

Take-aways

FOR TEACHERS, PRINCIPALS & EDUCATORS



Teachers Matter
Online Summit
16-18 July 2021

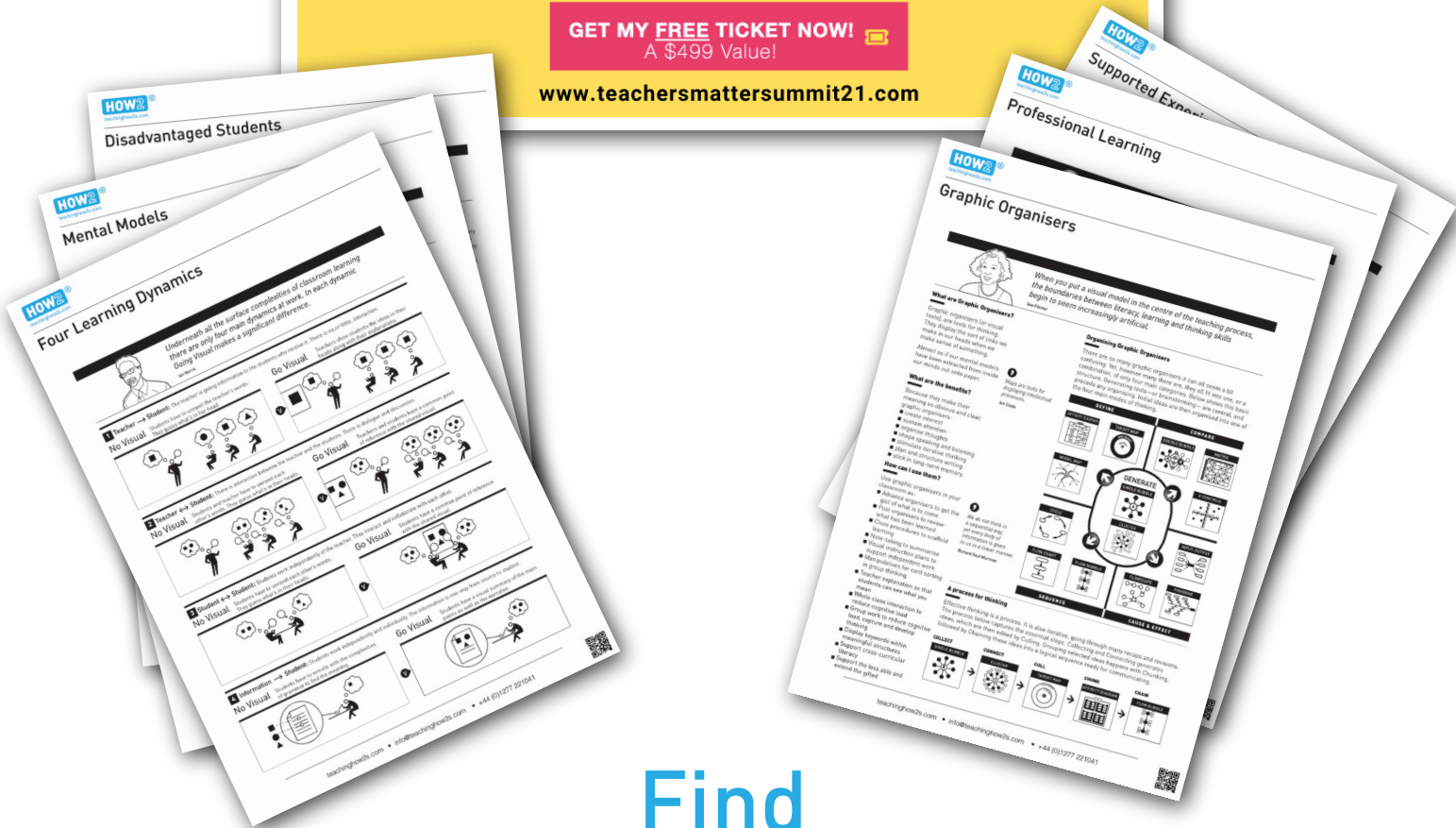


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Ian Harris
Graphic Organisers – essential not extra

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Disadvantaged Students

Mental Models

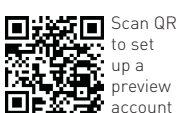
Four Learning Dynamics

Supported Experiences

Professional Learning

Graphic Organisers

Find out more at www.teachinghow2s.com



Mental Models



The packets that organise information and make sense of experience.

Daniel Goleman

The power of mental models

Mental models —also known as schemas— are the storehouse of our understanding and memory.

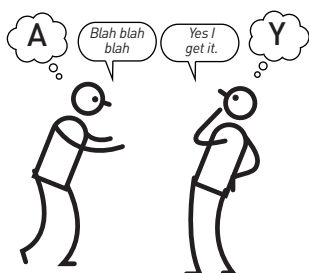
Teachers' primary task, whatever educational approach, is to help develop their students' mental models. To do that, they need to be able to know what mental models their students have about the subject and its concepts. The major question is "how to do that?".

Mentalese

To make things more difficult, Steven Pinker claims we don't think in words but a sort of personal private language he calls *mentalese*.

A communication problem

If teaching and learning is, essentially, the sharing of mental models, we have major communication problems to overcome.



The visual solution

Visuals have a more direct access to mental models than words alone. Visual models are mental models taken out of the head and put into graphic format. Meaning is evident in the grouping and connecting.



Mental models are the images, assumptions and stories which we carry in our minds.

Peter Senge



Schemas are the ghost in the machine, the intelligence that guides information as it flows through the mind.

Steven Pinker



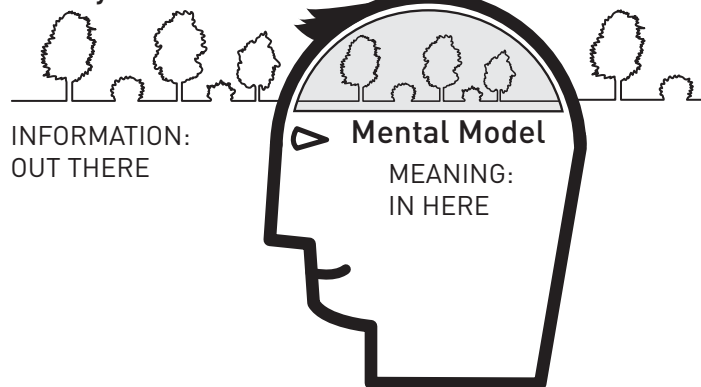
Instructional methods that promote efficient learning serve as substitutes for missing schemas in the long-term memory of novices.

Ruth Clark

Personal meaning-making

Mental models are our personal interpretation of reality. They shape our understanding, beliefs and actions. The trouble is we

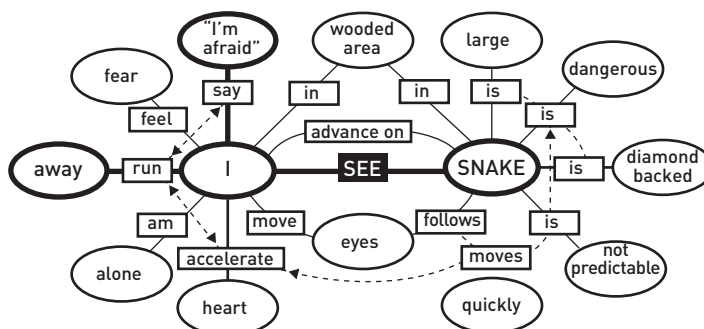
Reality



The basis for our actions

This diagram was created by Daniel Goleman of his mental model to explain his responses to seeing a snake. It is his attempt to communicate just how private, complex and powerful mental models are.

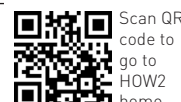
Grasping this significance will influence how you view assessment for learning. It will change how you communicate the major concepts of your subject as well as how to assess your students' understanding of them.



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Vital Lies, Simple Truths,
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Pinker, S. (1997)
How the Mind Works
Penguin, London



Graphic Organisers



When you put a visual model in the centre of the teaching process, the boundaries between literacy, learning and thinking skills begin to seem increasingly artificial.

Sue Palmer

What are Graphic Organisers?

Graphic organisers (or visual tools), are tools for thinking. They display the sort of links we make in our heads when we make sense of something.

Almost as if our mental models have been extracted from inside our minds out onto paper.

What are the benefits?

Because they make their meaning so obvious and clear, graphic organisers:

- create interest
- sustain attention
- organise thoughts
- shape speaking and listening
- stimulate iterative thinking
- plan and structure writing
- stick in long-term memory.

How can I use them?

