



Prifysgol Cymru
Y Drindod Dewi Sant
University of Wales
Trinity Saint David

Yr Athrofa
Institute of Education
Addysg i Gymru Education for Wales

ECAD6011/C

Creativity - Creadigrwydd

Flipped Learning - PBL - Dysgu Fflip - DSB

VR - Virtual Reality - Rhithwir

Tom Cox & Mathew Jones



Canolfan Addysg Athrawon De-Orllewin Cymru
The South West Wales Centre of Teacher Education

Problem-based Learning

Dysgu yn Seiliedig ar broblemau

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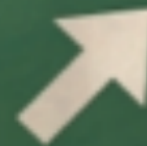


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Y Dyfodol

The Future

NEXT EXIT



ALLANFA NESAF

What kinds of skills will learners need in the 21st century?

Pa sgiliau gwahanol sydd angen ar ddysgwyr yn yr 21ain ganrif?

Paratoi ar gyfer y dyfodol

- Yn y dyfodol bydd angen i bobl broffesiynol medru:
 - Datrys-problemau
 - Bod yn hyblyg
 - Bod yn meddylwyr rhesymegol
 - Cymhwyso gwybodaeth
 - Gweithredu 'arfarniad digidol'
 - Bod yn dechnolegol gymwys

Preparing for the future

- Future professionals need to be:
 - Problem-solvers
 - Flexible
 - Logical thinkers
 - Apply knowledge
 - Exercise 'digital judgement'
 - Technically competent

Exhibit 1: Students require 16 skills for the 21st century

21st-Century Skills

Foundational Literacies

How students apply core skills to everyday tasks



1. Literacy



2. Numeracy



3. Scientific literacy



4. ICT literacy



5. Financial literacy



6. Cultural and civic literacy

Competencies

How students approach complex challenges



7. Critical thinking/
problem-solving



8. Creativity



9. Communication



10. Collaboration

Character Qualities

How students approach their changing environment



11. Curiosity



12. Initiative



13. Persistence/
grit



14. Adaptability



15. Leadership



16. Social and cultural awareness

Lifelong Learning

<https://www.weforum.org/agenda/2016/03/21st-century-skills-future-jobs-students>

Note: ICT stands for information and communications technology.

Teacher dispositions now and in the future



A word cloud on a light green background featuring various teacher dispositions. The words are arranged in a non-uniform, overlapping manner. The colors of the words are purple, blue, and red. The words include: tolerant, open-minded, creative, technologically literate, caring, reflective, inquisitive, flexible, dynamic, knowledgeable, passionate, and respectful. The word 'flexible' is the largest and most central, while 'caring' is the smallest and least central.

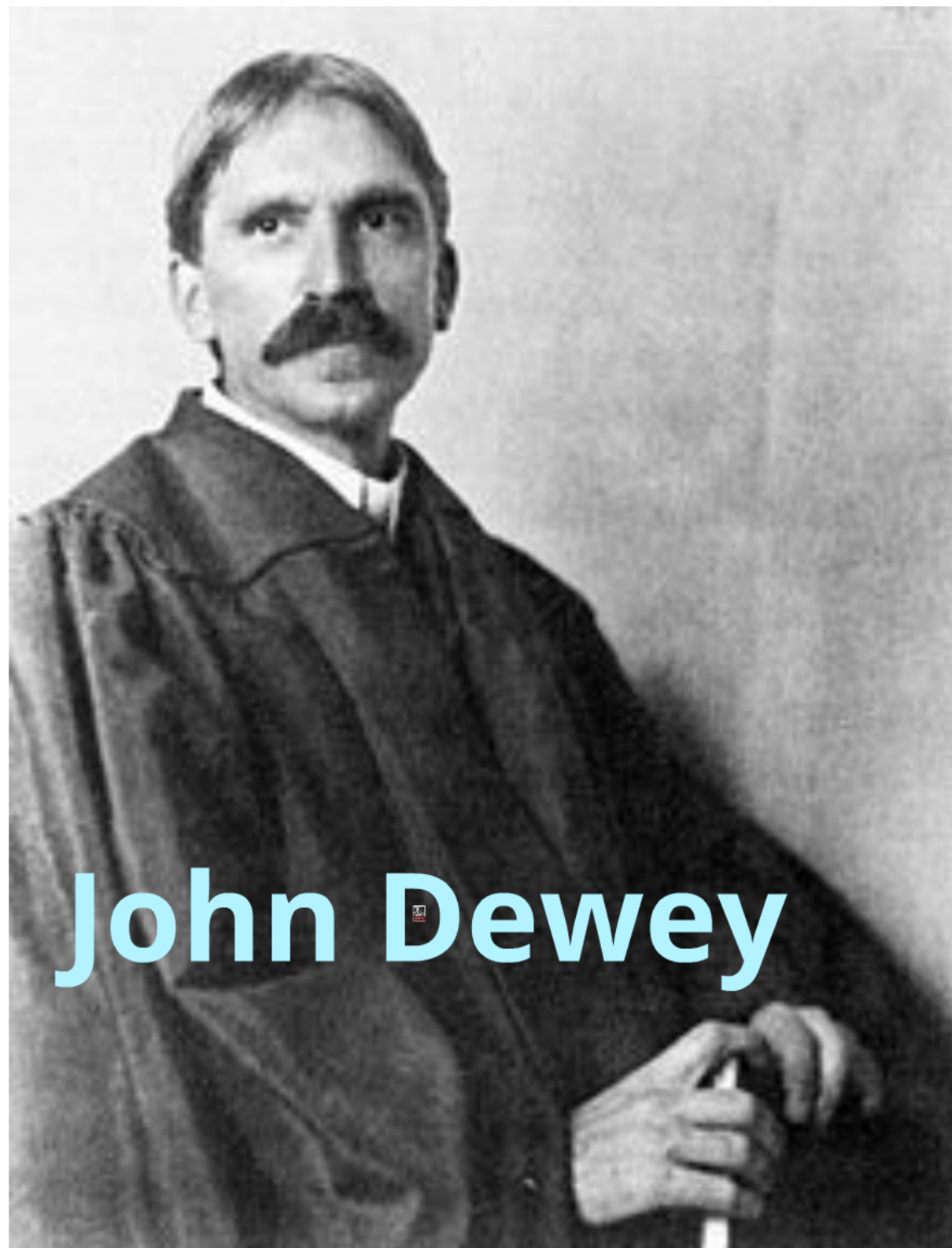
tolerant
open-minded creative
technologically literate
caring reflective
inquisitive flexible
dynamic knowledgeable
passionate
respectful

