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Partners in Learning

Innovative Teachers



21ST CENTURY SKILLS

Collaboration



Note on the Authors

This document was developed through an international consultation process with educators and academics lead by Imagine Education (<http://www.imagineeducation.net>). The paper is deliberately discursive in its current format and works best when used in conjunction with the 21st Century classroom projects. It will be updated with example case studies to illustrate key points in the near future.

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Introduction

Working with others is one of the most important and fast developing areas of education - but what does it mean for the role of teachers in the classroom?

Working with others is an important part of the learning process, particularly within classrooms, networks and communities of practice. Over recent years, the importance of collaboration in classrooms has grown for two principle reasons: workplaces have changed requiring more team work and collaborative practice; and learning is more and more seen to be effective when learners can share processes, ideas and knowledge building. It is the interaction between learners and between teachers aiming to develop new understanding that is at the heart of collaborative practice. Indeed, more than simply working with others, collaboration emphasizes activities where each participant comes away with new knowledge and understanding due to the interactions with others. Sharing, contributing to, reflecting on and listening are all important parts of this process, with the outcome being a shared development of understanding.

Being able to collaborate effectively requires a range of skills that have been well articulated across a wide range of research in education, psychology, sociology and human computer interaction (HCI). These skills of interdependence need to be fostered to ensure effective collaboration can take place with the aim of supporting deeper, more personal learning.

- Problem solving
- Listening
- Evaluation of ideas and suggestions
- Articulation and communication of ideas
- Justifying and defending opinions
- Sharing expertise and experiences
- Peer learning and teaching
- Learning from others
- Reflection





Introduction

Recognising the benefits of collaboration builds on well known theories of learning which explore the role of the teacher in great detail. Socio-constructivist approaches to learning sees the role of the teacher as someone supporting the active engagement of the learner in constructing their own understanding of the subject. The teacher's role is to scaffold the collaborative process; ask open and reflective questions; to challenge the learners' explanations to support their own reflection and review. Teaching techniques that foster collaboration then include:

- Providing frameworks to support group investigation and enquiry
- Setting group rules for collaborative practices
- Being conscious of group sizes for each activity
- Supporting the groups in the mechanisms of group work and collaboration
- Supporting questioning and reflection and asking open questions
- Reviewing individual input and roles within collaborative activities





Role of digital technologies for assessment

There has been much work looking at the role that computers can play in supporting collaborative activities. Synchronous collaboration, interactions between collaborators working together at the same time, can be encouraged through the use of networked technologies that enable multiple workers to work on a single document from different computers. This includes online tools such as:

- Mindmapping documents, shared spreadsheets, whiteboards, and text and design authoring tools.

Asynchronous collaboration, working together at different times, is also supported through the use of digital technologies, providing a space to share ideas in a semi-structured way. Tools such as:

- Online Communities of Practice and other professional networks Discussion boards, online messaging services, wikis, blogs and websites.

Digital technologies can also be used to highlight where individuals have played a part in collaborative activity, assisting the teacher in their formative assessment of learning. Utilizing networked technologies also affords the opportunity for new learning networks to collaborate, bringing new expertise into the classroom. These activities are unbounded by classroom walls, but bounded by access to a shared set of tools. This supports learners.

- Capturing ideas in a variety of ways to share with others for reflection, review and questioning
- Writing, drawing, creating images, videos and presentations to provide a range of ways to share ideas clearly





Scenarios

The following scenarios paint a picture of possible collaborative learning and teaching practices that move towards more personalized approaches to learning. They are presented to support the developments of new approaches to teaching and learning by considering the implications and benefits of alternative practices. They are not presented as recommendations or predictions, but as the starting point for teachers to consider how collaboration can be developed as part of their own practice.

01 EXPERT NETWORKS

Looking at the role of teachers as pedagogue and expert learner, linking to experts outside of the classroom (including international links).

With the wide range of subjects being investigated in schools as the curriculum becomes far more personalised and reactive to individual learner's interests and needs, teachers are no longer expected to retain the subject expertise of all topics studied. Instead, the role of the teacher becomes that of expert pedagogue: an expert in the processes of learning and teaching and in supporting learners as active constructors of knowledge. In order to ensure that a group of learners have access to a subject expert, Miss Naylor, a teacher in a school in London, sets up a video-linked session to a university Professor of Sustainability in Ireland that the group can interact with. Professor Bees discusses his job, research and understanding of some key issues whilst answering questions. The second part of the session sees the students present their work using a screen sharing tool that Professor Bees responds to by questioning some of the sources used, some of the conclusions drawn and by pointing to further resources

that challenge the learners' opinions. Miss Naylor works with the learners to articulate new questions to further their understanding and discusses some 'meta-level' issues that need to be addressed: the learners' ability to critique resources online and their ability to create a reasoned argument. Miss Naylor provides some thinking-model frameworks to scaffold the learners' arguments more tightly whilst asking the learners to explain which of the models best suits their needs for this work.

