

Enhancing Teaching on Higher and Degree Apprenticeships

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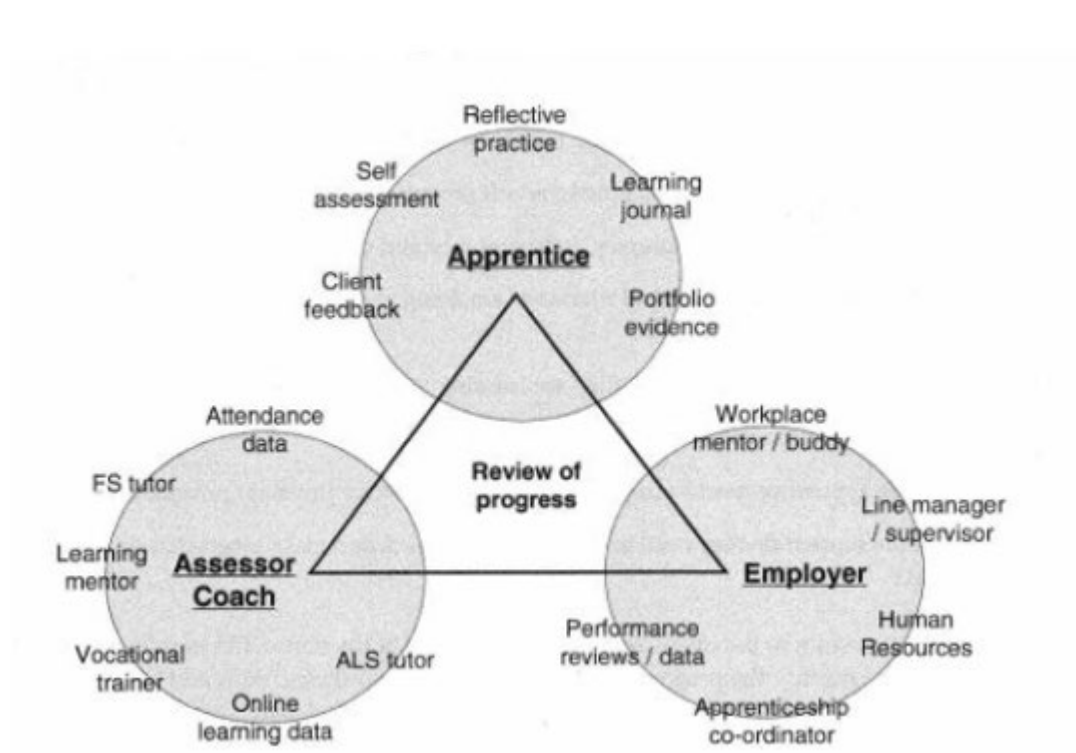
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What is my role? Being an apprentice educator

Is there a difference between teaching and apprentice and a non-apprentice student? Yes, there is likely to be a difference between their experience and expectations. They are likely to be older. They may not have been studying for years whereas the majority of direct entry undergraduates join fresh from school or college. They have less time to devote to study, even though they have protected study hours. You will need to take all of this into account.

That being said, there are many benefits and advantages in terms of vocation, experience, commitment to succeed and maturity when teaching apprentices. They bring multiple professional/life experiences to the classroom and can have a different motivation for study at their stage of life/career. Prior teaching experience, good learning and teaching methods, tools and techniques still apply. In many ways teaching apprentices does not differ greatly from other teaching. Teaching on apprenticeships gives you the opportunity to be a facilitator of learning; you can help apprentices make sense of what they do at work by providing theoretical and conceptual frameworks. This opportunity is a rich learning space because of what they bring to the classroom.

The diagram below illustrates the different stakeholders involved in apprenticeships through the context of a progress review:



Apprentice progress review stakeholders and evidence. Ingles (2020, p.113)

It clearly shows the difference between an apprentice and a direct entry undergraduate with the employer being a major influence and guide not normally present in a traditional teacher/student learning format.

The role of tutors on apprenticeship courses is primarily to help and support learners' new knowledge, skills and behaviours (Ingle, 2020, p.53) in line with the [ifATE Standards](#). The following section gives you a range of theories supported with ideas for practical application which will help you plan synchronous and asynchronous sessions.

