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| **Setting goals** | **Structuring lessons** | **Explicit teaching** | **Worked examples** | **Collaborative learning** |
| **Overview**  Lessons have clear learning intentions with goals that clarify what success looks like.  Lesson goals always explain what students need to understand, and what they must be able to do. This helps the teacher to plan learning activities, and helps students understand what is required. | **Overview**  A lesson structure maps teaching and learning that occurs in class.  Sound lesson structures reinforce routines, scaffold learning via specific steps/activities. They optimize time on task and classroom climate by using smooth transitions. Planned sequencing of teaching and learning activities stimulates and maintains engagement by linking lesson and unit learning. | **Overview**  When teachers adopt explicit teaching practices they clearly show students what to do and how to do it.  The teacher decides on learning intentions and success criteria, makes them transparent to students, and demonstrates them by modelling. The teacher checks for understanding, and at the end of each lesson revisits what was covered and ties it all together (Hattie, 2009). | **Overview**  A worked example demonstrates the steps required to complete a task or solve a problem.  By scaffolding the learning, worked examples support skill acquisition and reduce a learner’s cognitive load.  The teacher presents a worked example and explains each step. Later, students can use worked examples during independent practice, and to review and embed new knowledge. | **Overview**  Collaborative learning occurs when students work in small groups and everyone participates in a learning task.  There are many collaborative learning approaches. Each uses varying forms of organization and tasks.  Collaborative learning is supported by designing meaningful tasks. It involves students actively participating in negotiating roles, responsibilities and outcomes. |
| **Key elements**   * Based on assessed student needs * Goals are presented clearly so students know what they are intended to learn * Can focus on surface and/or deep learning * Challenges students relative to their current mastery of the topic * Links to explicit assessment criteria | **Key elements**   * Clear expectations * Sequencing and linking learning * Clear instructions * Clear transitions * Scaffolding * Questioning/feedback * Formative assessment * Exit cards | **Key elements**   * Shared learning intentions * Relevant content and activities * New content is explicitly introduced and explored * Teacher models application of knowledge and skills * Worked examples support independent practice * Practice and feedback loops uncover and address misunderstandings | **Key elements**   * Teacher clarifies the learning objective, then demonstrates what students need to do to acquire new knowledge and master new skills * Teacher presents steps required to arrive at the solution so students’ cognitive load is reduced and they can focus on the process * Students practice independently using the worked example as a model | **Key elements**   * Students work together to apply previously acquired knowledge * Students cooperatively solve problems using previously acquired knowledge and skills * Students work in groups that foster peer learning * Groups of students compete against each other |
| **Related effect sizes**   * Goals – 0.68 * Teacher clarity – 0.75 | **Related effect sizes**   * Scaffolding – 0.82 * Evaluation & reflection– 0.75 * Teacher clarity – 0.75 | **Related effect sizes**   * Goals – 0.68 * Worked examples – 0.37 * Time on task – 0.49 * Spaced practice – 0.60 * Direct instruction – 0.60 * Teacher clarity – 0.75 | **Related effect sizes**   * Worked examples – 0.37 * Spaced practice – 0.60 | **Related effect sizes**   * Peer tutoring – 0.53 * Reciprocal teaching – 0.74 * Small group learning – 0.47 * Cooperative learning– 0.40 * Cooperative learning vs individual work – 0.55 * Cooperative learning vs competitive learning – 0.53   **Months of progress**   * Collaborative learning +5 * Peer tutoring +5 |

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| **Multiple exposures** | **Questioning** | **Feedback** | | **Metacognitive strategies** | | **Differentiated teaching** |
| **Overview**  Multiple exposures provide students with multiple opportunities to encounter, engage with, and elaborate on new knowledge and skills.  Research demonstrates deep learning develops over time via multiple, spaced interactions with new knowledge and concepts. This may require spacing practice over several days, and using different activities to vary the interactions learners have with new knowledge. | **Overview**  Questioning is a powerful tool and effective teachers regularly use it for a range of purposes. It engages students, stimulates interest and curiosity in the learning, and makes links to students’ lives.  Questioning opens up opportunities for students to discuss, argue, and express opinions and alternative points of view.  Effective questioning yields immediate feedback on student understanding, supports informal and formative assessment, and captures feedback on effectiveness of teaching strategies. | **Overview**  Feedback informs a student and/or teacher about the student’s performance relative to learning goals.  Feedback redirects or refocuses teacher and student actions so the student can align effort and activity with a clear outcome that leads to achieving a learning goal.  Teachers and peers can provide formal or informal feedback. It can be oral, written, formative or summative. Whatever its form, it comprises specific advice a student can use to improve performance. | | **Overview**  Metacognitive strategies teach students to think about their own thinking.  When students become aware of the learning process, they gain control over their learning.  Metacognition extends to self-regulation, or managing one's own motivation toward learning. Metacognitive activities can include planning how to approach learning tasks, evaluating progress, and monitoring comprehension. | | **Overview**  Differentiated teaching are methods teachers use to extend the knowledge and skills of every student in every class, regardless of their starting point.  The objective is to lift the performance of all students, including those who are falling behind and those ahead of year level expectations.  To ensure all students master objectives, effective teachers plan lessons that incorporate adjustments for content, process, product, and learning environment. |
