

Teaching with Technology

About Me...

hi



Why are we here?

A very quick guide to educational technology and how it can enhance learning



backchannelchat.com

Join

Code: p33ml

Session overview

1. Theory and Frameworks
2. In-Class Teaching
3. Blended and Flipped Learning

Methodology

Free, available or generic technology

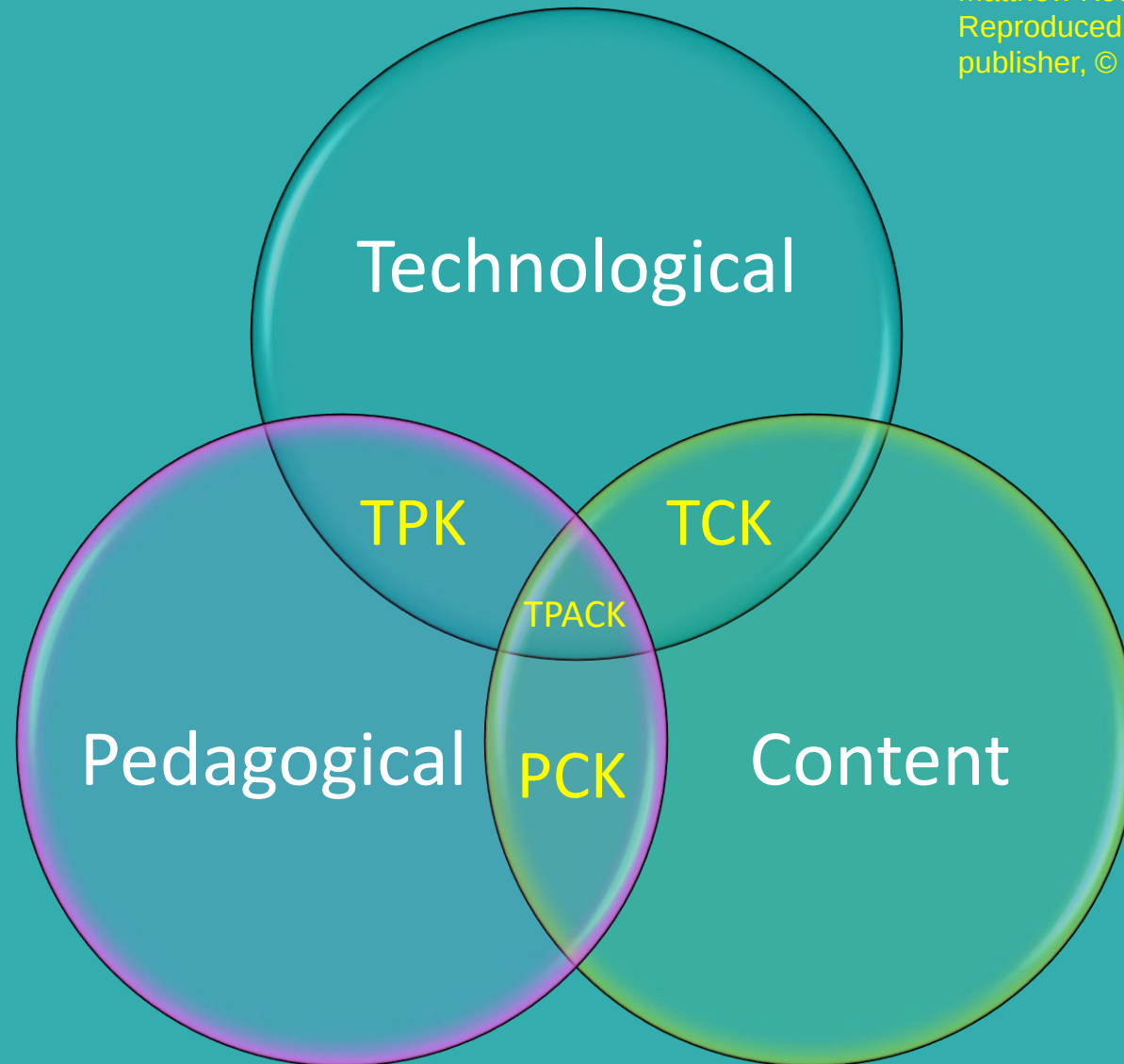
Active learning

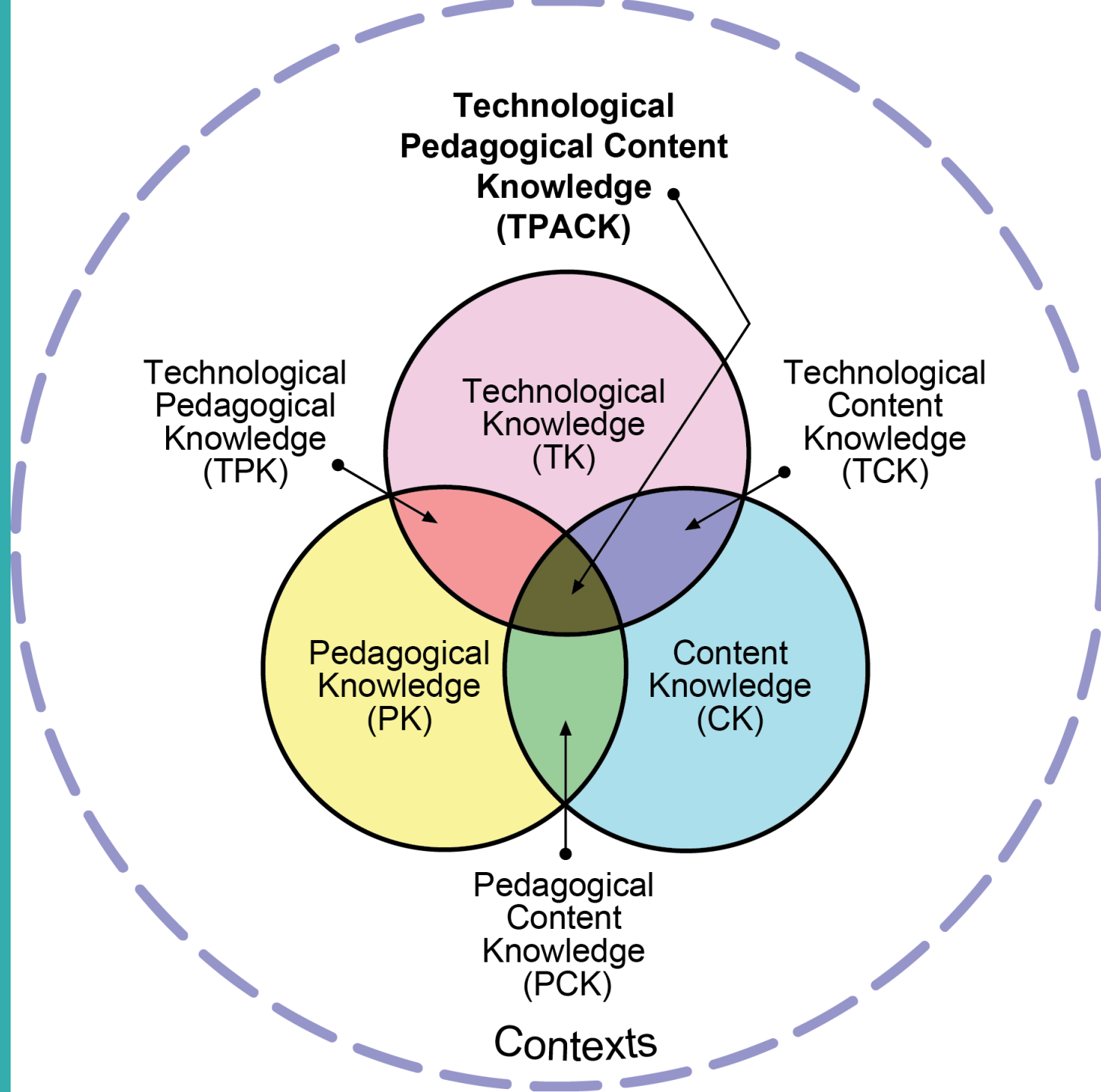
TPACK





Technological
Pedagogical
and
Content
Knowledge





Caveats

I don't know it all!

Not product training

Making connections



Part 1: Theory

Why is teaching with technology a good thing?

Why should we do more of it?

Reason 1

Technology can enhance
teaching and learning

Reason 2

Education should equip learners with real-life skills

Part 1 objectives

- To identify and categorise learning technologies
- To consider learning theory in the digital context
- To consider digital capability for both staff and students

Active Learning

“If we teach today’s students as we taught yesterday’s, we rob them of tomorrow.”

John Dewey

“Tell me and I forget. Show me and I remember. Involve me and I understand”

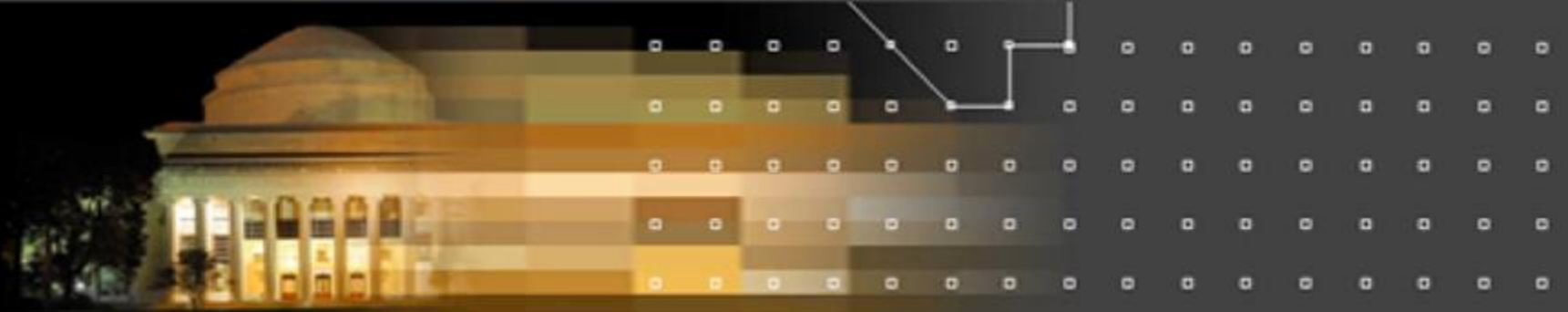
Chinese proverb

“Learning is an active process. We learn by doing. Only knowledge that is used sticks in your mind.”

