IB CONFERENCE OF THE AMERICAS 2014
WASHINGTON, DC • 10–13 JULY
Transforming teaching and learning: a successful 1:1 experience in an IB school

THE ENGLISH SCHOOL – BOGOTÁ, COLOMBIA
Natalia Castillo M.

- Language arts Spanish teacher and Head of Department. MYP Language A, DP Language A: Literature.
- E-learning Coach

- [www.englishschool.edu.co](http://www.englishschool.edu.co)
- Twitter: @NataliaCM0319
Choose one of the following exercises (1, 2 or 3) and if you have internet access post your answer in the padlet located in this address: http://es.padlet.com/ncastillo/wi49bugbyv2t. You will have 4 minutes for this exercise.
Warm up exercise:

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1

Answer the following question: What are the main challenges you find teaching your students with technology today?
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<td><strong>Find three images or invent a slogan that best describes the impact of technology in your students.</strong></td>
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Comment on one of the answers or ideas you find interesting with the person sitting next to you. If you have internet access write a post next to the original answer. You will have 4 minutes for this exercise.
Reflection 1:

What are the main challenges we face introducing technology to our classrooms?
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Information overload
Reflection 1:

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Information overload  
Multiple distractions  
(games, social media, etc)
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Reflection 1:

What are the main challenges we face introducing technology to our classrooms?

- Information overload
- Multiple distractions (games, social media, etc)
- Multiple devices
- Disengaged students
- Individual work- not looking up!
Why should we implement technology in education?
Reflection 2:
Reflection 2:

What skills did you develop during the exercise?
Reflection 2:

What skills did you develop during the exercise?

How did you interact with others?
Reflection 2:

What skills did you develop during the exercise?

How did you interact with others?

How did you use your own strengths in order to respond to what was asked?
“History will judge us on how well we prepared an entire generation to face the challenges of a life where a real world and a digital world converge” - Jason Ohler

http://www.jasonohler.com/index.cfm
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• **Critical thinking**- analysing the existing data, evaluating sources and responses, develop arguments and strong points of view with the information in hand and develop problem solving skills.
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What are the pedagogical possibilities when you introduce technology?
• Creating spaces for individual and collaborative work.
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• Enhancing communication skills.
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• Considering differentiated instruction.
• Creating spaces for individual and collaborative work.
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  - Analytical, pragmatic and creative thinking (Sternberg’s triarchic approach)
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• Generating reflection and inquiry from essential questions.
• Creating spaces for individual and collaborative work.
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• Generating reflection and inquiry from essential questions.
• Developing projects and challenges with students.
Who are we and how have we integrated technology?
MISSION
The English School strives for academic excellence, delivering high quality learning in a happy environment, creating confident leaders who act with integrity. Students have a social conscience, demonstrate care for the environment and are capable of transforming their surroundings in a positive way.

VISION
By 2016 our pioneering, innovative and multilingual graduates will be among the happiest IB students within Latin America, striving for excellence.

KEY OBJECTIVES
1. For our graduates to be multilingual and among the best IB students in Latin America
2. To strengthen the international reputation and prestige of the school.
3. To implement cutting edge teaching and learning strategies supported by emerging technologies.
Strategic objectives
Strategic objectives
1:1
¡Aprendizaje, donde sea, cuando sea!
¡Aprendizaje, donde sea, cuando sea!
2013-2014: Introducing the 1:1 program

Grade 9 - 100%
Grade 10 - 94%
Grade 11 - 81%
E-learning plan vision:

“Teachers will change educational practice within the classroom and technology will enhance practice. In four years teachers and students will all have their own global collaborative learning spaces. Learners will be self directed & independent. Teachers will be facilitators, guiding students in cyber classroom activities. Students will take ownership of their own learning by helping fellow classmates and teachers reinforce technological skills, through sharing practice and collaboration. The school will be less dependent on paper, services and resources will be web accessible. Repetitive processes will be automated and communication tools will be centralized and streamlined.”
Four Year Plan

Y1: 2011-2012
Access

Y2: 2012-2013
Integration

Y3: 2013-2014
Consolidation

Extension
Four Year Plan

Y1: 2011-2012
Access

Y2: 2012-2013
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Y3: 2013-2014
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Extension
# Action Plan

