

DRAFT

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Bolton College Digital Research Project

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## [Introduction to the Bolton College Digital Resource](#Introduction)

## [Menu 1: Common Learning Issues](#Menu1)

## [Menu 2: Common learning issues described](#Menu2)

## [Database of effective practice](#Databaseofeffectivepractice)

## [Glossary](#Glossary)

## Introduction to the Bolton College Digital Resource

This resource has been made possible by the generosity of many of Bolton College's teachers and managers who took the time to share the challenges they face in the classroom and, where possible, the effective strategies they've used to solve them.

This is a very early draft of the resource. Only around a fifth of the findings have been used as of February 3rd, 2022. The first full draft will be finished shortly.

## How to use this resource

*"Change just one thing"*

If you could resolve one learning issue that's costing you too much time and/or effort, what would it be?

Try clicking on that issue in one of the menus, and see where the journey takes you.

## Menu 1: Common Learning Issues

Which learning issue would you most like to resolve?

[Aspirational outlook](#Aspirationaloutlook)

[Barriers to independence](#Barrierstoindependentlearning)

[Behaviour issues](#Behaviourissues)

[Concentration and engagement](#Concentration)

[Critical reflection](#Criticalreflection)

[Differentiation](#Differentiation)

[Don’t understand](#Dontunderstand)

[Homework](#Homework)

[Late assignments](#Lateassignments)

[Learning outcomes](#Learningoutcomes)

[Lesson openings](#Lessonopenings)

[Maths](#Maths)

[Motivation](#Motivation)

[Note taking](#Notetaking)

[Passivity – poor use of Q&A](#Passivity)

[Punctuality](#Punctuality)

[Project management](#Projectmanagementskills)

[Social relationships](#Socialrelationships)

[Spelling](#Spelling)

[Study skills](#Studyskills)

[Transition point management](#Transitionpoint)

[Vocabulary (1) personal expression](#Vocabulary)

[Vocabulary (2) terminology](#Vocabulary2)

## Menu 2: Common learning issues described

*…what exacerbates them and potential solutions*

|  |  |
| --- | --- |
| [Aspirational outlook](#Aspirationaloutlook) | Learners who cannot vision a draft version of their future self can lack overall motivation to commit wholeheartedly to their studies. They may also lack the resilience required to be successful on aspects of the course they find uninspiring or lacking in relevance.  |
| [Barriers to independent learning](#Barrierstoindependentlearning) | The identification of all potential barriers to learning independently that may result in a learner underperforming or leaving early.  |
| [Behaviour issues](#Behaviourissues) | Behaviour issues a generally a symptom of an unmet need or a response to the current environment.  |
| [Concentration and engagement](#Concentration)  | Learners who lose the *Attention War* in class; distracted by off-topic thoughts. |
| [Critical reflection](#Criticalreflection) | Learners who do not sufficiently develop their ability to critically reflect on the quality of their work. |
| [Differentiation](#Differentiation) | Meeting individuals' needs in the context of a group.  |
| [Don’t understand](#Dontunderstand) | Including learners who will not say they don’t understand.  |
| [Homework](#Homework) | Learners' poor attitude to completing homework. |
| [Late assignments](#Lateassignments) | Learners who hand their written work in late.  |
| [Learning outcomes](#Learningoutcomes) | Learning outcomes that are no more than to-do list: 'stuff'. A failure to understand the impact required from the whole lesson: how learners should be 'different' by the end of the lesson. And that this intended difference should influence every pedagogical decision for the lesson. Too many teachers don't understand 'stuff' and 'difference'.  |
| [Lesson openings](#Lessonopenings) | The use of recall strategies to check initial understanding at the start of a lesson.  |
| [Maths](#Maths) | The development of learners' numeracy skills.  |
| [Motivation](#Motivation) | Consideration of learners’ emotional learning journey when designing learning experiences. Too often, it feels like teachers are using a formula for the lesson, which causes them to abdicate responsibility for thinking about learning impact. The idea of using curiosity, discovery, unfolding narrative, then simply don’t seem to be considered.  |
| [Note taking](#Notetaking) | The development of learners' ability to take reflective notes that aid the development of comprehension and act as memory triggers. |
| [Passivity – use of Q&A](#Passivity) | Q&A sampling that allows many learners to remain passive.  |
| [Punctuality](#Punctuality) | Formulaic lesson openings that are missable. Insufficient use of curiosity strategies at the end of the previous lesson.Insufficient use of pre-learning strategies |
| [Project management](#Projectmanagementskills) | Using the whole of the assignment period for proactive learning.  |
| [Social relationships](#Socialrelationships) | The development of the group's social relationships, so avoiding cliques and loners and a reduction in the effectiveness of group learning activities and possibilities.  |
| [Spelling](#Spelling) | Confidence to spell important words and vocational terms correctly.  |
| [Study skills](#Studyskills) | The central expert learning skills needed to learning independently.  |
| [Transition point management](#Transitionpoint) | The transition between teacher instruction and learner task.  |
| [Vocabulary (1) personal expression](#Vocabulary) | Poor use of vocabulary for personal expression. |
| [Vocabulary (2) terminology](#Vocabulary2) | Insufficient development of learners' vocational vocabulary. |

## Database of effective practice

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| Aspirational outlook | [**Back**](#Commonlearningissues) | LRF 05 |
| **Learning issue** |
| Learners who cannot vision a draft version of their future self can lack overall motivation to commit wholeheartedly to their studies. They may also lack the resilience required to be successful on aspects of the course they find uninspiring or lacking in relevance. |
| **What might cause or contribute to this issue?** |
| * Insufficient use of stimulating experiences to help learners produce initial drafts of their future careers.
 |
| Thoughts on technology and pedagogy |
| 1. PhDs & Concept Cars

*[For level 2 upwards]*Show learners what study for a PhD involves and how this develops vocational thinking. Task learners with asking their [learning networks](#Learningnetwork) to set out the greatest challenge/s for their vocational area. You might use phrases such as: 'Wouldn't it be cool if…' This could be teamed with illustrations of how 'concept cars' change the motor-vehicle industry. Ask learners to set out the learning networks they would need to address the PhD challenge. This task is primarily about seeding curiosity and aspiration management and will ideally create long-term relevance for some of the elements of the course.1. Guest speakers

Industry figuresAlumni1. Industry visits
2. Career progression sheets

Produce, or ask learners to research and produce, a list of careers for which their current course is a starting point. These could be collated onto a group [wiki](#Wiki). 1. Employability skills