Dale Carnegie



Massachusetts
Institute of
Technology

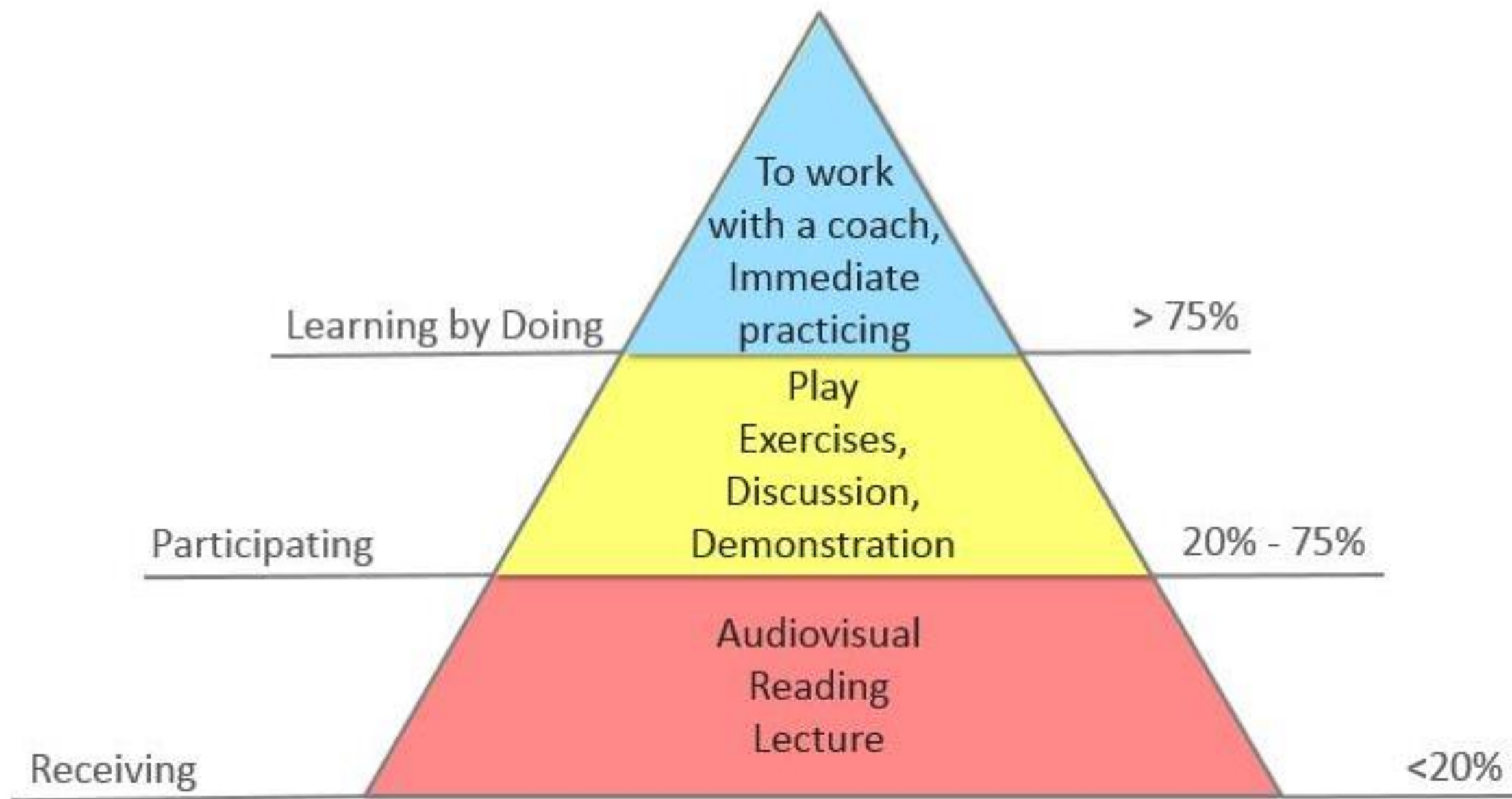


5.95J, Fall 2015

Teaching College-Level Science and Engineering

Janet Rankin

Active Learning Overview



Retention of Learning

Bunce, Flens & Neiles

(Introducing active learning techniques significantly reduces student attention decline)

Gardner

(We all have our own individual learning styles and educators should use a range of techniques accordingly)

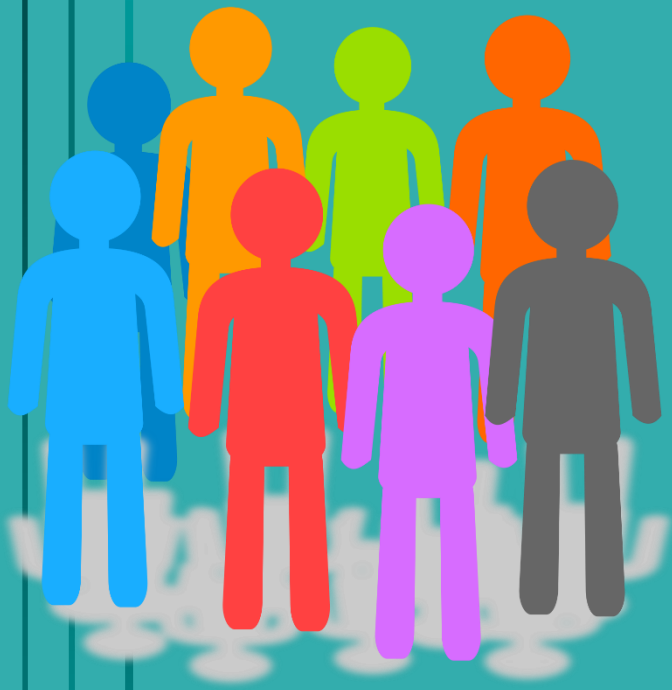
Hattie & Yates

(Different tasks and situations have different learning styles which are appropriate – “multi-modal” teaching)



Technology

- Everything is technology
- Focus on software
 - free and readily available
 - discipline agnostic
- “Ed-tech”

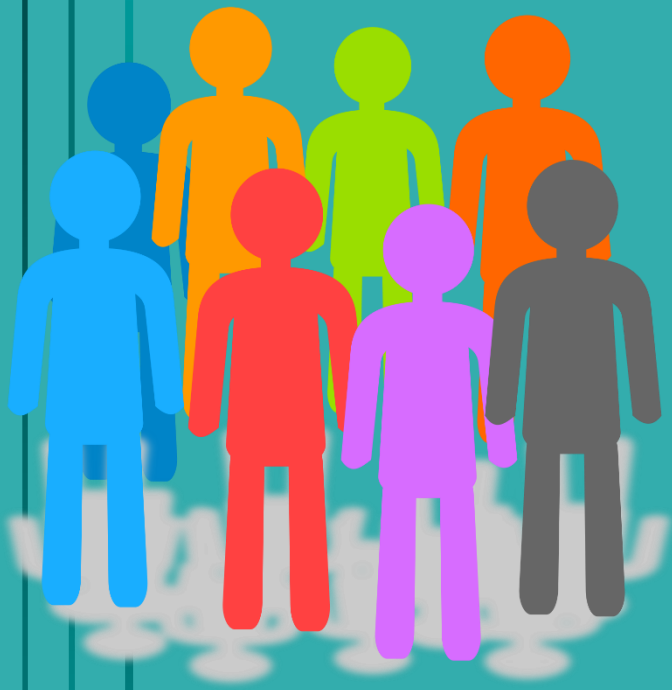


Individual Task

Brainstorm edtech...

...get your devices ready

Educational Technology



Group Task

Brainstorm edtech

Now categorise them...

How can we categorise "Ed-Tech"?

Top

<u>Category</u>	<u>Educational Technology</u>				
Classroom Response	Wordwall Socrative	Mentimeter Quizzizz	Kahoot Padlet	Poll Everywhere Quizalize	
Interactive Resource Creation	Blendspace	TEDEd	Clickview	Edupuzzle	
Content Creation	Office Canva	iWork Panopto	GSuite Wordpress	Audacity Easel.ly	Piktochart Paint.net
Presentational	Powerpoint Tellagami	Sony VE Voki	Explain Everything Nearpod	Prezi Powtoon	
Ready-Made Content	YouTube	Open Clipart	Clickview	Clker	Pixabay
Communication and Social Media	Skype Snapchat	Moodle Forums Today's Meet	Twitter Facebook	Hangouts Pinterest	Yammer Instagram
Learning Environment	Moodle	Google Classroom		OneNote Class Notebook	
Storage and Sharing	OneDrive DropBox	Evernote OneNote	iCloud WeTransfer	Google Drive	

