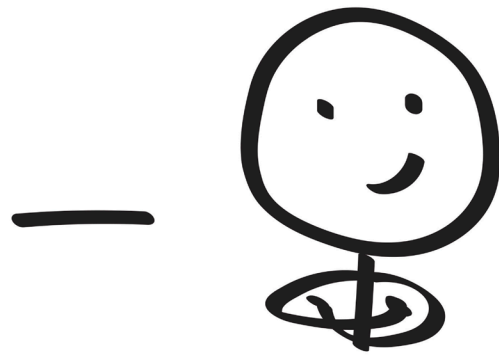


# CRITICAL THINKING



problem



thinking



solution

## Critical thinking and problem-solving

HOW CAN TEACHERS HELP LEARNERS BECOME CRITICAL THINKERS AND PROBLEM SOLVERS WHILE ENSURING THAT THEY ACQUIRE THE NECESSARY KNOWLEDGE FOR EACH SUBJECT? **AMY LIGHTFOOT** SHARES TOP STRATEGIES.

References to the need for 21st century skills are now commonplace among educators around the world. It is widely accepted that there is an ongoing need for teaching to extend its focus beyond developing content knowledge and including a more explicit emphasis on skills that students will use in later life – for employment, for higher education and more generally as they navigate through our fast-changing world. In particular, employers regularly highlight their requirement for employees who can think critically to address complex problems.

Similarly, when we consider the problems that we are increasingly facing at the community, society and global levels – issues around the environment, economy and

social structures – we need young people to be able to innovate and find solutions which may not be immediately obvious, and which are not based on a pre-established formula or rule book that they can memorise while at school. They need to be able to cope with solving ‘non-routine’ problems. As the futurist and businessman Alvin Toffler famously said, ‘the illiterate of the 21st Century are not those that cannot read or write, but those that cannot learn, unlearn and relearn.’

As teachers, these requirements may seem daunting. Not only do we have responsibility for ensuring that our learners develop literacy, numeracy and content knowledge, but also that they have the ‘softer’ skills required for the workplace and to help them achieve

their ambitions. It’s fair to argue that these ‘softer’ skills are often much harder to teach – how can we help our learners to become critical thinkers and problem solvers while at the same time ensuring they have the basic knowledge they need in each subject?

It’s not easy, but there are a number of strategies that we can employ – including careful consideration of how we measure progress in these skills.

### Asking questions

There’s an often-quoted maxim that there’s no such thing as a bad question. However, I would like to argue that in the context of teaching and learning, there is such a thing as better and worse questions. Let’s start with the ones that are less good,



particularly in the context of developing critical thinking skills. These are sometimes called ‘display questions’ and are defined as questions which serve little purpose other than to encourage the learners to repeat a point already made, or to check understanding when the teacher already knows what the answer should or is going to be (as do probably many of the other students).

Display questions have their place, but in some cases, teachers will use only this form of questions to quickly check understanding, and will neglect the arguably more important category: referential questions. These questions seek information and ideas from learners which the teacher doesn’t already know – they often begin with a *wh-* word and by their nature encourage the learners to think more deeply and carefully about the topic they are working on. *What would happen if ...? Why do you think we ...? How can this be used to ...?* In order to answer these questions, the learners would typically need to *analyse, interpret* and *assimilate* the information in front of them. These are exactly the type of skills that they will need to use in the real world.

Importantly, it’s not only the teacher who needs to be thinking about the type of questions that she or he is asking their learners. Learners also need to be guided and supported to ask similar questions to each other and of themselves.

#### Encouraging decision-making

Closely linked to asking questions is supporting students to develop their decision-making skills. This can be done from a very early age, giving students increasing levels of autonomy over their learning, with choices about what they will focus on in the classroom and beyond. A recent video which went viral on social media showed a teacher who greeted her Grade 1 students at the classroom door each day. As they filed into the room, each had to decide how she should greet them, indicating their decision

by pointing to a picture on a poster: with a high five, a hug or a dance. To decide, they had to assess how they were feeling at that moment, make a decision and then communicate it in the agreed way. A very simple idea, but a good example of how we can help to develop decision-making skills in creative ways – and from a very early age.

For older students, decision-making can involve asking them to articulate their critical thinking processes as well as the outcome, by working through the pros and cons of different solutions to a problem and assessing the risks of each one. Asking students to work in pairs or groups can facilitate this, as they challenge each other to consider other options and their potential outcomes.

#### Considering different perspectives

Another important aspect of this skill area is the ability to consider others’ perspectives and take these into account both when critically analysing a problem or issue, and when considering solutions. How would other people assess this? How will the proposed solutions affect them? This overlaps with another important life skill: empathy.

To facilitate this, teachers can set up activities where students have to consider an issue from the perspective of different types of people. Which perspectives to consider can be determined by the students who first analyse who the various stakeholders are in any given situation. Groups can then be assigned, with different stakeholders to think about, reporting back to the rest of the class and looking for similarities and differences among the perspectives. For tasks where there is a defined problem to solve, this information can help to make the decision about which solution to choose.

#### Measuring progress

Unlike subject knowledge which can be assessed by exploring what students know, assessing skills like critical thinking and problem-solving need to be measured by

looking at what students can do. This area of assessment is in its early stages, but there is some excellent work being done to articulate what exactly we should expect to be able to track. One example of this is the *SkillsBuilder* framework – this breaks down skills into steps for which both the teacher and students themselves can provide evidence of achievement.

Problem-solving is broken down into steps including being able to describe a problem; describing pros and cons for solutions; explaining cause and effect; using hypotheses to assess the value of different solutions and evaluating a solution’s success. This framework recommends that teachers build in activities which ‘focus tightly’ on specific steps – helping to simplify what could otherwise be a daunting task for teachers while at the same time providing specific measurable goals for learners.

These are just a few ideas for how skills for critical thinking and problem solving can be developed in the classroom. The earlier we start to do this in a child’s educational journey, the more likely he or she is to be able to apply these fundamental skills when out in the real world, including in future employment. **T**

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#### REFERENCES

*For more information about the SkillsBuilder framework, take a look at their website – an excellent (and free!) resource for teachers, schools and employers around the world. <https://www.skillsbuilder.org>*

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