# EXPLICIT TEACHING

## WHY IT MATTERS

The evidence shows that students who experience explicit teaching practices perform better than students who do not. Explicit teaching can benefit all students (that is, across all year groups and ability levels) when learning new or complex concepts and skills. Explicit teaching reduces the cognitive burden of learning new and complex concepts and skills, and helps students develop deep understanding.

## WHAT THE EVIDENCE SAYS

When this paper refers to explicit teaching, it refers to the set of teaching practices that Hattie summarises:

> *"The teacher decides the learning intentions and success criteria, makes them transparent to students, demonstrates them by modelling. Evaluates if they understand what they've been told checking for understanding, and retelling them what they've been told by tying it all together with closure." Hattie, 2009*

The evidence base for the effectiveness of explicit teaching is extensive and longstanding. Hattie's (2009) synthesis of four meta-analyses found the average effect size of explicit teaching on student achievement is 0.59.

### *Students in all year groups and of all ability levels can benefit from explicit teaching*

Explicit teaching can benefit students across all year groups and ability levels when learning new or complex concepts and skills. Przychodzin et al conducted a meta-analysis on explicit or direct teaching of mathematics and found positive results in 11 of 12 studies across a variety of year groups and student ability levels, not just for students who have special needs or mathematics difficulties. In addition, there is evidence that in the early stages of learning a new topic or skill, gifted learners benefit from explicit teaching practices, such as worked examples, guided support, and well-sequenced learning tasks.

### *Explicit teaching recognises that learning is a cumulative and systematic process*

Explicit teaching acknowledges that student understanding and mastery of concepts and skills builds on their previous understanding of related concepts and skills. As such, explicit teaching requires a systematic and sequenced approach to what is being taught. For example, evidence shows the advantage of using phonics in teaching reading to children in preschool and the early primary school years. However, it is not just important that phonics is taught, and that it is taught explicitly, but also when it is taught.

### *Explicit teaching supports students towards independent learning*

Explicit teaching draws on research about how students effectively take in and retain information, and how they then use that knowledge and understanding to solve problems, pose questions, and synthesise and justify their reasoning. When teaching new or complex concepts and skills, explicit teacher guidance accompanied by practice and feedback can reduce cognitive burden so that students have enough working memory space to learn new content and build connections to prior learning. For example, a recent Australian study of students in Years 9-11, found that using explicit teaching practices in mathematics during the early stages of learning allowed students to build up the skills and knowledge they needed to then be successful in subsequent guided inquiry-based learning.

A challenging aspect of explicit teaching is finding the right balance between teacher guidance and independent practice. McKinsey & Company (2017) analysed PISA 2015 data and found that while high levels of 'inquiry-based' teaching with little provision of 'teacher-directed' teaching practices resulted in low student science scores, students had the highest achievement when they experienced teacher-directed teaching in most or almost all lessons, with inquiry-based teaching practices in some lessons. This finding may reflect that, as student understanding or mastery of a skill or concept increases, there is decreasing benefit from teacher provided guidance and support.

The McKinsey & Company (2017) findings may also reflect that once teachers have explained, modelled and guided student practice, students benefit from opportunities to independently practise concepts or skills. For example, a recent US study found that kindergarten students with mathematical difficulties had higher achievement when

given three individual practice opportunities for every explicit teacher demonstration of mathematical content compared with those given fewer individual practice opportunities (Doabler et al. 2019).

The use of formative assessments is critical in explicit teaching. Formative assessment allows teachers to accurately determine students' level of understanding and decide how much guidance is required. Without formative assessments, teachers may assume that students need much more or much less support and guidance than they actually do.

### *Asking questions is important*

The literature supports the use of questioning to support comprehension, problem solving, reasoning, creativity and learning. Asking questions also provides teachers with a way to identify what students already understand so that teachers can build connections to new learning, or revise concepts or skills and adjust their level of guidance to meet student needs. Some forms of questions are more effective than others. Craig (2013) distinguishes between shallow questions that verify existing knowledge, and do not take much thought, and deep questions, which ask learners to build connections between ideas. The What Works Clearinghouse (2007) reports strong evidence for teachers encouraging students to both ask and answer deep-level questions.

