research online. This suggests confidence in using available technology to source information.
- Former Pamoja students surveyed were less likely than other students to turn to their university instructors for help. This suggests that IB DP online learners have already developed the skills to be independent learners.
- The former Pamoja students surveyed frequently indicated that the pre-university experience of online learning provided a ‘rehearsal space’, allowing students to develop their approaches to study, including note-taking, information searching, and communicating online (with peers and teachers) before starting university.

³ Pre-tertiary engagement with online learning: Exploring uses of online learning environments and digital technology for progression into and through Higher Education (2014) <http://discovery.ucl.ac.uk/10019278/>

Report outlining work undertaken by the Institute of Education to explore how pre-tertiary experiences of online learning influences students’ successful transitions into and through Higher Education. The work was commissioned by Pamoja, and the studies that were undertaken focused on the experiences of students and staff taking part in Pamoja Taught courses offered as part of the International Baccalaureate Diploma Programme.

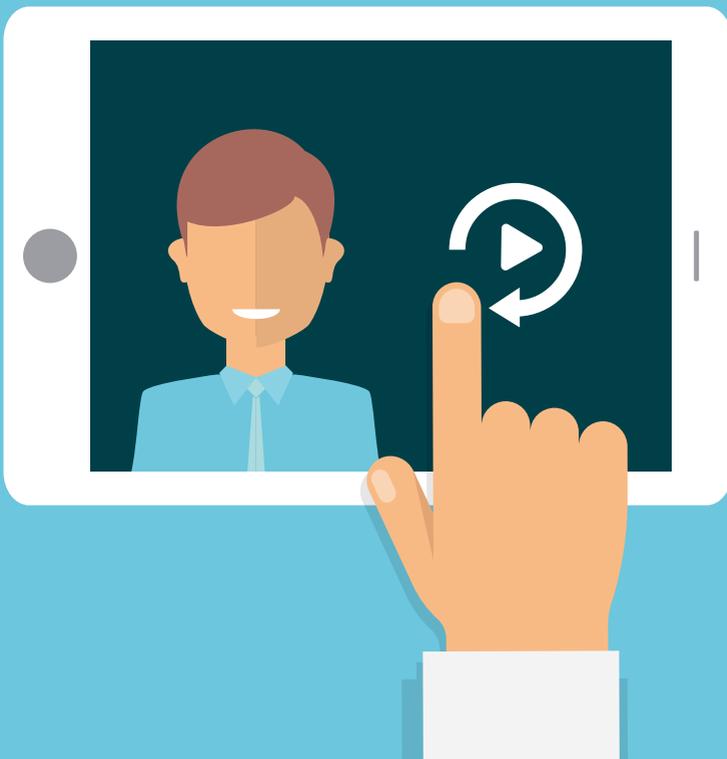
Use of technology at university

Almost all students surveyed by the Institute of Education in the study thought that technology use was important as preparation for university:

- There are specific technological skills that many university students require, including finding academic resources online, coordinating group work online, building relationships via social networks, discussing questions with the tutor through web-based technology, and using multimedia resources for both the production of work and for revision.
- The IB DP online learners surveyed were more likely than the other students surveyed to have experienced a wide range of technologies.
- Accounts from respondents indicated that technology is central to the way that university students undertake many aspects of their studies; from access to analysis, to writing and production, and on to submission of their work.
- Respondents indicated that technology use prior to university contributed to their ability at university to be an independent learner, supported their development of time management, and enabled them to become familiar with technologies that other university students would “sometimes struggle” to use successfully.

Development of behaviours

As a result of the research, the Institute of Education was able to identify two distinct behaviours that developed notably as a result of IB DP online learning prior to university; independent learning skills and a readiness for higher education.



Independence in learning

Several findings from the survey suggest that university students recognise the importance of being able to learn independently once they start higher education.

The students surveyed were asked about the usefulness of different technologies as a means of preparing for university life:

- Most respondents felt it was important to develop the skills of goal-setting, standards-setting, taking notes, and choosing the right time and place for studying, in preparation for university learning.
- 84% of all students who responded said it was definitely important to be able to set goals to help manage studying time for their university course.
- 78% of all students who responded said that at university they try to solve learning problems by themselves.
- All IB DP online learners surveyed agreed that studying online prior to university had increased their independence as learners.

One teacher said that in the face-to-face environment, *“students are forced to go to class at a certain time, whereas in an online environment, they’re being empowered and given more freedom to come to that course and set up their schedule to be effective and I think that’s probably the biggest adjustment.”*



Personally, I learned a lot from taking an online course because it helped me prepare myself in terms of scheduling and allocating time to finish each of the subjects that I am currently taking.”