Use graphic organisers in your classroom as:

- Advance organisers to get the gist of what is to come
- Post organisers to review what has been learned
- Cloze procedures to scaffold learning
- Note-taking to summarise
- Visual instruction plans to support independent work
- Manipulatives for card sorting in group thinking.

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Caviglioli, O., Harris, I & Tindall, B. (2002)

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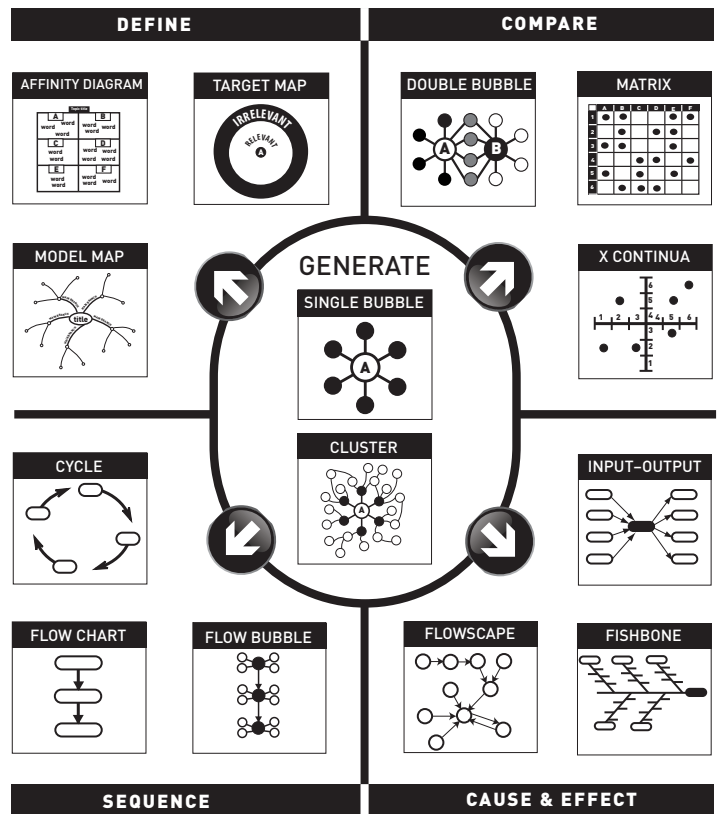
WiseGuide to Visual Tools
Model Learning, Brentwood

Harris, I. & Caviglioli, O. (2003)

Think It, Map It
Network Press, Stafford

Organising Graphic Organisers

There are so many graphic organisers it can all seem a bit confusing. Yet, however many there are, they all fit into one, or a combination, of only four main categories. Below shows this basic structure. Generating tools—or brainstorming—are central, and precede any organising. Initial ideas are then organised into one of the four main modes of thinking.



Maps are tools for displaying intellectual processes.

Art Costa

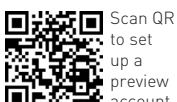
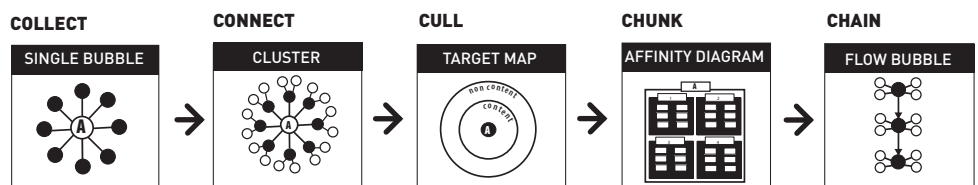


We do not think in a sequential way, yet every body of information is given to us in a linear manner.

Richard Saul Wurman

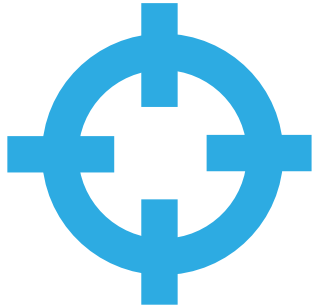
A process for thinking

Effective thinking is a process. It is also iterative, going through many recaps and revisions. The process below captures the essential steps. Collecting and Connecting generates ideas, which are then edited by Culling. Grouping selected ideas happens with Chunking, followed by Chaining these ideas into a logical sequence ready for communicating.



6

WAYS VISUALS HELP LEARNING



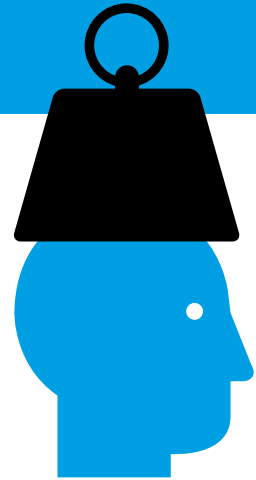
SUPPORT ATTENTION

Visuals direct your attention to what's important — to the key elements of a lesson.



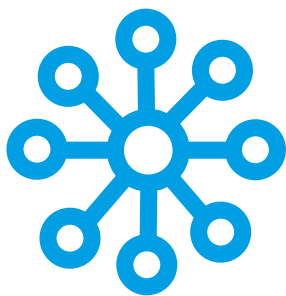
ACTIVATE & BUILD ON PRIOR KNOWLEDGE

Visuals trigger memories and provide hooks upon which new information can hang.



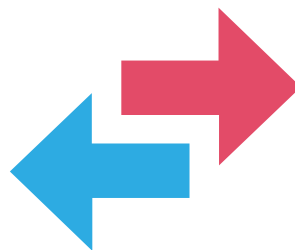
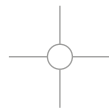
MINIMISE COGNITIVE LOAD

Visuals are quicker and easier to process than sentences because they are not sequenced by complex syntax.



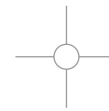
BUILD MENTAL MODELS

Visuals provide ready-made frameworks that match the structure of schema, aiding their development and extension.



TRANSFER LEARNING

Visuals embed easily into long-term memory, making themselves available for retrieval in new circumstances.

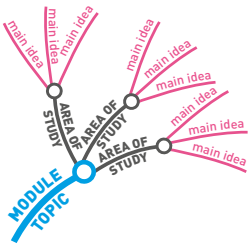


SUPPORT MOTIVATION

Visuals can make material more interesting. They offer a promise of clarity that a wall of words doesn't.

Getting Going with Model Mapping

01 PLANNING



Clarify subject structure by mapping out a topic's main themes. And then the main ideas that make up each theme. Explain this to your students.

02 TEACHER EXPLANATIONS



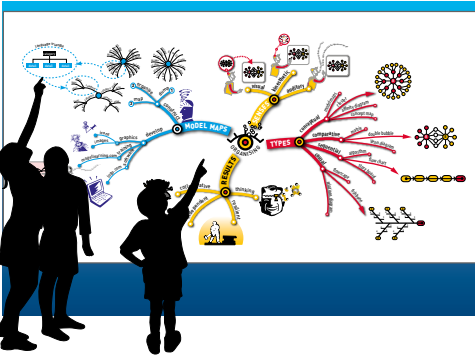
Short of time? Need to get through something quickly? Map out what it is you need to explain and make sure students can see what you are talking about.

03 TEACHER-CLASS INTERACTION

Capture the discussion. Pupils will forget much of what has been said. Don't lose the words — organise them as you go along.

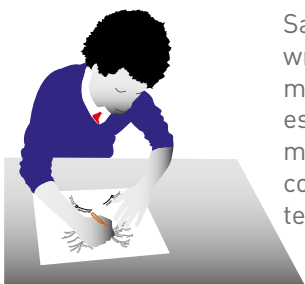


04 DISPLAYS



On a display board, put the title of the topic in the centre, with the main themes on main branches. Extend the outer branches as the topic progresses. With interactive whiteboards, save as to show new learning.

05 PLANNING FOR WRITING



Save your students hours of writing and yourself hours of marking. Allow them to plan essays and coursework as model maps. Check for structure and content before they write in linear text.

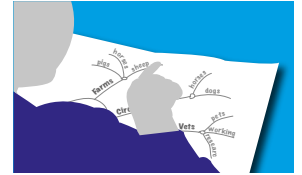
06 REVISION

Students map out their understanding and you fill in the gaps. They explain to a mate to check for understanding. Redraw the map to check memory.



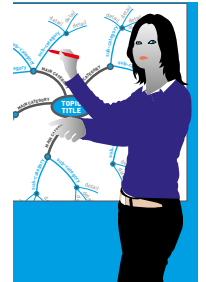
07 TAKING NOTES

Students organise their research, or notes, by map out their notes into particular categories. Direct them towards particular categories or teach them to find categories for themselves.



08 SPOKEN PRESENTATIONS

Allow your students to use maps to support spoken presentations. Develop their confidence and skills by doing this first in pairs, then groups, building up to whole class presentations. Get them doing some of the teaching!