| **Key elements**   * Students have time to practice what they have learned * Timely feedback provides opportunities for immediate correction and improvement | **Key elements**   * Plan questions in advance for probing, extending, revising and reflecting * Teachers use open questions * Questions used as an immediate source of feedback to track progress/understanding * Cold call and strategic sampling are commonly used questioning strategies | **Key elements**   * Precise, timely, specific, accurate and actionable * Questioning and assessment is feedback on teaching practice * Use student voice to enable student feedback about teaching | | **Key elements**   * Teaching problem solving * Teaching study skills * Promotes self-questioning * Classroom discussion is an essential feature * Uses concept mapping | | **Key elements**   * High quality, evidence based group instruction * Regular supplemental instruction * Individualized interventions |
| **Related effect sizes**   * Time on task – 0.49 * Spaced practice – 0.60 * Feedback – 0.70   **Months of progress**   * Mastery learning +5 | **Related effect sizes**   * Questioning – 0.48 | **Related effect sizes**   * Feedback – 0.70   **Months of progress**   * Feedback +8 | | **Related effect sizes**   * Teaching problem solving – 0.68 * Study skills – 0.46 * Self-questioning – 0.55 * Classroom discussion – 0.82 * Concept mapping – 0.64   **Months of progress**   * Metacognition and self-regulation +8 | | **Related effect sizes**   * RTI – 1.29 * Piagetian programs – 1.28 * Second and third chance programs – 0.53   **Months of progress**   * Individualised instruction +2 * Mastery learning +5 |
| **Behavioral Evidence for High Impact Teaching Strategies** | | | | | | |
| **Strategy** | **Positive Teacher Behaviors** | | **Negative Teacher Behaviors** | | **Student Behaviors** | |
| Setting Goals | * assesses students’ prior knowledge * uses evidence to differentiate learning goals for groups of students based on need * demonstrates a purpose for learning by linking a specific activity to the learning goals * provides realistic but challenging goals, and recognizes effort towards achieving them | | * implies by words or actions that some students are not expected to achieve the learning goal * praises all work regardless of quality and effort * assesses student work against other students’ work, rather than against prior achievement and individual learning goals | | * actively engages with the learning goals to plan their own learning * self-monitors their progress, and provides evidence they believe demonstrates they have achieved their goals * frames future learning goals based on identified strengths and areas for improvement | |
| Structuring Lessons | * explains to students the steps in the lesson, including presenting learning intentions, explicitly presenting new knowledge, identifying planned opportunities for practice, outlining questioning techniques the class will use, and describing the assessment formats * makes clear connections between the learning goals, activities and assessment tasks * creates transparent, predictable and purposeful routines for students * identifies clear transitions between each step in the lesson * plans the sequence of steps to scaffold student learning * monitors student understanding and provides feedback | | * lesson structures keep changing, producing unhelpful unpredictability in the classroom environment | | * understands the learning goals and success criteria * understands the lesson routine and confidently negotiates the sequence of steps/activities | |
| Explicit Teaching | * explains what students need to know and be able to do by the end of the lesson or unit * uses worked examples to show students how to do something * allows students sufficient time to practice what they have learned * guides student practice by monitoring their work and providing help when it is needed * reinforces the main points at the end of the lesson | | * is didactic, using teacher-centered, uninterrupted monologue with few opportunities for students to be active in the learning * restricts class discussions and student input is discouraged * responds judgmentally to students’ attempts at problem solving activities rather than treating each attempt as an opportunity for further learning | | * understands the learning goals and success criteria * has access to multiple examples before undertaking the learning task * masters the new knowledge and skills before moving on receive feedback as needed | |
| Worked Examples | * scaffolds the acquisition of new knowledge and skills by presenting students with a clear, step-by-step example * designs worked examples that are accessible to students (self-explanatory) and unpacks the learning process, highlighting options available to arrive at the correct solution * monitors student learning and supports students to move towards more independent practice | | * introduces new knowledge and skills with worked examples that are too complex and inaccessible to learners * uses the same worked examples for all learners, including those with an already advanced knowledge of the topic or subject matter | | * are engaged and on task because the worked example is pitched at the right level of challenge * understands that the focus is on understanding the process required to complete the task * can move with confidence from using worked examples to independent practice | |
