

## Hattie's Visible Learning Factors - Glossary

Factor	Description
Ability grouping/tracking/streaming	Refers to whether classes are heterogeneous or homogeneous. Studies consider achievement effects and equity effects. More than 300 studies show tracking has minimal effects on learning outcomes and “profound negative equity effects.”
Accelerate learning (e.g. skipping a year)	Other forms of acceleration include compacting curriculum, telescoping curriculum, and advanced placement. No negative social effects for accelerated students were supported by the research.
Clarity of Goals / Teacher Clarity	The ability to clearly communicate the intentions of lessons and the success criteria. Clear learning intentions describe the skills, knowledge, attitudes and values that the student needs to learn. Teachers need to know the goals and success criteria of their lessons, know how well all students in their class are progressing, and know where to go next.
Classroom Discussion	Classroom discussion is a method of teaching, that involves the entire class in a discussion. The teacher stops lecturing and students get together as a class to discuss an important issue. Classroom discussion allows students to improve communication skills by voicing their opinions and thoughts. Teachers also benefit from classroom discussion as it allows them to see if students have learnt the concepts that are being taught. Moreover, a classroom discussion creates an environment where everyone learns from each other.
Collective Teacher Efficacy	The overall belief and perception among teachers across an entire institution of their ability to have a positive impact on student learning and achievement.
Comprehension Strategies	Comprehension programs with dominant focus on processing strategies (e.g. inferential reasoning, rules for summarizing, and chunking texts) produced higher effect than did text programs (e.g. repetition of concepts and explicitness) and task programs.
Concept mapping	Involves development of graphical representations of the conceptual structure of content to be learned. Importance of concept mapping is in its emphasis on summarizing main ideas in what is to be learned. Assists in synthesizing and identifying major ideas, themes, and interrelationships.
Cooperative vs individualistic learning	Most powerful when students have acquired sufficient background knowledge to be involved in discussion and learning w/peers. Most useful when learning concepts, verbal problem-solving, spatial problem-solving, retention and memory. Effects increase with age.

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Direct Instruction (Gradual Release Model)	<p>Not to be confused with didactic teacher-led talking from the front. Refers to 7 major steps:</p> <ol style="list-style-type: none"> <li>1. Teacher specifies learning outcomes/intentions</li> <li>2. Teacher knows and communicates success criteria</li> <li>3. Builds commitment and engagement in learning task (the hook)</li> <li>4. Lesson design: input, model, check for understanding</li> <li>5. Guided practice</li> <li>6. Closure</li> <li>7. Independent practice</li> </ol>
Feedback	<p>Among most powerful of influences, especially when it is from the student to the teacher. If the teacher is open to feedback regarding what students know and understand, where they make errors, when they have misconceptions, and when they are disengaged, then they can respond accordingly. Feedback is about providing information about the task performance. Effect sizes from these studies show considerable variability, meaning some forms of feedback are more powerful than others. Least effective: programmed instruction, praise, punishment, and extrinsic rewards. Feedback is more effective when it provides information on correct rather than incorrect responses and when it builds on changes from previous trials.</p>
Home environment	<p>Includes measures of the socio-psychological environment and intellectual stimulation in the home. Most highly correlated factors with achievement were maternal involvement, variety and play materials.</p>
Homework	<p>Involves “tasks assigned to students by teachers that are meant to be carried out during non-school hours.” Effects twice as large for high as for junior high, and twice as large again for junior high as for elementary. Smallest effects in math. Largest in science and social studies with English in the middle. Effects greater for higher than lower ability students. Homework for some reinforces that they cannot learn by themselves. Can undermine motivation and internalize incorrect routines and strategies.</p>