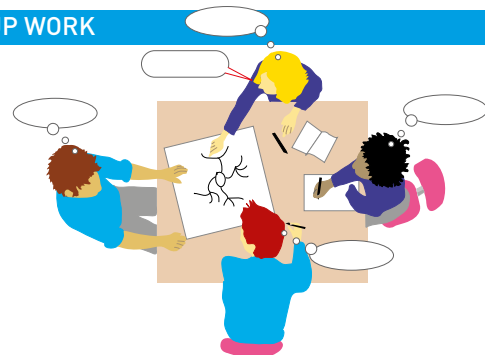


09 PEER ASSESSMENT



If they can't explain it, chances are they haven't understood it. Ask your students to talk through their maps to check for understanding. Done systematically it enables them to edit and develop their maps.

10 GROUP WORK



Use Snowballing or Jigsawing to develop your students' collaborative learning skills. Direct students' attention towards particular categories or challenge them to find them. Either way, make sure they focus not just on gathering but also on organising their ideas.

Professional Learning



Learning is not a one-off event, but rather a process of learning and change over time.

Helen Timperley

The human black boxes

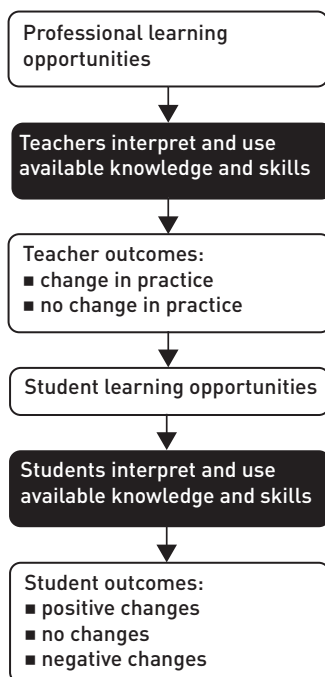
Professional activities aren't half as rational as we believe. Within the journey from course or coaching session to the classroom, there are two major black boxes that can impede progress.

Both teacher and student have to process what is put in front of them — with all their human cognitive and emotional frailties.



There is no straight line between professional learning opportunities, changes to practice and changes to student outcomes.

Helen Timperley



The teacher may misunderstand or ignore the messages from their course or coaching session. And the student may ignore all the evidence that best practice should be having on them!



When the theory behind a strategy is poorly understood these adaptations are likely to be inconsistent with the theory underpinning them and, therefore, less effective.

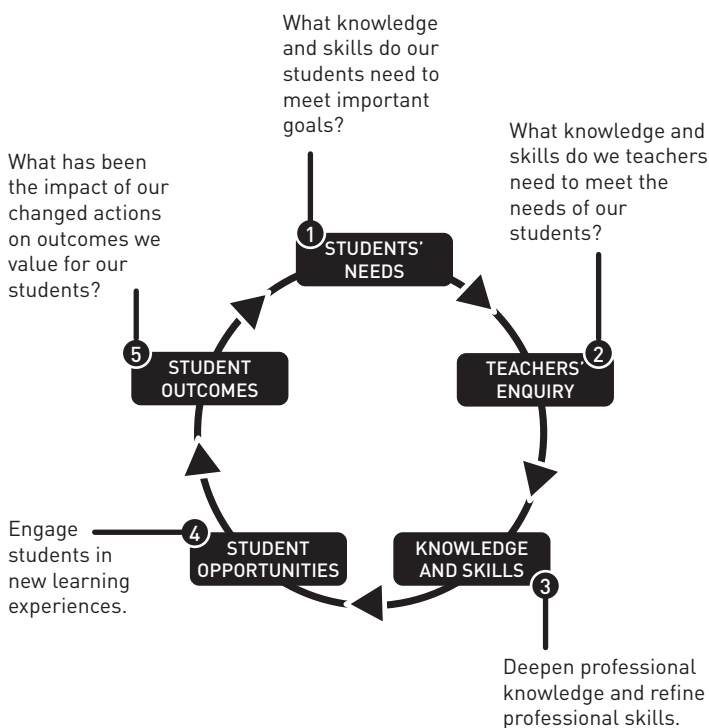
Helen Timperley

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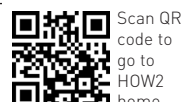
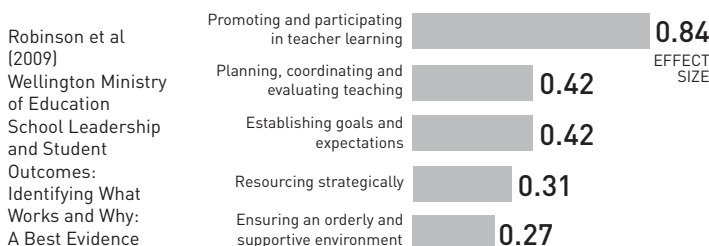
The cycle and rationale

Professional learning can too easily be diverted from its only true purpose: developing student learning. This model by Helen Timperley reveals how decision-making should start with an analysis of student learning needs. Obvious really, isn't it?



The evidence about leaders

This meta-analysis clearly shows which activities leaders engage in that have the greatest impact on student learning.



Four Learning Dynamics



Underneath all the surface complexities of classroom learning there are only four main dynamics at work. In each dynamic Going Visual makes a significant difference.

Ian Harris

1 Teacher → Student: The teacher is giving information to the students who receive it. There is no, or little, interaction.

No Visual Students have to unravel the teacher's words. They guess what's in her head.

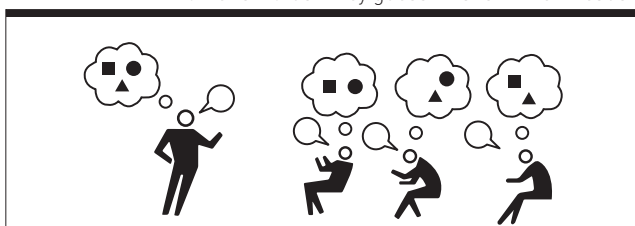


Go Visual Teachers show students the ideas in their heads along with their explanations.

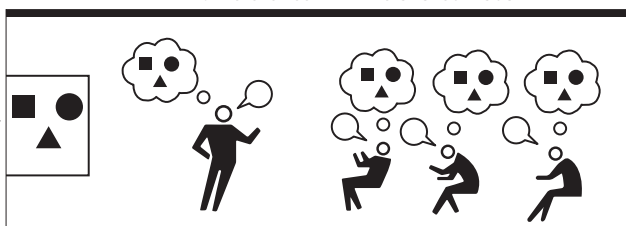


2 Teacher ↔ Student: There is interaction between the teacher and the students. There is dialogue and discussion.

No Visual Students and teacher have to unravel each other's words. They guess what's in their heads.



Go Visual Teachers and students have a common point of reference with the shared visual.

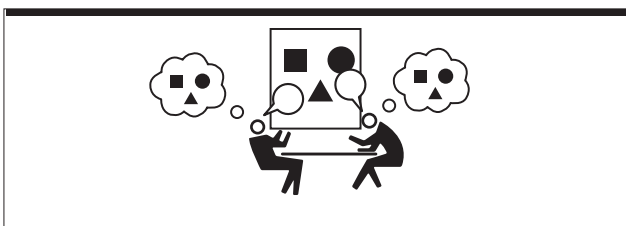


3 Student ↔ Student: Students work independently of the teacher. They interact and collaborate with each other.

No Visual Students have to unravel each other's words. They guess what's in their heads.

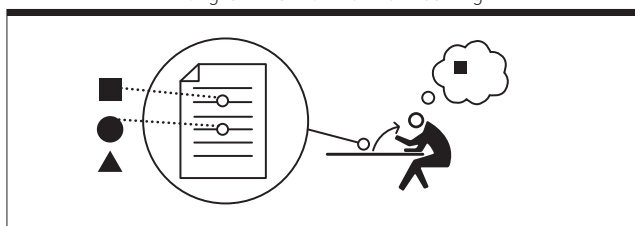


Go Visual Students have a common point of reference with the shared visual.

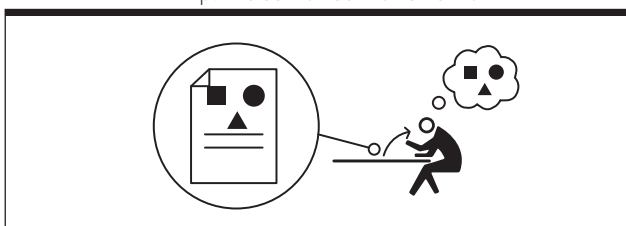


4 Information → Student: Students work independently and individually. The information is one-way from source to student.

No Visual Students have to wrestle with the complexities of grammar to find the meaning.