**APR 2012 - MARCH 2013**

**PHASE 1 - PLANNING**
1. Prepare team
2. Consider current research (other 1:1 deployments – Headmistress visits 5 schools in UK, 4 Mexico, 1 Costa Rica)
3. Develop a vision for learning and teaching w/ 1:1 engaging stakeholders
4. Develop Communication Strategies
5. Audit current use of ICT
6. Conduct infrastructure readiness assessment
7. Work on budgetary options & prepare budget
8. Confirm project scope and timeline

**SEP 2012 - JUL 2013**

**PHASE 2 - PREPARATION**
9. Professional Development, to support 1:1, improve learning and change pedagogy
10. Content for learning (software, tools and online resources)
11. Learning spaces
12. Ensure infrastructure & support are suitable
13. Provide guidance for stake-holders (Support documentation)
14. Invite suppliers
15. Pilot Project
16. Management Policies

**MAY 2013 - SEP 2013**

**PHASE 3 - IMPLEMENTATION**
17. Provide On site service structures (Space, tech support)
18. Conduct parent and community sessions
19. Order and prepare devices and on-going maintenance
20. Provide PD for teachers
21. Deploy devices

**OCT 2013 - JUN 2014**

**PHASE 4 - EVALUATION**
22. Evaluate successes and areas of improvement
23. Incorporate students, teachers and parents reflections
24. Share with community
25. Plan 1:1 Program extension
Leadership

Action Plan
Leadership

Infrastructure

Action Plan
Leadership

Infrastructure

Community

Action Plan
Leadership: SELT

- Inspiring and leading the process.
- Promoting digital-age learning culture and providing an environment for innovation (becoming the first Smart elite school and the first Apple school in Colombia).
- Monitoring progress.
Infrastructure

• Technical considerations (networks, servers, storage), planning the launch, creating and renovating learning spaces, providing technical support.
Community
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- Communicating and socialising the e-learning plan to all members of the community in each step of the process.
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- Studying and considering the needs and challenges of each section and department and giving the required support in terms of pedagogical vision and technical support.
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- Introducing the “Buen trato digital” campaign in alignment with the schools pastoral team.
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- Content and pedagogy
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- Finally, it has determined a specific Pedagogical Approach to support the teaching and learning process and give specific guidelines in order to transform the teaching and learning process and not just rely on software or equipment.
Teaching resources
Teaching resources

Year 1
Teaching resources

Year 1
- SMART
- Phi-dias
- ManageBac
- kerboodle!
- board works
- Á Tantót
- Tiki-Toki
- MyiMaths.com
- turnitin

Year 2
- Discovery Education
- Follett DESTINY
- EBSCO HOST
- moodle

Year 3
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Pedagogical approach: three key models

- **ISTE standards**: the ISTE Standards are the standards for learning, teaching and leading in the digital age and are widely recognised and adopted worldwide. The family of ISTE Standards work together to transform education. [http://www.iste.org/STANDARDS](http://www.iste.org/STANDARDS)

- **T-PACK**: Technological Pedagogical Content Knowledge (TPACK) is a framework that identifies the knowledge teachers need to teach effectively with technology. The TPACK framework extends Shulman’s idea of Pedagogical Content Knowledge. [http://www.tpck.org](http://www.tpck.org)

- **SAMR model**: “SAMR, a model designed to help educators integrate technology into teaching and learning, was developed by Dr. Ruben Puentedura. The model aims to enable teachers to design, develop, and integrate digital learning experiences that utilise technology to transform learning experiences to lead to high levels of achievement for students.” [http://www.hippasus.com/rrpweblog/](http://www.hippasus.com/rrpweblog/) and [http://www.schrockguide.net/samr.html](http://www.schrockguide.net/samr.html)
Context Influence on TPACK Knowledge

- Teacher Training
- Experiences
- Students
- Resources
- Attitude
- Objectives/Aims
- Technological Pedagogical Content Knowledge (TPACK)
- Technological Knowledge (TK)
- Content Knowledge (CK)
- Pedagogical Knowledge (PK)
- Pedagogical Content Knowledge

Contexts

Technological Pedagogical Knowledge (TPK)

Technological Content Knowledge (TCK)
Redefinition
Tech allows for the creation of new tasks, previously inconceivable

Modification
Tech allows for significant task redesign

Augmentation
Tech acts as a direct tool substitute, with functional improvement

Substitution
Tech acts as a direct tool substitute, with no functional change
How can these models change the way we plan and conceive our lessons and assessment?
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The English School - 1:1 Pilot program
9th grade Language Arts 2013-2014
(MYP year 5)
How can these models change the way we plan and conceive our lessons and assessment?

