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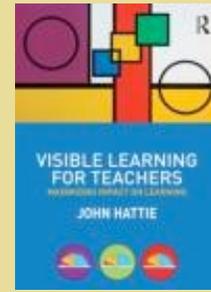
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Summary of <u>Visible Learning for Teachers: Maximizing Impact on Learning</u>
By John Hattie (Routledge, 2012)

Abridged Text
Full text may be found at the following url
http://www.tdschools.org/wp-content/uploads/2013/08/The+Main+Idea+-+Visible+Learning+for+Teachers+-+April+2013.pdf

S.O.S.   (A Summary of the Summary)

A main idea of the book is:
~ When teaching and learning are "visible" – that is, when it is clear what teachers are teaching and what students are learning, student achievement increases.

Why I chose this book:
By synthesizing over 50,000 studies related to achievement in school-aged students, Hattie conducted the biggest ever evidence- based research project in education.

SO, what does this mean? And why didn't I summarize his earlier book, *Visible Learning*?
It means that Hattie is taking the guesswork out of education by stating there *are* practices that we know are effective in the classroom and there are practices that we know are not. We *do* know what works.

Visible Learning told the story of the factors that have the greatest impact on learning. It will take time to wrestle with some of the nuanced ideas.

Chapter 1 – What is "Visible Learning"?

What is "visible learning"?
This book is about the attributes of schooling that will truly make a difference for student learning. It is based on evidence from John Hattie's book *Visible Learning*. The 'visible' refers to a few things. First, it refers to making student *learning* visible to teachers so they can know whether they are having an impact on this learning. Further, it also refers to making *teaching* visible to the student as well so that students learn to become their own teachers, an important component of becoming lifelong learners – something we want students to value. The 'learning' part of visible learning -- and a common theme throughout the book -- is the need to think of teaching with *learning* in the forefront and with the idea that we should consider teaching primarily in terms of its *impact on student learning*.

The evidence from Visible Learning (2009)
The ideas in this book are based on the preponderance of evidence that comes from Hattie's earlier book, *Visible Learning*. That book was based on over 800 meta-analyses (a method of combining results from different studies to identify patterns) of 50,000 research articles and about 240 million students. The most important discovery from the research was that almost *any* intervention can claim to "work." Almost every intervention had an effect size above zero which simply means that the intervention had *some* positive effect on achievement. However, if every intervention has *some* effect on achievement, then all we need to do is implement more of what we already do – so all we need is more money, more resources, more teachers, and all of our problems will be solved. However, this will *not* solve the problems in education. Instead, we need to be *more discriminating*. Rather than looking at any practice that has an effect size of more than zero ($d > 0$), in *Visible Learning* Hattie suggests that an effect size of 0.40 should be considered the *hinge-point*. An effect size of 0.40 is about the average effect we expect from a year's schooling. Therefore we should aim to implement those interventions of 0.40 and above because those are the ones that will truly improve student achievement.

Chapter 2 – The Main Implications from *Visible Learning*

Visible Teaching and Learning

The principle throughout the book is "visible teaching and learning." When the *teaching is visible* the student knows what to do and how to do it. When the *learning is visible* the teacher knows if learning is occurring or not. Teaching and learning are *visible* when the learning goal is not only challenging but is *explicit*. Furthermore, both the teacher and the student work *together* to attain the goal, provide feedback, and ascertain whether the student has attained the goal. Evidence shows that the greatest effects on student learning come when not only the students become their own teachers (through self-monitoring, and self-assessment), but the teachers become learners of their own teaching (to be explained below). In successful classrooms, both the teaching and learning are visible.

Chapter 4 – Preparing the lesson

There are four important parts to consider in preparing to teach a lesson listed below.