Using a [collaborative whiteboard](#Collaborativewhiteboard), ask learners to set down the employability skills they feel they will develop on their course. Move their contributions into two lists: those specific to the vocational subject, and those transferable to any career. Produce, or ask learners to research and produce, a list of careers for which their potential transferable skills will be ideal. These could be collated onto a group [wiki](#Wiki). |

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| Barriers to independent learning | [Back](#Commonlearningissues) | LRF 03 |
| **Learning issue** |
| Insufficient identification of ***all*** potential barriers to learning independently that may result in a learner underperforming or leaving early.  |
| **What might cause or contribute to this issue?** |
| * Teachers perceive initial assessment to be a process carried out by others.
* Proprietary initial assessment tests are delivered without sufficient through to emotional preparation, resulting in a blaze attitude by some learners.
* Teachers perceive initial assessment to be limited to English and maths.
 |
| Thoughts on technology and pedagogy |
| 1. Identifying barriers to independent learning

Hypothesis: if no learners had barriers to learning independently, teaching would be easy. If you agree with this hypothesis, then it follows that the art of teaching is to clearly identify and mitigate these barriers – whatever they may be. Barriers can be attitudinal. Telling learners to change their attitude is unlikely to work. Teachers must design experiences through which learners attitudes change. This is clearly dependent on the focus of the poor attitude and the learning context. Poor attitudes could be:* + shy, lacking confidence
	+ intolerance
	+ poor resilience to failure
	+ don't love the subject
	+ don't enjoy working independently, completing research, etc.

Barriers can also be around skills, such as: * + inability to express themselves in writing
	+ lack of critical-reflection skills
	+ the urge to cut-and-paste when researching due to poor synthesis skills, etc.
1. Task

Focus on a case study. Find a learner or group of learners and your perception of their specific barrier to learning. Design a strategy to overcome it. Many of the strategies in this resource can be used. However, here is a simple example. A learner doesn't love the subject. The *Back Pocket* strategy. * + Chat to the learner to find out their wider background and interests.
	+ During your week, keep an eye out for anything that can bridge the gap between the subject and the learner's interests.
	+ Give or send the item you find to your target learner with the line: 'I saw this and thought of you'.
	+ This may not work instantly, but it can be a powerful motivator when learners feel they have been singled out by the teacher for thought outside of the classroom.

Critical success factor is the teacher's instinct to clearly articulate learning barriers, then be inventive in their resolution.  |

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| Behaviour issues | [**Back**](#Commonlearningissues) | LRF 10 |
| **Learning issue** |
| Poor learner behaviour probably means the learner is no longer learning. This poor behaviour may well also adversely affect the learning of others.  |
| **What might cause or contribute to this issue?** |
| * In one lesson, the teacher was working through a set of marked test papers. Many of the answers were wrong. The teacher methodically explained the correct answer to each question.
* The many instances of poor behaviour, disengagement body language, and under-desk mobile phone use, showed that there was little value being added by this strategy.
* It seems fair to suggest that many learners had hit cognitive overload as the complexity of the answers rained down one after another in this overly teacher-centred approach. At no point were learners given the opportunity to:

reflect on their personal misunderstandings to assimilate the correct solution to practise and test their new learning |
| Thoughts on technology and pedagogy |
| 1. Behaviour Support, rather than behaviour management

As can be seen in the above illustration, this teacher attempted to manage and, indeed, challenge poor behaviour, but the strategy exacerbated the issue rather than solved. it. By treating poor behaviour as a symptom that something is wrong, the teacher can, and in the above instance should have, re-evaluated their teacher-centred approach.Arguably, re-engagement of misbehaving learners is easiest if we can back-track to the point at which the issue began. In the above instance, this could be the point at which leaners were overloaded with technical answers. 1. Be clear about your intended impact

Write a clear learning outcome for each element of your lesson; or rather, write clear learning outcomes for the lesson and make sure every strategy used works hard to deliver them. If your intention is to go through the issues identified in a test paper, treat the results as a formative assessment and set out precisely what you will do with the information.* + One solution might be to give learners their answers alongside the correct answers and ask learners to say where they went wrong. By setting a similar question to work through, learners will know whether or not they now understand. Learners' understanding is the primary goal, not teacher explanations.
	+ A teacher-led solution might be to work through the common issue on the board, then set a follow-on question as above. However, this could lead to passivity in those who did not get the answer wrong.
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| Concentration | [**Back**](#Commonlearningissues) | LRF 04, 05, 08 |
| **Learning issue** |
| Some learners lose the *Attention War* in class; distracted by off-topic thoughts, such as events and relationships in their private lives. One of our roles as teachers is to help learners win this war and remain focused on the task.  |
| **What might cause or contribute to this issue?** |
| * Too much teacher-centred instruction.
* Poor management of the [*Transition Point*](#Transitionpoint)between the teacher's instruction and individual learning tasks.
* Moving learners onto 'B' and 'C' before they've mastered 'A'.
* Teacher demonstrations that require learners to remember a sequence of events.
* Poor concentration could also be because there is no excitement associated with the task, even if this is ‘manufactured’ by the use of friendly competition and/or game-based learning.
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| Thoughts on technology and pedagogy |
| 1. Discovery demonstration

Pepper a practical demonstration with hypothesis questions. For instance: ‘What do you think would happen if I did X?’ ‘What do you think I should do next?’ ‘Look at where we’re up to and ask me a great question.’ This allows learners to practise the questions they will ask themselves when it’s their turn to carry out the task. The focus is then on learning the potential and value of the process rather than trying to remember a sequence of actions. At the end of the session, (wherever appropriate) ask learners to write down how they intend to practise and develop the technique before next lesson.1. Chunking

The process of 'chunking' information allows us to better utilise our limited working memory. Chunking can be used to introduce a topic, make sense of a topic, or as a device to summarise a topic. Simply ask learners to group the information into manageable units. This could be through creating a taxonomy (creating sub-headings and organising information under each), or mind-mapping, or illustrated notes, etc..1. Game-based learning

Quizzes are often used to check learners' ability to recall information. This is *Gamification*. *Game-based learning*, however, is where the learning comes from the playing of a game. What game formats could you appropriate that require learners to analyse, make connections and evaluate? A good example of this is the *Top Trumps* format.1. Gamification

In an ESOL lesson, the teacher used the [*Blooket*](#Blooket) mobile phone game well to engage and enthuse learners, while checking their understanding. In a lesson where the teacher used the *Around the Room* game, around half of the learners were passive when the teacher was checking the understanding of the rules. * + This is a common issue when explaining game rules, one cause of which is cognitive overload (a moments loss of concentration of misunderstanding can cause a rule to be missed. This gap then results in a lack of confidence about what to do.)
	+ One solution is to ask learners to explain the rules to their neighbour, so that everyone can quickly check their understanding and fill in, or seek help to fill in, any gaps identified.