Go Visual Students have a visual summary of the main points as well as the narrative.



Improving Education



The quality of an education system cannot exceed the quality of its teachers.

Sir Michael Barber

The McKinsey Report 2007

This global study of education systems by one of the world's leading management companies was led by Sir Michael Barber, former Chief Adviser to the Secretary of State for Education on School Standards.

THE PRINCIPLES DISCOVERED

- The quality of an education system cannot exceed the quality of its teachers.
- The only way to improve outcomes is to improve instruction (ie teaching)
- This only happens with mechanisms that ensure every student receives high quality instruction.

THE FINDINGS

■ ■ *We found that high-performing school systems, though strikingly different in construct and context, maintained a strong focus on improving instruction because of its direct impact upon student achievement.*

THE IMPLICATIONS

This, in other words, is a real commitment to professional learning and development. But not all such attempts, however expensive and well-intentioned, worked.

■ ■ *Reforms that expose teachers to best practices through workshops or written materials but that do so without making this knowledge precise enough for teachers to understand how to apply it in their own classroom also fail.*

The challenge is obviously that...

■ ■ *Individual teachers need to gain understanding of specific*



The first part of the challenge is to define what great instruction looks like.

Sir Michael Barber



The next challenge is to make in-service training an effective tool to improve instruction.

Sir Michael Barber



When a brilliant American teacher retires, almost all of the lesson plans and practices that she has developed also retire.

Sir Michael Barber

Professional Development

According to the OECD, "the quality and nature of continuing training available is very uneven". Each of the traditional formats has limitations that work against teachers getting the sort of practical knowledge of different methods needed for improvement.

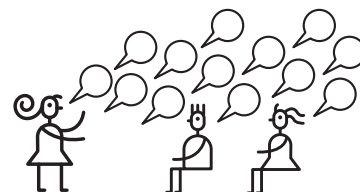
READING

Much gets lost in translation from author's head to reader's understanding. Words are very easily misinterpreted and so there is considerable leakage of accuracy in the transmission.



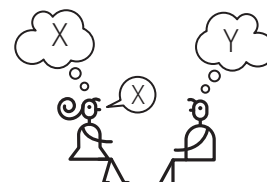
TRAINING

Powerpoints, stories, activities and dialogue can amount to insights and inspiration. But rarely so. It is a one-size-fits-all approach. Little of the content is remembered and applied.



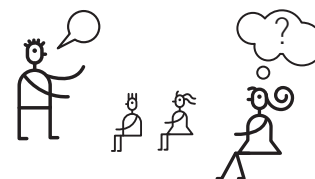
COACHING

Coaching conversations are easily misunderstood. Plus the coaching process emphasises the teacher discovering their own solutions. It is expensive and doesn't scale up as needed.



OBSERVING

Research shows only experts accurately observe the workings of outstanding teaching. Less skilled teachers don't see beneath the surface details to the deeper messages.



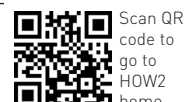
THE HOW2 FACTOR

HOW2s visual explanations reveal with great clarity and simplicity what outstanding teaching looks like. The step-by-step detail gives teachers the necessary precision needed for them to understand and apply the technique immediately. The addition of the HOW2s elevates the quality of conversation in all professional development activities. The explicit and shared understanding transforms the speed, ease and accuracy of teachers' learning.

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Barber, M & Mourshed, M. (2007)
How The World's Best Performing Schools Come Out On Top

OECD (July 2010)
www.oecd-ilibrary.org/education/initial-teacher-education-and-continuing-training-policies-in-a-comparative-perspective



Teaching HOW2s



Unique, innovative, clear and straightforward — HOW2s provide a step change in training for learning professionals.

Tricia Hartley, CEO National Campaign for Learning

The purpose and strategy

The central purpose of the TeachingHOW2s website is to improve the quality of teaching.

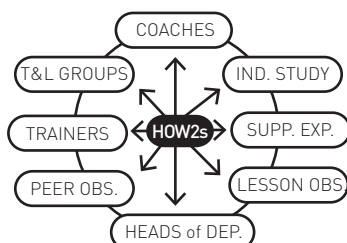
To be effective in this pursuit, teachers need to know what quality teaching looks like from the start. Not as a distant goal, gaining familiarity with it only after prolonged exploration.

HOW2s offer a radical new approach — show teachers from the very beginning what quality teaching looks like. Up close and step-by-step. Not through the avalanche of words found in policies or speeches, but directly through visuals.

Just as you wouldn't teach swimming with only a manual and repeated tests, so the skill of teaching needs visual explanations and the time to absorb and apply them.

The hub of CPD

HOW2s are not an extra CPD activity to be fitted in. Quite the opposite. HOW2s are the practical knowledge of quality teaching that informs all CPD activities.



With HOW2s at the centre, every CPD activity starts with over 100 blueprints of quality teaching. A common understanding of the mechanics of excellence is established from the very start.



What educators don't have are explicitly shared practices, which is what distinguishes educators from other professionals.

Richard Elmore



When learning something new, we are all visual learners.

Ruth Colvin Clark

Learning Managers

Ofsted expects managers, such as HoDs, to drive up standards of teaching. HOW2s give them a compendium of teaching ideas and a set of tools to plan, communicate and monitor progress.

Step-by-step visuals

Just as aircraft safety cards communicate procedures easily, rapidly and accurately, so HOW2s explain the step-by-step processes of evidence-based teaching techniques.

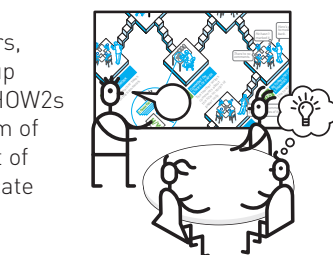
With backgrounds cut out, the key elements are clearly defined and unambiguous. Everyone understands.

Three different visual formats cater for individual preferences.

Supported Experiments

Supported Experiments are about teachers expanding and discovering new ways to teach. They cannot, however, waste time reinventing the wheel. Or worse, explore techniques proven to be ineffective.

HOW2s provide 100+ evidence-based techniques to spark ideas, establish a common language, build a growing shared understanding and focus discussions to specifics.



Coaches

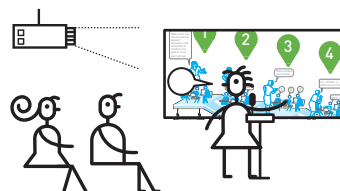
With HOW2s by their side, coaches are able to coach more teachers in less time.

Time spent preparing materials is radically reduced. HOW2s are ready-to-go and very appealing.

Coaches can send Lists of HOW2s to teachers to look at before their sessions, which are then studied together.

As a result coaching sessions *hit the ground running* and take less time to achieve their aims.

And so coaches report they are able to coach more teachers.



Coaches can group innumerable combinations of HOW2s together to create materials for instant workshops.

With over 100 HOW2s available, coaches rapidly become more knowledgeable, confident and appreciated.

Teachers

After coaching sessions, workshops or training events, teachers reinforce their learning by revisiting the HOW2s online as and when they need.

The Recommend feature means teachers' social learning strengthens their community of practice.

HOW2 Staff Launch



When learning something new, we are all visual learners.

Ruth Clark, multiple author on research into workforce learning

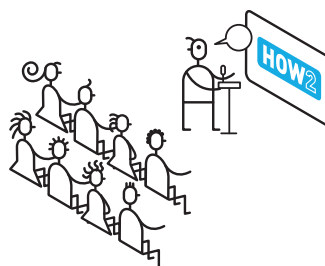
Bilborough College

David Shaw is the director of TLA at Bilborough sixth form college. He was responsible for launching the HOW2s to his staff. This is how he went about it. Look how well it sets up further powerful CPD work as described by David Weston of the Teacher Development Trust.

"Teachers must work together to support and challenge, to enquire together. They must focus their work on student learning, identify issues/areas for development and work on these valued student outcomes."

1 GIVE OVERVIEW

David Shaw kicked off the session by giving an overview of what the HOW2s were, how they developed student learning and how the Skills Exchange was the hub for sharing their own learning with one another.



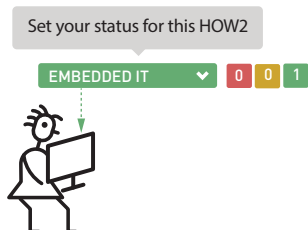
2 SPLIT INTO GROUPS IN COMPUTER ROOMS

The teachers split up into smaller working groups in computer rooms, each with a learning coach leading the activities on the HOW2 app, as seen below.