Reason 1

Technology can enhance
teaching and learning

Stimulus and
response
Extrinsic

Behaviourism

Cognitivism

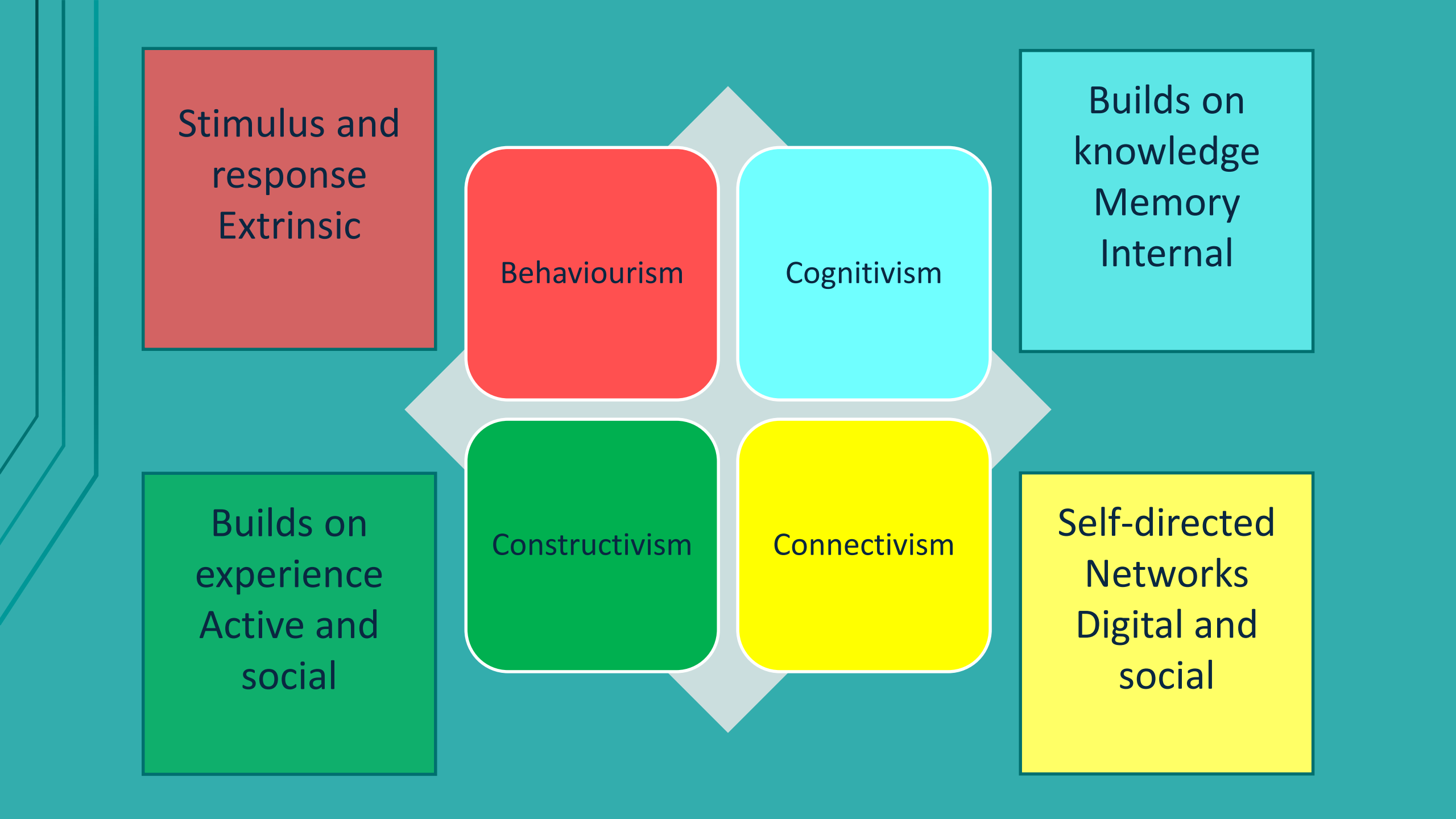
Builds on
knowledge
Memory
Internal

Builds on
experience
Active and
social

Constructivism

Connectivism

Self-directed
Networks
Digital and
social



Music Performance



Behaviourism

Music Appreciation



Constructivism

Music Composition



Cognitivism

Music Discovery



Connectivism

Stimulus and
response

Extrinsic

Online drills
(tables practice, music
lessons, e-sports)

Behaviourism

Cognitivism

Builds on
knowledge

Memory

Internal

Quizzes and
interactive tasks

Builds on
experience
Active and
social

Curated Communication
(forums, team tasks)

Constructivism

Connectivism

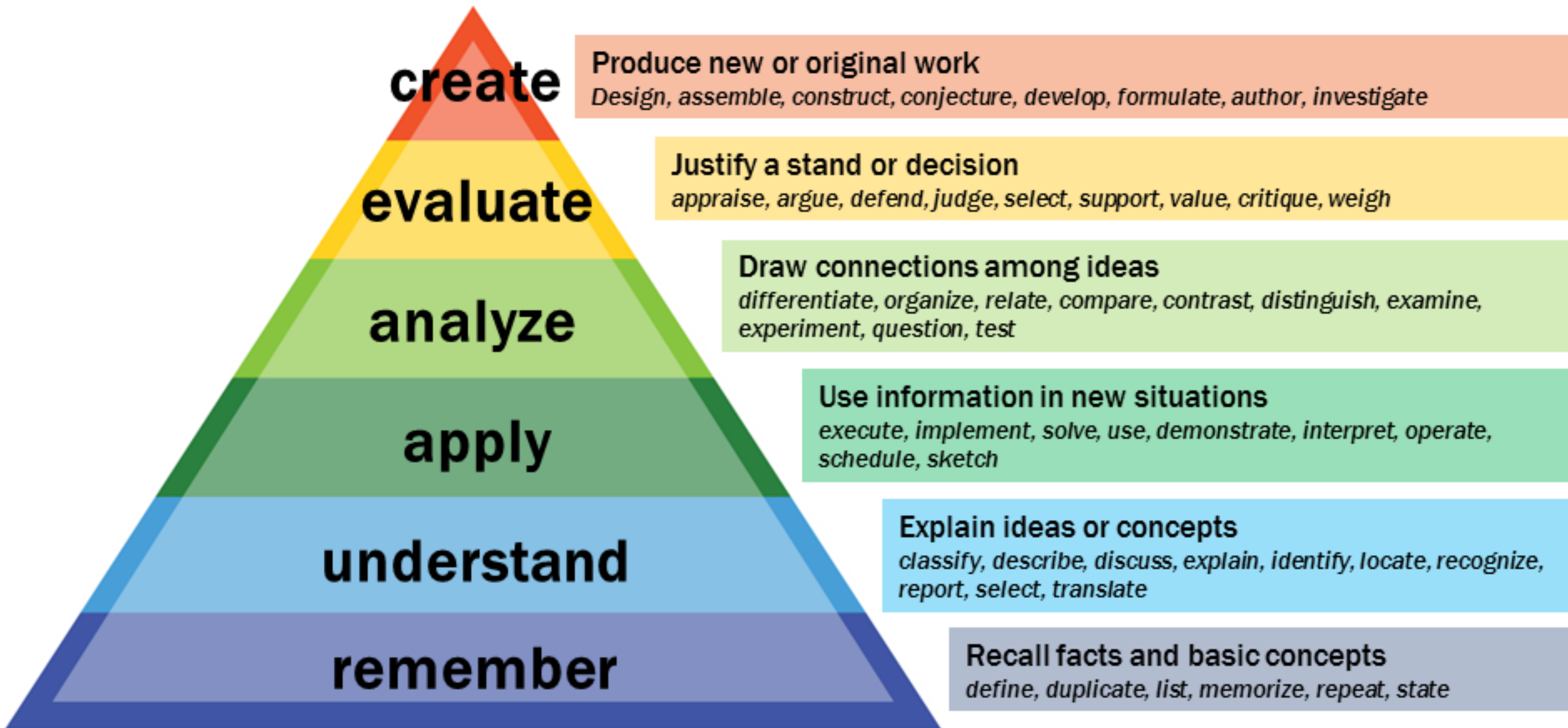
Self-directed
Networks
Digital and
social

Open Communication
(online communities)

Learning Models

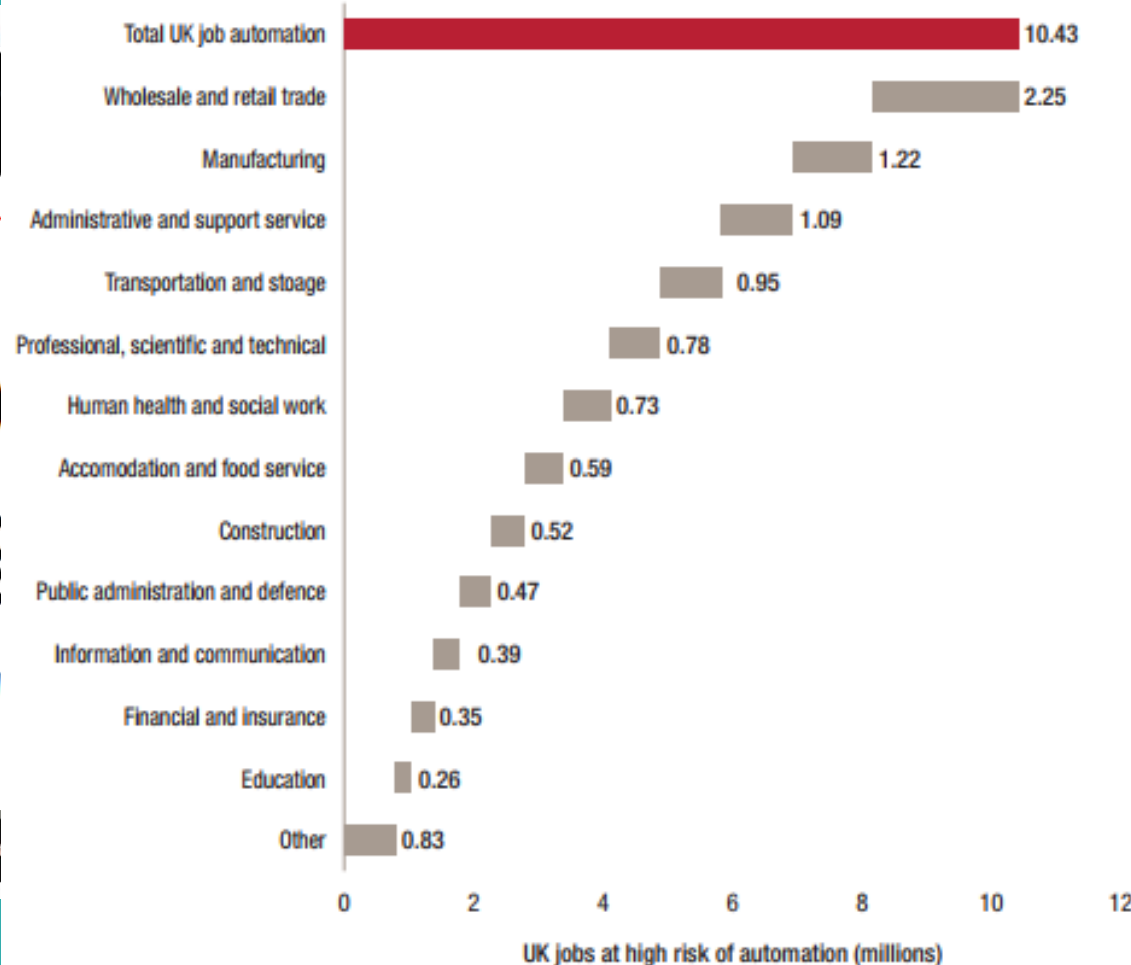
- Bloom's Taxonomy
- SAMR

Bloom's Taxonomy



Why are HOTS important?