**The English School** - 1:1 Pilot program
9th grade Language Arts 2013-2014
(MYP year 5)

- 1:1 Program 7th -11th grade all subjects 2014-2015 (MYP years 3-5, DP)
Classroom management

Approaches to learning

Developing unit plans with challenge based learning strategies
Ciudadanía digital: guía para el uso responsable de tecnología

Segu las instrucciones del profesor en cuanto a cómo y cuándo usar los dispositivos electrónicos. No olvides que hay momentos adecuados para su uso y hay momentos en que éste no es necesario.

En clase usa los dispositivos electrónicos, redes y software sólo con propósitos educativos referentes a la asignatura en cuestión.

Muestra respeto por ti mismo y por los demás al usar tecnología, incluyendo las redes sociales. Evita toda forma de acoso o maltrato a través de estos medios.

Mantén privada tu información personal y la de otros.

De crédito a otros por su trabajo e ideas, referencia tus fuentes: libros, vídeos, textos, imágenes, archivos de audio o video encontrados en aplicaciones o plugins de web.

Reporta el uso inapropiado de tecnología inmediatamente.
Classroom management

• Developing school specific digital citizenship guidelines aligned to the school’s “Buen trato” project.
Classroom management

- Developing school specific digital citizenship guidelines aligned to the school’s “Buen trato” project.

- Developing with the students classroom’s digital expectations. Generating a set of clear and direct instructions for the proper use of devices.
Classroom management

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IB profile exercise!
Consider the ten attributes of the IB profile and think of one way we can develop each one in our class both in real and virtual environments.
Class behaviour tools
Class behaviour tools

- classdojo.com: behaviour points allow positive reinforcement and helps students focus on the assigned task. It generates reports for students, parents and teachers, it has a timer and a random name picker to make sure everyone in the classroom participates and is engaged.
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• classtools.net: it has a random name picker, timers with music that can be used for starters or plenaries, revision games, timelines, etc.
Approaches to learning
Approaches to learning

Collaboration
Approaches to learning

Organisation

Collaboration
Approaches to learning

Organisation  Collaboration

Reflection
Approaches to learning

**Organisation**
- Note taking
- Tagging
- Calendars
- To-do-lists or sticky notes

**Collaboration**

**Reflection**
Approaches to learning

Organisation

- Note taking
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Collaboration

- Group cork boards
- Group notebooks
- Project to-do-lists
- Shared documents and folders

Reflection
Approaches to learning

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**Reflection**
- Creating and sending self and co evaluation
- Evaluating projects with
Approaches to learning

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**Reflection**
- Creating and sending self and co evaluation
- Evaluating projects with
Developing unit plans with challenge based learning strategies through the SAMR model
Acknowledge differentiation, collaborative work, challenge-based learning and inquiry-based learning as a pedagogical framework to explore teaching and learning strategies involving technology.
SAMR model

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Substitution
Tech acts as a direct tool substitute, with no functional change
What do we want our students to be able to do?
Developing Higher order thinking skills - Bloom’s taxonomy
Developing Higher order thinking skills - Bloom’s taxonomy
How to successfully integrate these pedagogical approaches?
Is it possible to integrate collaboration, inquiry based learning, creativity and redefinition in each task?
Is it possible to integrate collaboration, inquiry based learning, creativity and redefinition in each task?

How do you develop coherent formative and summative assessment that relies on technology in the redefinition level?
Challenge based learning strategies

“Challenge based learning is a collaborative learning experience in which teachers and students work together to learn about compelling issues, propose solutions to real problems, and take action. The approach asks students to reflect in their learning and the impact of their actions and publish their solutions to a WORLDWIDE AUDIENCE.” (Apple, p.3)
- Collaborative skills
- Real life situations or problems/Concepts in context
- Interdisciplinary connections
- Focus on inquiry and creation
- Impact on the community
- Differentiated tasks
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Teaching and learning strategies

Service and Action
- Collaborative skills
- Real life situations or problems/Concepts in context
- Interdisciplinary connections
- Focus on inquiry and creation
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- Differentiated tasks

Teaching and learning strategies

Service and Action

Inquiry and research
- Collaborative skills
- Real life situations or problems/Concepts in context
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Teaching and learning strategies

Service and Action

Inquiry and research
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IB PROGRAMS

Teaching and learning strategies
Service and Action
Inquiry and research
How to do it?
How to do it?

Steps!
How to do it?

Steps!