But what should explicit teaching and effective teaching look like? How will you know if you've observed it? There is no one answer, and no one way of looking at this. Teaching is complex: what works in one settting may not work in another; what is effective with one student may not be effective for all students. As Dylan Wiliam says, "Everything works somewhere, and nothing works everywhere".

Good teachers have "adaptive expertise". They are educators who: are responsive to the needs of students; actively seek new knowledge and understanding; think evaluatively and check impact; welcome different perspectives: and act transformatively. (Le Fevre, Timperley).

So let's take some of the key concepts from "explicit teaching" and see what other recognised experts say.

The teacher decides the learning intentions and success criteria, makes them transparent to students, demonstrates them by modelling

What do our educational experts say? We'll look at two widely recognised experts: John Hattie & Dylan Wiliam

## Making Learning Visible Starts with Teacher Clarity – Hattie, Fisher & Frey

A starting place for lesson planning is the learning intention, or the statement of what students are expected to learn from the lesson. The learning intention for a given lesson, and the ability to communicate it clearly to students such that they can use it to gauge their progress, is foundational. Stated simply, when one knows what the target is, there is an increased likelihood that the target will be achieved. Knowing one's learning destination is crucial.

If learning intentions serve as one bookend for learning, the other book- end consists of the criteria used to measure success. How do you know whether your students are successful at learning what you wanted them to? How do they know whether they're successful? How can they know whether or not they've met the intended learning intentions, or whether they're making progress toward doing so? With success criteria. Success criteria are statements that describe what success looks like when the learning goal is reached. They are specific, concrete, and measurable.

Effective teachers know where their students are in the learning cycle and design their instruction to foster learning. Learning intentions can include a combination of surface, deep, and/or transfer learning, with the exact combination dependent on what kinds of choices a teacher makes based on where her learners are and where she wants them to go. A teacher who fails to identify where her students are in their mathematical learning is likely to undershoot or overshoot expectations for them.

Different strategies support learning at each phase in this cycle. The first three elements of the learning cycle will incorporate surface and deep learning, while the active experimentation phase is about transfer. The daily learning intentions that are communicated by the teacher are an end product of her careful planning, as she determines the type of expected learning (surface, deep, or transfer) and how to implement instruction for that type of learning. The success criteria provide a means for students and the teacher to gauge progress toward learning, thereby making learning visible.

Learning intentions are different from syllabus outcomes. Syllabus outcomes are tough for yet-to-be- educated students to understand, and they are too broad for students to master in a single lesson. Effective teachers start with an outcome, break the learning that the outcome requires into lesson-sized chunks, and then phrase these chunks so that students will be able to understand them. Following are some examples of learning intentions that we have seen in mathematics classrooms:

- Know that a ten is really just a group of ten ones.
- Recognize that area is a specific kind of array (built from unit squares) that measures two-dimensional space, and understand why we find area by multiplying the length times the width of a rectangle.
- Learn to add two fractions with like denominators by modelling on a number line.

Learning intentions are themselves evidence of a scaffolded process that unfolds over many lessons. A key to planning a lesson is in knowing where your students currently are in their learning. It would be tough to teach students that a ten is really just a group of ten ones if they don't understand the value of one, just as it would be difficult for students to determine growth patterns in functions if they don't really understand what functions are or why they're useful.

However, learning intentions can (and often should) have an inherent recursive element in that they build connections between previously learned content and new knowledge. Savvy teachers embed previous content in the new content. The teacher is not only creating a need and a purpose for students to hone learned skills, but also providing opportunities for students to experience those "aha" moments that relate concepts to a previous lesson's content. In this way, students are continually connecting and deepening their knowledge.