In an ESOL lesson that began with a warm-up game, learners were asked individually to go to the interactive white board and pair a word with the correct technical category: very, pronoun, preposition, etc.. * + Some learners struggled to complete the task. Around a third of learners enjoyed shouting out suggestions, but for some learners this led to rapid trial and error, rather than reasoned learning.
	+ In some instances, over use of coaching by the teacher appeared to create anxiety in the learner, and their inability to solve the problem was being evermore highlighted to the group.

On reflection, the teacher felt this could have been avoided if learners had been given the questions to complete in pairs or small groups first. The learning stage would then not have been clouded by public anxiety. * + The teacher also felt that better use could be made of the gaps identified for further learning opportunities. If prefaced with the above strategy, the gaps could have been used as opportunities for micro teaching and personal note taking. These additions would have turned the game from a summative- to a formative-assessment strategy.
	+ That said, the next phase of the lesson tasked learners to login individually on their phones to a very similar game on [*joinmyquiz.com*](#Joinmyquizcom).
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| Critical reflection | [**Back**](#Commonlearningissues) | LRF 04 |
| **Learning issue** |
| Learners do not sufficiently develop their ability to critically reflect on the quality of their work. |
| **What might cause or contribute to this issue?** |
| * Learners have not developed a sufficiently clear understanding of 'quality'.
* Learners cannot objectively evaluate their work in relation to an understanding of 'quality'.
* Learners do not have effective editing strategies to redraft their work so that it meets high expectations.
 |
| Thoughts on technology and pedagogy |
| 1. Completing the edit

Give learners an artefact relevant to your subject that 'contains' errors. Ask them to identify the errors. Give the answers and ask learners to use this to mark their own critique. As work on their own artefact progresses, give recognition for any evidence you see of a learner editing their work as it develops.1. Trick questions

Learners have completed a piece of work. They are paired with a colleague and asked to swap work. Learners are then given 10-minutes of silent time to review their colleague’s work and write 10 killer questions to ask them. The ‘trick’ bit…At the end of the preparation time, learners are, instead, directed to use their 10 questions to write a review of their own work. The answers to these questions should form an action plan for improvement.1. Hexagonal Learning

The aim of Hexagonal Learning is to make associations and connections and to use critical thinking to justify ideas. Give learners laminated or electronic hexagons. On each side, they write key words, terminology, facts, ideas, concepts, etc. As learning progresses, ask them to create more. Initially, learners will be able to explain the concepts behind each hexagon. As ideas are added, they search for links between new and old, helping them to form evidence-based opinions. This allows learners to explore content individually, and collaboratively, in order to make sense of the subject and own their ideas.1. Paired exemplar marking

Give learners three short questions/problems and five minutes to complete them on their own. Once completed, they should swap their answers with their neighbour.The teacher then presents the correct explanation of the answers.Following the explanation, learners should correct and comment on their neighbour’s answers. Once complete, these should be handed back, and the comments reviewed. Finally, learners should bullet-point what they will do differently with the next question/problem.1. Preparing to submit work – group review

Set a pre-submission milestone for a near-final version of the assignment. Group learners in threes and ask them to swap assignments. Give each learner just one of the distinction criteria and ask them to assess the work using only that criterion. This could be related to the subject (e.g. the refinement of the artefact), or an expert learning skill (e.g. the strength of the evaluative language used). Learners should then write an action list to respond to peers’ comments and their own ideas from evaluating others’ work.1. Match comments to work

Write comments about learners’ work on separate, anonymous, pieces of paper. Group learners in fours and give back their assignments and the anonymous comments. Ask the group to then match comments to work.Each learner should then write two positives they’ve seen in others’ work that they would like to steal, and two issues with their own work they would like to address. |

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| **D****ifferentiation** | [**Back**](#Commonlearningissues) | **LRF 03** |
| **Learning issue** |
| Insufficient use of differentiation strategies to support learners with varying degrees of learning experience. |
| **What might cause or contribute to this issue?** |
| * Teacher-centred instruction to the whole group.
* Insufficient use of the individual learning plans to understand the learning challenges.
* In some instances, the cutting and pasting of differentiation text from one lesson plan to another stops the teacher form looking creatively at lesson design.
* Teachers who differentiate learning outcomes rather that the support needed for all to achieve outstanding outcomes.
 |
| Thoughts on technology and pedagogy |
| 1. Pre-learning 1

Set learners pre-learning homework for the next lesson, or the start of a new topic. List and define all of the vocational terminology that will be used and ask learners to memorise them and add them to their Learning Management File. Test recall at the start of the lesson and reward those who do well. This may include public recognition and/or well-placed reference throughout the lesson to how the pre-learning has made the new learning easier for those who scored well.1. Pre-learning 2

Experienced learners have an advantage when starting a new topic as they have a 'seedbed' of background knowledge into which new learning takes root. Inexperienced learners do not have this. Design an exciting, curiosity-filled pre-learning introduction to a topic. This could be as simple as curating a series of impressive and/or straightforward online video links. Add access to a knowledge bank for learners to explore if they wish. This could be teacher-devised, or an online source. Make learners curious to look at your resource two weeks before the unit. Inexperienced learners can engage with, and be motivated by, the new topic immediately. Here is a case study on the use of *Blendspace* for this purpose.1. Scaffolding – Differentiated support

Set learners a difficult problem to solve. If they find it too difficult, they’ll see three Help Sheets (scaffolding) set out in different parts of the room. They should try Help Sheet 1 first. If that doesn’t help, they should move on to Help Sheet 2, and so on. Ask learners to tick any Help Sheets they use to help you keep track of their experience.Your three Help Sheets should offer ever-greater degrees of support to solve the problem. The first might address the most common and simple blocks, enabling the learner to continue unaided (think of this as a gentle nudge in the right direction). The final one could clearly prescribe the strategy to solve the problem, or show the workings of the solution, before giving a new problem through which they can test their learning. The teacher should count the ticks to help evaluate the level of confidence in the group and the content of the next lesson.While the above are discrete strategies to help differentiate learning, many of the strategies discussed in this resource differentiate learning effectively.  |