Specific example from MYP language arts
• Start with a big idea: what is it that I want my students to learn? - **CHOOSE THE KEY CONCEPTS**

• Present an essential question: write a question or ask your students to write a question that serves as a guide to connect a real world problem to the selected concepts - **QUESTION(S)**

• Design the challenge: design a challenge that makes students integrate the subjects key **CONTENTS**, **CONCEPTS** and **SKILLS** through the creation of a **PRODUCT** designed on the Redefinition level.
Determine the preliminary steps to prepare students for the challenge: what do they need to know? what will they need to be able to do before the challenge in terms of contents and technological skills? How will I prepare them to inquire and work collaboratively?
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Remembering, Understanding, Applying and Analysing skills. **FORMATIVE ASSESSMENT:** Substitution, augmentation, modification.
Determine the preliminary steps to prepare students for the challenge: what do they need to know? what will they need to be able to do before the challenge in terms of contents and technological skills? How will I prepare them to inquire and work collaboratively?

Remembering, Understanding, Applying and Analysing skills. FORMATIVE ASSESSMENT: Substitution, augmentation, modification.

• Organise your unit considering the challenge completion your final product.
New approach to apps and technology!
New approach to apps and technology!

Tools for classroom management
New approach to apps and technology!

- Tools for classroom management
- Tools for formative assessment
New approach to apps and technology!

Tools for classroom management

Tools for formative assessment

Tools for final products and other summative assessments
<table>
<thead>
<tr>
<th>Level</th>
<th>App 1</th>
<th>App 2</th>
<th>App 3</th>
<th>App 4</th>
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<td>iMovie</td>
<td>ComicBook! ReelDirector</td>
<td>SonicPics</td>
<td>Animoto</td>
<td>Puppet Pals</td>
<td>Toontastic</td>
<td>Doink</td>
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<td>Evaluating</td>
<td>HootSuite</td>
<td>Skype</td>
<td>Mobile RSS</td>
<td>Science 360</td>
<td>Zite</td>
<td>FlipBoard</td>
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<td>Diigo</td>
<td>Explain Everything</td>
<td>3D Cell Simulation</td>
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<td>Motion Math</td>
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<td>NotesHelf</td>
<td>Stack the Countries</td>
<td>Evernote Peek</td>
<td>NxtApp 4Kids</td>
<td>Ansel &amp; Clair's Adventure</td>
<td>Word Seek HD</td>
<td>eClicker</td>
<td>Globle</td>
<td></td>
</tr>
</tbody>
</table>
Apps and websites for formative assessment (preliminary steps)

✴ **Understanding:** specific subject related apps. Language development, math skills, etc. (Khan Academy, Duolingo, LouvreHD, TED.)

✴ **Reading and note taking:** iBooks, GoodReader, Acrobatreader, Evernote, Notability, etc.

✴ **Class behaviour:** Classdojo, Stopwatch.

✴ **Analysis:** iThoughtsHD, OmniGraffle, Idea Sketch, Mindnode, Popplet, PicCollage.

✴ **Collaboration:** Wikispaces, Lino, Padlet, Dropbox, Wunderlist, Snapguide, Edmodo, etc.

✴ **Photography:** iphoto, photobooth, photogene, colorthief, pencil camera, snap different, superburst.

✴ **Developing creative thinking:** Brainsparker

✴ **Application:** Keynote, Numbers, Pages, ShowMe, HaikuDeck, Moodboard, ComicBook, Stripdesign, Tellagami, etc.
Apps and websites for summative assessment-final product:

✴ Images and posters: keynote, Moodboard, Diptic, PicCollage, AnimationHD, MyBrushes Pro, Skitch.

✴ Podcasts: Audioboo

✴ Video creation: iMovie, Movie FX cam, 8mm, ReelDirector, Garageband.

✴ Book creation: iBooks, Bookpress

✴ Publishing and social media: Tumblr, Facebook, Instagram, Twitter, Skype
Which ones do I need for each project?
Personal SAMR integration experience
Personal SAMR integration experience

Language Arts MYP: grade 9
Natalia Castillo- John Triana
Unit title:
Unit title:

Community and service: social injustice in literature
Unit objective: Big idea!
Unit objective: Big idea!

The students will understand how literature can address relevant situations of any community, respond to them in a critical fashion and generate a response or impact in the reader.
Unit objective: Big idea!

The students will understand how literature can address relevant situations of any community, respond to them in a critical fashion and generate a response or impact in the reader.

New chapter: Statement of inquiry. The authors communicate political, social and ethical issues through characters that present different points of view in order to generate an effect in the reader.
Essential question
If I had the voice of a narrator, what problems or situations of my society will I portray in my story so that others could see them and reflect on them?
Challenge!
Challenge!