Beth yw DSB?

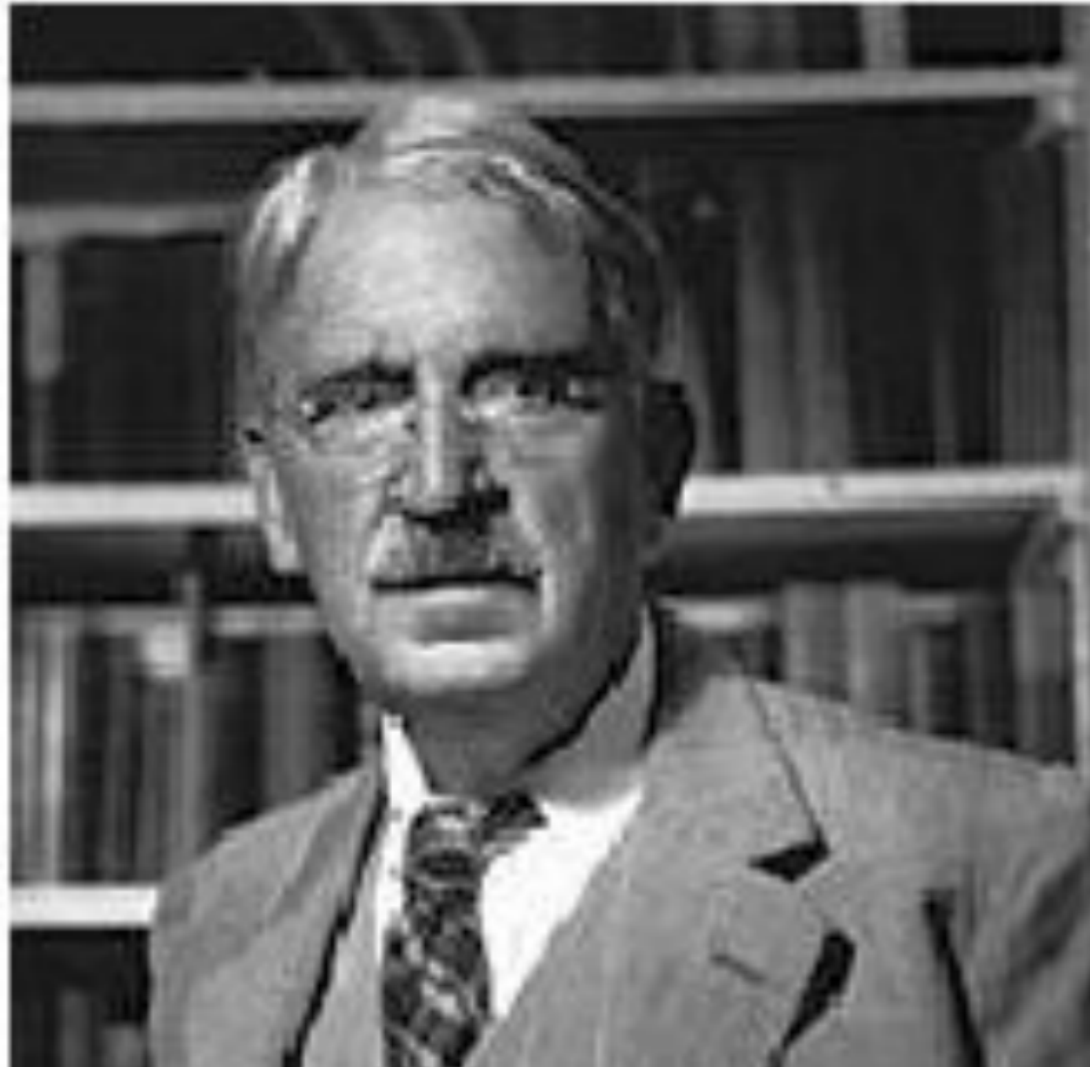
- Ffocws ar yr myfyriwr
- Sylfaen ymholi
- Senarios
- Cyd-destun – Realistig

What is PBL?