Some useful teaching models and approaches

Petty's Present Apply Review model (PAR)

Educational author and teacher trainer Geoff Petty's PAR model shows one possible way you could structure a session:

Present	Apply	Review
<p>The learner is presented with the new knowledge, concepts, skills, theories, explanations etc. Explanations are given, (or better, constructed by the apprentice) to persuasively link the material to prior learning and experience.</p> <p>Possible strategies</p> <ul style="list-style-type: none"> • PowerPoint presentations • Giving demonstrations • Modelling worked examples • Peer explanations • Reading written material 	<p>The learner carries out an activity that requires them to <u>apply</u> the material presented (Learning by doing.) This is likely to be working towards a more challenging goal such as problem-solving, answering questions about a case study or making decisions. Apprentices are very likely to be engaged in a range of applied, practical and experiential tasks.</p> <p>Possible strategies</p> <ul style="list-style-type: none"> • Q&A session • Evaluating a case study • Problems relating to their subject area for them to solve • Exercises and examples 	<p>The key points are confirmed and emphasised with explanations that link the new learning with former learning. This strengthens the links that will be used during subsequent recall. This summarises, reviews and explores the learning and checks if goals/objectives have been met.</p> <p>Possible strategies</p> <p>Peer-assessment Self-assessment Teacher assessment (questions, Mentimeter quiz, test etc.)</p>

Adapted from Petty (n.d.) and Ingle (2020)

Gagne's Nine-stage theory

Educational Psychologist Robert Gagne's nine-stage theory of instruction can be helpful when planning and structuring your approach to teaching sessions.

1. Gain the learners' attention – make connections, establish expectations and develop a rapport (this can be done prior to the session using Blackboard quizzes, getting to know you activities in the first face-to-face session).
2. Inform learners of the learning outcomes so that they know what to expect and why (in the module and course handbooks, on your Blackboard and clearly defining how sessions meet the objectives and how the assessments will show that apprentices have met the learning objectives).
3. Recall and retrieve prior learning – to build on prior knowledge (brainstorming, knowledge check quizzes, class discussion)
4. Present the stimulus – introduce new learning content and material. For apprentices it may be best to presented new information asynchronously in a flipped context and be on your Blackboard in the form of a pre-session task, reading exercise, Padlet for the group to annotate etc. You can then bring in the topic and start building on and contextualising knowledge in the class.
5. Provide learning guidance – by modelling, scaffolding and guiding.

6. Elicit performance – learners should practice and apply knowledge/information to a given task.
 7. Provide feedback – on what’s working and where correction/guidance/improvement is needed.
 8. Assess performance – to check learners’ understanding and skills and to gain feedback.
 9. Enhance retention and transfer – apprentices should be able to use their new learning in new and different contexts, such as their workplace or in their end-point assessment.
- (Adapted from Ingle, 2020, p.54)

Rosenshine’s Ten Principles of Instruction

Educator and educational psychologist Barak Rosenshine’s Ten Principles of Instruction are based on research in cognitive science and the practice of effective and experienced teachers. The principles provide a valuable link between research and teaching practice.

Principles	Practical implications	Possible methods
1. Daily review	Taught sessions should start with a short review, around 5-10 minutes, of previous learning. This regular review helps apprentices to retrieve, recall and retain previous learning from their long-term memory, strengthening connections and deepening their understanding. It also helps the teacher to see if learners have understood previous concepts, clarify any misunderstandings, see what needs revisiting and if any additional support is needed.	<ul style="list-style-type: none"> - Class discussion - Quiz - Gap-fill exercises - Monitor peer discussion - Checking answers to asynchronous activities
2. Present new material and information using small steps	We have a very limited amount of working memory space so spend sufficient time presenting new information and material to apprentices in small chunks or step by step. Visual information helps as well so use the whiteboard, visualiser, shared computer screen, Padlet etc. to support any verbal explanation. It also helps to talk out loud as you work through examples or models so that they can follow your process.	<ul style="list-style-type: none"> - Boardwork - Class discussion - Complete activity on Padlet and then get learners to discuss - Complete a process or cycle projected on the whiteboard
3. Ask questions	Questioning apprentices helps them to practise and connect new material to their prior learning. It also provides valuable feedback on what has been understood and what needs further coverage. Ask questions that probe and challenge them to explain their thinking and make connections.	<ul style="list-style-type: none"> - You may ask questions specifically or at random in class or as you monitor learners as they complete tasks. - Questions may be provided asynchronously via Padlet/ tasks on Blackboard. - You can use also Mentimeter quizzes, peer feedback
4. Provide models	Help apprentices develop a deeper understanding by providing appropriate prompts, models, worked examples and applied real-life scenarios. Explain examples as you work through them together as well as any stages, processes or procedures. Learners may need significant support at first, through frequent demonstration or explanation.	Provide models in a range of ways: <ul style="list-style-type: none"> - reading - video - voiced PowerPoint - recorded screencast - handouts/class materials