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| Don’t understand Confidence to ask questions | [Back](#Commonlearningissues) | LRF 04, 05 |
| **Learning issue** |
| Teachers report that some learners don’t feel confident to say that they don’t understand, to ask questions, or contribute publicly. * This strongly suggests that the stakes are too high for these learners, who might perceive that they will suffer adverse consequences, such as a loss of status in their peer group, or to become the subject of a joke, etc.
 |
| **What might cause or contribute to this issue?** |
| * These insecurities can be symptomatic of a fractured group dynamic and insufficient development of a social infrastructure that would enable learners to take risks, risk-free.
* The root cause of this issue could be a failure to build the group effectively during the extended induction period, so preventing the formation of cliques and loners, and the adversarial attitudes that can accompany them.
 |
| Thoughts on technology and pedagogy |
| Strategies range from low to high investment for the teacher.1. Itch your arm if you don’t understand

This strategy is quick to implement. Simply ask learners to *Itch their arm if they don’t understand* something. These small movements can be seen by the teacher, but not by peers, so allowing them to consider different explanation strategies. Enabling learners to remain anonymous allows them to avoid any perceived recriminations. 1. Collaborative whiteboards

Use a [*Collaborative whiteboard*](#Collaborativewhiteboard), such as Goggle’s Jamboard. By asking all learners to contribute an answer to a share online space, the teacher can test all learners’ level of understanding and assess whether further explanation is required. As above, Jamboards are anonymous. Teams and OneDrive also has similar shared spaces. 1. Taxonomy Teams – building social relationships

During the extended induction period, never allow seating patterns to emerge. Randomising seating patterns can cause friction with some groups of learners if they feel they are being manipulated against their will. *Taxonomy Teams* is a strategy for randomising seating and widening social relationships while avoiding the conflicts that can be caused by simply asking learners to sit in different seats. Find a topic in your subject that can be broken down into two tiers. Examples could include: car manufacturers, acidity of materials, Blooms verbs, dog Breeds, etc, etc. Here's how Dog Breeds might look: * + Tier 1 = Dog Breed Groups (Terriers, Retrievers, Toy dogs...)
	+ [For 25 learners you might need 5 tier-1 groups.]
	+ Tier 2 then breaks each group down. So if Tier 1 = Terriers, Tier 2 might include Westies, Yorkies, Cairns…
	+ [For 25 learners you'd need 5 tier 2 items].

Make a set of Tier-2 cards, but do not include the Tier-1 names. As learners arrive, ask them to choose a Tier 2 card and tell them to simply 'find and sit with their group'. At first they will be confused, but through discussion will figure out the rules, and sit in randomised, but self-selected groups.Here's a link to detailed instructions on how to run [*Taxonomy Teams*](https://ccqi.org.uk/good-practice-resources/taxonomy-teams)*.*1. Categorising cards

Learners are given 20 cards with names/statements/facts on and asked to categorise them based on their own criteria. (The teacher can set the number of categories.) Students work in groups of three. By categorising and explaining their choices, learners will make connections and clarify their understanding. For instance: History. Each card is a monarch. Minimum number of categories = 4. Learners group according to their own categories and explain why. Categories could include:Religious beliefs; had an heir; executed; invaded countries; periods of rebellion; foreign policy; architecture; industry; public health; fashion; places of burial.. |

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| Homework | [Back](#Commonlearningissues) | LRF 03, 07 |
| **Learning issue** |
| Learners' poor attitude to completing homework. |
| **What might cause or contribute to this issue?** |
| * Failing to establish a culture of independent learning from the start.
* Failing to develop learners' ability to learn independently and in groups.
* Making homework feel like 'additional' learning rather than the main learning.
* Failing to make learners curious to discover more by themselves.
* Failing to value learners' personal discoveries by creating group learning from individual contributions.
 |
| Thoughts on technology and pedagogy |
| 1. Establish a learning culture

At the start of the course, establish a learning culture in which primary learning is between lessons. Build time into lessons to value what individuals have discovered. Create group learning from individual contributions. Make learners curious at the end of a lesson so that they want to go and discover something for themselves. Make learners curious about what will happen in the following lesson. Where appropriate, add a sense of competition to the completion of work between lessons. This can be competition with peers, or against learners previous work and/or aspirations. Have learners complete their independent learning on a [wiki](#Wiki) to which only they and you have access. This allows the teacher to gain early insight into any barriers to working independently. Early investment in ensuring every learner grows (and sees themselves as having grown) as a result of independent work with establish a sustainable homework culture. An excellent example of this was seen in performing arts. The teachers centres the whole of their work on [OneDrive](#OneDrive). All individual assignments are complete on individual wiki pages, and all group tasks on group wiki pages. * + The teacher always has a clear picture of attainment, allowing early intervention where needed.
	+ Learners know the teacher can always see their work, so don't proffer the 'usual' excuses.
	+ Work cannot be 'lost'.
	+ Learners work throughout an assignment's allotted time, so preventing last-minute plagiarism.
	+ Learners meet deadlines.
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| Late assignments | [**Back**](#Commonlearningissues) | LRF 04 |
| **Learning issue** |
| * Learners hand their written work and assignments in late.
* This may mean they have been passive on this work for a significant amount of the assignment's gestation period, often resulting in poorer quality work.
* Learners become susceptible to plagiarising the work of others as the deadline looms.
* Learners' (and arguably the teacher's) focus is on the product (the assignment) rather than the learning it is designed to produce.
* In some qualifications, the accumulation of pass grades can prevent learners from achieving higher overall grades, which in turn can fuel demotivation.
 |
| **What might cause or contribute to this issue?** |
| * Insufficient development of a learning culture during induction.
* For an assignment that spans a number of weeks, the learner and/or teacher has not set sufficiently clear milestones to structure the development of learning.
* The teacher is not sufficiently aware of learners' progress throughout the learning period.
* Learners are confident they can secure a deadline extension from the teacher.
 |
| Thoughts on technology and pedagogy |
| 1. In a performing arts group, learners complete all assignments online using a [OneNote](#OneNote) [wiki](#Wiki).