1. Prior Achievement: The levels of students at the start

A student's prior achievement has a powerful impact on his or her achievement ($d = 0.67$). What this means is that what students bring to the classroom is a powerful predictor of how well they will achieve. In other words, the brighter a student is at the beginning of the year, the more he or she will achieve. Therefore, the role of the teacher is to *disrupt* this so that those who are behind can learn just as much as the brightest students who walk in the door. For this reason, any lesson planning must begin with teachers developing a deep understanding of what students *already know and can do*. In addition to learning *what* students know, teachers also need to learn *how* their students learn as well. Since they want all of their students to reach the same high level of thinking, this will require teachers to be particularly attentive during peer-to-peer discussions and will really require teachers to *listen* as well as talk in order to learn about their students' learning. This contrasts with what is actually occurring in classes. For example, in one study, (Lingard, 2007), 1,000 classrooms were observed and there were particularly low levels of intellectual demand and an overpowering presence of teachers talking and students sitting passively waiting. We need to reverse this trend in classrooms.

In addition to prior achievement, students also bring attributes and dispositions that affect their ability to learn. For example, these might include motivation to learn, strategies to learn, and confidence to learn. Teachers need to know which self-attributes students bring to the lesson so they can enhance these attributes and thereby increase the learning. For example, one self-attribute is *self- efficacy* – the confidence that we can make our learning happen. Those with <u>high</u> self-efficacy see challenging tasks as opportunities to learn something new and those with <u>low</u> self-efficacy may avoid difficult tasks and deny personal agency. Teachers need to know this information about students so they can enhance student confidence, help students to accept rather than reject feedback, and help them compare their work to academic goals not to other students' work. Teachers can actively teach these dispositions. It particularly helps if teachers understand the attributes and dispositions their students bring to class.

2. Targeted Learning: The desired levels at the end

In planning lessons, there are two parts to consider in thinking about the targeted learning – or where teachers want students to end up. The first is being <u>clear</u> about what is to be learned – the *learning intention* or objective. The second is having a way to know that the learning has been learned – the *success criteria*. These both must be visible for the teacher and the students. The teacher must be clear about the goals in order to keep the class on track toward the objective. Further, the teacher needs to know *not* when the students have completed the *activities*, but rather, when they have learned the concepts and understandings.

Learning Intentions/Objectives

Effective planning involves deciding on appropriately challenging goals and *then* structuring learning situations so students can reach those goals. Having clear learning goals is vital if we want to develop a good assessment and provide accurate feedback to students about how to be successful. If we want students to achieve learning goals, teachers must start by communicating clear goals to students. This involves much more than having students chant the learning intentions at the start of class. Instead we must help students develop a deep understanding of what they are supposed to learn, help them understand what success will look like, how the lesson's tasks relate to the intention, and at the end of the lesson, how much closer they have come to achieving the success criteria.

Success Criteria

Success criteria let students know when they have achieved the learning goal. Imagine if you were told to get in your car and you would be informed when you had successfully arrived at your destination. School feels like this for too many students. It's not a surprise that they get turned off of learning. Furthermore, we can do more than sharing success criteria with students, we can involve them in *making* the success criteria. The idea is to get students engaged in and enjoying the challenge of learning that will keep them invested in and committed to school. Below are five components of learning that relate to the learning intentions and success criteria: challenge, commitment, confidence, high expectations, and conceptual understanding.

a. challenge – Creating a challenge is one of the most essential roles of the teacher because this is the essence of how students learn. However, this is incredibly tricky. Challenge depends on what students already know, so teachers must know students' prior levels of achievement and dispositions. Furthermore, challenge should not be too difficult. To take on a challenge, students need to know about *90 percent* of what they are aiming to master in order to enjoy and make the most of the challenge. In reading it is even *higher* – students must know about 95 – 99 percent of the words on a page before they can enjoy it!

b. commitment – Creating lessons in which students are committed to the learning often comes from creating lessons that are challenging. Two of the most powerful ingredients in planning are commitment and challenge. Peers are also a major source of commitment to school learning through pressure, modeling, and competition.

c. confidence – Having the confidence that they can achieve the learning goals is a vital component of success. This confidence can come from four sources: the student (from past success in learning), the teacher (from quality teaching and feedback), the tasks (from appropriate scaffolding), or peers (from feedback).