- Student-focused
- Inquiry-based
- Scenarios
- Real-world contexts



John Dewey



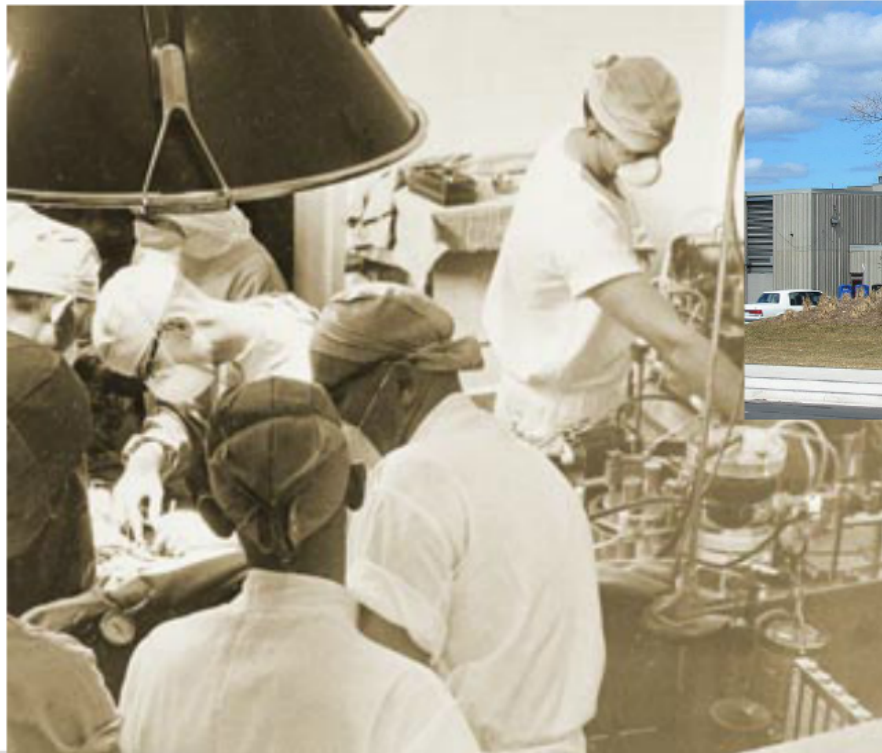
Developed the constructivist theory of learning.

Datblygodd y theori adeileddol ar gyfer dysgu.

"The most powerful learning occurs when the student is dealing with uncertainty"
John Dewy (1938)

Cefndir

- Dechreuodd yn y maes meddygol(1960au)
- Dwy rhagdybiaeth
 - 1. mae dysgu wrth weithio drwy broblem yn llawer mwy effeithiol i ffurfio gwybodaeth ddefnyddiol nag dysgu ar y cof.
 - 2. y peth bwysicaf sydd angen ar feddyg yw sgiliau datrys problemau nid sgiliau cofio ffeithiau.



Background

- Started in medical field (1960s)
- Two assumptions
 - 1. learning through problem- solving is much more effective than memory based learning for creating a usable body of knowledge.
 - 2. the most important thing doctors need are problem-solving skills, not memory skills

Mae'r prifysgol yma yn
defnyddio'r ardull gyda llaw.