Figure 4.3 – Potential jobs at high risk of automation by UK industry sector



Sources: ONS; PIAAC data; PwC analysis

THE VERGE

BUSINESS US & WORLD TECH

Automatic technology

New analysis says g

By James Vincent | @jjvincent

Richer countries will see more automation since they have

will affect one's

FORM VIDEO MORE

on jobs, but ays report

ce in flux

trained about being replaced by a machine.

Redefinition

Tech allows for the creation of previously inconceivable

Posting the article online, linking via social media and inviting comments

Modification

Tech allows for significant task

Including video clips and sound files to make the article a multimedia work.

Augmentation

Tech acts as a direct tool substitution for functional improvement

Using spellcheck, clipart etc.

Substitution

Tech acts as a direct tool substitution for functional change

Using the basic functions of a word processor to write an article.

The capacity for learners to use multiple media through ICT increases the opportunity to work in alternate modalities to the predominant text. ICT simplifies the production of visual & aural media as well as helping to make viewing & listening a more delightful engagement with material. Of even greater consequence is the potential for (re)construction in film, hypermedia (networks of information) and linear presentations. Such integrations of multiple media are perhaps the most demanding of expressions, not only anticipating audience viewing but also audience choice of sequence.

A powerful spur to more complex expressions of ideas is the ability to re-express cheaply and repetitively. The potato print transforms a simple shape into a rich pattern, the 'automation' provided by this simple tool allows a variety of re-arrangements of the shape to be explored at low cost and with reliable quality. Computers provide this kind of automation and much more, through copy and paste in almost every program, through formulae and 'Fill down' in a spreadsheet and, most important of all, through programming languages.

The computer frequently pleases, aesthetically and affectively, in a way that delights the learner. This positive mood is clearly valuable to creativity, as a means of sustaining motivation at the very least.

How can technology enhance learning?

'How Technology enhances learning?' by Richard Millwood is licensed under a Creative Commons Attribution-Share Alike 2.0 License. Based on a work at blog.richardmillwood.net



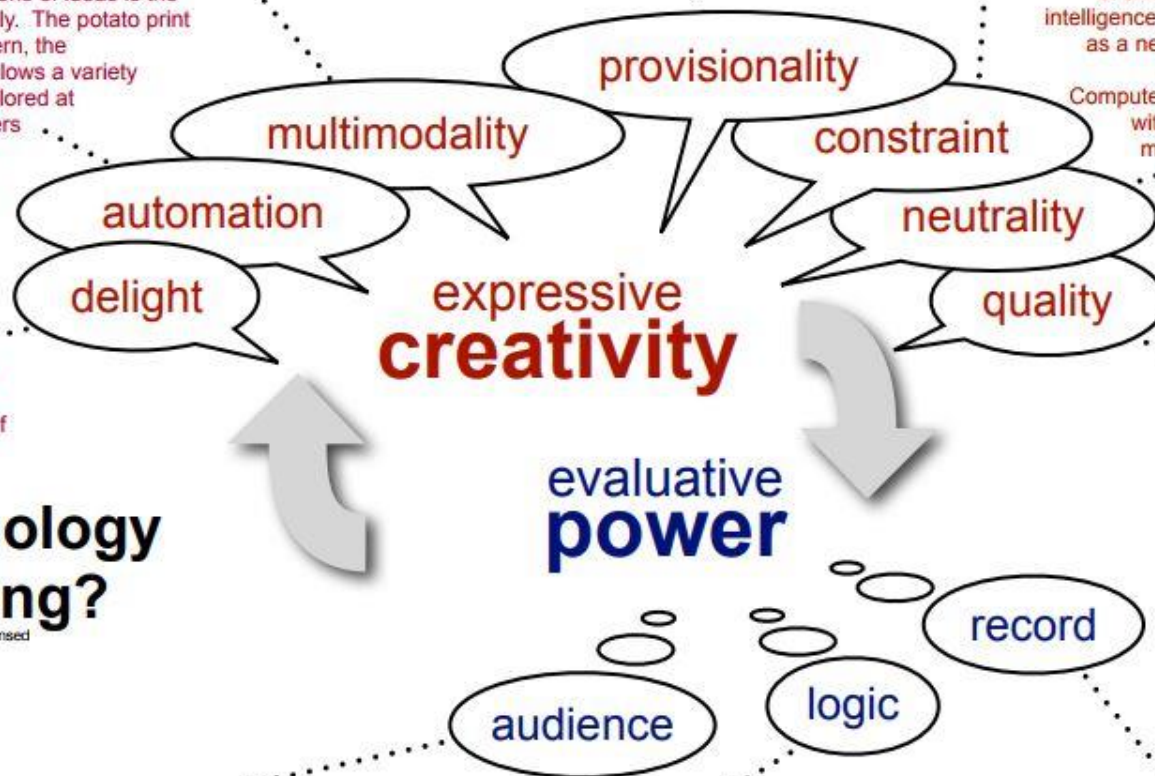
Using projectors or large screens in a classroom context, learners share a knowledge context and background, debate together, seek each other's views and respect diversity but also work towards consensus. The projected computer screen is a focus for representing the current state of the ideas being developed by the class and for judging quality and accuracy of expression. A wider, but identified audience can be found by publishing material on web pages so that the globe can take part in the evaluation of ideas and work. The power of potential audience to support both expression and evaluation is very real in the mind of the learner and can provide powerful motivational force and raise ambition.

For many learners, starting is difficult because making mistakes has such a disastrous effect on continuation. Many young people in schools use correction fluid to eradicate 'errors', or resort to ripping pages out of books in order to achieve a 'perfect' copy. Provisionality arises when one can begin developing ideas and, at little labour cost, perfect and re-draft those ideas with no evidence of the false starts. This means that creativity is promoted, one can start recording ideas out of order, in draft form and incomplete. Confidence then unlocks ideas, which might otherwise be considered not worth expressing.

ICT tools can promote the development of ideas, paradoxically, by constraining the universe of possible expressions. In many of the arts, the choice of constraint can lead to greater fertility by focussing on specific aspects of ideas – this kind of limit can offer similar gains in ICT. In graphic programs, limits on the position of the cursor to a grid can lead to the rapid development of diagrams. In geometry programs, constraints can help learners see important connections and propose new interpretations.

After some acquaintance with computers over a period of time, young people see through any pretence of intelligence or life in a computer and thus begin to see it as a neutral tool which although it may offer canned feedback, is clearly incapable of judgement. Computers allow students to 'say things out loud', but without judging those things in an interpersonal manner. The computer is a silent helper in this sense and can be trusted with half-formed ideas and ideas which follow the students' creative impulse.

ICT media are unique in that little imprint of the creator's weakness in production are seen – perfect fonts, geometric accuracy and colour faithfulness permit the weakest of learners to produce material which compares, on the level of media quality, with that of the most experienced professional. This means that learners' self-esteem, which is so heavily knocked by poor handwriting, inaccurate drawing or inadequate oral skills, can be raised. This in turn encourages risk-taking and attention to the content of ideas – continuing engagement which can promote attention to higher-order issues.



Computers offer a powerful tool for certain ideas, which are developed in symbolic, formal languages. These include diagrams, spreadsheet formulae, programming languages and database design. If these formal systems are used to develop ideas, then it is possible for the computer to 'execute' them or analyse them and display their consequences. Often, in order to judge the success of an idea, this output can be compared to that anticipated, and evaluation independent of a peer or teacher can take place. The programming language Logo has provided a powerful example of this effect, in some cases leading learners into extraordinary intellectual and creative endeavour.

Most work on a computer can be saved for later perusal or at intervals to record drafts. This can help learners see how their ideas have developed, or peers & teachers to understand and judge their originality & value. In the long term, work that has been compiled provides the basis for a portfolio of work, which can be used to represent the learner's capability. It also may be efficiently mined for new starting points, new connections can be made between past work and present concerns. Often surprising insights can be obtained, because ICT has recorded the work and allowed searching and indexing to take place.

Reason 2

Education should equip learners with real-life skills

Frameworks

1. What our students should be able to do
(WAG Digital Competence Framework)
2. What our citizens should be able to do
(EU Digital Competence Framework)
3. What our educators should be able to do
(JISC Digital Capability Framework)

Professional Frameworks

Embedding employability in higher education

Key projects, resources and ways you can connect with employability

Higher Education Academy views embedding employability as providing the opportunities to develop knowledge, skills, experiences, behaviours, attributes, achievements and attitudes to enable graduates to make successful transitions and contributions, benefitting them, the economy and their communities. Employability is relevant to all students, and at all levels of study so includes both undergraduate and postgraduate provision.