| Collaborative Learning | * regularly sets group tasks and establishes ground rules about how groups operate * explicitly teaches students to work as a team by assigning different roles within groups so that students take responsibility for particular aspects of tasks * differentiates learning by assigning group content based on student readiness * designs tasks that require sharing expertise and ensuring each student’s contribution is valued by other students * promotes interactions by organizing students in flexible groupings in which group membership varies and may be based, for example, on friendship, mixed academic ability or common interests | | * dominates class discussion * allows a few students to dominate discussion * gives students few opportunities to interact with, and support, each other | | * understands the protocols for working collaboratively * accepts individual responsibility for participating and contributing to group tasks * are skilled at providing feedback to each other | |
| Multiple Exposures | * links multiple exposures to the learning goals * plans units of work that clearly identify new knowledge and skills that will benefit from multiple exposures * uses a variety of learning and assessment tasks that vary students’ interactions with the knowledge and/or skills, and supports transfer of learning | | * repeats the same activity many times with no variation in context, resulting in dull repetition * does not provide timely feedback, resulting in students repeating mistakes multiple times | | * consolidates their learning through opportunities that engage and re-engage them with new content over a period of time * feels supported and confident about new learning | |
| Questioning | * negotiates conversational protocols which support all students to make meaningful contributions * targets questions, or responds to answers, in ways that acknowledge individual needs and potential contributions * models acceptance and valuing of unusual ideas * provides stimulus materials that challenge students’ ideas and encourage discussion * engages students in dialogue, continuously extending their thinking and refining students’ understanding * asks questions that probe student thinking and prompt them to justify their responses * provides feedback and structures opportunities for students to give feedback to one another | | * mainly asks questions that are closed, focuses on recall of information, and having one ‘right’ answer * allows insufficient wait time for students to think about the question and their possible responses * consistently relies on a few students to respond and does not engage all students in discussion * allows the class discussion to wander without focus * dominates the discussion and does not allow students to interact, challenge viewpoints and speculate | | * feels confident to ask questions, speculate and hypothesize, and respects others’ views * understands how different types of questions are used to identify and clarify information * gives feedback to one another, and builds on and challenges one another’s ideas | |
| Feedback | * provides feedback on tasks that challenges students to review, reflect on and refine their understandings at various points in a learning sequence * gives timely feedback, acknowledging areas well‑handled and suggesting areas for improvement * structures feedback to support further learning * organizes a variety of audiences to provide feedback * uses student assessment data as a source of feedback on the effectiveness of their teaching practice | | * provides feedback that is about the person (such as, ‘you are my best student’) or vague (such as, ‘good job’) * only provides feedback about students’ performance in formal, summative assessment situations, without the opportunity for students to refine and develop understandings on the basis of instructive feedback | | * understands what needs to be done to improve * feels encouraged and supported to achieve the learning goals * uses feedback to monitor and self-regulate their learning | |
| Metacognitive Strategies | * set goals, and monitor and evaluate their learning progress * assists students to identify and use strategies that support them to achieve learning goals * demonstrates how to use a particular metacognitive strategy in ways that make content knowledge more accessible, malleable and intriguing * uses a variety of learning and assessment strategies to scaffold and personalise the learning process * provides support and scaffolding for tasks through checklists, self-questioning, student-teacher conferences and self-assessment * uses ICT to increase student choice and flexible learning | | * gives students a choice of activities but does not explain how they can use specific strategies to achieve particular learning goals * does not encourage students to take responsibility for their own learning, or for applying metacognitive strategies | | * has a repertoire of learning strategies and can select strategies appropriate for the learning goal(s) * reflects on their learning processes, self-assesses and acknowledges the impact of effort on achievement * actively seeks out feedback because they value it as a way to improve understanding of how they learn * are capable of self-regulation and proactively takes control of, and responsibility for, their own learning | |
| Differentiated Teaching | * uses pre-assessment of student readiness, interest and learning profile to understand individual student’s needs and strengths * sets high expectations for all students * provides students with realistic, challenging goals, and recognizes effort * relies on formative assessment to monitor student learning progress toward and beyond learning goals * uses a range of teaching strategies that support different abilities and ways of thinking and learning * sets open-ended tasks that allow students to work at different levels and paces * uses group and targeted interventions to remediate learning difficulties * assesses student work against prior achievements rather than against other students’ work | | * sets the same work for all students * provides little variation in teaching strategies, resources and group composition * assesses all student work against general criteria * applies differentiated teaching strategies only for gifted students * establishes consistently inflexible groupings | | * can choose learning activities based on agreed goals * are assessed against prior achievements, rather than against other students’ work * are supported and challenged to reach their learning potential | |

Video link: <https://www.youtube.com/watch?v=6xpcXobZF1k>