d. high expectations – The influence that was highest in all of *Visible Learning* was self-reported grades. Students have reasonably accurate understandings of their levels of achievement. Across six meta-analyses (about 80,000 students), the effect was $d = 1.44$ or a correlation of about 0.80 between students' estimates and their subsequent performance in school tasks. It is important to note that two groups of students were *not as good* at predicting their performances – minority students and lower-achieving students. It has proved difficult to improve the confidence levels of these two groups of students. Rather than having these groups reflect on their performance or rewarding improved performance, the best approach is to emphasize *accurate calibration* and for teachers to provide opportunities for students to predict their performance once they are given clear learning goals and success criteria. Then teaching them to have high, challenging, appropriate expectations is among the most powerful influences in improving their achievement.

e. conceptual understanding – Research has shown that both teacher-created and standardized state-wide tests are dominated by surface-level questions. Students need to develop surface, deep, and conceptual understandings and to do so, all three levels should be integrated into learning objectives and success criteria. Below is an example of three levels of depths of understanding:

Examples of surface, deep, and conceptual levels of thinking (excerpted from p.55)		
Levels of	LEARNING INTENTIONS	SUCCESS CRITERIA
Uni/Multi-structural	Recognize that light/sound are forms of energy and have properties	I can name one or more properties of light and sound
Relational	Know that sound/light can be transformed into other forms of energy	I can explain how light/sound is transformed into other types of energy
Extended abstract	Understand how light/sound allows us to communicate	I can discuss how light/sound enables us to communicate

3. Progression: The rate of progress from the start to the end
Teachers must also address the curriculum -- what knowledge and understanding must be taught? While there is too little evidence to suggest that the *order of topics* is critical, what is more important is that there is an *increasing level of challenge* that is tied to the choices of activities, lessons, and lesson outcomes. This is often lost when there is an increasing obsession to align the curriculum with what is tested rather than what is worth knowing in order to live a "good life." Furthermore, another key idea in thinking about curriculum has to do with how students *progress* through the curriculum. Hattie's research team analyzed student achievement in New Zealand and found that the single greatest issue was the need for the teachers to develop a common understanding of progress. For example, almost every teacher considered it a badge of valor to dismiss any evidence of progress from previous teachers when new students came into their classes and decided to reassess students at the start of every year. The time lost to reassessing students may have had the same effect as the so called "summer effect" that reduces achievement over the summer ($d = -0.10$). If there were transfer plans or if teachers had a common understanding of progress, this might not happen.

4. Teacher Collaboration
One of the major takeaways from *Visible Learning* is that there is great power from teachers learning from each other and talking together about planning – discussing everything from learning intentions, success criteria, learning progression, to what it means to be "good at" a subject. Having a core discussion about what it means to be "good at" English, math, etc. leads to important debates about evidence of student learning, quality of teaching, student outcomes – most of the topics that lie at the heart of teaching and learning. When teachers do *not* have common understandings about how students should progress through the curriculum and outcomes to strive for, then individualism, personal opinions, and "anything goes" pervade the school. When teachers begin to collaborate and develop common understandings, particularly a common understanding of progression in school, then all begin to move in the *right* direction based on collaborative critique, distributed problem solving, and multiple interactions.

There are a number of ways to engage teachers in collaborative discussions about student progression. For example, teachers can discuss indicators of milestone performance (by looking at examples of student work); teachers can collaboratively grade student work across classes or grades; and teachers can plan curriculum together. However, the most successful method Hattie has encountered is the *data teams* model in which small teams of teachers meet every two to three weeks and follow a specific structure to examine student data, set incremental goals, engage in discussion about goals and improving instruction, and create a plan to monitor learning and instruction and then repeat the cycle again. It is *not* important exactly what form these teams take – whether they are "professional learning communities" or not. What is important is that teachers are open to looking at evidence of their *impact on students* and *critiquing* each other's impact to better meet the needs of the students.