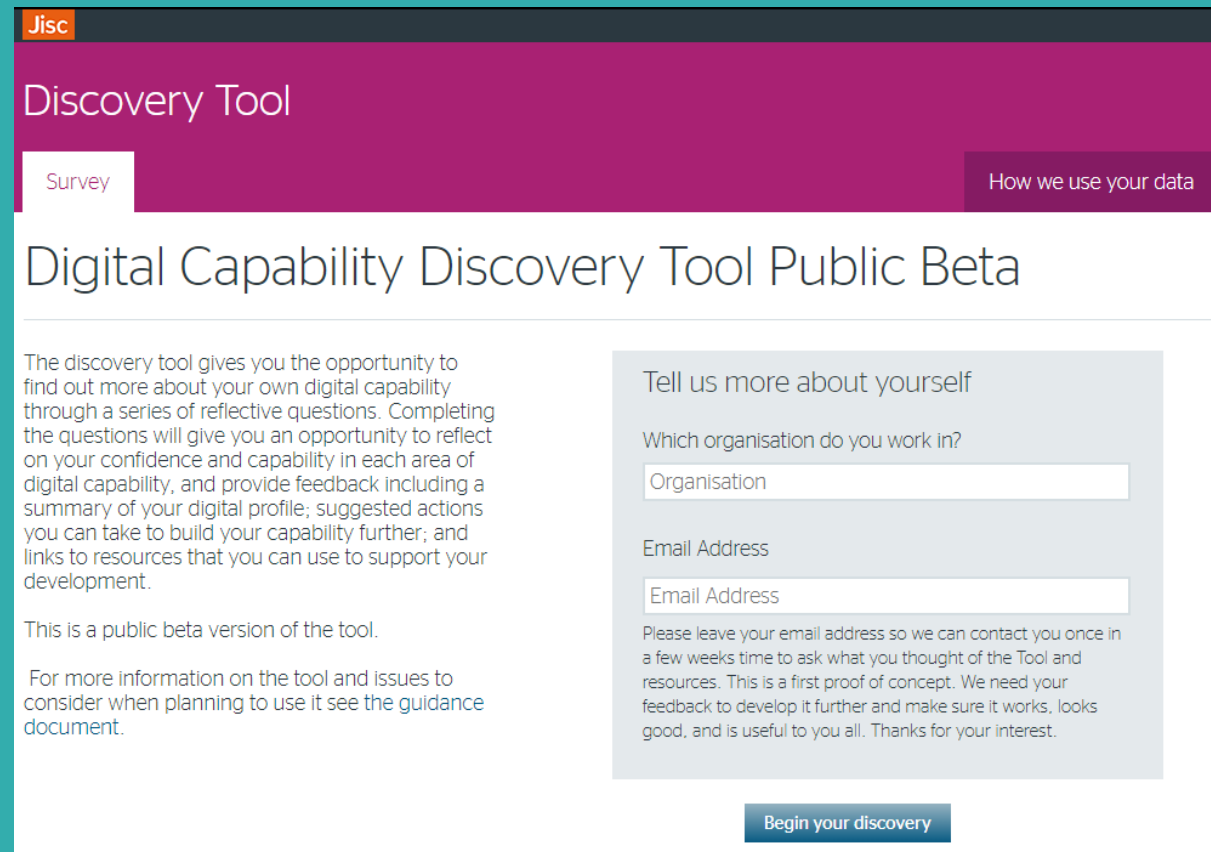


UK Professional Skills Framework Core Knowledge K4:
“The use and value of appropriate learning technologies.”

Teaching Excellence Framework – Example Evidence of Teaching Quality:
“Impact and effectiveness of innovative approaches, **new technology** or educational research”

Optional Task

Take the JISC Digital Capability Discovery Tool



The screenshot shows the landing page of the JISC Digital Capability Discovery Tool. The header features the JISC logo and the title 'Discovery Tool'. Below this, there are two tabs: 'Survey' (selected) and 'How we use your data'. The main heading is 'Digital Capability Discovery Tool Public Beta'. The page is divided into two columns. The left column contains a paragraph explaining the tool's purpose and a link to a guidance document. The right column contains a form titled 'Tell us more about yourself' with fields for 'Which organisation do you work in?' and 'Email Address'. A 'Begin your discovery' button is located at the bottom right.

Jisc

Discovery Tool

Survey

How we use your data

Digital Capability Discovery Tool Public Beta

The discovery tool gives you the opportunity to find out more about your own digital capability through a series of reflective questions. Completing the questions will give you an opportunity to reflect on your confidence and capability in each area of digital capability, and provide feedback including a summary of your digital profile; suggested actions you can take to build your capability further; and links to resources that you can use to support your development.

This is a public beta version of the tool.

For more information on the tool and issues to consider when planning to use it see the [guidance document](#).

Tell us more about yourself

Which organisation do you work in?

Organisation

Email Address

Email Address

Please leave your email address so we can contact you once in a few weeks time to ask what you thought of the Tool and resources. This is a first proof of concept. We need your feedback to develop it further and make sure it works, looks good, and is useful to you all. Thanks for your interest.

[Begin your discovery](#)

Part 2 objectives

- To consider how technology can enhance in-class teaching and learning
- To examinesome of the tools available
- To link in-class active learning with theory

1. Presentation
2. Discussion
3. Investigation
4. Collaboration
5. Practice
6. Production
7. Assessment



Information
Transfer



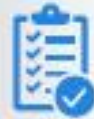
Testing &
Experimenting



Sharing



Discussion
& Debate



Assessment



Student
Presentation



Creating



Voting
& Polling



Research



Student
Collaboration



Modelling &
Demonstration



Field Trip
/ Site Visit

Overview

Tony's Categories	My Categories		Examples of Enhancement
Presentation	 Information Transfer  Student Presentation	 Modelling & Demonstration	Using a variety of presentational tools can enable a multi-modal approach suitable to task and/or learner requirements.
Discussion	 Discussion & Debate  Sharing	 Voting & Polling	Classroom response systems and sharing content with peers can prompt and encourage discussion.
Investigation	 Voting & Polling  Testing & Experimenting	 Research  Field Trip / Site Visit	Polling software can simplify data collection, note-taking software can aid research, spreadsheets can automate data analysis.
Collaboration	 Student Collaboration	 Research	Using cloud storage and collaboration can enable group projects to be undertaken seamlessly and flexibly.
Practice	 Testing & Experimenting  Assessment	 Sharing	Peer feedback through sharing draft ideas, self assessment through quizzes and using modelling software are all useful practice activities for honing understanding.
Production	 Creating		The Office, iWork and GSuite software collections, along with numerous free web tools facilitate and enhance the creation of content by educators and students.
Assessment	 Assessment  Discussion & Debate	 Voting & Polling  Student Presentation	Classroom response systems and presentational/sharing technology can provide flexibility and variety in both summative and formative assessment.

Instructor Led



Information
Transfer



Discussion
& Debate



Assessment



Voting
& Polling



Modelling &
Demonstration



Field Trip
/ Site Visit

Student Led



Testing &
Experimenting



Sharing



Student
Presentation



Research



Creating



Student
Collaboration

Category	Educational Technology					
Classroom Response	Wordwall Socrative	Mentimeter Quizzizz	Kahoot Padlet	Poll Everywhere Quizalize		
Interactive Resource Creation	Blendspace	TEDEd	Clickview	Edupuzzle		
Content Creation	Office Canva	iWork Panopto	GSuite Wordpress	Audacity Easel.ly	Piktochart Paint.net	
Presentational	Powerpoint Tellagami	Sony VE Voki	Explain Everything Nearpod	Prezi Powtoon		
Ready-Made Content	YouTube	Open Clipart	Clickview	Clker	Pixabay	
Communication and Social Media	Skype Snapchat	Moodle Forums Today's Meet	Twitter Facebook	Hangouts Pinterest	Yammer Instagram	
Learning Environment	Moodle	Google Classroom		OneNote Class Notebook		
Storage and Sharing	OneDrive DropBox	Evernote OneNote	iCloud WeTransfer	Google Drive		

Instructor Led

Presentation Software

Slideshow Style



Sway



Prezi

Video Style

Tellagami



Voki



Powtoon



Whiteboard Style

Explain Everything

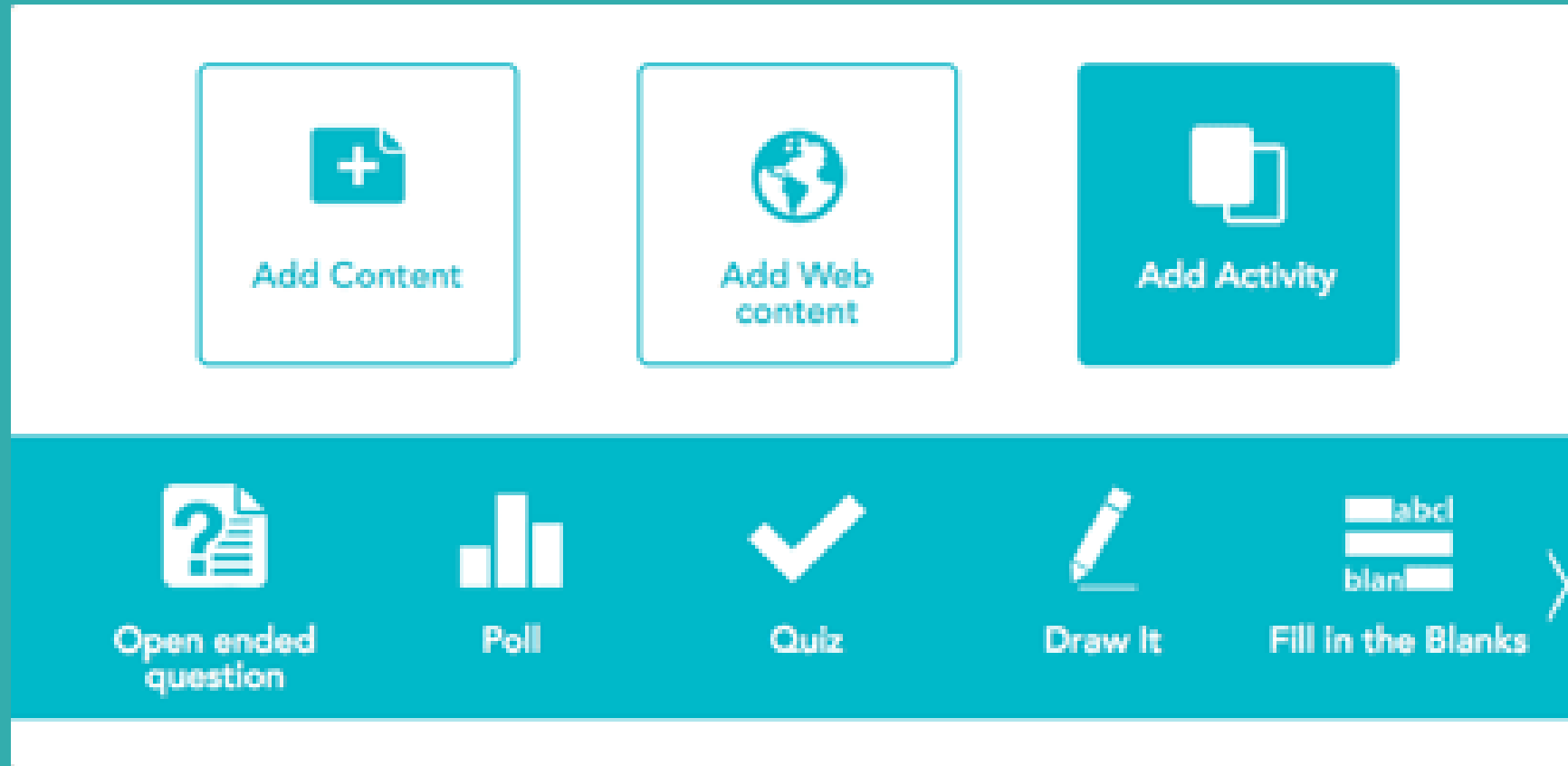


Laurillard 2008

“For example, Web sites and podcasts may appear to be exciting new forms of teaching method, but in terms of support to the learning process, they play exactly the same role as conventional books and lectures—they present the teacher’s concept. The additional value they offer is logistic rather than pedagogic: They offer more flexible study.”

