11

CREATING TEACHING RESOURCES

In this chapter, we will explore:

- **types of teaching resources;**
- **how to use resources effectively.**

INTRODUCTION

Creating teaching materials is one of the most time-consuming yet ultimately satisfying activities a teacher can undertake. If you want to create a positive and active learning environment, then it is essential that you guide your students by providing high-quality teaching resources. In your training, you will often hear phrases such as 'discovery learning', 'facilitation' and 'experiential learning'; these are all teaching techniques which are designed to allow students to find things out for themselves. Having high-quality teaching resources can be a great aid to the implementation of these techniques and can save you a lot of time and effort in your lessons.

Vygotsky talked about the need to traverse the zone of proximal development (ZPD) when learning. This refers to *the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance, or in collaboration with more capable peers* (Vygotsky, 1978: 86). In teaching, this is all about making sure that you help students 'fill in the gaps' in their knowledge. The key word here is 'help'; telling students the answers, means that they get the question right, helping them get to the answer means that they gain the skills needed to work out a range of answers themselves without resorting to asking you. In this chapter, we will outline how high-quality teaching materials can facilitate this process and how it is important not to become reliant on just one group of resources.

Figure 11.1 Scaffold

Before deciding on the materials that we are going to use in our lessons there are a few questions that we need to ask ourselves. The answers to these questions will help you decide what materials are best suited for you.

- **Original or pre-prepared?** (Also known as the dangers of the internet bearing gifts.) There are a LOT of pre-prepared materials available. Some are carefully crafted and have a price tag to match, others are given away free via numerous sources on the internet. As with everything available online, the quality is variable. There are many gems that can be used, with little modification, in your own teaching; however, it always pays to be wary of anything that you did not make yourself. Always ask whether it meets your learners' needs and always check the accuracy of the material rather than trusting the answers. A good way of getting pre-prepared material is to join subject-specific groups on the internet. The *Times Educational Supplement* (**https://www.tes.com/teaching-resources**) is a rich source of material, while helpful and supportive groups, such as #teamenglish on Twitter, have sprung up on social media. Just remember, getting pre-prepared materials can help your workload enormously if you get it right, but if you use the wrong materials, there can be long-term implications.
- **ICT or not?** (And the importance of Plan B.) There is one irrefutable law in teaching and that is if something can go wrong with technology, it will – and normally at the worst possible moment. While this is rather annoying, it need not be disastrous if you plan in advance. A good idea is to make sure that you include a Plan B on your lesson plan wherever you have indicated that you are going to use new technology. Having spare handouts, flipchart paper or ensuring that the lesson is flexible enough to move the non-ICT part of the session to the start, giving you time to solve the problem while students are working are all good ways of dealing with the panic caused by the failure of technology. Technology failure can be even more of a problem if you are teaching remotely. Teams, Zoom, Skype, BigBlueButton are all excellent systems, but wifi failure, microphone problems or computer crashes can still occur so Plan B is

even more essential. Emailing students details of the lesson and any exercises before the start of the session can allow them to carry on learning if you suffer equipment failure; if your students are mature enough, tasking someone to lead the session while you fix the problem might be another option.

ACTIVITY

You are teaching a revision lesson and you have prepared a detailed Microsoft PowerPoint presentation outlining the key points of the subject. Unfortunately, two minutes before the start of the lesson, you realise that the projector is broken and cannot be fixed in time for the session.

Think about what you would do in this situation.

- **When should materials be distributed?** There is no 'right' answer to this question as it depends on a range of different factors. The topic is one of those factors (so if you are teaching maths you might withhold the answers until students have tried the questions), but the most important factor remains the group that you are teaching. With some groups, handing out the materials at the end of the session encourages them to focus on what you are saying rather than assuming that all the answers are in the handout that you have provided for them. Giving material out, either at the start of the class or before the lesson begins can encourage students to learn about the topic before you start to teach which means that they can engage in discussion from the start of the session. One example of this is setting up a 'flipped classroom'. This is where you give students the information prior to the class and then encourage them to use this information in the classroom to understand the topic. This means students are able to construct meaning from the information rather than just being passive receivers of information (King, 1993).

TYPES OF TEACHING RESOURCES

There is a much-quoted maxim in literature that there are only seven basic plots and all stories fall into one of these categories. Booker (2004) classified this theory by suggesting seven titles that could be used for these plots. These are:

- overcoming the monster (for example, *Jaws* is about defeating a killer shark);
- rags to riches (an example might be *Cinderella* or *My Fair Lady*);
- the quest (in the *Lord of the Rings* there is a very clear end goal);
- voyage and return (*The Wizard of Oz* involves a journey to a magical world and the return);
- comedy (there are numerous examples but *A Midsummer Night's Dream* would fall into this category);

- tragedy (such as *Macbeth* or *Romeo and Juliet*);
- rebirth (again, a historical example might be *A Christmas Carol*).