5. Guide learners' practice	Spend time guiding apprentices as they practice and rehearse the new material. Support developing knowledge and skills with prompts so that the new material is neither too overwhelming nor too easy. This support can be reduced or withdrawn as apprentices become more confident and move on to more independent practice on more complex examples.	Support can take a range of forms: - suggesting which parts of an article to read/focus on first - giving completed model answers/tasks for them to work to or work backwards from
6. Check learners' understanding	Carry out frequent checks to make sure there are no misconceptions. Observe and question apprentices to ensure they understand content, material and specific processes/procedures. Check for a deeper understanding by asking apprentices to explain how and why. Ask them to provide a rationale or justification, or to summarise the learning. If they are unable to do this more time may be needed for direct instruction, modelling or guided practice.	- nominating specific learners to answer questions/demonstrate - whole class feedback - PowerPoint or materials with gaps for learners to fill - asking learners to annotate a text/task projected on the screen
7. Obtain a high success rate	Ensure that all apprentices are mastering the small steps of new material and learning. If too many are not successful, then they may not be ready to move onto more challenging content. If apprentices are very successful very quickly, do they know the material already? The content may not be providing sufficient challenge to allow apprentices to develop substantial new knowledge, skills and behaviour. Check if you have correctly gauged their starting points and consider how you might be able to stretch them with more challenging content.	- You may have to practice differentiation as some learners will be stronger/more experienced than others and have different work rates according to the amount of time they need to process tasks/instructions. - Have additional activities ready to keep stronger learners engaged while you support others. - Encourage stronger learners to support weaker in group/pair work.
8. Provide scaffolds for difficult tasks	Provide apprentices with useful scaffolding and support that helps them work towards learning challenging new knowledge and skills. These could include models, frameworks, checklists, resources or prompts. These supports should be temporary and can be removed as apprentices become more confident and independent.	- Models - Frameworks - Checklists - Prompts (verbal or written)
9. Independent practice	In order for apprentices to be successful in the workplace they need to learn new knowledge, skills and behaviours, but also to use what they have learned with colleagues, clients, customers or patients. Set apprentices targets, tasks and projects which allow them to practise with increasing independence and confidence, developing and enhancing their level of understanding, speed, precision and skill. Repeated practice helps them master knowledge and practical skills, developing occupational competence	- Set appropriate tasks or projects individually or in pairs/groups - Roleplays - Scenarios - Practical application e.g., how to administer a medication/ write up a police report/ apply a SWOT analysis

	and expertise and allowing apprentices to work at consistently high standard.	
10. Weekly and monthly review	Despite effective instruction, apprentices will forget new material, even if they remember it soon after being taught. Provide opportunities for regular reviews of learning over time, including materials learned in the last week, month or semester. This will help learners rehearse their recall of information without consciously thinking about it. When we have knowledge and skills that we can use fluently and automatically, it frees up working memory to deal with more new material and ensures learning continues.	Review through <ul style="list-style-type: none"> - Regular quizzes - Application of knowledge in different scenarios - Reflective practice e.g., a journal which encourages going over specific key points - starting sessions by recapping what has been covered previously

Adapted from Rosenshine (2012) and Ingle (2020)

Using technology to enhance teaching

Consider whether your apprentices have access to reliable technology and the Internet connectivity needed to access online material to prepare for taught sessions and to complete flipped learning tasks, assessments etc.

Remember that not all learners have easy access to a computer, webcam and microphone to participate in any online session

For short term loans refer apprentices to [iBorrows - Canterbury Christ Church University](#)

Summary of Technology Enhanced Learning (TEL) tools at your disposal at CCCU as well as some guidance of what they may be used for.