Interactive Style

Nearpod



Instructor Led

Classroom Response Systems

Kahoot! Quizizz

Quizalize



Why use a CRS?

(list from Vanderbilt University)

Maintain attention

Promote discussion

Create a safe space

Take attendance

Promote engagement

Encourage participation

Check understanding

Add incentive



Instructor Led Other Tools

Randomisers



Backchannels

💬 Backchannel Chat



Benefits

Randomisers

- ✓ Everyone must engage and prepare a contribution
- ✓ Neutral to the instructor
- ✓ Visual
- ✓ Fun

Backchannels

- ✓ Safe place for shy students to ask questions
- ✓ Questions can be addressed at appropriate times
- ✓ Realtime feedback through content and number of questions
- ✓ Extend opportunity for questions

Student Led

Cloud Collaboration



Word Excel PowerPoint OneNote Access Publisher Outlook Lync InfoPath



iPhoto



iMovie



GarageBand



Pages



Numbers



Keynote



iPhoto



iMovie



GarageBand



Pages



Numbers



Keynote

Social constructivism

Group interdependence theory

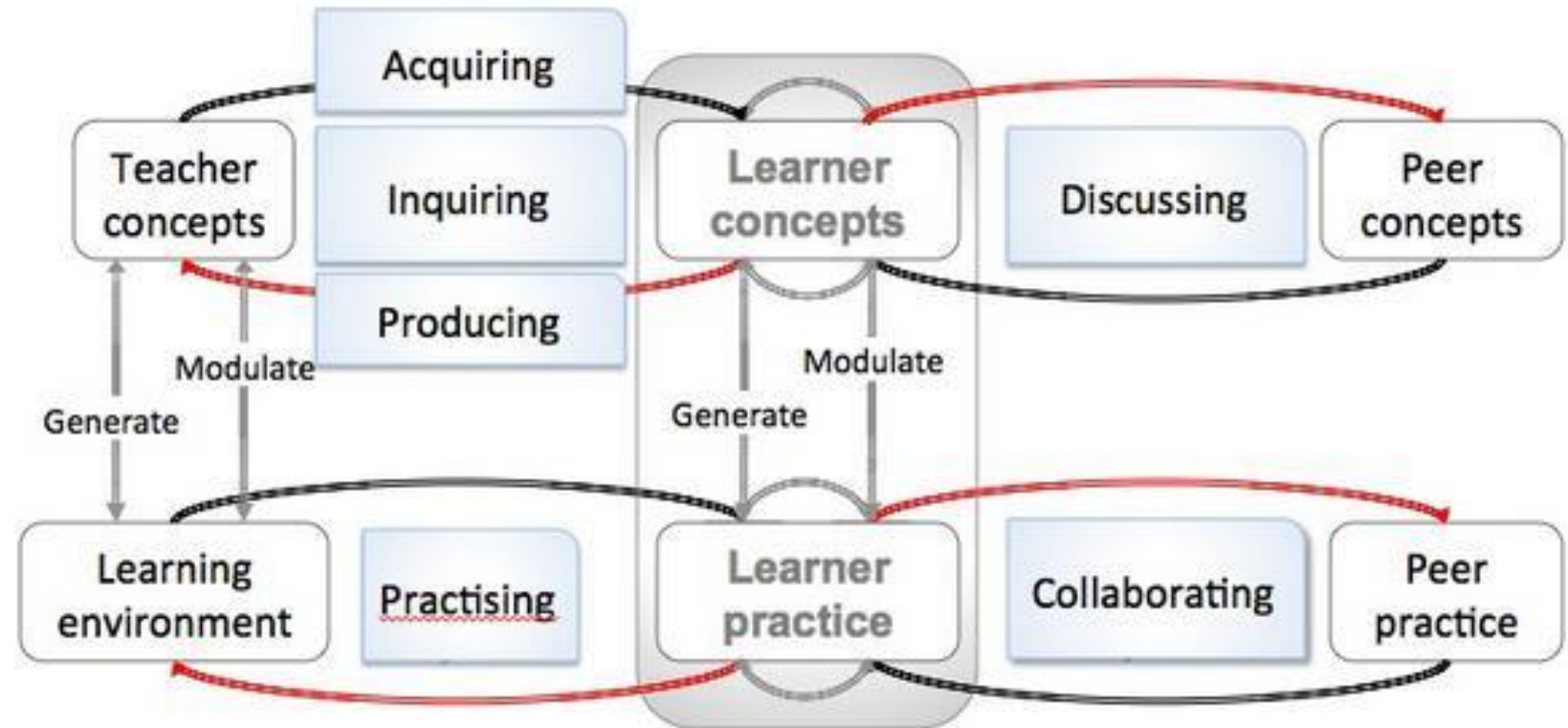
Student Led Screen Sharing



Diana Laurillard's Conversational Framework



The Conversational Framework



The good teacher will use all these types of learning that continually prompt the learner to generate and modulate their concepts and practice

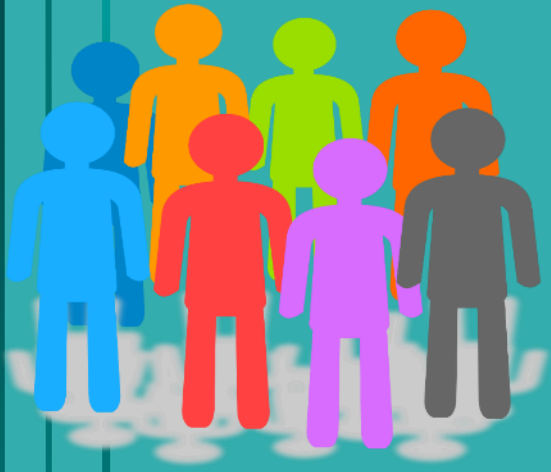
Collaborative Learning Examples

Problem/Project Based Learning (PBL)

“When implementing project based learning, I can't imagine a project without the use of technology. Whether you are using mobile devices, laptops, or desktops, there are so many applications and websites that can be resources and tools for the project based units.”

Sandy Cangelosi – PBL blogger

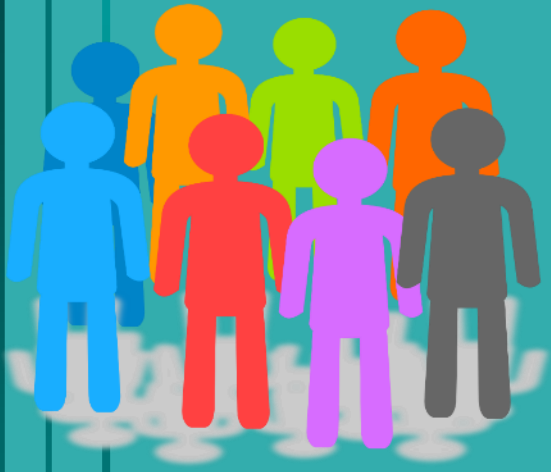
Scenario Based Learning



Group Task

Can you identify 6 verbs from Bloom's Taxonomy that would be developed in a PBL exercise?

Can you get at least one at each level?



Example answer

Identifying possible venues

Estimating amount of food required

Choosing a venue

Advertising the party

Reviewing entertainment options

Composing a music playlist

Action Words for Bloom's Taxonomy					
Knowledge	Understand	Apply	Analyze	Evaluate	Create
define identify describe label list name state match recognize select examine locate memorize quote recall reproduce tabulate tell copy discover duplicate enumerate listen observe omit read recite record repeat retell visualize	explain describe interpret paraphrase summarize classify compare differentiate discuss distinguish extend predict associate contrast convert demonstrate estimate express identify indicate infer relate restate select translate ask cite discover generalize give examples group illustrate judge observe order report represent research review rewrite show trace transform	solve apply illustrate modify use calculate change choose demonstrate discover experiment relate show sketch complete construct dramatize interpret manipulate paint prepare produce report teach act administer articulate chart collect compute determine develop employ establish examine explain interview judge list operate practice predict record schedule simulate transfer write	analyze compare classify contrast distinguish infer separate explain select categorize connect differentiate discriminate divide order point out prioritize subdivide survey advertise appraise break down calculate conclude correlate criticize deduce devise diagram dissect estimate evaluate experiment focus illustrate organize outline plan question test	reframe criticize evaluate order appraise judge support compare decide discriminate recommend summarize assess choose convince defend estimate find errors grade measure predict rank score select test argue conclude consider critique debate distinguish editorialize justify persuade rate weigh	design compose create plan combine formulate invent hypothesize substitute write compile construct develop generalize integrate modify organize prepare produce rearrange rewrite role-play adapt anticipate arrange assemble choose collaborate collect devise express facilitate imagine infer intervene justify make manage negotiate originate propose reorganize report revise schematize simulate solve speculate structure support test validate