Reference: Visible Learning for Mathematics Grades K-12, Hattie, Fisher & Frey, Corwin

## DYLAN WILIAM: EMBEDDING FOMATIVE ASSESSMENT

Low achievement is often the result of students failing to understand what teachers require of them. Many teachers address this issue by posting the state standard or learning objective in a prominent place at the start of the lesson, but such an approach is rarely successful because the standards are not written in student- friendly language. As teachers, we sometimes confuse learning objectives with learning contexts. Once we teach students something, we are not interested in students replicating exactly what we have taught them, we are interested in students applying what we have taught them. This example is clearest in mathematics. Once we have taught students how to add 3 + 5, we don't want our students to show us that they can add 3 + 5, rather we want them to show us that they have learned the skill of addition and can apply this to a new pair of numbers.

| Confused learning intention | Clarified learning intention | Context of learning |
|---|---|---|
| To write instructions on how to change a bicycle tire | To be able to write clear instructions | Changing a bicycle tire |
| To be able to present an argument for or against assisted suicide | To be able to present arguments either for or against emotionally charged propositions | Assisted suicide |
| To know what the local priest does | To know the duties and responsibilities of religious leaders | The local priest |
| To produce and analyze a questionnaire about movie-going habits | To be able to construct and analyze questionnaire data | Movie-going habits |

In an HSIE lesson in which a teacher is teaching her students to understand the impact of banana production on the banana producers themselves. If students study this topic and at the end of the unit the teacher assesses the objective of whether or not the students have learned about the impact of banana production on banana producers, the students will most likely get high scores.

However, this teacher has confused the learning objective with the learning context. A better and really clearer learning intention would have been for the students to understand the impact of production on producers in the developing world and banana production would have been the particular context for learning this objective. To see whether students had mastered this objective, that is, whether they could transfer their learning, the teacher should have given them an assessment on a different topic such as sugar production.

### *Practical Techniques*

A concrete way to help students understand learning intentions and success criteria is to have them look at samples of other students' work and discuss the strengths and weaknesses of these pieces. Teachers could construct rubrics using

sample pieces of student work. One teacher, before having students write their own lab reports, distributed five sample lab reports from the previous year. In groups, students had to decide which reports were better than others and report the reasons why to the whole class. The teacher used these reasons to have the students co-construct a scoring rubric for laboratory reports. Note that this was not a democratic process. The teacher used his own knowledge to shape the discussion. By having students spot examples of errors in other students' lab reports they were less likely to repeat these errors in their own reports.

*Cautions*

*Use examples where deep features are not aligned with surface features*. When quality has multiple dimensions, care needs to be taken that students are not able o determine which pieces are better by focusing on surface features .For example, if you are focusing on characterization, it might be useful to have one piece of work with deep characterization but poor grammar, spelling & handwriting and another with good grammar spelling and punctuation but weak characterization

*Be aware that sometimes quality cannot be put into words*. Perhaps the greatest danger with rubrics is that they are used where quality cannot be effectively described in words. Sometimes the best we can do is help our students develop "a nose for quality".

*The literature supports the use of questioning to support comprehension, problem solving, reasoning, creativity and learning.*

## RON RICHHARDT: QUESTIONS BLOG

*"It is better to have a "classroom full of unanswered questions than unquestioned answers".*

**What makes questions effective?**

Effective questions produce thinking. Learning is the result of thinking. Therefore, questions are one of the most important tools used in teaching and learning. In this blog we will examine how both teachers can ask fewer and better questions leading to more time to think in class.

Effective questions generate in students thought and interest in making answers. Effective questions are posed by both students and teachers throughout the learning process.