Incidentally the University
also uses this method



Examples of PBL in the class
Enghreifftiau o DdSB yn y dosbarth

rwvr Studo

Saesneg - English



AFE - AAR : Beth Rees 2012/13



Cymraeg- Welsh



You Tube

PBL - DSB- Dafydd Leigh 2013/14

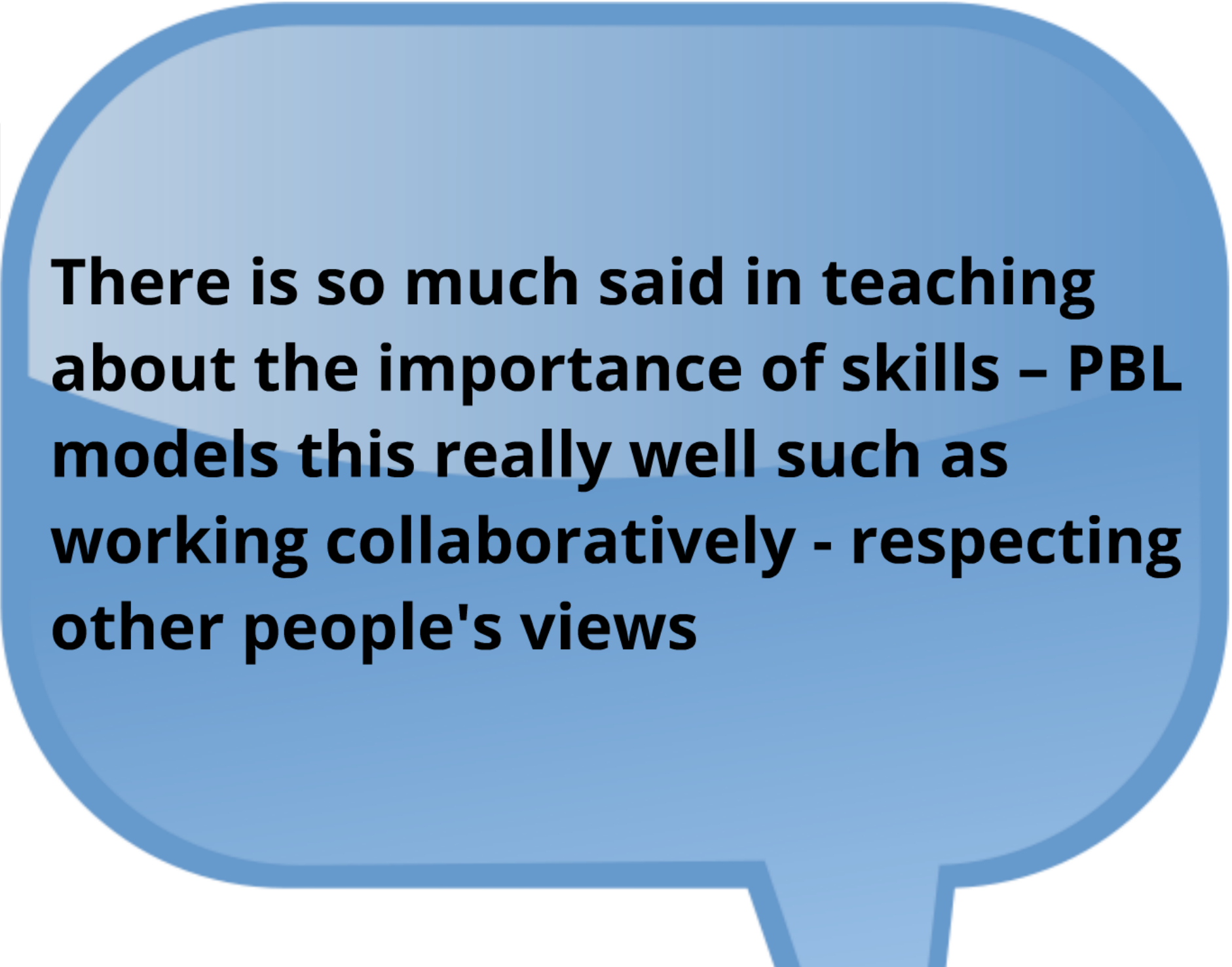


What do students think?