BLOOM'S TAXONOMY DIGITAL PLANNING VERBS					
REMEMBERING	UNDERSTANDING	APPLYING	ANALYZING	EVALUATING	CREATING
					
Copying Defining Finding Locating Quoting Listening Googling Repeating Retrieving Outlining Highlighting Memorizing Networking Searching Identifying Selecting Tabulating Duplicating Matching Bookmarking Bullet-pointing	Annotating Tweeting Associating Tagging Summarizing Relating Categorizing Paraphrasing Predicting Comparing Contrasting Commenting Journaling Interpreting Grouping Inferring Estimating Extending Gathering Exemplifying Expressing	Acting out Articulate Reenact Loading Choosing Determining Displaying Judging Executing Examining Implementing Sketching Experimenting Hacking Interviewing Painting Preparing Playing Integrating Presenting Charting	Calculating Categorizing Breaking Down Correlating Deconstructing Linking Mashing Mind-Mapping Organizing Appraising Advertising Dividing Deducing Distinguishing Illustrating Questioning Structuring Integrating Attributing Estimating Explaining	Arguing Validating Testing Scoring Assessing Criticizing Commenting Debating Defending Detecting Experimenting Grading Hypothesizing Measuring Moderating Posting Predicting Rating Reflecting Reviewing Editorializing	Blogging Building Animating Adapting Collaborating Composing Directing Devising Podcasting Wiki Building Writing Filming Programming Simulating Role Playing Solving Mixing Facilitating Managing Negotiating Leading

In-class technology: key benefits

- Attention and engagement
- Participation
- Scalability
- Deeper engagement with material – higher order thinking skills
- Promotes discussion – constructivism
- Employability skills – PBL and SBL
- Provides many opportunities for formative assessment



Part 3 objectives

- To understand the meaning of blended and flipped learning and its benefits.
- To consider suitable technology for blended and flipped learning.
- To understand good practice in blended and flipped learning.

joinmyquiz.com

***"Blended learning** is an education program (formal or non-formal) that combines online digital media with traditional classroom methods. It requires the physical presence of both teacher and student, with some element of student control over time, place, path, or pace. While students still attend "brick-and-mortar" schools with a teacher present, face-to-face classroom practices are combined with computer-mediated activities regarding content and delivery."*

***"Flipped classroom** is an instructional strategy and a type of blended learning that reverses the traditional learning environment by delivering instructional content, often online, outside of the classroom. It moves activities, including those that may have traditionally been considered homework, into the classroom. In a flipped classroom, students watch online lectures, collaborate in online discussions, or carry out research at home and engage in concepts in the classroom with the guidance of a mentor."*

Flexibility

- Availability
- Propensity for learning

Personalisation

Facilitates Active Learning

Repeatability

Extends opportunities for interaction and collaboration

Effective

IT literacy can be a barrier

Preparation time

Risk of being didactic

Need to train students

Screen time

Other advantages

- Easier for shy students to participate online

Other limitations

- Misunderstandings online can not be dealt with immediately as opposed to a live session.

Eric Mazur – the “father of flipped learning”



“Any question to which the answer can be Googled is no longer a good assessment”

- Students access content before live session
- Live sessions involve “on the spot” assessment and discussion
- The “curse of knowledge”
- Tailored teaching:
 - No progress without understanding
 - No addressing misconceptions unnecessarily

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Presentational	Powerpoint Tellagami	Sony VE Voki	Explain Everything Nearpod	Prezi Powtoon	
Ready-Made Content	YouTube	Open Clipart	Clickview	Clker	Pixabay
Communication and Social Media	Skype Snapchat	Moodle Forums Today's Meet	Twitter Facebook	Hangouts Pinterest	Yammer Instagram
Learning Environment	Moodle	Google Classroom		OneNote Class Notebook	
Storage and Sharing	OneDrive DropBox	Evernote OneNote	iCloud WeTransfer	Google Drive	



Microlectures

THINGS YOU SHOULD KNOW ABOUT...™ MICROLECTURES

Scenario

Gretchen is one of 300 students registered for Dr. Gordon's virology course. Before the first class session, she reviewed three short videos of Dr. Gordon describing virus structures and explaining virus replication. As he made his first point in these microlectures, a drawing appeared in the display, illustrating the structure of a virus. Gretchen always studies with a notebook at hand, but when she started to copy the illustration, she considered that the videos will be accessible all semester. With these microlectures, she can listen without distractions and can later check the drawings and hear Dr. Gordon's explanations of them whenever she likes.

As the semester progresses, Gretchen notices differences between Dr. Gordon's microlectures and his classroom presentations. In class, he adjusts the direction and pace of the lessons based on questions from students and often includes hands-on activities. By contrast, the microlectures are sharply focused on foundational concepts.

Students can view the microlectures anytime during the semester. Gretchen likes viewing them immediately before class discussions of the topic. She often watches on her tablet device, but enjoys the portability that allows her to view or listen on her phone when she is on a treadmill at the rec center or on a bus to campus. Dr. Gordon's lectures—in either video or audio format—direct students to a URL where they can submit questions or other responses. Before each class session, he checks for questions that relate to the current topic and initiates class discussion by addressing those issues.

Three weeks before the semester's end, Dr. Gordon posts an audio lecture called "Final Exam: What to Expect." Gretchen listens to the summary of what will be covered in the exam and realizes she can use the microlectures for much of her review for the test. As she watches and listens to these presentations again, she replays key points to make sure she has them right and practices drawing many of the sketches that Dr. Gordon uses to illustrate his points. They are much easier to see on her tablet than they were on a distant whiteboard in the lecture class.

At the end of the week, she arrives for her final exam feeling confident she knows the material. Better yet, she leaves the final three hours later feeling just as confident.

1 What is it?

A microlecture is a short recorded audio or video presentation on a single, tightly defined topic. Used as a component of online, blended, or face-to-face teaching, these brief lectures can be interspersed with learning activities that reinforce lecture topics. In addition, microlectures provide a self-help resource for students, either at the time of the lesson or later for review, explaining key concepts or demonstrating techniques that might be difficult to master. The abbreviated format of these lectures can be highly effective by focusing students' attention on a single topic for a short time, limiting the opportunities for distraction. Because students control the playback, they can refer to the instructor's presentation as often as needed.

2 How does it work?

Microlectures are typically produced by an instructor, who might begin by drafting a rough script—containing just an introduction, a list of key points to cover, and a conclusion—perhaps with help from instructional technologists. The lecture is then recorded, often with a webcam but possibly with only a microphone. Video content may feature the instructor as a talking head or may display other types of visual information to accompany a voiceover: a slide presentation, a screencast, or perhaps an animation. The result is uploaded to the LMS, a dedicated media server, or a public site like YouTube, Vimeo, or iTunes U, depending on campus infrastructure options. The title of each microlecture can be specific to the concepts discussed to ensure students are able to locate the lectures they need, and keywords and metatags can also be added.

3 Who's doing it?

Public microlecture sites such as Khan Academy and TED-Ed have made the microlecture format a familiar staple of informal learning, and colleges and universities are also integrating the microlecture into formal coursework. In 2009, an early example emerged at San Juan College in Farmington, New Mexico, where brief recorded lectures, each with an introduction, a few key points, and a conclusion, were developed for a new online degree program in occupational safety. While the microlecture is still seen primarily as a tool for online learning, it is also seeing application in hands-on activities in the classroom and lab. At the University of Illinois at Urbana-Champaign, students in Animal Science learn the appropriate technique for milking cows. Previously, the professor taught this skill by lecturing as he demonstrated the procedure, but as class size grew, some students had to stand on tiptoe to see over the heads of their colleagues. A microlecture and demo, delivered

more >>



SCREENCASTOMATIC

Why?

- Repeatability
- Flexibility
- Focus
- Personalised
- Re-useable
- Multi-purpose



Communication Tools

Computer Mediated Conferencing (CMC)

Synchronous	Asynchronous
Skype Moodle Chat Zoom Facetime Whatsapp Calls WebEx Hangouts	Forums Comment Threads Twitter Facebook Messenger WhatsApp Yammer

Benefits of CMC

- Constructivism extended
- Conversational framework (Laurillard) extended
- Time for reflection (asynchronous only)
- Flexibility (more so for asynchronous)
- Permanence (more so for asynchronous)
- Democratic (more so for asynchronous)

“Productive discussion does not happen automatically – it must be planned.”

Martyn, M. A. (2005). Using Interaction in Online Discussion Boards. *Educause Quarterly*, 2005(4), 61-62.

Etiquette

Encourage

Educator
presence

Expectations

Equilibrium

Classroom Response Systems used online

Behaviourism

Self-assessment

Focus

Learner Analytics

[Back](#) **Smith, Huw - Progress** [< Previous Student](#) **2/3** [Next Student >](#)

Video Views
Number of times a student watched a video portion

x0 x1 x2 x3 x4

x1 x1 x1 x1

0:00 0:10 0:21 0:31 0:42 0:53 1:03 1:14 1:25 1:35 1:46

Video progress bar (time)