TEL tool	Pedagogical approach	Application
ReCap	Present new information using small steps/set up pre-tasks	Screen-capture software allows you to record short videos/voiced PowerPoints. You can make the clip available to apprentices to watch asynchronously before taught sessions Captioning function means you can make material accessible to your learners with specific needs.
One Drive	Co-operative learning	Set up an online document and share the link with apprentices to work in collaborative groups
Blackboard – discussion board/blog	Asynchronous learning Collaborative learning	These functions are good for encouraging discussion both in and out of class. It allows as much time as you want to allocate for apprentices to contribute to a discussion thread or add information/evidence to a topic.
Padlet	Teaching Self-explaining Collaborative Learning	Padlet is a digital interactive noticeboard which can be used both synchronously and asynchronously, individually or in groups, and can be shared as a link or embedded into your Blackboard page. You can encourage learners to complete a task, reflect on learning, explain an approach or even teach other

		group members. You can also set up the Padlet so that learners can comment on or critique their peers' responses or offer a counter-argument/new point.
Mentimeter	Interactive learning Polls Quizzes Q&A	In synchronous sessions you can use live polls, quizzes, create word-clouds and conduct live Q&A. You can also use these tools in an asynchronous setting
SmartAssessor	Electronic portfolio	Smart Assessor is an electronic collection of a learner's skills and knowledge, which is assessed by their tutor against a training standard or qualification and replaces paper portfolios.
Blackboard Ally	Blackboard Ally is a tool which allows you to download alternative formats for common documents to make learning resources more accessible. Files uploaded to Blackboard are automatically given an Ally icon (looks like an 'A' with an arrow next to it) to the right of the file name, clicking on this opens the alternative format download options.	This helps you to ensure that material you upload to Blackboard is accessible. 1 in 5 people in the UK have a disability – this could be visual, hearing, motor or cognitive (affecting memory and thinking). All users will have different needs at different times and in different circumstances e.g., location, health, equipment.

SPACE Benefits

Used effectively TEL can have a highly positive impact on the quality of education. The SPACE benefits are tabulated below

Attribute	Benefits
Sharing	<ul style="list-style-type: none"> • TEL can help teachers and apprentices share information about learning quickly and easily. Blackboard has a range of features such as Announcements, blogs, wikis and discussion boards where information can be disseminated by both tutor and learner. You can also use Padlet to encourage apprentices to share information both synchronously and asynchronously. • Electronic portfolios such as PebblePad can help teachers, mentors and employers share information on the apprentice's progress as well as targets for development. • Using online video conferencing tools such as Blackboard Collaborate or MS Teams means that teachers and apprentices can share their screen to talk about a presentation, review feedback on formative or summative assessment or to work through a problem or learning resource together.

Personalisation	<ul style="list-style-type: none"> • Technology can be used to extend learning before and after taught sessions, e.g., by setting flipped learning activities that should be completed before the session, or activities that can be accessed asynchronously to challenge apprentices to apply learning from the session or to extend their learning with additional activities. • Teachers can also signpost specific online resources to help target specific skills gaps such as referencing or paraphrasing skills.
Accessibility	<ul style="list-style-type: none"> • TEL can help apprentices with specific needs to access their learning. A particularly useful tool is Blackboard Ally, which has a wide range of accessibility options that can support learners with additional needs. • Sessions which have been recorded on ReCap or Blackboard Collaborate can also be uploaded to Blackboard and captioned.
Communication	<ul style="list-style-type: none"> • Facilitate communication via digital platforms such as Blackboard Collaborate and MS Teams allowing relevant stakeholders to attend meetings while being in different locations. • As mentioned above, the VLE allows learners to make use of discussion boards, blogs or forums to discuss learning synchronously or asynchronously. • Blackboard Collaborate allows teachers to allocate learners into breakout rooms which make online group work easier. The Blackboard Announcement function allows group messaging when something needs to be communicated urgently, or a reminder is useful. • Social media platforms such as WhatsApp are often used by class groups to communicate quickly and efficiently as a group and to gather/share information.
Engagement	<ul style="list-style-type: none"> • TEL can be a useful way to promote engagement and participation among learners. Mentimeter has options including online polls and quizzes. Tools such as MSForms or JISC surveys to create questionnaires for gathering feedback. • The use of low tech options such as quick response (QR) codes can encourage learners to use their mobile devices to participate, follow weblinks and access resources.

Adapted from Ingle (2020)

While most teaching will be in class it is important to remember that the learners still need you to support them with a well-organised Blackboard page with tasks and readings ideally made available a month before the session. Learners spend the majority of their time in their workplace so one week may not be enough time for them to prepare for your session alongside their other tasks and duties.