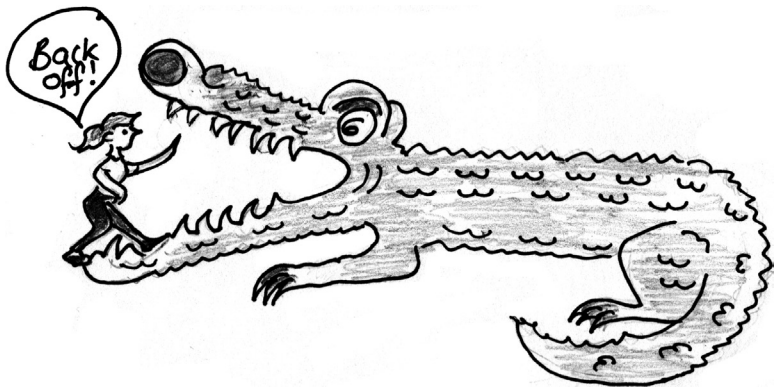

Figure 11.2 Overcoming the monster

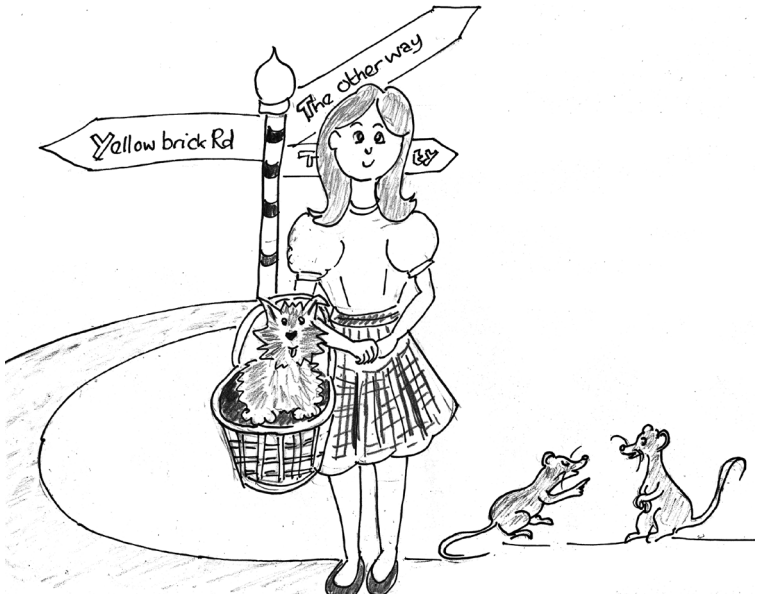

Figure 11.3 Journey and return

Authors and directors have tended to have a favourite category and, although they might sometimes deviate from this, often return to it as it appears to provide a psychological safety net for them.

This approach can also be applied to the production of teaching materials where there are seven broad categories of resources:

- artefacts;
- games;
- manipulable kinaesthetics;
- practical experiments;
- problem-solving tasks;
- peers (group tasks and challenges);
- adaptable ICT tools.

There is a tendency in teaching to use the same types of resources for each lesson with some teachers producing lesson plans that have a focus on handouts, others using presentation software to the exclusion of all other forms of communication, while others might rely on kinaesthetic resources. As with plots, it is possible to categorise all materials into seven basic categories, each of which has its own advantages and disadvantages. This does not mean that every material in each category is the same; it refers more to the fact that the basic ingredients are the same.

REFLECTION

Write down all the materials you have used so far in your teaching career. Do you seem to have a preference for certain types of resources and are there any obvious gaps in your resources (so, for example, do you never use ICT resources or alternatively have you underused the standard textbook)?

We will now look at each of the seven categories in turn. At the end of each section there will be a chance for you to reflect on the materials discussed and how you can adapt them to ensure that they 'stay fresh'.

ARTEFACTS

The dictionary definition of an 'artefact' refers to something made or given shape by 'man'. In a teaching context, it is simply an alternative resource for getting across information. The artefact is not simply a teaching resource, it is a representation of a topic; if someone looked at the artefact they should have some idea about what you are trying to 'say' with it. So, for example, an object recreating hieroglyphics can be used in a lesson to help students learn about language but also life in ancient Egypt, as it would depict various objects common in the culture without you having to 'spell it out'.

Artefacts can be used in two ways. You can give students an artefact and ask them to use it to create something from it, or discuss how it might be used. These approaches encourage a cognitive or a social learning approach whereby students are thinking for themselves (the cognitive part) and

working with others to decipher the learning (social learning). We will look at these theories in more detail in Chapter 12. This works well as students are encouraged to think for themselves and also to realise that there are often multiple interpretations of meaning rather than a narrow understanding which sometimes occurs when more teacher-centred materials are used.