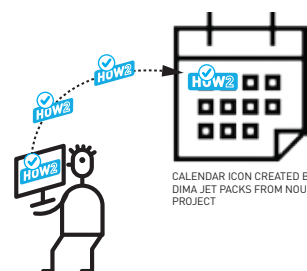
3 UPDATE EMBEDDED STATUS

Teachers looked through the HOW2 Library to find techniques they had been using. They updated their status to Embedded It, and used the Notes to capture how they applied it in their practice.



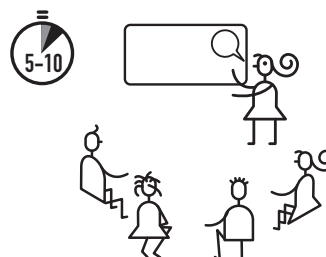
4 PLAN FOR MORE EMBEDDED STATUSES

Teachers then had to choose 3 to 4 HOW2s they would like to work on for the rest of the term with a view to developing their practice to the Embedded status.

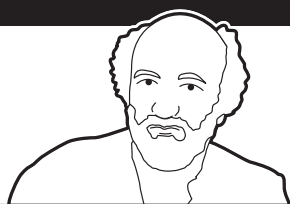


5 MICRO-LESSONS USING HOW2S

Teachers then worked from a list of 12 HOW2s, chose 1 they felt was most relevant to them, and used it to teach a 5-10 minute micro-lesson to their peers. They had 45 minutes to prepare. The topic was either something from their subject area, or something else of interest to them.



Supported Experiments



Unlike many systems-based approaches it creates improvement, rather than simply identifying where improvement is needed and asking for it.

Geoff Petty

Definition

Supported Experiments are like mini-action research projects. Crucially, they are supported and promoted by the leaders of the organisation. Even better, as Helen Timperley's research shows, the most effective leaders participate in them.

Principles

Deliberate Practice: constant effort creates excellence.

No Blame Culture: Learning without fear of judgement.

Corrected Practice: Learning grows from feedback.

Growth Mindset: An approach based on learning from errors.

Iterative Process: Not a single effort, but continuous improvement from continuous feedback.

Balance

The sweet spot is achieved in the balance between the following extremes.

Safety — Accountability

Teachers don't need measuring during the learning process. But they are accountable for their outcome improvements.

Informality — Bureaucracy

Teachers learn best in informal processes, not burdened with management paperwork. But rigour needs to be present to coordinate different experiments and monitor progress. This requires a system that is lean — minimum administration for maximum impact.

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Process

Supported Experiments can work in a variety of different ways. Here is a 6-stage process revolving around the HOW2s.

1



Start with students' learning in mind. Analyse current problems and the techniques needed to remedy the situation. Identify the students' barriers to learning and what you want then to achieve. Now, consider the techniques you'd like to experiment with in order to achieve the student goals.

2



Explore the HOW2 Library and identify those techniques most appropriate to the decisions made at stage 1. Create a personal Collection of HOW2 techniques that will form the project. Write up any adaptations needed in the Notes function. Communicate the plan to the students involved.

3



Try out the HOW2s several times until you feel confident enough to invite colleagues to see your trials by using the Nudge tool. Call these *visits* to distinguish them from formal *observations*. Talk through the specific HOW2s with colleagues before they see you in action.

4



The coaching can be by a Lead Teacher or a peer. If new to the HOW2, again, talk it through. Reverse coaching roles with the observer becoming the coachee, and the performing teacher the coach. Make feedback for action directly related to the stages of the HOW2.

5



Celebrate successes in skill development and increased student learning by using the Share function. Pass on the news to all participating colleagues. And others. Explain the learning journey and how problems were overcome.

6



Analyse the successes of the different HOW2 techniques and relate them to various factors: subject, stage of topic or lesson, student ability, student engagement and test results. Capture this in the Notes review section.

Expert Knowledge



Expert teachers are very context bound, and find it hard to think outside the specifics of their classrooms. Generalizations are not always their strength.

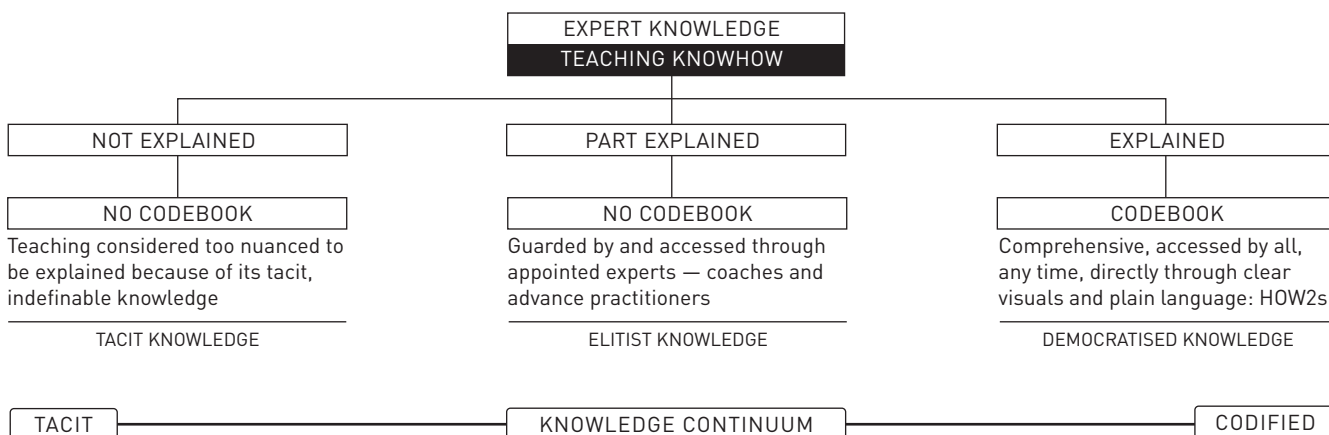
John Hattie

Guarding Expertise

When expert professional knowledge is not articulated, it remains guarded and arbitrated by authorities. In education, coaches and advance practitioners have become its appointed gate keepers. Professional development is greatly synchronised to their availability, judgements and pedagogic repertoire.

Democratising Expertise

Software algorithms have regularly proven to outperform human experts in professions such as the law and medicine. This unprecedented demysitification and sharing of previously secret professional knowledge is an inherent characteristic of our digital age. Education will not escape this erosion of elite status by the unrelenting codifying of professional *knowhow*.



Coaches: Education's Rock Stars

In his book *The Checklist Manifesto*, top surgeon Atul Gawande describes how some professions have their own *rock stars*. These are the top performers who enjoy elite, high status because their professional *knowhow* has not been captured, codified and shared. The emphasis therefore focuses on them — the *special ones* — rather than on demystifying their talent.

In education, coaches and advance practitioners enjoy a similar status. Selected for their top-graded lesson observations, they are the channels through which teachers can access expert teacher knowledge. Their status means they also often control the type and source of information available.

Teach Like Me!

There is an inherent weakness in designing improvement programmes around expert practitioners. As John Hattie points out above, expert teachers are experts in their particular context alone. Researchers have not found them to be very able in generalizing beyond their situation. As a natural consequence, they often send out the, unintentional, message to teach as they do. Very little depth of learning happens in this situation and transfer into different classrooms has a disappointing rate of success.

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HOW2: A Visual Codebook

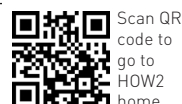
HOW2s are visual explanations that transform research of the best teaching techniques, into easy-to-follow, step-by-step guides for every teacher.

HOW2: Self Coaching

This innovative codifying of teacher expertise, puts power into the hands of teachers. No longer reliant on experts, they can access expertise whenever and wherever they want.

HOW2: Social Learning

Teachers are equally empowered to learn socially with the HOW2 set of tools. Forming groups and sharing recommendations creates a network of learning that is designed for time-pressed modern professionals.



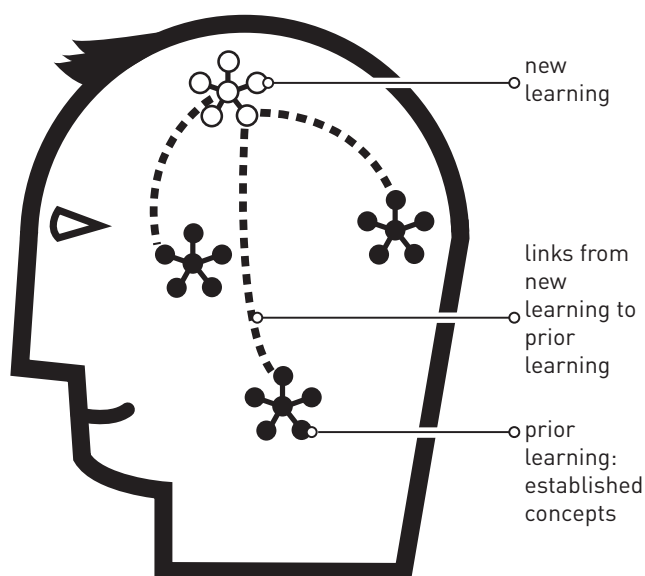
Constructivism



*What we see changes what we know.
What we know changes what we see.*

Jean Piaget

New information needs to make personal sense
New information needs to make personal sense
New information needs to make personal sense
New information needs to make personal sense
New information needs to make personal sense



Prior learning

Established concepts and knowledge are clustered into inter-connected networks of meaning. These structures are non-linear and are not based on the syntax we use when forming sentences.