Every learner has their own assignment page to which only they and the teacher have access. Learners know the teacher can view their work at any time; it never has to be 'handed in' for interim feedback. This avoids learners going into 'wait mode' while awaiting feedback. Awarding body regulations prevent teachers feeding back on assessed work. In this strategy, however, the teacher can quickly explore emerging work and address issues to all learners in lesson time. The teacher can use inactivity in the wiki as an indicator that a conversation is needed to identify and mitigate any barriers to progress. On the assignment deadline date, learners' editing privileges can be removed. This means that learners will never hand their work in late.1. A detailed version of the above wiki solution can be found here: <https://ccqi.org.uk/app/uploads/2013/07/Late-assignments-the-solution.pdf>
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| Learning outcomes | [**Back**](#Commonlearningissues) | LRF 04 |
| **Learning issue** |
| * Learners are not sufficiently 'different' by the end of the lesson.
* Lesson elements are too long, causing learners to disengage, as they have not been designed specifically to produce one of the intended learning outcomes.
 |
| **What might cause or contribute to this issue?** |
| * Too often, learning outcomes are no more than to-do list – a list of 'stuff' that will happen in the lesson.
* A failure to understand the impact required from the whole lesson: how learners should be 'different' by the end of the lesson. And that this intended difference should influence every pedagogical decision for the lesson.
* Too many teachers don't understand the dichotomy: 'stuff' and 'difference'.
 |
| Thoughts on technology and pedagogy |
| 1. Take a lesson you know well.

Imagine learners walking into your learning environment. Now imagine them walking out at the end of the lesson. How do you want them to be 'different'. Do you want them to have new cognitive skills, new physical skill or a new attitude to something? These are your learning outcomes. NB. Never use the word 'to understand' in an outcome, even if this is written into your awarding body performance criteria. An easy solution to this is to add 'use their' in front of 'understanding to'. This forces us to write a verb that will then make learning visible: *By the end of the lesson, learners will/will be able to use their understanding to…(verb)…(visible outcome).* |

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| Lesson openings | [**Back**](#Commonlearningissues) | LRF 11 |
| **Learning issue** |
| * Beginning a lesson for which learners do not have the required knowledge and skills.
* When teachers attempt to teach 'B' and 'C' before the learner has mastered 'A', they risk tipping the learner into cognitive overload.
 |
| **What might cause or contribute to this issue?** |
| * Using quizzes and games to check learning, but failing to use any gaps to influence how they or their learners move forward.

The above illustration is the use of games as a *summative* assessment strategy. Summative assessment should only be used at the end of the course or the end of a unit learner will not return to. At all other times, assessment should be *formative*. For assessment to be formative, it must produce a *next step* for the learner, or teacher, or both.  |
| Thoughts on technology and pedagogy |
| 1. Formative assessment games

An apprenticeship teacher often uses *Socrative* and *Plickers* at the start of lessons as a quick check on learning. They then use the outcome of this initial assessment to determine how the lesson should progress. * + When formative assessment is designed so that it produces the next step for the learner rather than the teacher, significant positive impacts can be made.
		- Reduced teacher-talk
		- Reduced teacher workload
		- Increased learner independence
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| Maths | [**Back**](#Commonlearningissues) | LRF 03 |
| **Learning issue** |
| Insufficient development of learners' numeracy skills. |
| **What might cause or contribute to this issue?** |
| * Teachers' understanding of the GCSE and/or Functional Skills assessment criteria, and those that can be made relevant to the vocational subject.
* Teachers over-empathising with learners' poor attitude to maths and the personal challenge it presents.
* Teachers saying or implying that maths is simply necessary.
* The inappropriate shoehorning of maths into a lesson.
 |
| Thoughts on technology and pedagogy |
| 1. Take a proactive approach to making maths skills relevant to your area.

Create a Excel spreadsheet or Word table of the maths assessment criteria. (An example from 2015 can be found here: [Contextualising post-16 GCSE Mathematics: a toolkit](#Contextualisingpost16Maths).)Identify any opportunities in your vocational area where these skills can be valuable and developed. (The above toolkit shows examples of this for: construction and the built environment, health, social care, childcare, business, administration and entrepreneurship, and general life and personal interest courses.)Work with a maths specialist, if necessary, to refine your 'relevance' list.Create a *research lesson* in which you will experiment with addressing one of the outcomes you've not previously worked towards.Share your learning with your colleagues. 1. A numeracy toolkit for problem solving

Think of numeracy skills as being part of a toolkit for problem solving. Where might this augment your approach within your programme of study? At it's simplest, Excel can be used for simple tasks such as: to capture and order lists; capture an interrogate data; be used instead of a calculator; as a survey tool; etc. Without overt reference to maths, how could you integrate the use of Excel?1. Enjoying mental maths

Consider building the pure enjoyment of mental maths. While this might sound counterintuitive when considering learners who feel themselves failures and dislike maths, global international games such as [Mathletics](#Mathletics) can be enormously stimulating. The granular nature of the games available mean that once you've identified that specific skill the learner needs to develop (right down to 'simple additions to 10', for instance) precisely targeted games can be played repeatedly to develop these missing skills.  |

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| Motivation | [**Back**](#Commonlearningissues) | LRF 04, 05 |
| **Learning issue** |
| No enthusiasm to invest in the study of the subject. This may be the subject overall, or a particular unit of study, such as a theory element.  |
| **What might cause or contribute to this issue?** |
| Lack of consideration of learners’ *Emotional Learning Journey* when designing learning experiences. This can happen when teachers use a formula for a lesson, which takes their focus off learning impact (the 'difference' they need to make) and onto the 'stuff': tasks and outputs. But if learners are not in a conducive *Emotional Learning State*, then the content will not be able to work its magic and produce learning. |
| Thoughts on technology and pedagogy |
| 1. Planning for the *Emotional Learning Journey*.

Consider the *Emotional Learning States* of your demotivated learners. Are they disinterested, anxious, filled with self-doubt, overwhelmed by what they don't know, daunted, confused, or have they hit cognitive overload? Designing an experience that will remotivate your learners is only really possible once you know what is at the root of the issue. We must, however, 'own' these issues. There's little value in abdicating responsibility to external factors. Design a learning experience to overcome the root-cause issue. * + Clearly there isn't space here to offer suggestions for every issue, but as an example, consider 'cognitive overload'. This happens when too much information has been given without sufficient *interleaving* of application. Arguably, learners will only have confidence that they can use their stored facts and comprehension once they've applied it in a number of situations. Take learners back to 'A' and have them apply their learning before moving them on again to 'B'.
1. Pre-learning
2. Consider using a pre-learning [quiz](#Quiz), [survey](#Survey) or [Blendspace](#Blendspace) to make learners curious and stimulated about a new topic a few weeks ahead of when it begins. Ensure the quiz maker you use gives learners 'wrong-answer text' – automated feedback that helps them understand where they went wrong.
3. The survey format gives teachers the opportunity to ask questions that not only make learners curious, but also gains commitment to study. For instance: 'What do you hope to get out of this unit of study?' 'What barriers do you think others have faced?' 'How might you mitigate those barriers yourself?' etc..
4. Blendspace can be used to create a more elaborate pre-learning experience, though they are easy to produce due to the sophistication of the Blendspace user interface. A full case study can be found [here](#Blendspace). This strategy can also be used to introduce learners to new terminology, so that when they hear it for the first time in class, they already have strong visual anchors to aid recall and understanding. This can prevent them hitting cognitive overload.
5. Unmissable moments