Asking students to create an artefact works well with some groups. It can be a challenging activity but for more able (and creative) students it means that you can get them to think about a topic in far more depth than you normally would as they have to think beyond just a descriptive answer and instead use skills higher up Bloom's taxonomy, which we discussed in Chapter 10. Asking students to present their results can also be a good addition to the class as it will encourage them to use communication skills as well as the cognitive skills the artefact will give them.

REFLECTION

Think about the role that you have taken as a teacher in your last few lessons. Have you been the 'sage on the stage or the guide on the side'? (King, 1993) If the former, consider how you might change that role and give students the freedom to discover things for themselves.

Consider how the use of an artefact might facilitate this process.

GAMES

Using games as a part of your teaching materials can have the advantage of engaging the competitive instinct of students. This can encourage a sense of fun in the class which, when channelled in the right direction, means that students enjoy the learning. Of course, with some classes, the use of games can be a challenge. Some learners might fail to see beyond the fact that you are 'playing a game rather than learning' and see it as a waste of time, so if possible tell your students *why* they are playing the game; give them a sense of purpose and this will help them engage in it.

You can use any game as the basis of an idea – indeed the only limit is your imagination. Some popular examples are based on bingo and snakes and ladders while others are ICT-based and use well-known television programmes like *The Chase* or *Eggheads* as templates. Games are particularly good at encouraging a behaviourist approach (this refers to the reinforcement of concepts or ideas and is discussed in more detail in Chapter 13) as well as a social learning approach (providing opportunities for students to learn from each other).

As with all materials, there are problems with using this approach. Finding games that engage the complete class can be challenging and, as many games are team-based, some students are able to 'hide' during periods when they are being used. These activities also need to be kept under control as it is very easy for students to become overly stimulated leading to noise and disruption.

As with many teaching materials, the initial time spent making the resources can be extensive but, when they work well, games can be a powerful tool.

REFLECTION

The time taken to produce games can be offputting to teachers. One way of avoiding this is to produce one that is transferrable to many different classes. So, the basics stay the same (for example, the board used, the ICT framework put in place) but the specifics, perhaps the questions or the diagrams, change according to the group. Think about games that you could use in your teaching that are transferrable across classes.

MANIPULABLE KINAESTHETICS

This is a simple example of a kinaesthetic activity which involves giving students something they can manually manipulate – for example, a set of cards to sort into a specific order. This could be based on a logical order to provide structure or maybe a ranking activity which might generate discussion. As with the artefact, this has the advantage of giving students control of the class, allowing them to discover things for themselves rather than you taking the lead role all the time.

Manipulable kinaesthetics work best when used to reinforce an activity or when introducing a new concept. Using these materials as reinforcement means that you can see if students understand a topic and something as simple as a card-sorting exercise means that you can run a plenary session without always having to use standard question and answer techniques.

Using manipulable kinaestethics can be a good way of engaging learners with a new topic and also to assess their previous knowledge. This ensures that a cognitivist approach can be used with students thinking through the topic rather than just learning the answers by rote.

ACTIVITY

Manipulable kinaesthetics can be a valuable form of materials but it is easy to fall into a pattern of using the same resources again and again. Think about examples of the type of materials you have used before and then think about new variations which would help your teaching.

PRACTICAL EXPERIMENTS

When we think about practical experiments, it is tempting just to picture science experiments, but the reality is that they can be used in a variety of ways and provide good opportunities for learners to construct and test out hypotheses in a controlled environment. This engages both cognitive and social learning theory to encourage students to take control of their learning.

An example of a practical experiment would be asking students 'can you form ...?', and then giving them the name of a shape and some modelling clay. Hence students are encouraged to create (say) a square or circle. The advantage of this sort of resource is it is relatively easy to differentiate by ability. Stronger students can be given more challenging hypotheses (so they will need to create a pyramid

or a sphere) while those students who had not yet grasped the finer points of the lesson would be given more basic tasks.

Practical experiments often work well in bonding groups together and so might be used at the start of the course. Getting students to work as a team means that they can get to know each other and it can be a useful way of breaking down barriers that exist between cliques in classes.

REFLECTION

Ensuring differentiation is a good way of making sure that you keep all students engaged in the learning but it does have some drawbacks. When done in an obvious manner it can create divisions and resentment in the classroom. Some students may perceive themselves as inferior whilst others may wonder why they are doing more difficult tasks. Think of ways in which you can differentiate your teaching materials without making it obvious to students what you are doing.