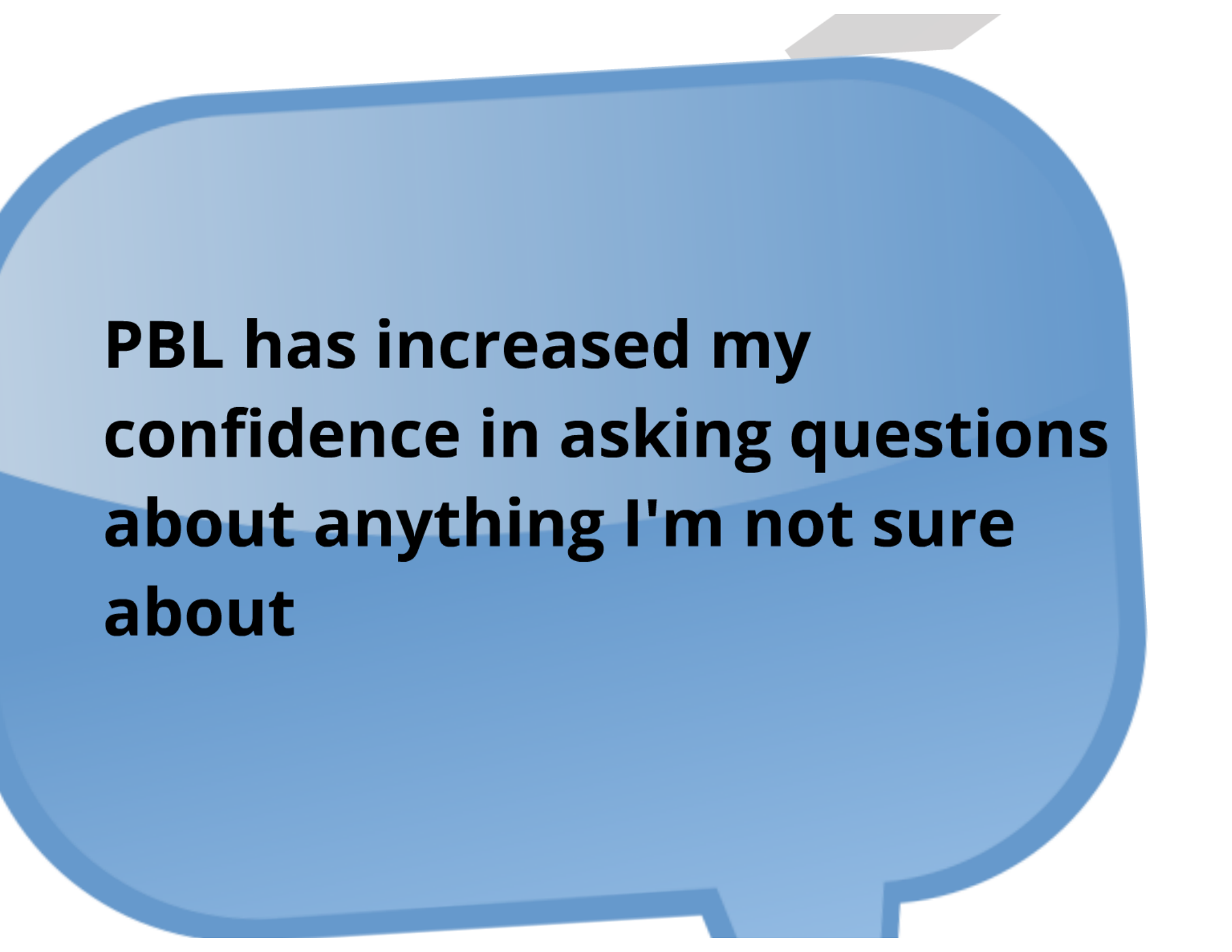




**PBL has helped me to
look at things from a
different perspective
and not to make
knee-jerk judgements**



There is so much said in teaching about the importance of skills – PBL models this really well such as working collaboratively - respecting other people's views



**PBL has increased my
confidence in asking questions
about anything I'm not sure
about**

What do we look for in a successful student?



Beth i ni am weld mewn myfyriwr llwyddiannus?