Chapter 6 – The flow of the lesson: learning

Too often, professional development focuses on *how to teach,* not on *how students learn*. If teachers want to help students improve, they need to take the seemingly invisible process of learning, which occurs "in the head," and make it visible for students. Teachers need to instruct students in "how to learn." Currently, observations of classrooms show that there is very little direct instruction in "how to learn" or the use of various learning strategies. Researchers who studied how frequently teachers were teaching students strategies to help them learn found they did so very infrequently; instead they found that teachers taught content and memorization of that content. Perhaps teachers are not aware that there are many theories of learning and a number of recent books on the topic.

Below are four ways of thinking about how students learn. The overarching idea is for the teacher to be aware of the desired results (the success criteria and learning intentions) and to understand where the student starts (based on his/her prior knowledge and thinking) and then to be able to use the thinking and learning strategies below to provide instruction at the *right* level and in the *right way* given how the student processes information. This requires that teachers are constantly on their toes to know the difficulty of the activities they are teaching and how each student is responding in order to insure the learning continues to move upward. The idea that teachers should be teaching "at or +1 above" where the students are thinking is a continual theme in this chapter.

Four ways of thinking about how students learn
1. **Capabilities in thinking** – This is Piaget's model for how students learn. Students begin with their own, concrete and personal way of knowing and move up through four phases until they reach a more scientific and abstract way of understanding the world.

2. **Phases of thinking** – This way of learning is when students start with a *surface* understanding of a topic, begin to relate it to other areas, and then expand their thinking until they develop a *deeper* understanding of the topic. Again, when teachers help students move from a surface to a deeper understanding, the idea is to help students work at, or +1 beyond, where the student is now.

3. **Phases of motivation** – Students do not remain constantly motivated! When teachers know which phase they are in, they can work to help students work at, or +1 beyond this phase as well. One four-stage model of motivation involves students first *seeing a gap* between what they know and the intended learning. Then they *plan* to approach the goal, *implement strategies* to help close the gap, and then finally students *examine* whether they have attained the learning goal.

4. **Phases of competence** – In this model of learning, students go through three major phases from *novice,* to *capable*, and finally to *proficient*. At the capable level students will have a deep foundation of factual knowledge and will have organized that knowledge for retrieval. At the level of proficiency, students should be able to have a meta-cognitive approach that allows them to take charge of their own learning by defining their own learning goals and monitoring their own progress.

When teachers know where students are in the different levels of thinking suggested in these models, *and* teachers know the *next higher level of thinking* toward which students should be working, this is where they can intervene to optimize students' growth. Given such a wide variety of ways of learning, and the diversity of levels students will be on, this suggests the importance of *differentiation*. However, this does *not* mean that homogeneous groups are the answer. If teachers aim to move students "+1" beyond their current levels, then it can be more useful for students to work with other students who see things differently.

Strategies of Learning
It is easy to be overwhelmed by the vast number of *strategies of learning*. Lavery, 2008 lists the relative effects of some of the learning strategies with the *highest impacts* in the chart below (excerpted from pp.105-106). She found the highest effects from strategies that involve *forethought* (goal-setting, planning, etc.) as well as strategies that involve a more *active* approach to learning.

Strategy	Definition	Example	Effect
Organizing and transforming	Overt or covert rearrangement of instructional materials to improve learning	Making an outline before writing a paper	0.85
Self-consequences	Student arrangement or imagination of rewards or punishment for success or failure	Putting off pleasurable events until work is completed	0.70
Self-evaluation	Setting standards and using them for self-judgment	Checking work before handing it in to a teacher	0.62
Help-seeking	Efforts to seek help from either a peer, a teacher, or another adult	Using a study partner	0.60
Keeping records	Recording of information related to study tasks	Taking class notes	0.59
Goal-setting/planning	Setting of educational goals or planning sub-goals and planning for sequencing, timing, and completing activities related to those goals	Making lists to accomplish during studying	0.49
Reviewing records	Efforts to re-read notes, tests, or textbooks to prepare for class or further testing	Reviewing class textbook before going to lecture	0.49
Self-monitoring	Observing and tracking one's own performance and outcomes, often recording them	Keeping records study output	0.45
Time	Estimating and budgeting use of time	Scheduling daily studying and	0.44

These are all strategies that can be *taught*. In one study, however, results showed that creating a separate "study skills" course that was not tied to any particular *content* was *not* an effective way to teach these learning strategies. It is important to note that, as when discussing success criteria, it is helpful to share examples of success criteria when teaching these learning strategies. For example, in one study, when students were shown examples of the teacher's notes, as well as a rubric by which their own notes would be judged, these students created much more effective notes than students who did not receive either of these things.