Developing apprentices' applied English and maths skills

It is important to remember that apprentices may not have very high levels of maths or English. The table below shows the kind of maths and English skills they need and how they might apply them.

Applied English skills	Applied maths skills
Being able to write a formal letter to customers which is correctly formatted and uses suitable language.	Being able to calculate the correct dosage to administer medicines to patients
Being able to compose an accurate email to clients that communicates key ideas and options clearly, with correct use of grammar, spelling and punctuation.	Being able to calculate the speed of a vehicle in a traffic accident
Being able to read a range of detailed and complex reports and documents to compare information, ideas and opinions with confidence.	Being able to represent data and statistics in a table, chart and graph for a presentation
Being able to take part in a discussion at work, asking relevant questions and expressing an opinion.	Being able to add, subtract, multiply and divide decimals up to two decimal places when calculating a quote for a client

Advice from Course Directors

Understand the pressure apprentices are under. You need to put readings and tasks up on Blackboard at least a month before teaching sessions to give them time to prepare.

Lectures don't go down well. Make sessions interactive and engaging. Give them models to work on in groups.

They may only have Level 2 Maths and/or English. Keep that in mind when setting tasks and considering what support they may need.

It is important to take what we teach out of an academic context and make it relevant to their workplace practice.

Use professional rather than academic language.

Be aware that they have very limited time for reading. Base reading lists on chapters or short papers not whole books.

Apprentices can need breaking down before you build them back up. They may have unprofessional behaviours and not be familiar with academic conventions.

You may need to go over how to write paragraphs and reference sources.

Motivation can vary. Some are excited to be studying at a university. Others see it as a waste of time and would prefer to just get on with the job. You may need to work to convince them.

It is essential to include work-based learning outcomes in your course/module learning outcomes.

Practice at evidence-based decision making is essential.

Apprentices can lack critical thinking skills, referencing skills, writing and research experience. They need scaffolded support

Make any videos or pre-reading bite-sized, short, sharp pieces

Use images, words, phrases not geared towards undergraduates e.g., on your Blackboard. These should suit your target audience.

Apprenticeships do not fit into the University calendars and vacation time does not match the university timetable either.

Glossaries

Higher and Degree Apprenticeships specific terms

Term	Definition/explanation
Apprenticeship levy	Paid by employers with an annual wage bill of over £3 million
Co-investment	Government funding of apprenticeships for non-levy paying employers
Digital Account Service (DAS)	Levy paying employers access their levy fund on this government website
Education Skills Funding Agency (ESFA)	The government agency responsible for administering the apprenticeship levy and co-investment funding
End Point Assessment (EPA)	The final assessment of the apprentice, given either by an external organisation, or by the training provider (each Standard has specific EPA criteria)
EPA Organisation (EPAO)	The body which undertakes the final assessment against the apprenticeship EPA plan.
E-portfolio	An online collection of the apprentice's best work that highlights the skills, knowledge and behaviours in the standard
Evidence pack	Documentation that evidence learning is taking place. This includes eligibility for government funding
Gateway	A set point on the apprenticeship journey, where the apprentice has achieved the skills, knowledge and behaviours in the apprenticeship standard
IfATE	Institute for Apprenticeships and Technical Education who oversee the employer route panels and Apprenticeship Standards
Individualised Learner Record (ILR)	Monthly data provided by CCCU that records the learner's progress and allocates further funding
Integrated degree apprenticeship	Learning modules and the End Point Assessment are both provided by CCCU. CCCU acts as the EPAO. In many cases the final module of the course is the EPA specified in the EPA plan. The academic qualification and apprenticeship are awarded at the same time.
Non-integrated degree apprenticeship	Learning modules are provided by the training provider, while an external organisation provides the End Point Assessment. The academic qualification is awarded prior to the assessment and award of the apprenticeship.
Register of End Point Assessment Organisations (RoEPAO)	A list of the organisations accredited by the Education Skills Funding Agency (ESFA) to provide the external End Point Assessment

(Apprenticeship) Standard	The outline, contents and connected End Point Assessment plan, specifically created for a job role(s) including the Knowledge, Skills and Behaviours required.
Trailblazers	Employers involved in the development of new apprenticeship standards
Training provider	The organisation delivering the training portion of the apprenticeship
UK Provider Reference Number (UKPRN)	The number given to each registered training provider of apprenticeships
Unique learner number	A number assigned to every apprentice to track their learning and funding
Workplace mentors	Co-worker assigned to assist the apprentice with workplace questions support