FLIPPED LEARNING - DYSGU FFLIP

TRADITIONAL

Lecture
Gwers



Homework
activities
Gweithgareddau
gwaith cartref

Traddodiadol

FLIPPED

Lecture
Gwers

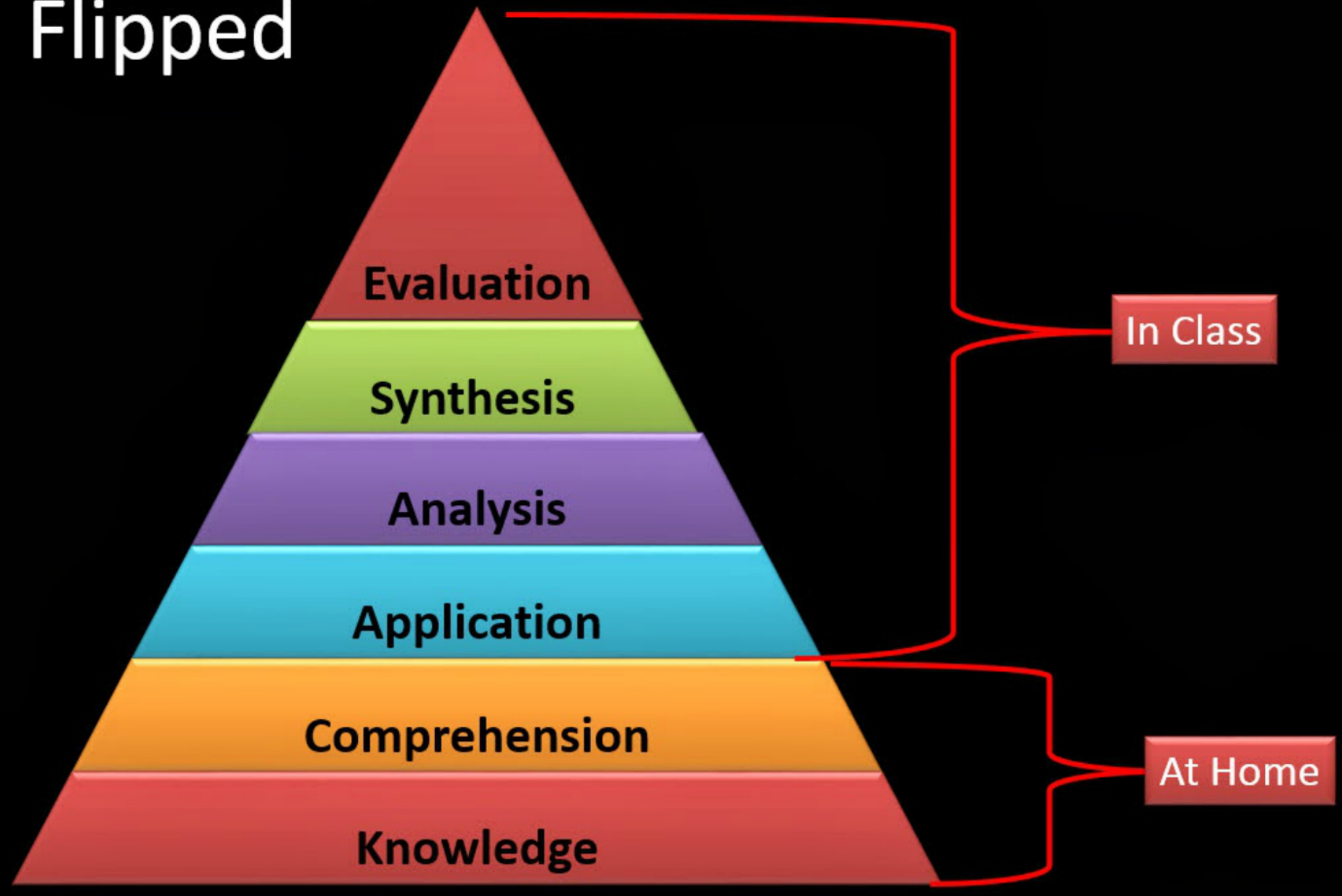


Classroom activities
Gweithgareddau dosbarth



Fflip

Flipped



Fflip

Dosbarth

Gwerthuso

Syntheseiddio

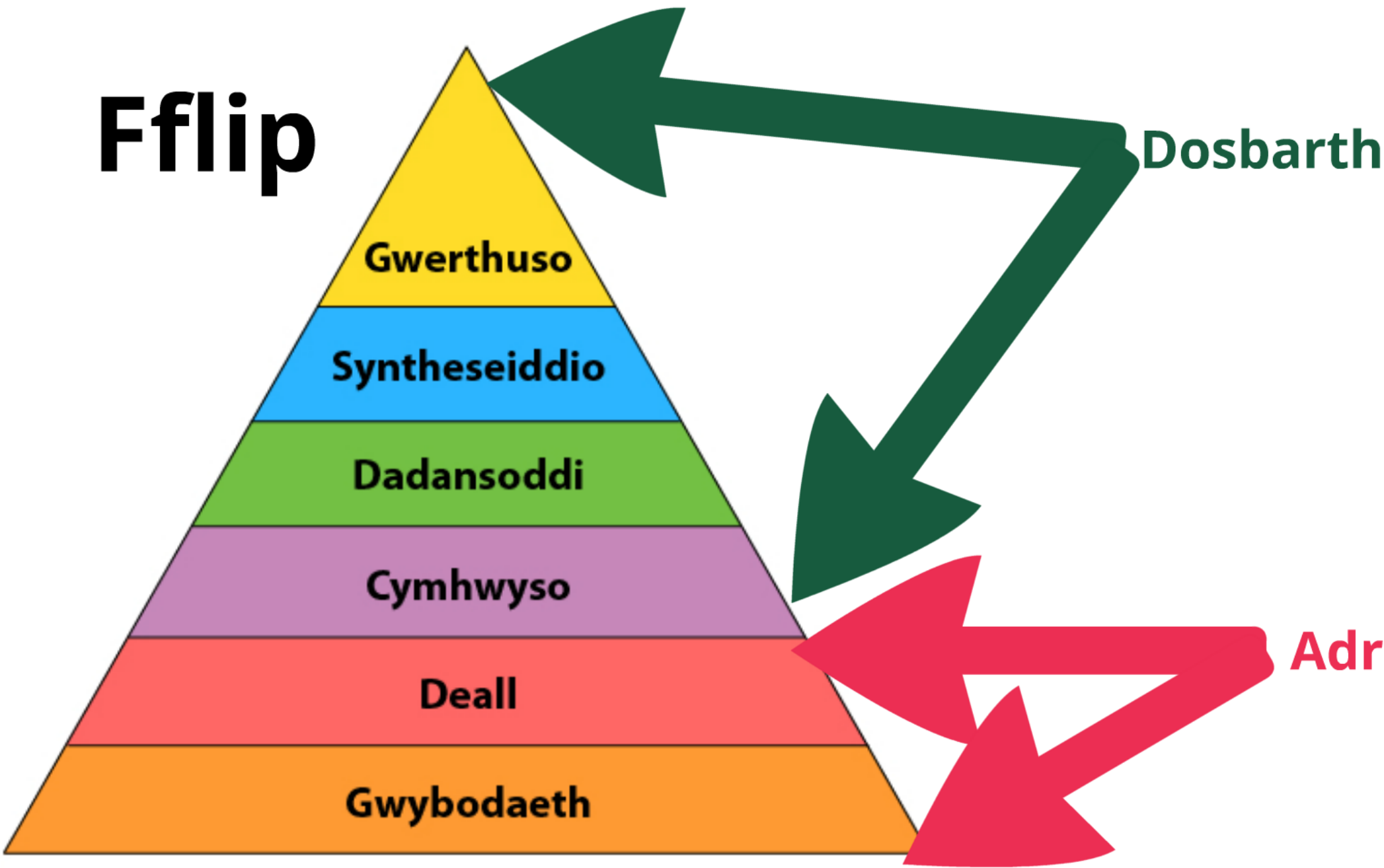
Dadansoddi

Cymhwyso

Deall

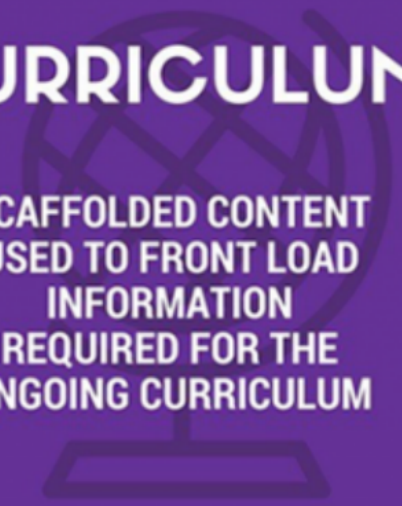
Gwybodaeth

Adr



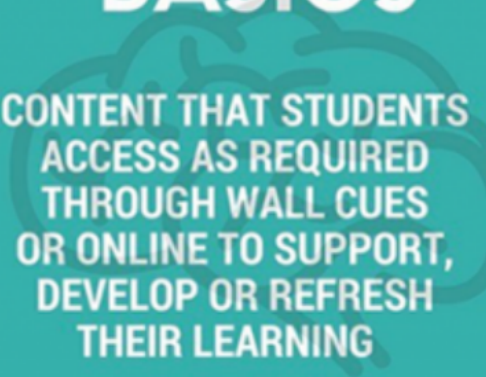
4 WAYS TO FLIP THE PRIMARY CLASSROOM

CURRICULUM

A faint, stylized globe icon is visible in the background of the Curriculum section.

SCAFFOLDED CONTENT
USED TO FRONT LOAD
INFORMATION
REQUIRED FOR THE
ONGOING CURRICULUM

BASICS

A faint, stylized lightbulb icon is visible in the background of the Basics section.

CONTENT THAT STUDENTS
ACCESS AS REQUIRED
THROUGH WALL CUES
OR ONLINE TO SUPPORT,
DEVELOP OR REFRESH
THEIR LEARNING

HOOKS

A faint, stylized eye icon is visible in the background of the Hooks section.

ENGAGING CONTENT TO
EXCITE STUDENTS

PARENTS

A faint, stylized person icon is visible in the background of the Parents section.

SNEAKY CONTENT FOR THE
'STUDENTS' - ALSO FOR
PARENTS

Different Flipped Strategies

7

1. The Standard Inverted Classroom:

1. Yr Ystafell Ddosbarth Safonol Gwrthwyrd:

Students are assigned the "homework" of watching video lectures and reading any materials relevant to the next day's class. During class time, students practice what they've learned.

Through traditional assignments, with that feedback being the additional in-person time.

2. The Discussion-Oriented Flipped Classroom:

2. Yr Ystafell Ddosbarth Fflip yn seiliedig ar Drafodaeth:

Teachers assign lecture videos, as well as any other video or reading related to the day's subject — think TED Talks, YouTube videos, and other resources. Class time is then devoted to discussion and exploration of the subject. This can be an especially useful approach to subjects where content is overwhelming — think history, art, or English.