Students will create their own stories through Illustrated/Graphic Novels to express their personal points of view about their society while understanding the most important narrative devices, how they work and what effect they can create on the reader.
Preliminary steps: developing content understanding and skills development
SUBSTITUTION: Remembering and Understanding

Phase 1
Individual work!

- Reading and annotating the selected stories in digital books (iBooks).
- Taking notes of the main idea, topics and literary devices discovered in the stories in an Evernote or other note taking app. Special emphasis in devices related to expressing social injustice.
AUGMENTATION: Analysing

- Sending the notes from the iBook with the general analysis of the stories to the teacher to get feedback.
- Creating a mind map of one the stories that summarises the analysis both of content and the devices of each story using images to support main ideas.
AUGMENTATION: Analysing

- Sending the notes from the iBook with the general analysis of the stories to the teacher to get feedback.
- Creating a mind map of one of the stories that summarises the analysis both of content and the devices of each story using images to support main ideas.

Collaborative work!
AUGMENTATION: 
Analysing and applying

- Participating in a class cork board through the unit to develop further concept appropriation through inquiry questions related to narrative and it’s possibilities of expression.
- Creating comics that represent the physical, psychological and ideological characterisation of a chosen character. (formative assessment)

Collaborative work!
MODIFICATION: Analysing, evaluating and creating

Creating posters based on the authors' perspective on society and how it relates to the story that was read and analysed in class. Presenting the choices of image, text and edition that were made to convey an important message about society. (Summative assessment)

Phase 4
No technology task: analysing and evaluating

- Writing a formal Commentary about one of the short stories. Students had to analyse all the literary devices and give a personal interpretation of the text and the message the author was trying to convey. (Summative assessment)

Individual work!
Final project: Redefinition

Taking it one step further!

Phase 5
MODIFICATION: Analysing, evaluating and creating

- Creating and adaptation of one of the stories as a chapter of a Graphic or illustrated novel that portrays one or more topics related to social injustice in the students context.

Collaborative work!
- STEPS:
  1. Choosing the topic related to social injustice that they consider more related to their own Colombian, bogotan, context.
  2. Create a project timeline and assign the group member responsibilities.
  3. Researching in different media (websites, blogs, newspaper websites, etc) about the situation.
  4. Evaluating the sources, choosing the best ones based on their content and share their inquiry in the Dropbox folder of the class so all the groups can benefit from the research.
  5. Writing a storyboard of their original story to develop this topic and situation in relevant and meaningful way.
  6. Taking and editing pictures in order to integrate the graphic component to the novel.
  7. Creating a Graphic story based on images taken in Comic Book or related apps that vividly recreate their story.
REDEFINITION: Evaluating and Sharing

- Publishing the book in Ibooks, Bookpress or other related apps.
- Each class creates a Facebook fan page where they post the link to the novels and invite friends and family to read their novels and give their opinions about the social issues presented on them.
- Each group writes comments about the topics that were presented by the other groups and evaluates their work according to the specific rubric.
- Each group uploads a video reflection on their work.

https://www.facebook.com/MYPTES
Impact on students learning
82%

Reinforce Technological Skills

1:1 @TES

To what extend has the iPad helped you to
(Not at all, A little, A lot, Completely)
79%

Increase independent learning

1:1 @TES

To what extent has the iPad helped you to
(Not at all, A little, A lot, Completely)
77%

Enhance Learning Experience

1:1
@TES
To what extend has the iPad helped you to
(Not at all, A little, A lot, Completely)
72%

Take ownership of own Learning

1:1
@TES
To what extend has the iPad helped you to
(Not at all, A little, A lot, Completely)
73%

Collaborate more with peers

1:1
@TES
To what extend has the iPad helped you to (Not at all, A little, A lot, Completely)
100% Use less paper

1:1 Has the iPad helped your son/daughter
(Not at all, A little, A lot, Completely)
92%

Access to more tools to solve problems

1:1
Has the iPad helped your son/daughter
(Not at all, A little, A lot, Completely)
83%

Work more collaboratively with classmates

1:1 Has the iPad helped your son/daughter
(Not at all, A little, A lot, Completely)
75%

Improve the learning experience

1:1
@TES
Has the iPad helped your son/daughter
(Not at all, A little, A lot, Completely)
“I never teach my pupils; I only attempt to provide the conditions in which they can learn.”

- Albert Einstein