When, in the academic year (or equivalent for other types of provision) do your learners generally lack motivation? A common answer to this question is January. The answer to this issue is very straightforward: design an unmissable, immersive learning experience for the first week of the January term. Some additional thoughts: * + Begin telling learners about the experience mid-way through the autumn term so they are continually looking forward to it.
	+ Make it experiential; visceral. Think of the phrase 'learning in the muscles'.
	+ Make it social.
	+ Consider dislocating learners: change then environment and avoid your established pedagogy approaches.
	+ Consider an interdisciplinary element – working with one or more different vocational areas.
	+ Build in kudos – public reward for endeavour.
	+ Make learners laugh.
1. Moments of Recognition

The use of *Moments of Recognition* motivate learners and create lasting memories.The *Learner of the Month Award* can be given for a variety of reasons, but is essentially a public reward for endeavour – kudos. Learners have their photograph taken with the Head of Department. This photograph, the endeavour and congratulations are then posted on the course's Instagram page. Learners take pride in showing this to their families. This is particularly effective for level 1 and 2 provision.  |

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| Note taking | [Back](#Commonlearningissues) | LRF 02 |
| **Learning issue** |
| Poor development of learners' ability to take reflective notes that aid the development of comprehension and act as memory triggers. |
| **What might cause or contribute to this issue?** |
| * While this is a generalisation, learners who are poor at note taking on entry remain poor. If you empathise with this, it could mean that your scheme of work lacks a proactive and effective approach to the development of this expert-learning skill.
* The teacher does not establish a culture of reflective note taking.
* The teacher does not continually show that they value reflective note taking.
* Tasks set do not require learners to draw on their notes.
 |
| Thoughts on technology and pedagogy |
| 1. Perfect lesson notes

Set up a group [wiki](#Wiki) to enable all learners to contribute to the taking of lesson notes. At the start of term, ask learners to volunteer for the week/lesson in which they will take and upload ‘raw’ (rough) notes to the central wiki. After each lesson, all learners must then refine the raw notes into ‘neat’ notes. Every learner must contribute to the review by reading the raw notes and comparing them to their own notes. (Weaker learners begin to learn how notes should be taken.) By reading the editing neat notes, the teacher will be clear about their impact on learners' understanding. This process will produce a ‘perfect’ set of lesson notes for use in learners' final assessments. |

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| Passivity – due to poor use of Q&A | [Back](#Commonlearningissues) | LRF 01 |
| **Learning issue** |
| The overuse of directed and undirected questioning can lead to passivity in too many learners. Low-value questioning simply checks recall. The purpose of high-value questioning is to stimulate learners to use their cognitive 'mass' of information and understanding to move their learning forward. This is done by making connections between what they know (synthesising) and presenting a coherent, considered hypothesis or explanation. For many learners, this can take at least around 10 seconds, or more, depending on the question. Questioning causes learning issues when teachers use sampling, as this often only requires a small number of learners to process an answer – leading to passivity. |
| **What might cause or contribute to this issue?** |
| * Many teachers do not build in any thinking time.
* Undirected questioning can lead to domination by over-contributors and too many learners electing to remain passive.
* Directed questioning can cause some learners to become anxious and so cloud their ability to process a meaningful answer.
* Directing questions at every learner in turn (often referred to as 'creeping death') can increase anxiety in many and is also costly in terms of time.
* The 'stakes' for mistakes are high for public contributions. This can cause some learners to simply refuse to answer, or say 'I don't know'.
 |
| Thoughts on technology and pedagogy |
| 1. Think/pair/share

Give learners a silent moment to think about the question. Ask learners to share their thoughts with a peer. Sample the sharing for group learning. * By 'overhearing' the discussion of quiet, maybe unconfident, learners, teachers can build confidence to make public contributions by letting these learners know their answer is valuable, and asking permission to have this broadcast to the group.
1. Online collaborative whiteboard (such as Jamboard) for simple questions.

This is an excellent differentiation strategy. * Share a link to your online collaborative white board.
* Ask all learners to add their answers.
* As answers are anonymous, the 'stakes' for giving a 'wrong' answer are low.
* Additionally, the teacher can move answers around the whiteboard to create meaning from different contributions.
* Ask learners to add an *Empathy tag* to any or all comments they agree with. This task makes learners read others' comments with enough depth to evaluate each contribution – a high-level thought process.
	+ Empathy tags can be added in a variety of ways depending on the technology in use. In Jamboard, the pencil tool can be used to make a tick. In Zoom, the heart stamp tool can be used.
1. Online wiki (think: online Word document) for more complex questions.

*[As above]* This is an excellent differentiation strategy. * The added benefit of the wiki is that learners can type more detailed responses to the question.
* Hesitant learners can wait to see others' contributions before adding their own.
* For an example wiki, including formatting that includes an *Empathy Tag* box, see [here](https://docs.google.com/document/d/1TDlW7e6kIro_eddY5mp8ANhERNzAH_DKuHfwC9Rg4uc/edit?usp=sharing).
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| Punctuality | [**Back**](#Commonlearningissues) | LRF 04, 07 |
| **Learning issue** |
| Too often, learners are late for lessons.  |
| **What might cause or contribute to this issue?** |
| * Learners don't value the opening of the lesson.
* The lesson opening is formulaic.
* The lesson opening is missable. This doesn't mean that the teacher doesn’t feel it is important, it means that if a learner misses the opening, they can catch it up easily.
 |
| Thoughts on technology and pedagogy |
| 1. Avoid formulaic lesson openings.
2. Continually surprise learners.
3. Make opening an experience. The giving of information can be 'caught up'; and experience can't.
4. Consider when, how and if you should overtly state your learning outcomes.