Not turned in yet

Video Watched	Correct responses	Grade
40%	0/3	0/100

submitted responses: 1/3

Quiz #1 at 0:26

Can you think of any other advantages of e-Learning?
dsqs

of 100

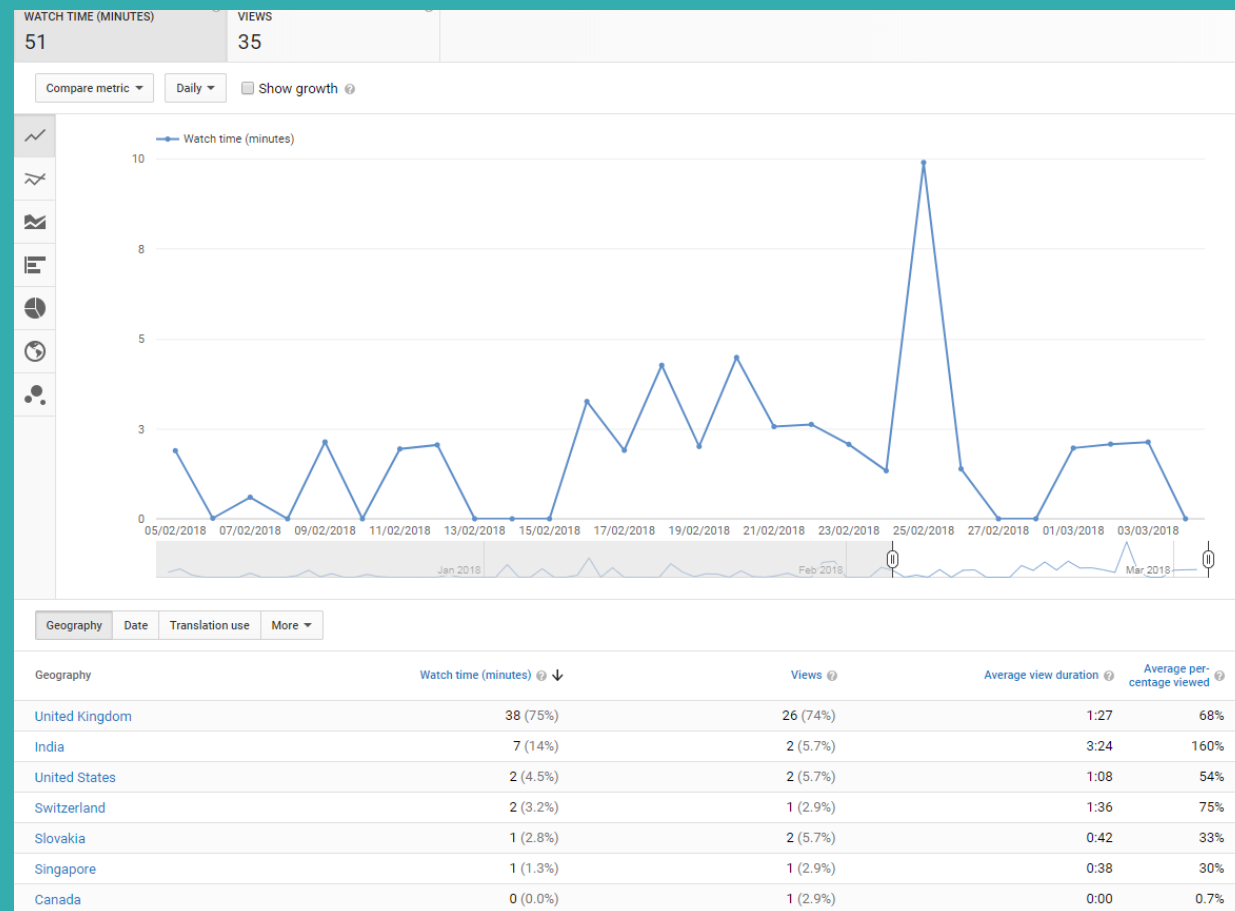
Add comment

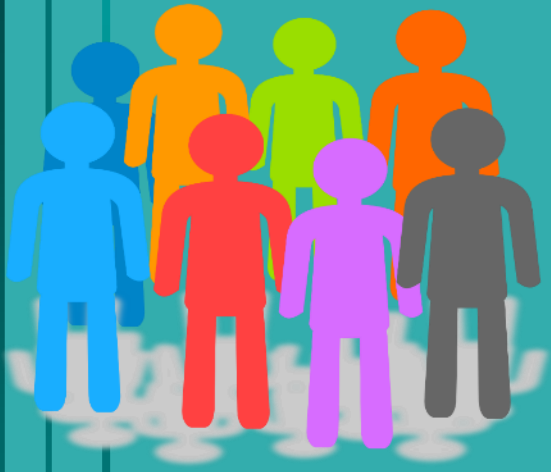
Quiz #2 at 1:00 To be done

How does blended learning make the time spent in the classroom more effective?

Quiz #3 at 1:40 To be done

Can you think of any disadvantages or limitations of a blended learning approach?





Optional Task

Analyse the learner data and identify any interventions you think are necessary.

	Active Learning Overview  6 March 2018	Discussion: Learning Theory  6 March 2018	Video 	Planning  6 March 2018	Quick Quiz - How are you ... 	Benefits of Flipped Learning  6 March 2018	Theories Summary  6 March 2018	Assignment  6 March 2018	Good Website  6 March 2018	Follow Up Task  6 March 2018
Student A	☒	☐	☐	☐	☐	☐	☒	☒ 58%	☐	☒
Student B	☒	☒	☒	☒	☒ 37%	☐	☐	☐	☐	☐
Student C	☒	☒	☒	☐	☒ 52%	☒	☐	☒ 49%	☒	☐
Student D	☒	☒	☒	☒	☐	☒	☒	☒ 64%	☒	☒
Student E	☒	☒	☒	☒	☒ 76%	☒	☒	☒ 56%	☒	☒
Student F	☐	☐	☐	☐	☐	☐	☐	☒ 68%	☐	☐

Student A has accessed some materials and has done the assignment and the follow-up task therefore appears active, although has not used any of the interactive features. Their assignment score is average.

Intervention: Student A could be encouraged to access more materials, particularly the interactive ones to take advantage of social learning to learn from, and self-assess against, peers.

Student B accessed everything up to and including the quiz, but nothing thereafter and has not completed the assignment.

Intervention: Student B is at risk of dropping out, if they haven't already done so. The data would suggest that they got discouraged by a poor score on the quiz, and have given up. Contact the student, discuss and offer support.

Student C has accessed most of the material but achieved a relatively low assignment score.

Intervention: The data would suggest that Student C is engaged and active on the course, but appears to have some fundamental misconceptions looking at the quiz and assignment scores. This student is likely to require some additional support and guidance.

	Active Learning Overview 6 March 2018	Discussion: Learning Theory 6 March 2018	Video	Planning 6 March 2018	Quick Quiz - How are you ... 6 March 2018	Benefits of Flipped Learning 6 March 2018	Theories Summary 6 March 2018	Assignment 6 March 2018	Good Website 6 March 2018	Follow Up Task 6 March 2018
Student A	☒	☐	☐	☐	☐	☐	☒	☒ 58%	☐	☒
Student B	☒	☒	☒	☒	☒ 37%	☐	☐	☐	☐	☐
Student C	☒	☒	☒	☐	☒ 52%	☒	☐	☒ 49%	☒	☐
Student D	☒	☒	☒	☒	☐	☒	☒	☒ 64%	☒	☒
Student E	☒	☒	☒	☒	☒ 76%	☒	☒	☒ 56%	☒	☒
Student F	☐	☐	☐	☐	☐	☐	☐	☒ 68%	☐	☐

Student D has accessed everything apart from the quiz and has achieved a good score on the assignment.

Intervention: There is little or no need for intervention. Perhaps the student would have benefited from self-assessing by completing the quiz but otherwise there is little concern.

Student E has accessed everything, scored well on the quiz but less so on the assignment.

Intervention: Student E is active, engaged and has already completed post-assignment tasks. Their quiz score suggests a good grasp of the material. Their lower score on the assignment may suggest support requirements on how to write a formal assignment.

Student D has accessed none of the material but has scored well on the assignment.

Intervention: Student F is performing well, despite being inactive online. That methodology will suit some learners – they are likely to be reading independently and are likely to be engaged and concentrating well in live sessions. A subtle suggestion that more online engagement may well improve their performance even further may be appropriate here.

Interactive Content Creation



edpuzzle

tes teach
with blendspace

TEDEd

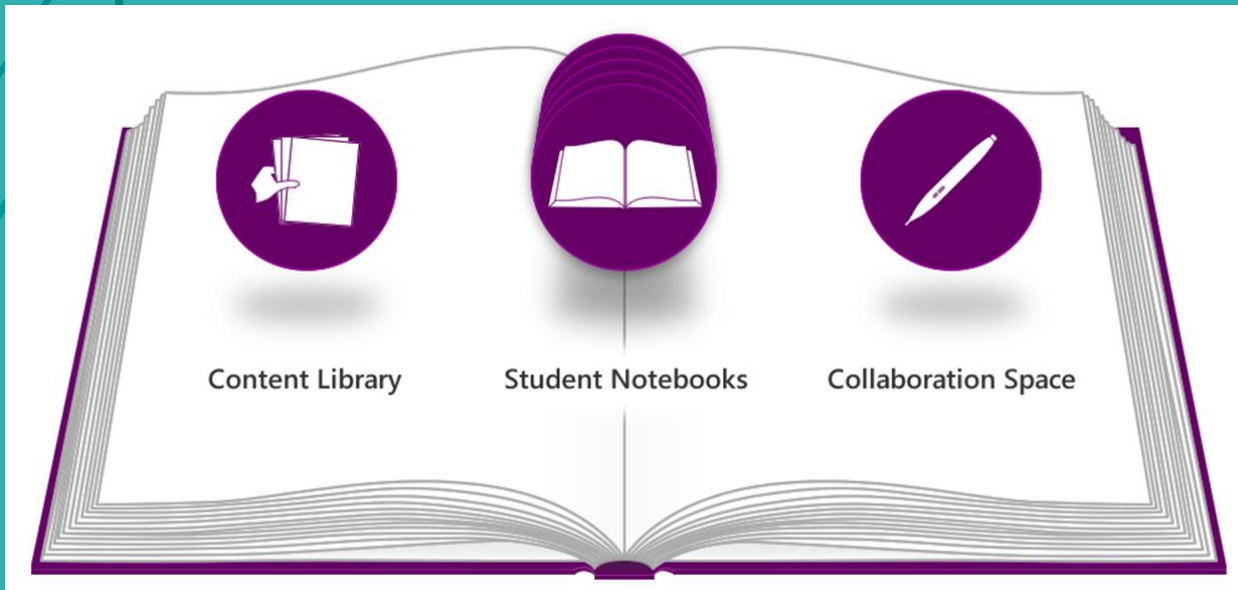
Benefits

- Focus
- Analytics
- Multi-layered
- Control
- Student tool for reinforcement

Virtual Learning Environments



Class Notebook



Virtual Learning Environments

Advantages	Good Practice
Manageability	Visually engaging
Gateway	Well organised
Control	Purposeful learning design
Common Space	Prioritise user experience

Final Thoughts...

What tech have we used today?

How has it enhanced the learning?