3. The Demonstration-Focused Flipped Classroom:

3. Ystafell Ddosbarth efo Ffocws Arddangos/Dangos

Especially for those subjects that require students to remember and repeat activities exactly — think chemistry, physics, and just about every math class — it is most helpful to have a video demonstration to be able to rewatch. In this model, the teacher uses screen recording software to demonstrate the activity in a way that allows students to follow along at their own pace.

4. The Faux-Flipped Classroom:

4. Ystafell Ddosbarth Faux-Fflip:

One great idea EducationDrive uncovered is perfect for younger students for whom actual homework might not yet be appropriate. This flipped classroom model instead has those students watch lecture video in class — giving them the opportunity to review materials at their own pace, with the teacher able to move from student to student to offer whatever individual support each young learner needs.

5. The Group-Based Flipped Classroom:

5. Yr Ystafell Ddosbarth Fflip yn seiliedig ar Grŵp:

This model adds a new element to help students learn — each other. The class starts the same way others do, with lecture videos and other resources shared before class. The shift happens when students come to class, teaming up to work together on that day's assignment. This format encourages students to learn from one another and helps students to not only learn the what the right answers are but also how to actually explain to a peer why those answers are right.

6. The Virtual Flipped Classroom:

6. Yr Ystafell Ddosbarth Rhithwir:

For older students and in some courses, the flipped classroom can eliminate the need for classroom time at all. Some college and university professors now share lecture videos for student viewing, assign and collect work via online learning management systems, and simply require students to attend office hours or other regularly scheduled time for brief one-on-one instruction based on that individual student's needs.