Format your teaching sessions may take

Term	Definition/explanation
Fieldwork	Learning undertaken in an alternative context, location or environment from the university campus-focused learning spaces. Apprentices are likely to get the majority of this through their employee but this could potentially combine with the academic side of their apprenticeship.
Lecture	A lecture is usually an oral presentation intended to present information or teach apprentices about a particular subject. Lectures are used to convey critical information, history, background, theories and equations. You are most likely to produce short recorded lectures to support apprentices.
Practical	Learning opportunities relating to putting theory and research into practice – important given that apprentices are operating in a working environment for the majority of their time. This will help them see the relevance of the tasks and information you present to them.
Seminar	A seminar is a form of academic instruction which brings together small groups for recurring meetings, focusing each time on some particular subject, in which everyone present is requested to participate. This may be lead by the tutor but you can employ techniques such as apprentices as partners in learning where they can determine e.g., if they will take turns to lead a seminar.. It is essentially a place where assigned readings or pre-tasks are discussed, questions can be raised and debates can be conducted
Supported independent study	Activities where an apprentice conducts research or another identified learning activity either on their own and/or with tutor support (face-to-face or otherwise).
Tutorial	This will likely be a one-to-one (but you can arrange these in pairs or small groups if the apprentices prefer) in which the tutor, a lecturer, or other academic staff member, gives additional individual attention

	or academic support. You may want to check knowledge, conduct a Q&A, review feedback or help apprentices complete specific tasks.
Webinar	A web-based learning or training activity, usually interactive, for example, a workshop or seminar. Webinars take place synchronously online using Blackboard Collaborate, with participants taking part remotely. Webinars may be recorded and made available as a video for asynchronous viewing via ReCap.
Work-based learning	Learning achieved by undertaking activities, under supervision and mentoring, in a work context. Learning concepts and techniques associated with a particular profession or trade in a working environment, while being monitored and supported by a tutor. This is the fundamental underpinning to an apprenticeship.
Workshop	Probably the most common learning and teaching forum you will use teaching on apprenticeships, a training workshop is a type of interactive training where participants carry out a number of training activities rather than passively listen to a lecture or presentation. Broadly, two types of workshops exist: a general workshop is put on for a mixed audience, and a closed workshop is tailored towards meeting the training needs of a specific group.

Adapted from: [Pedagogical Glossary, Marjon Hub. https://hub.marjon.ac.uk › mod_forum › attachment](https://hub.marjon.ac.uk/mod/forum/attachment)

Higher education pedagogical glossary of terms

The following list provides definitions for commonly used pedagogical terms. This list and the associated references and resources provide an overview of foundational concepts, teaching strategies, classroom structures, and philosophies that are likely to be of use/relevance to you in teaching and supporting apprentices.

Active learning	A teaching and learning approach that “engages apprentices in the process of learning through activities and/or discussion in class, as opposed to passively listening to an expert. It emphasizes higher-order thinking and often involves group work.” (Freeman et.al. 2014)
Apprentice-centred teaching	Apprentice-centred teaching consists of instructors using a wide range of pedagogical approaches for apprentices to learn and actively engage with the course content by having apprentices construct knowledge with peers through collaboration, discussion, group projects, and problem solving (Felder & Brent 1996, Freeman et.al. 2007, Handelsman et.al. 2007 – relating to student-centred learning).
Apprentice-engagement	Apprentice engagement describes the ways in which apprentices take part in the learning process and the development of their own knowledge. An increase in apprentice engagement is thought to be linked to an increase in apprentice learning. Apprentice engagement is often tied to active learning techniques and apprentice motivation (McVitty 2015 – relating to student-engagement).
Asynchronous instruction	Asynchronous instruction is the idea that apprentices learn similar material at different times and locations. The term is often associated with online learning where apprentices can complete readings, assignments, or activities at their own pace and at their own chosen time. This approach is particularly useful when apprentices may have limited access to technology.