Could the opening experience enable learners to determine the outcomes?Might you use a curiosity strategy before revealing the outcomes?Might you use discovery learning, where the opening aligns learners to the learning, makes them curious, then uses an unfolding narrative to maintain engagement till the end without ever stating the outcomes?It is essential that you know how you want your learners to be different as a result of the lesson, and to have these outcomes determine your teaching strategy. It is not essential to state your outcomes if this act then prevents you from achieving your impact. 1. Learner-centred catch-up

In one lesson, a late learner did not integrate effectively into the group work that was in progress. It is suspected that this learner feared social exclusion, so excluded himself to remain in control of his situation. On reflection, the teacher felt the situation could have been better dealt with using the following approach. At an appropriate point after the arrival of a late learner, ask the group to summarise the learning so far. * + This will avoid the passivity caused if the teacher completes this task.
	+ This will also enable the teacher to check learning so far.

The learner could also have been asked to volunteer the skills they might contribute to the task, and potentially take the lead on an aspect.  |

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| Project management skills | [Back](#Commonlearningissues) | LRF 04, 05 |
| **Learning issue** |
| As part of the process of learning independence and the development of personal project management skills, it’s important that the teacher can identify early any interim milestones that are missed. Failure to use these ‘misses’ as progress indicators can result in learners handing work in late. This, in turn can: increase the likelihood of plagiarism immediately before the assignment deadline increase staff workload through the chasing of late assignmentsreduce the quality of the assignment and so increase marking timeoverly focus the period on the production of a product (the assignment) rather than its primary focus – the learning. result in learners accruing so many ‘pass’ grades that it prevents learners from achieving overall high grades – and so reduces further the motivation to work hard. |
| **What might cause or contribute to this issue?** |
| * Insufficient emphasis by the teacher on learners setting learning and project milestones.
* Insufficient monitoring of milestones by both learner and teacher.
* Insufficient overt focus on the proactive development (and valuing) of excellent project management skills.
* An inefficient system for the setting and monitoring of milestones.
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| Thoughts on technology and pedagogy |
| Some teachers regard Teams and/or Moodle as good systems for the setting and submitting of assignments. By themselves, these two systems will not help learners overcome some of the learning challenges listed. To overcome the key issues, teachers need to be able to ‘drop in’ on learners’ work at any point during the development period. Perhaps more importantly, learners need to know that teachers and see their work at any time.When learners physically submit milestone work for interim comment by the teacher, a number of potential problems occur.1. Learners may enter ‘wait mode’, where they stop working until they have received feedback from the teacher. (Naturally, this also increased teacher workload.)
2. Learners can become dependent on the teacher for feedback and so fair to sufficiently develop their own critical reflection skills.

A solution is for learners to complete the work on a [wiki](#Wiki), to which only the teacher and each learner have viewing and editing privileges. This means that no versions are ever ‘frozen’ for teacher review, there is no interim hand-in point, and so learners do not enter ‘wait mode’. At any point teachers can see the provenance of the assignment and can use successes and issues/misunderstandings as indicators for on-going lesson planning.These wikis can be set up very quickly from within Moodle. |

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| Social relationships | [**Back**](#Commonlearningissues) | LRF 05 |
| **Learning issue** |
| Symptomatic of a group with insufficiently developed social infrastructure are cliques and loners. This can reduce the effectiveness of group-learning activities and group-learning possibilities. In turn, this reduces the options for creating learning that is independent of the teacher.  |
| **What might cause or contribute to this issue?** |
| * Insufficient focus on the development of social relationships during the extended induction period.
* Allowing seating patterns to solidify too early.
* Insufficient use of group learning.
 |
| Thoughts on technology and pedagogy |
| 1. The extended induction period.

Set down a description of the ideal social relationships you would want to achieve by week 8. Write a learning outcome in every lesson that targets this outcome and allow your lesson strategy to be altered by them. 1. Taxonomy teams – building social relationships

This strategy builds the social infrastructure of the group by randomising seating patterns using a technique learners value and enjoy. More details here: [Taxonomy teams – building social relationships](#TaxonomyTeams).All group learning has the potential to positively build your group's social infrastructure. There are many such strategies in this resource. Here are a few further examples: 1. Pyramid discussions

In small groups, ask learners to discuss a topic and to build a consensus through negotiation. Merge to form progressively larger groups and repeat. A variation is to nominate a spokesperson and note-taker in each small group of four. Instead of merging groups, the spokespersons and note-takers from each group cycle to the next group and present their findings. Listening learners act as critical friends, offering challenge or additional ideas. This is repeated as required, culminating in an overall plenary discussion, or the completion of a collaborative wiki (an online document that all learners can view, edit and learn from).1. Forum learning

Learners are set a learning challenge (or enable them to set their own).They create a blog accessible to their network and broadcast the challenge they'll be working on.They add to their blog the forums that have the best potential to help with their challenge (so building their Personal Learning Network).Successive blogs capture their progress.When learners are stuck, they ask for help on their blogs and forums, then post the results and how these have helped them move forward. The final post sums up their learning. |

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| Spelling of key words | [Back](#Commonlearningissues) | LRF 01 |
| **Learning issue** |
| Teachers report that learners’ over-reliance on spell correction and predictive text is preventing them from gaining confidence to spell key vocational terms correctly.  |
| **What might cause or contribute to this issue?** |
| * Failing to write learning outcomes specifically targeting the development of vocational vocabulary.
 |
| Thoughts on technology and pedagogy |
| 1. Personal dictionaries

The use of individual personal dictionaries that contain a unique collection of words with which learners lack confidence. If these were electronic, they could be hyperlinked to definitions, to the contexts in which they are used, and also to images – which would then function as memory anchors and recall triggers. *Note This practice was discussed with one of the college’s maths teachers.* |

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| Study skills | [Back](#Commonlearningissues) | LRF 02, 04 |
| **Learning issue** |
| * Poor development of learners' study skills.
* Many people refer to study skills as 'soft' skills, but this term is wholly inappropriate. The development of these 'hard' skills should be the primary aim of further education. The vocational subject is the vehicle we use to teach them, by capturing learners' current interests. These interests may change over time, but the central expert learning skills will remain.
* Too often, teachers ignore in both their scheme of work and individual lesson plans the proactivity needed to develop these skills. This is ironic, as by actively developing these skills, learners find it easier to learn, so reducing teachers' [*preventable contact*](#Preventablecontact) time.
 |
| **What might cause or contribute to this issue?** |
| * Failure to be proactive in their development through the design of the scheme of work, lesson plans, assignments and tasks.
* Specifically, failure to write a learning outcome in every lesson on the development of one or more of these skills.
 |
| Thoughts on technology and pedagogy |
| 1. Database of Expert Learning Traits

For a growing list of these specific skills, see this [wiki of expert learning traits](https://ccqi.org.uk/wiki/induction-expert-learning). 1. Writing learning outcomes