KEY WORDS: networks, communication and collaboration, screen sharing, ICT literacy





Scenarios



02 DIGITAL PARTNERING

Considering the role of the teacher in supporting collaboration in and outside of the classroom.

Building from project-based and enquiry-based learning, Mr Dixon has provided a framework of investigative journalism for his class to find out local opinion and understanding of a proposed shopping development. Amit and Sarah have elected to work together for this three week project: Amit knows that Sarah is very creative in her approaches to project work and in presenting her findings, whilst Sarah knows Amit is very thoughtful in forming good questions and drawing conclusions from the answers. In their proposal to Mr Dixon they explained why they would make a good collaborative pairing and explained what they hoped to find out, as well as how they intended to learn from each other's ways of working.

Amit and Sarah start a creative blog about their project that will be used to present their final work. Currently it only has the background to their project as their workings use a range of shared documents and services from image and video hosting to shared documents, whiteboards and spreadsheets. They are highly motivated by this project and are able to access these tools when they want to work on the project – working together asynchronously in school or at home, or synchronously at school or online, where they use a free voice conferencing tool to both leave messages for one another and to talk directly about what they've been doing and plan to do. Mr Dixon has explained that the assessment is against the aims set out by the pair, so he reviews the edits made to the documents to see that Sarah often starts the content and Amit then edits it to put it into a more coherent structure. Mr Dixon gives praise that they're working well on the overall content and asks that Amit then allows Sarah to edit Amit's next stage of work, supporting her to do so, so that she develops as a reviewer of other people's work. They agree on parts of the work to be made public and viewing/ commenting rights are given to others in the class as well as Sarah's and Amit's parents.

KEY WORDS: networks, communication and collaboration, Media literacy, ICT literacy



Scenarios

03 SOCIAL AUTHORIZING

Considering sorting activities that support learners to find commonalities with other learners and new people and resources to work with.

Being aware of the difference between creating a shared output and other important elements of classroom collaboration, Dr Yasim creates an activity to encourage his students to question each other and to respond to their answers. His primary students use an online mindmap to enter examples of animals living in the local area in groups which after 20 minutes he merges into one class mindmap to present using the Interactive whiteboard. The groups are asked to look for themes within the animals and to move them into groups. Some groups use species and size to categorise the animals, whilst others use their habitat – each group rearrange the items on their own shared maps. The students then take their maps and begin to annotate further by linking to online resources that give greater details about the animals, tagging the resources in a shared online repository. By searching against these tags, one group finds a secondary school doing work about horses in agriculture and they use a web form to contact the older students asking for further information.

KEY WORDS: networks, communication and collaboration, Critical Thinking and Problem Solving, ICT literacy, Media Literacy

04 TEACHING TOGETHER

Using a 'personal learning network' to improve preparation and teaching.

As a newly qualified teacher, Miss Kames is concerned about the best approaches to teaching some of the scientific processes for her class of 12 year olds. She is aware that her school does not have great facilities for practical experiments and is unsure of the best ways to support her students. She asks for suggestions from her 'personal learning network' – colleagues in her school, friends and people on her extended 'digital network'. She is provided with a range of resources that have been useful in other

people's classrooms, include videos of experiments, online simulations, lesson ideas and the contact details of a parent who is a scientist in a local company. One of her colleagues offers to team teach these sessions and suggests using the assembly hall, the playground and the ICT suite as venues for different parts of the session. This begins the process of peer coaching to support Miss Kames' development. Using an online resource booking suite that includes a public calendar, Miss Kames arranges for the visiting parent to talk about their work whilst she and her colleague book the appropriate equipment and rooms. The technologies used support the functional elements of working together, providing the teachers more time to work together to develop a shared understanding of the best approaches to teaching this work.

KEY WORDS: Creativity & Innovation, communication & collaboration, networks, ICT Literacy, Information Literacy, 21st Century Professional Development, Peer Coaching.



Scenarios

05 TANGIBLE COLLABORATION

Supporting collaboration between groups of highly connected learners.

Whilst preparing for a history exam, five 16 year old students meet with their teacher to look at how their revision is going. They sit around an interactive table where each student logs on to access their own files on the school learning platform. Mrs Jumbwa asks the students to first share what they have been looking at over the past few days: in turn the students bring up files, enlarge them so the group can see them, and talks through the resources they've been reading and the key points they've come across. Some students swap resources and share suggestions. Mrs

Jumbwa highlights some areas of study that none of the students have looked at, prompting Shaid to bring out her mobile phone to transfer some images onto the table. Shaid explains that she had started to look at this area on the bus this morning and that she already had some useful links. The other students add the links to their own portfolios and start adding their own tags related to the subject.

As the students share resources and the key points of their work, Mrs Jumbwa asks questions that probe the students understanding before facilitating a student discussion where each shares any problems they have faced in order to get feedback and suggestions from the group. Finally Mrs Jumbwa takes the 'hotseat' and students spend 10 minutes asking her questions about the topics whilst accessing a range of resources to check her responses and to find further questions.