Attainment gap	An attainment gap term which refers to the difference in academic attainment between learners from different social backgrounds. Empirical evidence for many years has pointed to this gulf between the academic attainment of those from middle-class backgrounds and those learners from disadvantaged socioeconomic backgrounds. In CCCU Closing our Gap is the campaign to reduce the attainment gap between white and BAME students. You should also be aware of this in terms of apprentices. Closing Our Gap (canterbury.ac.uk)
Authentic assessment	Assessments in which apprentice learners demonstrate learning by applying their knowledge to authentic, complex, real-world tasks or simulations. Proponents of authentic assessment argue that these types of knowledge checks “help apprentices rehearse for the complex ambiguities of the ‘game’ of adult and professional life” (Wiggins, 1990, p.1).
Blended or hybrid learning	Blended or hybrid courses are “classes in which some percentage of in-class time has been reduced and replaced with online content and activities” (Darby & Lang 2019, p.xxix). These courses continue to meet in-person for some percentage of the class time but content, activities, assessments, and other ways for apprentices to engage with content are delivered online.
Bloom’s Taxonomy	Bloom’s Taxonomy is a cognitive framework of learning behaviours organized hierarchically in six categories: knowledge, comprehension, application, analysis, evaluation, and synthesis. Bloom’s taxonomy is often used as a helpful tool to create learning objectives that help define and measure the learning experience for both apprentice and instructor. (Anderson, 2001, Bloom, 1956, Krathwohl, 2002) Blooms Taxonomy :: Resource for Educators
Collaborative learning	an umbrella term that covers many different methods in which apprentices work together to solve a problem, complete a task, or create a product. Collaborative learning is founded in the concept that learning and knowledge building is social and requires active engagement from apprentices. (Smith & MacGregor 1992)
Culturally responsive pedagogy	A pedagogical framework where instructors centre apprentices’ cultural identities as an important aspect of learning. Those committed to this framework deliberately work to make connections between course content and apprentices’ lived experiences in order to prompt apprentice involvement and motivation. Culturally responsive course design includes cooperative, apprentice-centred instruction and diverse course readings from a variety of voices and perspectives, particularly those voices which may fall outside of traditional collegiate canons (Landson-Billings 2006).
Digital divide/digital exclusion	The digital divide is defined as the gap that exists between those who have reliable internet access and devices and those with very limited access or none at all (Close the Gap Foundation, 2021). Broadly defined, digital exclusion is where a section of the population have continuing unequal access and capacity to use Information and Communications Technologies (ICT) that are essential to fully participate in society (Schejter, 2015; Warren, 2007 cited in Sanders, 2020).
Experiential learning	Experiential learning is a process by which apprentices develop knowledge and skills from direct experience, usually outside a traditional academic setting. Examples include: internships, study abroad, community-based learning, service learning, and research opportunities.

	The concept was introduced by David Kolb in 1984 and combines both a cognitive and behavioural approach to learning (Kolb 1984).
Fixed mindset	Mindset refers to the beliefs and attitudes held by a person and can affect their learning outcomes and achievement. Individuals with a fixed mindset (also referred to as entity theory) are outcomes-focused, don't view intellectual ability as being malleable, and give up quickly on learning a new skill when learning becomes more challenging and difficult (Dweck, 2008, Dweck & Master 2008, Rattan et. Al. 2012, Yeager 2012). <i>See also growth mindset.</i>
Flipped classroom/learning	A flipped classroom is a teaching approach where apprentices a first exposed to content before coming to a class session and then spend class time engaging more deeply with the ideas and concepts (Brame, 2013). This model encourages the use of active learning during in-person class sessions to allow apprentices to explore concepts, solve problems, and discuss ideas with each other and the instructor.
Formative assessment	Formative assessment is the process of providing feedback to apprentices during the learning process. These are often low stakes activities that allow the instructor to check apprentice work and provide feedback. An instructor writing comments and suggestions on a draft version of a paper is an example of formative assessment (Weimer 2013).
Growth mindset	"In a growth mindset, people believe that their most basic abilities can be developed through dedication and hard work—brains and talent are just the starting point. This view creates a love of learning and a resilience that is essential for great accomplishment." (Dweck, 2015)
Inclusive teaching	a mode of teaching that intentionally designs course content and curricula to engage with apprentices of diverse backgrounds, abilities, and lived experiences. The ultimate goal of inclusive teaching is to create a learning environment where all apprentices feel valued and supported to succeed.
Inquiry-Based Learning	Inquiry-based learning is an umbrella term that includes pedagogical strategies such as problem-based learning and case-based learning that prioritize apprentices exploring, thinking, asking, and answering content questions with peers to acquire new knowledge through a carefully designed activity. Such activities build in opportunities for apprentices to authentically engage in and apply the scientific process as scientists rather than following a predetermined protocol (LaForce et.al., 2017, Yew & Goh 2016). <i>See also problem-based learning, project-based learning.</i>
Knowledge Gap	A disparity in levels of knowledge, particularly technological knowledge.
Learning Outcome	statements that articulate the knowledge and skills you want apprentices to acquire by the end of the course or after completing a particular unit or assignment. Learning objectives help instructors to shape course content and assessments as well as increase transparency for apprentices by clearly communicating expectations. Learning-Outcomes-Guidance-for-Staff-v2-May-2021.docx (live.com)
Motivation	An individual's "personal investment" in reaching a desired state or outcome as "seen in the direction, intensity, persistence, and quality of what is done and expressed" (Maehar, M.L. & Meyer, H.A., 1997, p. 373). Research suggests that motivation plays a vital role in directing and sustaining apprentice learning. The most motivated apprentices see value in the task, believe that they can accomplish the task, and feel that they are in a supportive environment (Ambrose et al, 2010, p. 80).