We must transform linear sentences into a hierarchical structure in order to assimilate them into our minds.

Joseph Novak & Bob Gowin

Mentalese

We all use a private operating system to make sense and create personal understanding. Daniel Goleman calls this language *mentalese*.

New learning

When you are presented with new information, you try to make sense of it. But how exactly? By translating it into your own mentalese.

This means that all classroom talk and text has to be successfully translated into mentalese in order to be understandable.



Maps make sense of chaos, define the abstract with the concrete.

Richard Saul Wurman

Accommodation and assimilation

Jean Piaget's contribution to child psychology was his explanation of how we deal with new information from the world. Essentially, we compare it to what we already know. This is why connecting to prior learning is so important in planning lessons.

If the new information makes immediate sense, then it fits neatly into the child's existing mental model. It is *accommodated*.

If, however, the new information doesn't easily drop into the child's personal world view, something else has to happen. In this instance, deeper learning is prompted. The child is forced to adapt, develop or reconstruct her existing notions of reality. This harder and more challenging process is called *assimilation*.

Theory of learning, not a method of teaching

The great abuse of constructivism was to mistake a theory of learning, for a method of teaching. And following on from that imposing so-called universal truths such as Piaget's stages of learning. As a theory of how humans create knowledge, constructivism is both interesting and valuable. As a method of teaching, it leads to ideological dead-ends.

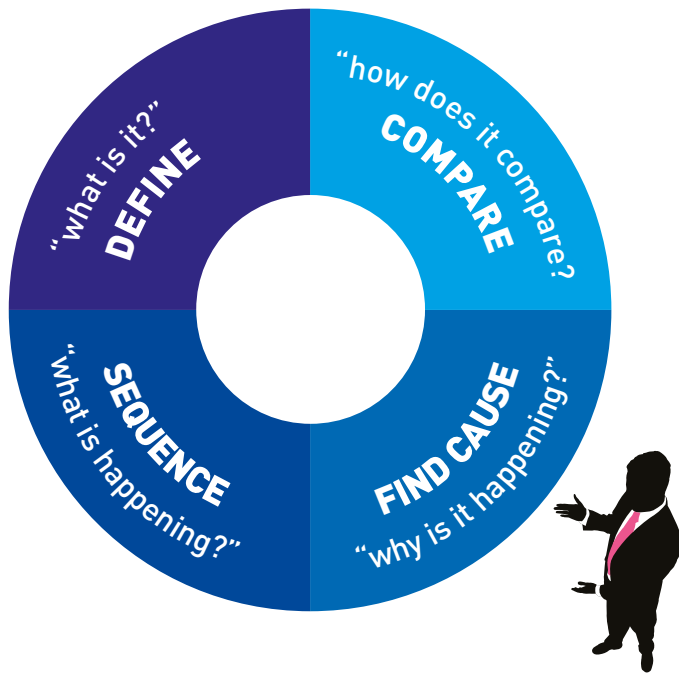
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Graphic Organiser Model



FOUR QUESTIONS

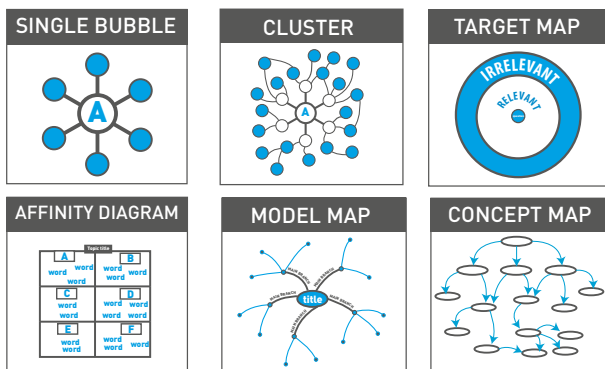
There are, essentially, four main types of questions we can ask. All questions are, therefore, elaborations on these four types. Knowing this helps you clarify your explanations. For students, it helps them focus on the right sort of thinking to adopt.

FOUR MODES OF THINKING

Just as there are four types of questions, so there are four modes of thinking. These modes of thinking arise directly from the four questions. Consequently, whether you're analysing, hypothesising, synthesising or problem-solving, you're still operating within one, or more, of these four modes.

FOUR TYPES OF TOOLS

As visual tools are thinking processes made visible, it comes as no surprise to know there are only four types of visual tools. This clear match of questions, thinking and tools makes it possible to use visual tools systematically and with great effect.

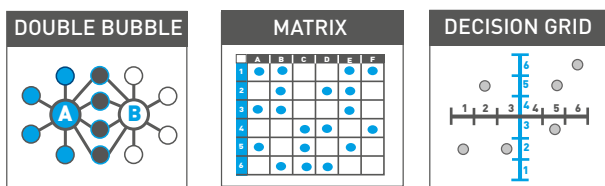


DEFINE

This thinking mode establishes the relationships between various ideas that make up concepts. Knowledge is gathered, sorted and organised into meaningful patterns.

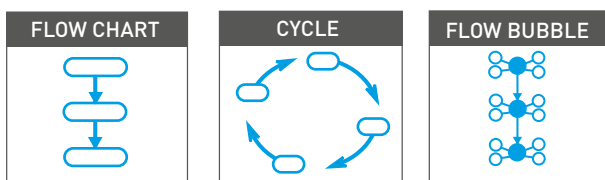
It is at the root of the other modes of thinking too. After all, how can you compare two items until you have defined what they both are? Or, for that matter, how can events be sequenced until they have been identified?

Whenever thinking gets too complex and challenging it's good to retrace your steps and start from this defining question.



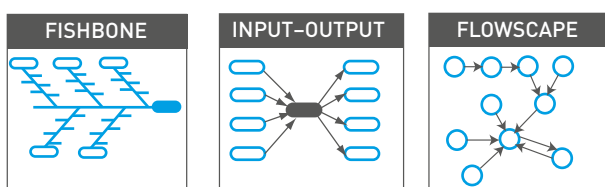
COMPARE

Comparisons are a key way of learning. Sometimes you want to compare two items directly. Or examine change and compare the same item over a period of time. On other occasions, more items may need to be compared with respect to a list of features.



SEQUENCE

Identifying the sequence of events is a key way of establishing what happened. Clarifying the sequence needs precise plotting for which there are a range of tools. These sequences can also be applied to the future, providing clear step-by-step instructions or stages of progress.



FIND CAUSE

This can often be the most complex thinking task. These visual tools help you identify patterns of influence, chains of reactions and networks of consequences. Again, there are different visual tools for these different approaches to identifying causes.

CPD Test



Courses are to CPD as ingredient-buying is to cooking; it's what happens after that makes the difference.

David Weston, Chief Executive Teacher Development Trust

Teacher Development Trust

Set up by teacher David Weston, in 2012, this organisation is now the go-to place to find out about the latest research and practice on CPD. It commissioned leading academics to write this ten-question test to help teachers and leaders evaluate the effectiveness of their CPD.

The right kinds of CPD can produce big benefits for learners, and... most of the CPD undertaken by teachers is not of this kind.

Professor Robert Coe

The Test

Based on what works best in professional learning, these ten questions help teachers work out if their current CPD diet is worthwhile or not. And pinpoint what exactly is missing so they can agitate to get changes made. We test the HOW2 app against the questions.

The Authors

Robert Coe: professor of Education, Durham University.
Phillipa Cordingley: chief executive at CUREE
Steve Higgins: professor at Durham University
Toby Greany: professor of Leadership, Institute of Education

1 *Tried to learn to do something that is relevant and supported by research evidence?*

HOW2 users choose their techniques based on evaluation by a mentor, coach or observer. Or, indeed, on their decision of what skill their students need them to develop. The HOW2s themselves are evidence-informed, being based on several sources of meta-analyses of the most effective techniques.

3 *Engaged in activity that surfaced, challenged and developed your thinking about learning and teaching?*

The HOW2 Learning Centre offers teachers the necessary background theories of learning and teaching with which to enrich their pedagogic decision-making. The structure of the HOW2 Process, with its embedded theory of action, clarifies teachers' thinking, ready for conversation and challenge.