Learning requires two major skills: deliberate practice and concentration
Sometimes learning is not fun. It can take years of practice to become an expert in something. Malcolm Gladwell popularized the idea that it takes 10,000+ hours of practice to become an expert. However, this practice is *not* repetitive skill and drill practice, rather, it is *deliberate* practice. Deliberate practice is *different* from just practice. Deliberate practice involves concentration and someone monitoring and providing feedback during the practice. Furthermore, the activity being practiced is usually a challenge for the student and it helps if the student is aware of the goal of the practice and has a clear idea of what success looks like. A major role of schools is to teach students to *value* deliberate practice and learn that this type of practice leads to competence.

In order to engage in *deliberate practice*, students must also be able to *concentrate* or *persist*. This does not mean they need quiet rooms or long periods of time; it has more to do with *quality* than with quantity. It does mean deliberate attempts to focus on the task and deliberate effort to improve performance. The perfect combination of deliberate practice and concentration occurs when students are given challenging tasks that can be mastered given hours of practice that improves with feedback.

Chapter 7 – The flow of the lesson: [lesson map for students]

Students [need to be able to answer three important questions:
1. **Where am I going?** Often students don't know the goal of a lesson and when they are given a goal, it is often *performance*-related, "Finish the task," "Make it neat," "Include as many sources as possible." Teachers need to help students answer the question, "Where am I going?" with a *mastery*-related goal. Teachers can do this by creating clear and challenging learning goals and making sure these learning goals are transparent to students.
2. **How am I going there?** It is valuable when teachers provide students with feedback *relative to the starting or finish point*, and *not* in comparison to other students. Rapid formative feedback – which will be discussed later – is useful here.
3. **Where to next?** This is the most interesting question to students because it helps them choose the next most appropriate challenge and can lead them to developing self-regulation over the learning process.

Chapter 8 – The end of the lesson

There is a big focus these days on teachers *reflecting* on their lessons. It's easy for teachers to wax poetic about their *teaching*, but one of the main messages of this book is that we need to focus on the *effects* of our actions, that is, our impact on students. In fact, Hattie goes so far as to say, "I never allow teachers or school leaders to visit classrooms to observe teachers; I allow them to observe only students – the reactions that students have to incidents, to teaching, to peers, to the activity." (p. 138) This focus moves the discussion *away* from the teaching toward the *effect* of the teaching.

Evidence of effective learning intentions and success criteria
When evaluating a lesson, it is important to determine the effectiveness of the learning intentions and success criteria. To begin, consider asking, "Did the students know these?" "Could they articulate them in a way that showed they understood them?" and "Did they see them as appropriately challenging?" One way to approach this might be to ask students to keep a notebook in which they write down what they think they are learning, indicators of their progress, and, at the end, whether they believe they have achieved the learning intentions. Another way to evaluate the appropriateness of the learning intentions and success criteria is for teachers to work with other teachers to critique them. Teachers can look at each others' planning to determine whether it matches the success criteria or they can look at student work to evaluate the quality of the learning intentions and success criteria in light of these work samples.

Evidence of learning
Finally, teachers need to examine the impact they have had on each student's learning. They need to be able to answer:

• Are you aware of each student's progress on the journey from his or her starting point toward attaining the success criteria?
• How close is each student to attaining the success criteria?
• What now needs to occur to help each student to move closer to meeting the success criteria?

To answer these questions, teachers need some type of formative assessment that will help to provide them with this type of evidence and which will help to inform their future decisions about their teaching.