Object-Based Learning (OBL)	(OBL) is a teaching method whereby apprentices engage with authentic or replica material objects in their learning in order to gain discipline-specific knowledge or to practice observational or practical skills that can be applied in various fields. "Objects" can include a number of different material items often housed in museums: specimens, works of art, architectural forms, relics, manuscripts and rare books, archival documents, or artifacts of various kinds. Research on OBL suggests that "objects can inspire, inform, fascinate and motivate learners at all stages of their education" (Jamieson, 2017, p. 12).
Pedagogy	Pedagogy is the method, practice and study of effective teaching. In order to be effective, instructors must have both subject-based knowledge and pedagogic knowledge and skills (Barkley & Major, 2016).
Problem-Based Learning	A form of apprentice-centred teaching that focuses on having apprentices work through open-ended problems to explore course material. Apprentices are asked to define the problem as part of the process, research content outside of class time and iterate solutions to arrive at their final response (Nilson, L.B., 2016)
Project-Based Learning	form of apprentice-centred teaching that engages apprentices with course content as they work through a complex project. These projects are typically real-world scenarios and multifaceted. Project-based learning encourages interdisciplinary conversations and groups work.
Scaffolding	Scaffolding is a process by which instructors build on a apprentice's previous experience or knowledge by adding in specific timely support structures in the form of activities or assignments for apprentices to master new knowledge or skills and achieve learning goals (Greening, 1998, Hmelo-Silver et.al. 2007).
Social Belonging	Social belonging is a state when apprentices feel welcomed and included into a community where they can engage freely and foster positive relationships with others (Walton & Cohen, 2011).
Summative assessment	Summative assessment is the process of measuring a apprentice's learning at the conclusion of a course (or a portion of the course). Summative assessments are typically associated with grades and can take the form of quizzes, exams or papers.
Stereotype threat	Stereotypes are negative generalizations about groups of people. When apprentices are subtly or overtly made aware (primed) of these stereotypes while performing challenging academic tasks in domains that are important to them, apprentices begin to underperform in these tasks. Anxiety about confirming a negative stereotype creates additional cognitive load that reduces the capacity of working memory in the brain (Aronson et.al. 1999, Steele & Aronson 1995).
Synchronous instruction	synchronous instruction is the idea that apprentices learn material at the same time. Examples of synchronous instruction might include lectures, discussions or collaborative activities. When applied to remote learning, apprentices must be online at the same time. This approach can be disadvantageous if apprentices are spread across different time zones or have limited access to technology.
Threshold Concept	Thresholds are crucial barriers in the learning process where apprentices often get "stuck". These ideas are essential to understanding a particular discipline and progress in the discipline can be blocked until that barrier to understanding has been overcome. Examples of discipline-based

	threshold concepts include deep time in geology or the idea of constructed narrative in history (Meyer & Land 2006, Pace 2017).
Virtual Learning Environment (VLE)	This is Blackboard at CCCU.

Adapted from [Glossary of Pedagogical Terms - Center for Teaching and Learning \(wustl.edu\)](https://www.wustl.edu/center-for-teaching-and-learning/glossary-of-pedagogical-terms)

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