Pamoja student

Readiness for university



94%

of respondents said, at university, being able to find academic resources on the Internet is valuable.



78%

of respondents said, at university, it is important to be able to plan and coordinate group tasks using digital calendars, scheduling tools and discussion applications.



71%

said it is useful to build relationships with other learners using social networks.



68%

said being able to use Wikis or other online editing tools to create shared materials is valuable.

“We ask them to read, we ask them to respond to questions, we do some construction of mind maps, we have a seminar presentation, and I think that all of those things provide the kind of experience in careful critical thinking that university work demands or should demand.”

Pamoja teacher

Online teaching behaviours

Just as students adapt to online learning, teachers adapt to online teaching.

In the IB DP online learning context, teachers enable students to develop independence in learning by trusting learners to self-manage. Part of the challenge for the online teachers is to provide the right level of support and not over-commit, as individual support does not scale well as class sizes grow. The teachers who were researched as part of the Institute of Education's academic research perceived this as a real change of orientation. They referred to it as "skillful neglect" and emphasised that this "neglect" was strategic.

It is also valuable to point out that online learning does not make the teacher-student connection any less meaningful. In fact, online teachers who took part in the research emphasised the importance of **establishing a personal connection between teacher and student in the online learning environment**. Like the students, the teachers felt that teacher feedback (on assessment, and to questions put to them) was an important part of the online learning approach for students. The teachers felt that providing written feedback demanded more care from both teachers and the students than the verbal feedback often used in the face-to-face classroom.



I can't imagine having an online classroom with a hundred students because there's simply not enough time in the day to do the kind of careful evaluation and feedback that is absolutely necessary to make the online environment work. I mean, I know that your students are supposed to take responsibility for their learning and all of that, but if the teacher is not really focused and devoting a lot of time to the feedback process, it's really easy for all but the most dedicated students to get lost."

Pamoja Teacher

Stages of digital transformation in IB World Schools

In more recent research,⁴ which we carried out with IB World School decision-makers and coordinators earlier this year, results show that roughly one in five schools have defined a digital strategy, and these strategies tend to be heavily focused on hardware rather than integrating software and digital tools in the classroom. The results of this research have enabled us to identify three stages of digital transformation in IB World Schools.



⁴Research commissioned by Pamoja, carried out by Polar Insight from January to April 2018, supported by the results of a survey of 106 International Baccalaureate coordinators and schools' decision makers from around the world.

Early stage:

Introducing digital resources in the classroom

When they are ready to use Ed Tech in the classroom, and once the hardware provision is in place, schools turn to digital content. We know one of a school's main challenges is to support and engage students. For IB World Schools specifically this support and engagement also extends to helping students understand the IB philosophy, helping them to accept they may have to work harder than they have done in the past (especially when they're new to the IB curriculum), and encouraging them to develop critical thinking.

Plenty of digital resources can support the student experience in this respect, and in fact most IB World Schools already rely on them. Teachers appreciate the flexibility technology provides to complement traditional classroom teaching. **Our research shows that 94% of IB World Schools worldwide use technology to support their students through digital textbooks and other self-study resources.**

Some of the advantages are quick to identify. Digital textbooks can save school budgets while supporting and improving their student experience. Most digital products incorporate interactions such as quizzes, scorecards or progress tracking that can contribute to increasing student engagement levels.

Summary

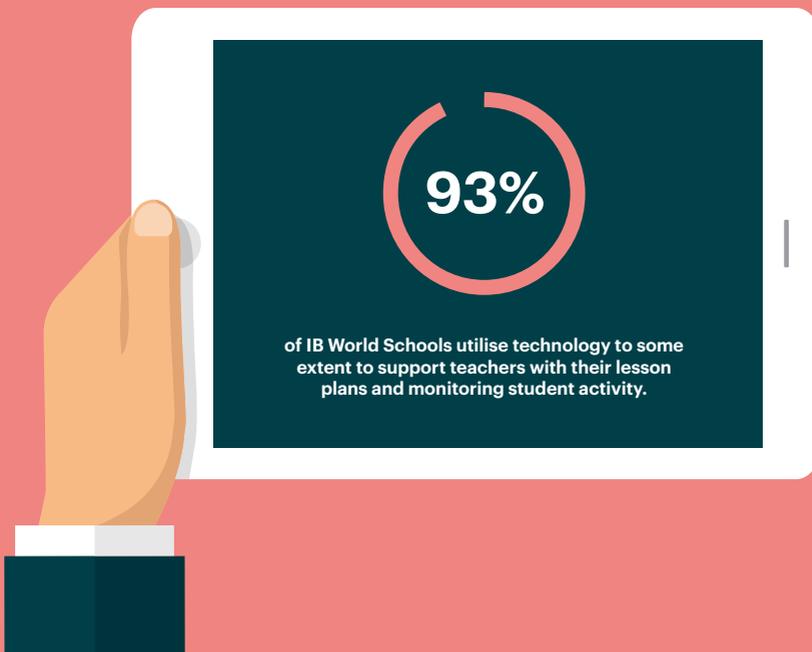
The main concern of research participants who are at this stage in the digital transformation of their school related to staff training. Not all IB teachers are comfortable when it comes to understanding the benefits or use of IT resources, and all IB teachers struggle to find sufficient time to be well trained. Teachers definitely need to incorporate digital resources into their lesson plans for any advantages to be seen on student experience, and to do this, they need to be proficient.