7. Flipping The Teacher:

7. "Fflipio'r" Athro:

All the video created for a flipped classroom doesn't have to begin and end with the teacher. Students too can make use of video to better demonstrate proficiency. Assign students to their record practice role-play activities to show competency, or ask each to film themselves presenting a new subject or skill as a means to "teach the teacher".

Gwahanol Strategaeth Fflip

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meth Fflip

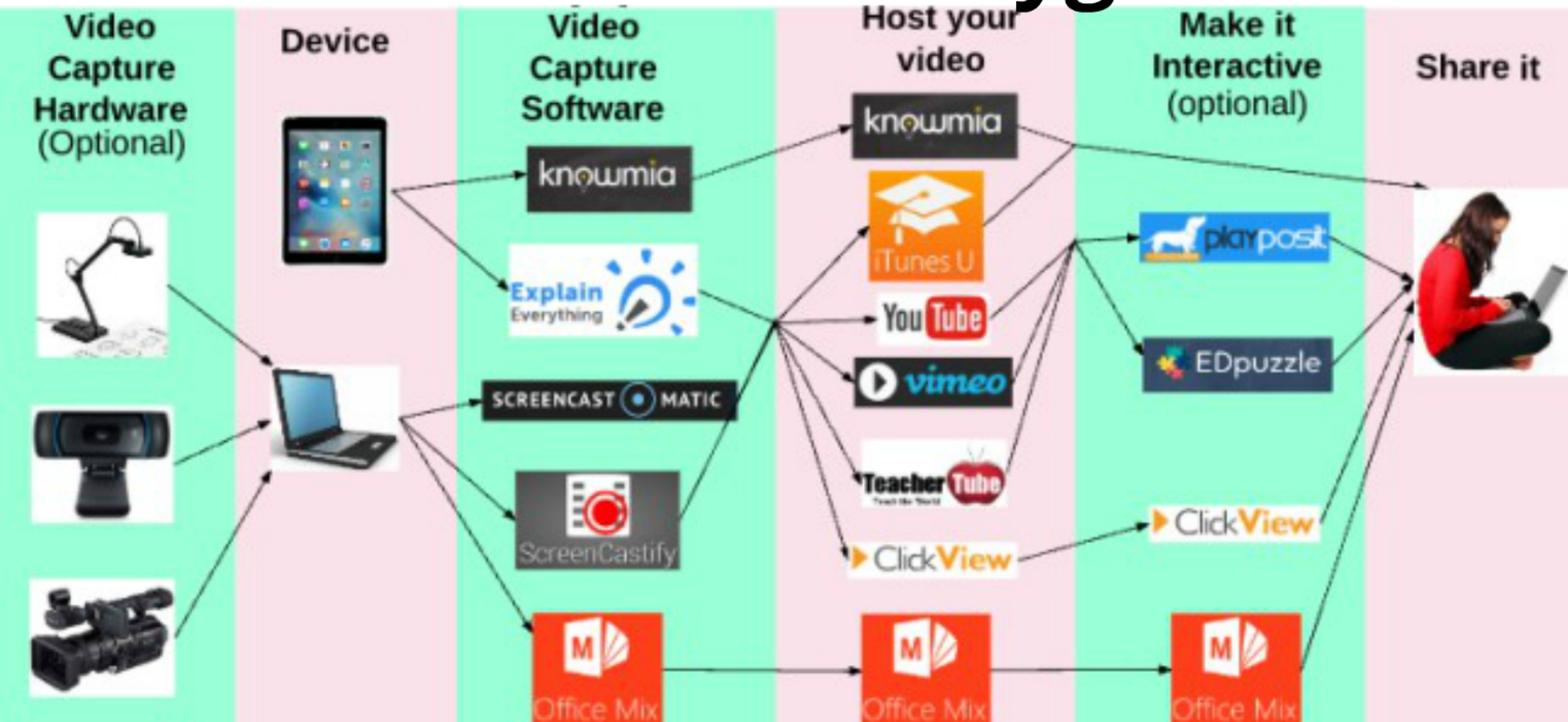


Neath Port Talbot - Mathematics Help Videos

Castell-nedd Port Talbot - Mathemateg Cymorth Fideos



Meddalwedd i ddatblygu hwn..



Software that could develop this..



So how did he flip it?
Sut wnaeth e "fflipio" hwn?



Copio!!!



You Tube



You Tube



You Tube



<https://yrathrofa.wordpress.com/apps/>

Cardboard VR



Cardboard puts virtual reality on your smartphone. The Cardboard app helps you launch your favorite VR experiences, discover new apps, and set up a stream.



Capture and share moments with virtual reality (VR) photos. VR photos let you experience sensory and sound in every direction and in 3D, making near things look close, and far things look far. From vacation photos to family get-togethers, capture the moment with Cardboard Camera and relive it in VR.



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