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<p><b>Inquiry-based teaching</b>          Note: Hattie wondered why effect wasn't higher and since publishing, has learned that teaching content so students have some background knowledge about which they are inquiring increases effect)</p>	<p>Art of developing challenging situations—students observe and question phenomena, pose explanations, devise and conduct experiments, collect data, analyze data, draw conclusions, design and build models, or any combination. Open-ended. Greater effects when teaching process rather than content. Shown to produce transferable critical thinking skills.</p>
<p><b>Matching teaching with student learning styles</b></p>	<p>Contends different students have differing preferences for particular ways of learning—auditory, visual, tactile, or kinesthetic, for example. No gains in achievement found when teacher matched instruction to preferred modality. Much skepticism surrounding claims around learning preferences. Research does not support correlation between matching learning style and increased achievement.</p>
<p><b>Meta-cognitive strategies</b></p>	<p>Meta-cognitive strategies refer to those “thinking about thinking” strategies: planning how to approach a learning task, evaluating progress, and monitoring comprehension. Self-questioning is another meta-cognitive strategy.</p>
<p><b>Micro-Teaching</b></p>	<p>Micro-teaching is the collaborative analysis of an observed lesson with a debriefing. The lesson is reviewed in order to improve the teaching and learning experience. In Visible Learning Hattie describes micro-teaching as a practice that “typically involves teachers conducting (mini-) lessons to a small group of students, and then engaging in a post-discussion about the lessons” (Hattie 2009, 112). Technical aspects are less important than the later analysis which allows teachers to get a microscope-view on their own teaching. Under the guidance of a coach / facilitator the teacher is first asked to present self feedback of his mini lesson, then the team gives feedback to provide positive reinforcement and constructive criticism.</p>
<p><b>Providing formative evaluation</b></p>	<p>Refers to teachers attending to what is happening for each student in their classrooms as a result of their instruction—when teachers ask, “How am I doing?” Highest effects when teachers seek evidence on where students are not doing well.</p>
<p><b>Providing worked examples</b></p>	<p>Typically consist of a problem statement and the appropriate steps to a solution. Three steps: introductory phase, acquisition/training phase, test phase (assess learning). Reduces cognitive load for students such that they concentrate on the processes that lead to the correct answer and not just providing an answer.</p>

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Reciprocal teaching	Teaching cognitive strategies intended to lead to improved learning outcomes. Emphasis on teachers enabling students to learn and use strategies such as summarizing, questioning, clarifying, and predicting. Dialogue between teacher and students around text. Students take turns as teacher and lead dialogue to bring meaning to written word with assistance to learn to monitor their own learning and thinking.
Reducing Class Size	Effects may be higher for working conditions which may or may not translate into effects on learning. For smaller class size to yield higher effects, the type of instruction needs to be re-conceptualized to ensure the needs of all students are met within whatever the class size. Need to focus on strategies that are maximized in smaller or larger groups and apply respectively.
Retention (holding back a year)	Repeating a grade. Also negatively correlated with social/emotional adjustment, behavior, and self-concept.
Student Expectations	<p>This strategy involves the teacher finding out what are the student's expectations and pushing the learner to exceed these expectations. Once a student has performed at a level that is beyond their own expectations, he or she gains confidence in his or her learning ability.</p> <p>Example: Before an exam, ask your class to write down what mark the student expects to achieve. Use this information to engage the student to try to perform even better.</p>
<p>Teacher Expectations of Students</p> <p>(Note: Hattie contends teachers must stop over-emphasizing ability and start emphasizing progress—steep learning curves are the RIGHT of ALL students regardless of where they start. Be prepared to be surprised!</p>	<p>Studies included effects related to the notion of self-fulfilling prophecy—teachers are more likely to have their students reach their expected outcomes regardless of the “veracity” of the outcomes. Studies in this meta-analysis also show students know they are treated differentially in the classroom due to expectations by teachers for certain students to take AP courses, for example, or others to pursue technical fields.</p>
Teacher subject matter knowledge	<p>Little data to support claim that teacher content knowledge is critical to student achievement. Darling-Hammond claims content knowledge influential up to some level of basic competence but less so thereafter. Since publishing <i>Visible Learning</i>, Hattie has studied this topic more in depth and has shared that the issue is a pedagogical issue—teaching is occurring at a surface level such that deep content knowledge has not presented itself as influential or not. Expert teachers know how to connect their content to other relevant issues and content and how to organize that content.</p>

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Teacher-student relationships	Interestingly, “when students, parents, teachers and principals were asked about what influences student achievement, all BUT the teachers emphasized the relationships between the teachers and the students.” “Building relationships implies agency, efficacy, respect by the teacher for what the student brings to the class (from home, culture, and peers) and recognition of the life of the student.”
Teaching learning strategies	Teaching kids how to learn and developing students’ strategies for learning. Need to provide students with learning strategies in the context of learning, a chance to practice, and assurance that the strategies are effective. Need to understand intention to use, consistency in appropriate use ,and knowing when chosen strategy is effective—learning to learn or self-regulation.
Teaching test-taking and coaching	Many studies around SAT preparation show influence impacted by length of coaching/training. Other studies indicate that familiarizing students with the examination process and examiner can make a difference, more so than test prep. Students in the low SES group performed significantly higher on standardized tests when they were familiar with the examiner.
Vocabulary instruction	Students who experienced vocabulary instruction experienced major improvements in reading comprehension and overall reading skills. Most effective vocabulary instruction included providing both definitional and contextual information, involved students in deeper processing, and gave students more than 1 or 2 exposures to the word to be learned.