5 *Engaged in activity that included observation & feedback?*

HOW2s are embedded in organisations' coaching and observation systems. In the HOW2 Learning Centre, are several visual guides to integrating HOW2s in to these and other contexts in which feedback takes place. The visual nature of the HOW2s enables the feedback to be precise and objective.

7 *Drawn on explicit support from external expertise?*

The HOW2s, their learning statements along with the material from the Learning Centre are all externally sourced. Regional HOW2 networks bring in both support and challenge. Carole Kane, the HOW2 professional learning lead, adds another external source of expert support.

9 *Drawn on explicit support from coaches / mentors?*

Most organisations start their HOW2 induction with their coaches, however differently titled they may be. The HOW2 coaching model has in its design the stages of developing through the For Me/ With Me/By Me phases that embeds the notion of modelling.

2 *Focused on (and evaluated success against) students' learning outcomes?*

Every HOW2 has a set of student outcome statements. These help teachers decide which technique is most relevant to their students' learning needs. By specifying, in quite detailed fashion, how they develop the students' learning power, the HOW2s offer a set of criteria against which to make a judgement.

4 *Engaged in activity that allowed experimentation to adapt/apply approaches to your classroom?*

The HOW2 Process, that helps teachers structure their plans, contains a feedback loop designed around adapting and applying the technique. This iterative way of working and reflecting provides teachers with a solid framework with which to base their experimentation.

6 *Engaged in activity that took place at least monthly over two terms?*

Teachers often make use of the HOW2 app on a daily basis. Designed for busy professionals, the HOW2 app gives teachers the convenience they need to integrate professional learning into their daily practice. There is no need to wait for a specified training day for a visiting expert. Expertise is always at hand.

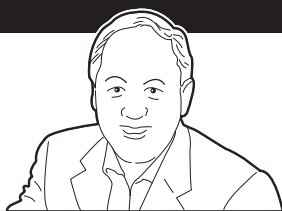
8 *Drawn on explicit support from peer networks?*

The HOW2 Skills Exchange (SX) is designed with this very purpose in mind. Structured around three self-designated statuses of fluency, the SX is a central hub for the capture and sharing of the organisations' best practices. The SX is soon to be expanded to become a national network of peers.

10 *Drawn on explicit support from school/college leaders?*

The HOW2 app provides leaders with dashboard updates on teacher participation. The Nudge feature helps managers shape professional learning and monitor its progress. The Learning Centre helps leaders and managers stay updated on research, theories and new practices.

The HOW2 Skills Exchange



It is not possible to establish productive school cultures without ... school structures that increase opportunities for meaningful working relationships and collegial support among teachers.

Andy Hargreaves

Definition

The HOW2 Skills Exchange is an online network of teacher know-how, freely exchanged among colleagues. Teachers learn from trusted peers who have tested out the HOW2s in their particular contexts.

Attributes

Knowledge Capture: No more organisational goldfish-like lack of retention of what the best teachers do. The capture of best practices is *cumulative* (building over time), *current* (live sharing) and *consensual* (teachers decide to share).

Open Statuses: Teachers determine their own status of a HOW2. Their transparency to colleagues provides both an invitation to connect and the peer accountability to respond.

Lateral Network: This is no top-down, directed activity. It generates itself purely from a free exchange of ideas and skills, providing teachers with trusted and valued know-how from fellow teachers working in the same context.

Radial Hub: No lethal mutation from serial word of mouth. The central hub of HOW2s provide a stable, shared understanding.

Shared Know-How: Teachers access, directly from peers, what they have found works best. Powerful, valued and trusted know-how. It increases teachers' professionalism and promotes their self sufficiency.

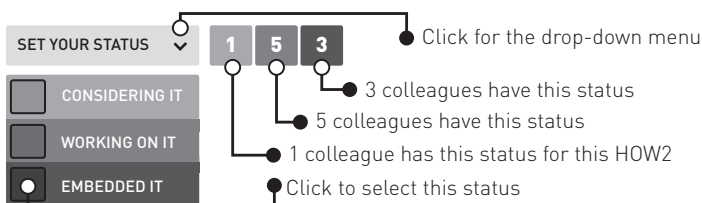


Unique, innovative, clear and straightforward – HOW2s provide a step change in training for learning professionals.

Tricia Hartley, Chief Executive National Campaign for Learning

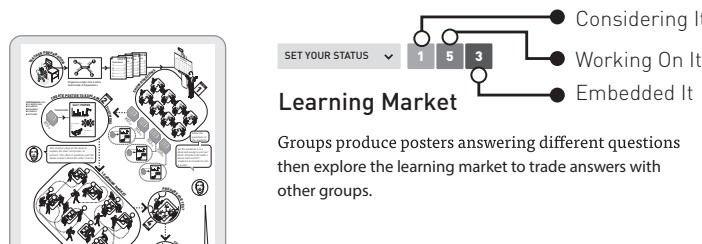
Individual HOW2 Page

On each individual HOW2 page, you can set your status: declare if you are considering using this HOW2, are indeed working on it, or maybe have even now embedded it into your practice.



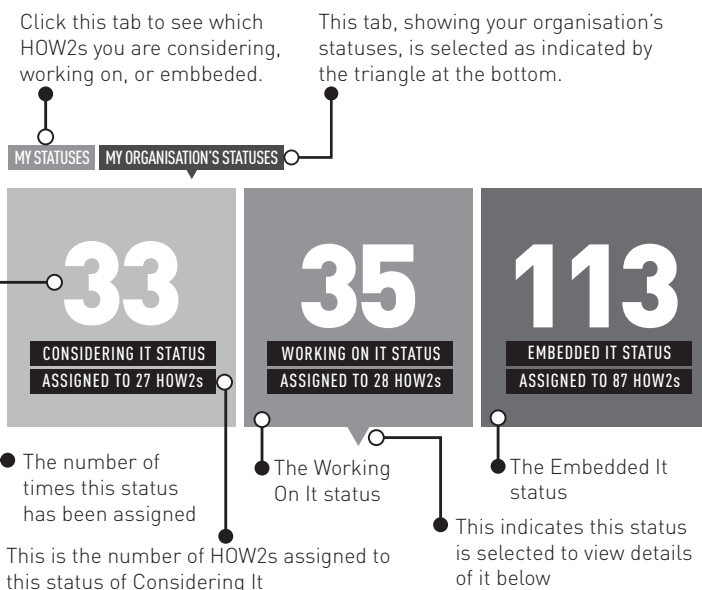
The Library

When searching for HOW2s in the library, you can see the status numbers for each individual HOW2.



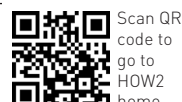
The Skills Exchange

At the Skills Exchange you can view all the numbers for either your statuses, or for those of your organisation.



REFERENCES

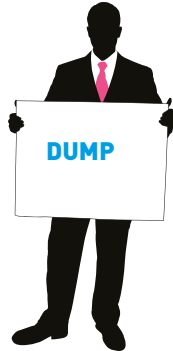
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DOM method of Model Mapping

1 DUMP

- Get your thoughts out of your head
- Don't judge or organise your thoughts
- Display your thoughts anyway you want



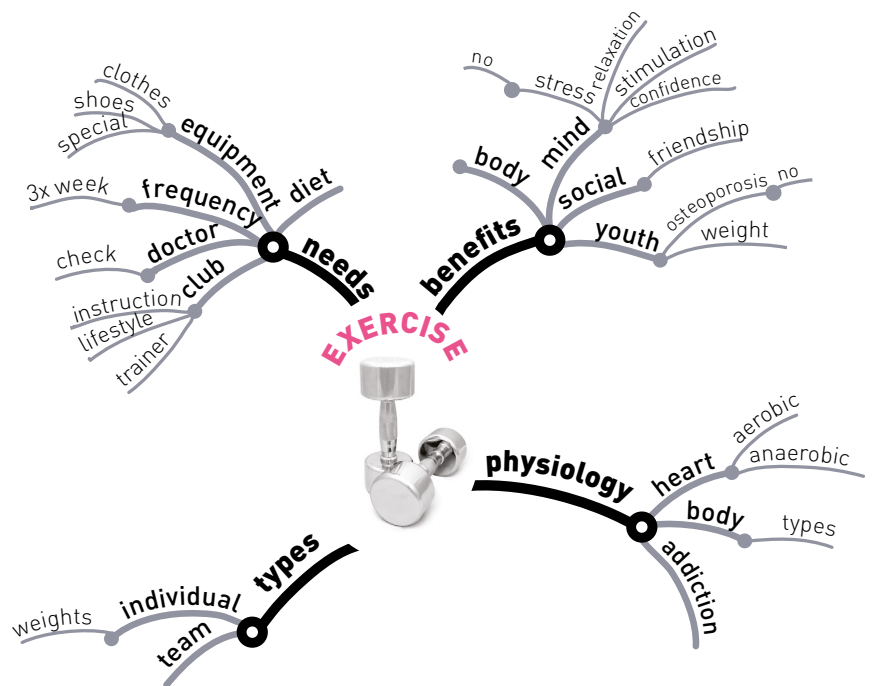
2 ORGANISE

- Tidy up your thoughts
- Put them into groups
- Identify what a group has in common



3 MAP

- Find words to capture the meaning of each group of thoughts
- Make these words your main branches
- Divide up the words within each group of words into smaller groups
- Keep breaking down into ever smaller groups



Disadvantaged Students



It is less the content of the curriculum that is important than the strategies teachers use to implement the curriculum.