Intermediate stage:

Implementing new teaching methodologies

Once the primary use of technology to provide student support is achieved, schools tend to focus on their next priority; teacher support. In fact, our research shows that **93% of IB World Schools utilise technology to some extent to support teachers with their lesson plans and monitoring student activity.**

Although some schools may solely use online training courses, others leverage the opportunities technology provides to start introducing new teaching models and focus on personalised learning. This enables teachers to monitor the activity of every student in their class. While this is arguably more complex and time-consuming in a non-digital classroom, assessment data provided by Ed Tech solutions can help teachers check the progress made by students within a few clicks.



The flipped classroom

The flipped classroom teaching methodology is a good example of where Ed Tech can be beneficial.

The concept relies on reversing a student's learning environment by delivering the instructional content outside of the classroom. Using digital course content in the form of textbooks or ready-made lesson plans makes it simpler for teachers to 'flip' their approach to teaching and learning. Face-to-face time with students is instead used for a range of activities that help students to engage with the content, reflect on their learning, collaborate with classmates and interact with their teacher.

In the flipped classroom model, the teacher role becomes more relevant and interesting, providing schools with an opportunity to motivate, develop and retain staff. Schools have access to a broad range of products to assist their teachers and digital textbooks are already used by a large number of schools in this way to support both students and teachers, provided lesson plans are adapted accordingly. Other, more complete flipped classroom products provide content broken down into lessons, with the additional benefit of saving teachers time in course preparation and administration.

Our research identified that, although the majority of IB World Schools rely on technology to support teachers, successfully integrating digital learning methods with traditional learning methods remains a challenge for 60% of our research participants. Once again, it comes down to teacher training. If the chosen technology solution incorporates training and orientation, introductory and ongoing support, best practice models, or collaboration with peers, teachers will be better equipped to successfully turn their methods around.

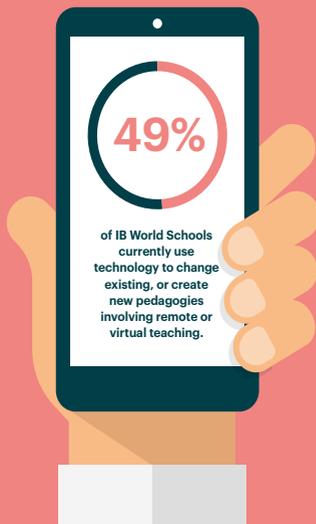
Most schools are willing to rise to the challenge; according to our research, the proportion of digital course content is expected to increase from its present level of 30% to 47% within five years.

Final stage:

Full blended model

Once schools have familiarised themselves and their community of teachers, students, administrators and parents with digital resources, it may be time to consider the final stage of their digital transformation - blending some courses that are fully taught online alongside the more traditional face-to-face classroom learning.

Currently adopted by a relatively low number of schools, the provision of fully online courses is expected to grow over the next five years. Our research indicates that only **49% of IB World Schools currently use technology to change existing, or create new pedagogies involving remote or virtual teaching.**



There are many advantages to using virtual classrooms and online teachers. Students access an online platform which incorporates all the content and lessons they need for the course, including activities and assignments. They also have access to online teachers who guide them throughout the course and can run live lessons in a similar way to video conferences, often with additional features for interactivity. Students are supported throughout their course by their online teacher but may never meet their teacher face-to-face.

Not only do virtual classrooms provide an administrative solution for course coordinators, they can also accommodate last minute or ad hoc requests to tailor and personalise a student's learning experience. Studying online doesn't necessarily require an allocated slot in timetables as the course can be taken any time a student chooses; during gaps in their classroom timetable or outside typical classroom hours. That alone can provide more flexibility for coordinating complex timetabling.

Student experience

Online courses have also opened up some opportunities for schools; complementing their range of traditional classroom courses with additional subject options to meet students' and parents' requests, or even accommodating students in circumstances that require home-schooling.