**Characteristics of a Good Question**

A good question:

- expresses genuine curiosity; behind every question there must be an intention to find out is a vehicle to clarify and make thinking visible
- is supported by tone and non-verbal signals that demonstrate interest ,engages our feelings as well as our thoughts
- challenges existing thinking and encourages reflection
- has reason, focus, and clarity
- is part of an on-going dialogue which involves relationships between speakers
- is paced so that listening to the answer is necessary
- results in an answer that creates change – either in the listener or in the next events

**How do we know when questions are effective in furthering learning?**

There are many important ways to think about the purpose of questions in the classroom. We often think of questions in terms of Bloom's taxonomy. Teachers aim to ask more questions that encourage higher level thinking. We often judge the quality of a question by noting where the question falls on a range from concrete or the answer is "right there" questions to questions that inspire critical thinking or multiple debatable answers. The purpose of questions evaluated by Bloom's Taxonomy is to inspire thinking. Therefore, if the question asks for higher level thinking then the question is a better question. However, one might argue that "right there" questions are just as important as synthesis type questions. "Right there" questions may serve to confirm and clarify knowledge while synthesis type questions summarize. It might be impossible for students to synthesize if they have not clarified knowledge first; therefore, both types of questions have value in learning. So, how do we know when questions further learning?

**Rather than measuring the level of thinking in the question, it might be more useful to evaluate the quality of the question by the opportunity for answers**. A high-quality question can be evaluated by how the students formulate an answer to the question (alone, pairs, small groups and responses to think, talk, write, or draw) and what the teachers asks students to do with the answers to the questions. High quality questions result when the process used to answer a question matches intended purpose of the question. In addition to the process and purpose match, the amount of time devoted to answering a question may reveal more about the level of thinking required then the question itself.

In a completely different way, teachers use questions as a means to move the action in the classroom along, for example, "Does everyone have their notebook out?", "Are we ready to go on?" Procedural questions help students to know the teacher's expectations, for example, "What should be included in your notebook?" These procedural type questions are essential and usually are in the greatest frequency of types of questions asked during a class period. It is important to note that students get in the habit of hearing questions that are part of a management dialog instead of a learning dialog. So, when the teacher switches to questions that demand thinking it is not surprising that many students do not recognize the change in expectations for answering questions.

There really isn't such a thing as "good" questions and "bad" questions. But, there are questions that accomplish the teacher's purpose. A communicated clear expectation for an answer is as important as the question. Students need to know when the teacher is using questions as part of classroom management and when the questions are part of learning. So, effective questions serve a particular purpose in a well-developed classroom and are posed with an expectation of a specific type of thinking students will use in their response.

Classroom questions can usually be divided into three general purposes, to: elicit information, build understanding, and encourage reflection. Within each purpose questions can accomplish different goals or tasks. See the table below for examples.

| Classification | Types of Questions (Questions that ….) |
|---|---|
| **Questions that Elicit Information** | • **Confirm: Recall & clarifying knowledge**<br>*What comes next? Could you summarise? What do we know?* |
| | • **Procedural: Establishing expectations**<br>*Can everyone see? Did someone get a different answer? Are you ready?* |
| | • **Elicit prior experience**<br>*What ideas come to your mind when? What experience might lead people to act that way?* |
| **Questions that Shape Understanding** | • **Generative: Exploring a Topic**<br>*Is there ……? Why do we remember ……?* |
| | • **Constructive: Build new understanding**<br>*How could things change when…. ? What could this mean to ……..?* |
| | • **Facilitative: Promoting learner's own thinking and understanding**<br>*Can you put that in a way that …. Would understand? What makes you say that?* |
| **Questions that Press for Reflection** | • **Reflective: Challenge to think critically & creatively**<br>*What patterns do you see here? Can you compare. …. To ….?*<br>*What are your questions now?* |

**How do we ask Powerful Questions?**

So now we have established the different purposes for asking questions in the classroom. But, how do teachers make questions powerful? How do teachers ask questions that efficiently and effectively move students in their thinking and understanding? How do questions help us build a classroom culture of collaboration and inquiry?

The Key #1 to Powerful Questions is Engagement: when we feel, think, and do at the same time. Powerful questions appeal to our feelings as well as our thinking and doing. Powerful questions invite and sustain student engagement in a learning experience. We cannot separate thinking from feeling and doing, so powerful questions connect to students on both an intellectual and a feeling level.

Powerful questions are the key to teaching for understanding. Students gain control over their learning when they see a relationship between what they are currently thinking, feeling, and doing with what they already know, feel,