KEY WORDS: Critical thinking, communication and collaboration, networks, ICT literacy, questioning.





Professional Development Activity Description

Here are a set of scenario descriptions that outline some possible practices that use digital technologies to support the development of new teaching and learning practices that focus on collaboration. They are not written as predictions nor recommendations, but as a starting point for discussions about how collaboration can best be fostered in your teaching practice. There are two suggested activities that use these scenarios to encourage these conversations.



Activity 1

ORDERING SCENARIOS

This activity is best done in a small group (3-4 people is best) with people you work with (other teachers, school staff, head teachers etc).

You'll need:

- Printed copies of the scenarios
- 3 columns marked 'can do now', 'could do with some changes' and 'not appropriate'

Instructions

1. Read through the scenarios. Once each has been read, place it in the appropriate column. The aim is for the whole group to agree where the scenario is placed. During the choice making, reflect on the reasons that the scenario is being put into a particular grid. Was the choice made due to the activity described, the technology used or the role of the teacher? Make a note of the main discussions that caused both agreement and disagreement within the group.



2. Look at the scenarios placed in the 'not appropriate' column. Within the group, remind yourselves of the reasons that it was placed in this column. What would need to change for it to be moved into another column? Who has the ability to make these changes? Are they desirable? Annotate the scenario with responses to these questions.
3. Look at the scenarios placed in the 'could do now' column. These are scenarios that you had decided have no difficult barriers to implement. What would you change about this scenario to make it work in your practice? Within your group, annotate the scenario with actions that need to be put into place to support putting this into practice. What benefits do you see from putting this into practice and how would you share those benefits with others in your school community?



Professional Development Activity Description

Activity 2

PLOTTING LINES OF CHANGE



You'll need:

- Scenarios you placed in the 'could do with some change' column
- 2 colour pens
- Sheet of paper

Instructions

1. Look at the scenarios that you have placed in the second column, 'could do with some change'. If you have not completed the first activity, read through the scenarios and select one description that you would like to consider within your own school context.
2. As a group, review each scenario and discuss how it might look if it took place as part of your teaching practice. Make a note of the differences. This activity is important to change the scenario from a 'possible future story' to one that you would like to see happening in your classroom.
3. Make a grid with 4 boxes, marked 'Resources' 'People' 'Practices' and 'Action'. For each scenario, using a coloured pen, write all of the barriers that need to be overcome for this scenario to become a reality in your practice. Theme your responses under the first three headings: what new resources are needed (reading materials, lesson resources, digital technologies)? What new roles need to be taken? What are the key changes to your practice?
4. Using a different coloured pen, annotate within each box what needs to happen to overcome these barriers. You can link these to SMART targets or other change management techniques, but at a minimum, try to think about WHO needs to do WHAT; WHEN it needs to be done and HOW they can achieve it.
5. In the final box, as a group, produce a brief outline of the actions that need to take place in order to begin developing this new practice.



Further Resources

A range of resources are available to support this teaching tool, including teaching resources, advice and research literature.



<http://21stcenturyskills.org/index.php>



<http://www.enquiringminds.org.uk>



<http://www.emie.ac.uk/research-areas/pims-data/summaries/review-of-collaboration-between-schools.cfm>



<http://www.openingminds.org.uk>



<http://www.visionmapper.org.uk>



http://www.gtce.org.uk/teachers/rft/collab_cpd0204/collab_cpd0204cs/casestudy5/

Video of US community approach to personalised learning



http://gallery.carnegiefoundation.org/collections/quest/collections/sites/brown_vanessa/



KEEP toolkit article on peer coaching & mentoring

http://gallery.carnegiefoundation.org/gallery_of_tl/educational_research_mentoring_in_school-based_contexts.html



Social software and learning

<http://www.futurelab.org.uk/resources/publications-reports-articles/opening-education-reports/Opening-Education-Report199/>



Collaboration in mobile learning

http://www.eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini.jsp?_nfpb=true&_ERICExtSearch_SearchValue_0=EJ767642&ERICExtSearch_SearchType_0=no&accno=EJ767642



Expert networks

<http://futurelab.org.uk/projects/space-mission-ice-moon>



Digital Partnering

<http://scraplog.com/> <http://www.flickr.com>



Social Authoring

<http://bubbl.us/edit.php> <http://www.diigo.com>



Teaching Together

<http://www.meetomatic.com/calendar.php>
<http://www.twitter.com>



Tangible Collaboration

<http://www.microsoft.com/surface/NoSilverlight.aspx>



Ideaslab ecommunities project (Melbourne)

<http://ideaslab.vic.edu.au/projects/building-ecommunities/>



Joyce, B., Calhoun, E., Hopkins, D. (2008) Models of Learning, Tools for teaching

http://www.amazon.co.uk/Models-Learning-Tools-Teaching-Bruce/dp/0335234194/ref=sr_1_1?ie=UTF8&s=books&qid=1259519753&sr=1-1