PROBLEM-SOLVING TASKS

Problem-solving tasks are linked to practical experimentation but cover a much wider range of materials. The idea behind using this category is to get students to think creatively and apply their thinking. A typical example of a problem-solving task would be a case study or scenario that generates discussion and alternative viewpoints.

The difference between this category and the practical experimentation category is that there is no hypothesis present with problem-solving tasks; this encourages greater creativity and also encourages students to apply theory learnt in lessons to practical examples. This transfer of learning might happen in a social learning environment which has the added benefit of encouraging a group approach.

When using problem-solving activities, it is important to ensure that students have guidelines to follow (or support when completing the tasks), but when handled skilfully a teacher can use this approach to ensure students are able to explore concepts for themselves without being told the answer.

REFLECTION

When using problem-solving materials, a key point is that the teacher should not tell the students the answer unless all else has failed. This can be a challenge when you see students heading in the wrong direction when trying to solve a problem.

Think of ways in which you would guide students towards the answer. Consider the wording of feedback and also the way in which you balance encouragement with ensuring that they successfully find a resolution.

Figure 11.4 Balloon

PEERS (GROUP CHALLENGES)

This may be an opportunity to make use of peer teaching, discussion and debate. You can base this on thought-provoking activities or information that needs to be analysed and broken down. It may also be an opportunity for students to evaluate something and take into account different perspectives.

One classic example is a balloon debate. This involves a group looking at a particular problem and bringing their own views and approaches to the task. This helps students realise that there are different perspectives when looking at tasks, a key skill to learn when fully evaluating a problem.

Alternative peer group challenges focus on practical tasks. Examples of these are the egg drop experiment (where you provide an egg and various materials and encourage students to find creative ways of dropping an egg without breaking it) and the newspaper tower (whereby groups are given plentiful supplies of newspaper and have to build as tall a tower as possible). Again, the focus here is on

social learning with students coming together to learn from each other and see things from alternative points of view.

REFLECTION

Practical experiments can bond groups together. Think of ways in which you can encourage students to work together rather than as individuals. This can create a group ethos and help prevent cliques. Reflect on ways in which you can do this within your groups.

ADAPTABLE ICT TOOLS

The use of ICT materials is such an everyday occurrence for most teachers that it seems strange to include it as part of the list of materials, but the reality is that we tend to take ICT for granted and there is an inclination to do the same thing each lesson. Microsoft PowerPoint is a valuable tool but there are other useful tools such as Prezi or Adobe Spark. Using alternatives can give a fresh look to your teaching as well as encouraging you to try something new.

With the constant evolution of new technology, trying something new on a regular basis – for example, Padlett and other software – is an excellent way of checking on knowledge in an interactive manner.

ACTIVITY

To avoid reusing the same ICT tools, a good activity to try is to select an area that you are teaching for a half term (so approximately six weeks) and then use a different ICT tool each week. It doesn't always have to be to do with presenting material. It might be connected to the assessment or a research tool, but it does mean that you learn a different ICT application each week.

Try it and see if it works for you.

THINGS TO THINK ABOUT

This chapter is intended to help you to think about the teaching materials that you use and to stop you falling into the trap of using the same type of materials again and again. So, think about the following. Do you tend to use the same category of materials for each of your lessons? If yes, why is this? Is it possible for you to try different materials rather than relying on the same categories? Are there any new skills you need to develop before using any of the materials?

IN A NUTSHELL

This resource can be photocopied and used as a revision tool or a prompt for discussion with your peers. It is designed to help you think about one particular theory associated with the design and use of resources.

USING RESOURCES TO FLIP THE CLASSROOM

The idea of a flipped classroom can be a daunting one for new teachers but the benefits can be significant when it runs smoothly.

The main idea is that students work on the basics of the topic before they attend the class and this means that they can focus on mastery of the concepts during the lesson.

Examples of this might be giving students reading or exercises to complete before the start of the lesson and then testing students when they come to the lesson to see what areas they are struggling with.

There are variations to this approach with groupwork suggested by some writers as a way of helping students learn in a social learning scenario prior to the teacher's input. Alternatively, online courses have been used by some tutors to engage with learners prior to the start of the session.

PUTTING IT INTO PRACTICE

Think of a topic that you will be teaching in the next few weeks.

Identify one part of the topic that you could teach by 'flipping' the learning and give students a task to encourage them to learn about it.

Using any ICT application set up a blog where students can contribute their thoughts about the topic.

Use the issues raised on the blog to inform your lesson and see if students are more engaged and performing better.

SUGGESTIONS FOR FURTHER READING

Ralston Ogles, M and Bogan, B (2014) *Flipping the Classroom: Unconventional Guide to Constructing the Classroom of the Future*. Murfreesboro, TN: UCM.

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