During the 10 years offering online IB DP courses, we have witnessed some students flourishing only as a result of their online learning. Our teachers have suggested this may be due to the fact that schools are "all about classes, and the class has a personality, and the individual can get lost in the class personality", whereas in the online classroom, individuals are able to maintain their distinctive style and still receive the learning attention they need.

The role of the teacher

The role of the teacher should not be underestimated when implementing a blended model. In an online classroom, the teacher's role is very different and absolutely essential. They become a facilitator, focusing on providing tailored support rather than group management, helping students foster their independence and self-reliance. The lack of traditional face-to-face dialogue means that every step of the learning process has to be clearly instructed and all communication thoughtfully and clearly delivered.

Because of the global nature of our online classroom and the diversity of our students (in terms of country of origin, cultural expectations, willingness to ask questions, etc), Pamoja online teachers have recognised how crucial this considered approach must be.

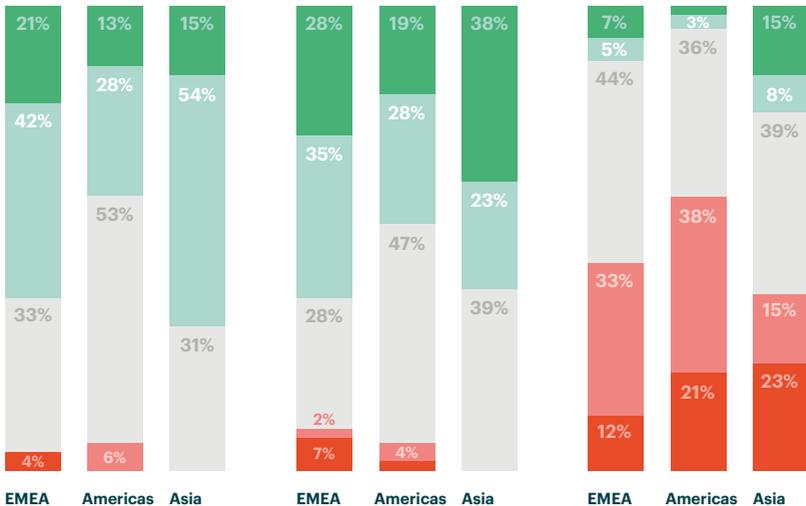
Summary

As the Institute of Education academic research identified, students taking online courses are well prepared for university. However, this method is not suitable for every student. Online learning requires a certain level of autonomy that not all students will be prepared for. This may raise a level of reluctance from IB World School staff to move into a blended model. It's a decision that requires consultation, not only with a student's teachers, but also their parents and the broader community to manage expectations.

Regional trends

This white paper has focused on the global data analysis of the latest research. However, we know challenges and opportunities faced by IB World Schools can vary significantly from one region to another. Some may have to rely on districts or government policies to introduce new models into their school. Others may have difficulties recruiting teachers with experience in specific IB Diploma subjects. With this in mind, here is a snapshot of our findings from a regional perspective.

Our research suggests that cultural factors may come into play in the digital transformation within IB World Schools. Those based in the Asia Pacific region are at a more advanced stage in their transformation.



Technology to support your students, e.g. digital textbooks, online learning resources (self-study) etc.

Technology to support your teachers, e.g. lesson plans, online, student activity/ attainment monitoring, teaching resources etc.

Technology to change existing or create new pedagogies, e.g. remote teaching, video-conferences etc.

■ Never use
 ■ Almost never
 ■ Occasionally/sometimes
 ■ Almost every time
 ■ Always use

Recommendations for IB World Schools

- ✓ Run an audit of your school to evaluate the stage you are at
- ✓ Evaluate digital transformation against your school's short-term and long-term objectives
- ✓ Involve your teachers in your decision-making process
- ✓ Involve your broader community, including parents, at an early stage of the decision-making process to encourage their support
- ✓ Identify any outsourcing requirements
- ✓ When selecting external suppliers:
 - Check that content is regularly updated and references latest curriculum updates
 - Check the technical requirements to facilitate the product implementation in your school
 - Check that the supplier provides user support, training and orientation
 - Ask for advice
- ✓ Gather user feedback

About Pamoja

Pamoja is an education technology company based in Oxford, UK. We provide schools, teachers and students around the world with progressive, flexible solutions that support the implementation of blended learning methodologies.

In 2009, we launched the largest International Baccalaureate (IB) Diploma Programme online. We now teach thousands of students from hundreds of schools, promoting student responsibility and success whilst supporting schools' blended learning strategies, through our flagship Pamoja Online Courses. We've recently developed new Pamoja Lesson Suite courses that enable teachers to flip their classroom. Students access IB-authorised lessons and resources via our online platform, encouraging new learning opportunities.

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