Try writing a learning outcome focused on one of these expert learning traits and allow it to modify your planned learning experience and teaching strategy. 1. Induction *Quality Standard*

Discuss with your team the list of traits you would ideally like all learners to have by the end of the extended induction period (week 8); the above wiki might be a useful starting point. How might you have to redesign your extended induction experience in order to achieve these? What impact do you think this could have on the rest of the programme of study? |

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| Transition point management | [Back](#Commonlearningissues) | LRF 01 |
| **Learning issue** |
| * Learners are not able to concentrate on the task they have been set.
* Learners are not able to solve problems.
* Learners do not develop resilience and learning independence.
 |
| **What might cause or contribute to this issue?** |
| Teachers do not have a clear understanding of the *Transition Point* – the point in a lesson when they have completed their exposition (instructions for a task) and asked the learners to start work. At this point, the teacher should stop talking and give learners space to think and work. * Some teachers continually speak, for instance, repeating instructions; telling 'useful' anecdotes; etc.
* Some teachers immediately begin touring the room and helping learners who say they are stuck.

Initially, the only checking should be that individuals understand the task. Intervening too early when a learner hits the edge of their abilities can prevent them from developing problem-solving skills, the ability to make their own connections, and the resilience needed to overcome challenges. * When assisting individuals, some teachers continue to speak at full volume, so distracting others and stealing the opportunity for them to solve the challenge themselves.
 |
| Thoughts on technology and pedagogy |
| 1. Managing the *Transition Point*

Complete all instructions before the *Transition Point* then stop talking. Observe learners. 'Furrowed brows' often means that significant learning is about to take place. Before intervening, the teacher should clarify in their mind the pedagogical outcome they want. Simply giving learners the answer is rarely the right strategy.  |

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| Vocabulary (1) – personal expression | [Back](#Commonlearningissues) | LRF 01 |
| **Learning issue** |
| * Poor use of vocabulary for personal expression.
* In one lesson, some learners struggled to find the words they needed to express themselves.
* Learners were asked to mine their personal experience and interests for suitable words and context for the writing exercise.
* In the plenary, only two of the 10 learners’ thoughts were sampled.
* These learners’ thoughts were not captured by other learners and did not appear to impact on those who were struggling.
 |
| **What might cause or contribute to this issue?** |
| * The teacher did not consider the potential for whole-group learning from individual contributions.
* Q&A sampling only requires sampled learners to process and answer to a question.
 |
| Thoughts on technology and pedagogy |
| 1. [Wikis](#Wiki)

Instead of using Q&A sampling for the plenary, consider asking all learners to type one or more of their adjectives into a ‘vocabulary [wiki](#Wiki)’.All learners would then be able to see every other learner’s ideas. This would:build confidence where learners have used the same or similar wordsbuild vocabulary, enable learners to appreciate and use synonyms (an extension task for the more experienced?) give less-experienced learners inspiration for their own writing exercise. The wiki would create group learning from individual contributions. As the wiki would suddenly provide learners with, say, 20 new adjectives to draw on, it would be interesting to see how a further 10 minutes of individual work could take learners’ work forward. Note. This use of wikis has not been taken from the practice observed as part of this research project. |

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| Vocabulary (2) - Terminology | [**Back**](#Commonlearningissues) | LRF 05 |
| **Learning issue** |
| * Insufficient development of learners' vocational vocabulary.
* If learners cannot sound like experts in their field – to form evidence-based opinions rich in vocational terminology – then they are unlikely to be able to write like experts in formal assessments. This is likely to result in lower grades.
 |
| **What might cause or contribute to this issue?** |
| * A lack of, or incoherent approach to the development of learners' individual vocabulary. (Wall posters containing key terms are good, but they are a crutch rather than a considered development strategy for individuals.)
 |
| Thoughts on technology and pedagogy |
| 1. Personal dictionary - physical

In an ESOL lesson, all learners used a physical personal dictionary to record and practise their target words. As all of the words are in one place, rather than scattered throughout their general lesson notes, they can refer to it with ease and practise regularly. 1. Personal dictionary – mobile device

By using the above strategy on a mobile device, learners can hyperlink their key terms to resources that will make the words come alive. These links may be to external videos, images and definitions, as well as to their own online [notes](#Notetaking) and [assignments](#Lateassignments). These links (and the creation of these links) then act as recall triggers, speeding the absorption of the terms into learners' vocabulary.  |

# Glossary [Back](#Commonlearningissues)

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| **Technology** | **How to use it** |
| Blendspace | DescribeLink to case study |
| Blooket | Mobile phone game |
| Collaborative whiteboard |  |
| Joinmyquiz.com |  |
| Learning network |  |
| Mathletics |  |
| Plickers |  |
| Preventable contact |  |
| Quiz | *Assessment Games** Use well-known computer-based assessment games such as: Blockbusters, Millionaire, University Challenge, Kahoot, etc. to test learners’ knowledge while having fun.
* With the help of a handout, ask learners to capture all questions to which they didn’t know the answer.
* Ask learners to write a short action note to resolve each of the problem areas.
 |
| Socrative |  |
| Survey |  |
| Wiki | A wiki is a shared ‘Word-style’ document online that all learners can type into at the same time. Many different styles of wikis are available from the comprehensive and secure to the simple and quick. A ‘comprehensive’ wiki requires each user to click ‘edit’ before typing their contribution, followed by clicking a ‘save’ buttons. These wikis also typically have comprehensive edit histories that show who made what change and when – all of which can be undone by the wiki owner. An example of this type of wiki is Wikipedia. The drawback for use in a classroom is that multiple users cannot contributed synchronously. If two people saved at the same time, it is likely that one person’s contribution would be overwritten and lost. A ‘simple’ wiki does not have a save button. A typical example is a Google Doc (these are also free). Every learner would be able to type a response synchronously, and all users are able to see these contributions being added in real time. However, the edit histories are poor and there isn’t a usable ‘undo’. For this reason, good practice is to set up the wiki with a series of independent tables/rows, and ask each learner to add their initials to be beginning of each row. By doing this, learners ‘claim’ their row, which ensures that no other learner will type over their work. Google Doc wikis can be created as a Word document then uploaded to Google Docs. Once uploaded, click on the ‘share’ button and change the permissions to ‘everyone can edit’. The link to the Doc can then be copied and pasted into any shared space or Moodle page. Microsoft Teams has a similar wiki. OneNote - describe |

## Example documents

Jamboard

Wiki

Contextualising post-16 Maths: a toolkit