John Hattie

The argument

The Centre for Social Justice argues that:

■ Because...

"The effects of high quality teaching are especially great for pupils from disadvantaged backgrounds: over the course of one year a good teacher can add 18 months of learning to a student from a disadvantaged background, compared with six months for a less able teacher." (Page 96)

■ Therefore...

"The benefits of effective professional development are especially great for disadvantaged students." (Page 104)

■ Yet...

"According to David Weston, Chief Executive of the Teacher Development Trust (TDT), schools in England spend only 0.25 per cent of their budget on developing the classroom skills of their teachers." (Page 106)

■ And...

"Vivienne Porritt, Executive Director at the London Centre for Leadership in Learning, Institute of Education, told the CSJ that ... continuing teacher education would still benefit from more personalisation and opportunities to take account of the individual learning needs of teachers and their context – "one size can't ever fit everybody". (Page 102)

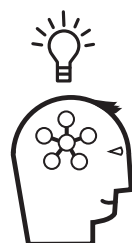


I would advise every child to choose their parents wisely.

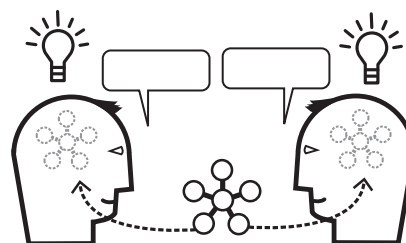
Professor Sir Michael Rutter

Evidence-informed teaching and learning

Able students from language-rich backgrounds come to school with the tools for effective learning: sustained attention, vocabulary and elaborate grammar. It's no surprise then that they are able to process incoming information on their own. Inside their heads, they scan, hypothesise, edit, analyse and connect. So, even with low quality, unadventurous and teacher-dominated teaching, they learn with far fewer difficulties than their more disadvantaged peers.



ADVANTAGED



DISADVANTAGED

Less able students, however, stall unless classroom activities are designed so that the internal processes of the able students are externalised. Private thinking needs to be made visual, concrete, public and social. Which is exactly what the top-ranking evidence-based teaching techniques achieve.

Seeing and manipulating visuals, prompts dialogue. The need for better explanations stimulates the development of sophisticated language. Supported by the social dynamics, thinking deepens. And learning is more likely to be internalised.

The HOW2 effect

HOW2s are evidence-informed techniques for generating quality active learning. Here are just some of the series and their impact.

■ Assessment for Learning

Peer assessment creates socially-generated evaluation skills.

■ Cooperative Learning

Language and understanding is developed via active learning.

■ Graphic Organisers

Visual representations of concepts makes thinking tangible.

■ Manipulatives

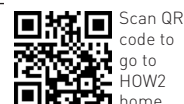
Sorting cards makes the solitary act of thinking, public and fun.

■ Whole Class Teaching

Dynamic No Opt Out activities generate participation and accountability.

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Stretch and Challenge



While challenge is one of the core ingredients of effective learning, the art is in making the challenge appropriate to the student.

John Hattie

Spin class metaphor

One way to look at S&C is to examine what goes on in a spin class at the gym. Everyone is working together, under the direction of the trainer, but working at their own level.

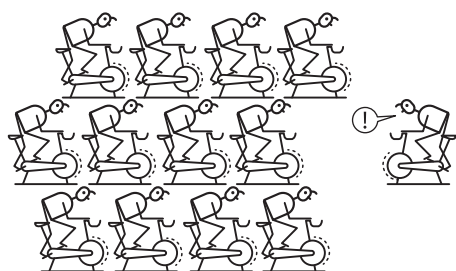
At the same time, the trainer is encouraging everyone to beat their own personal best.

Everyone is challenged. The fitter ones are not let off the hook as they have their own targets.



A student only learns when work is moderately challenging that student, and where there is assistance to help the student master what initially seems out of reach.

Carol Tomlinson



Bloom's new taxonomy

The upgraded taxonomy by Anderson and Krathwohl is now firmly embedded in knowledge. More specifically, four types of knowledge, as you can see below. Each of these knowledge domains is matched against the six levels of thinking. And at each junction, you see the sort of practical activity that challenges that level in Bloom's hierarchy. The teacher can use this table to ensure each student is stretched, at the appropriate level, within all four domains of knowledge.

THE COGNITIVE PROCESS DIMENSION

THE KNOWLEDGE DIMENSION	Remember	Understand	Apply	Analyse	Evaluate	Create
Factual Knowledge	List	Summarise	Classify	Order	Rank	Combine
Conceptual Knowledge	Describe	Interpret	Experiment	Explain	Assess	Plan
Procedural Knowledge	Tabulate	Predict	Calculate	Differentiate	Conclude	Compose
MetaCognitive Knowledge	Appropriate Use	Execute	Construct	Achieve	Action	Actualise

Differentiate to enrich, extend and accelerate learning

To extend the more able, here are six avenues for stretching them.

■ Task

More able learners can start at a higher level and move through concepts more quickly. Or skip work within levels.

■ Outcome

Engage with the same content but with the outcome open-ended.

■ Resource

Provide different resources to the rest of the class while working on the same topic (complex texts and concepts)

■ Pace

Work at a faster pace than others and make links. Or work more slowly for some extended, in-depth study.

■ Choice

Give opportunities to select their own activities. Self select materials. Start a task from a different point.

■ Questions and dialogue

Target questions for higher-order thinking and intricate language.

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Digital Technology



It is therefore the pedagogy of the application of technology in the classroom which is important: the how not the what.

Professor Steve Higgins

The Sutton Trust Report

Let's face it, technology hasn't delivered on many its promises. At least not in most schools.

The Sutton Trust report looks at what schools who succeed with technology actually do. What made the difference was not whether or not particular technologies were used. Or how often.

What was crucial was the degree to which technology was embedded in, and the servant of, every day teaching.

The shift is away from whether or not to use technology, to identifying to which specific educational purposes they are best suited. And then, how exactly to embed them into a variety of specific contexts.



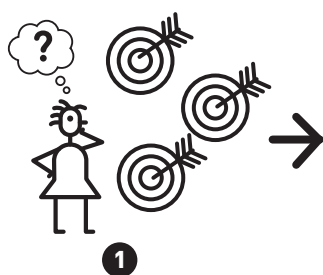
A focus on technology is not about the technology itself, but about changing teacher practice.

Robert Marzano

The Sutton Report recommendations

- 1 Clear rationale for use**
In other words, what's the point, learning-wise? Is it better, longer, more efficient, more effective, deeper or more productive learning? Or, maybe, better teacher support to a greater number of students?
- 2 Clear role**
What is the specific role of the chosen technology? To help students gain better access to content? Or provide better feedback? Could it improve student self-management?
- 3 Collaboration and interaction**
Digital technologies generate better learning if they are used as part of cooperative learning. This revolves around discussion and feedback.
- 4 Supported development**
Both teachers and students need continued support in this more advanced, learning-centred approach to technology.
- 5 Role for CPD**
There is a clear role for CPD in developing teachers' skills and mindsets for effective use of digital technologies.

Putting it into action



1

Choose a curriculum learning target

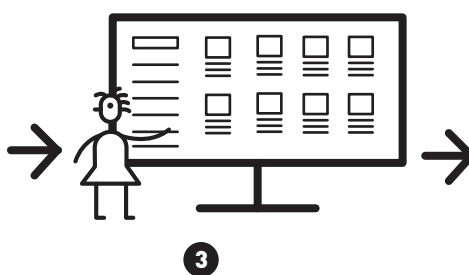
Clarify a learning goal .



2

Choose an evidence based strategy

Choose an evidence-based approach to achieve the goal.



3

Choose a HOW2 technique

Get more specific: choose a HOW2 technique to execute the strategy.



4

Choose a digital technology

Choose a digital technology to support the HOW2 technique.



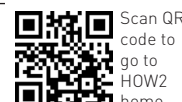
Technology is best used as a supplement to normal teaching rather than as a replacement for it.

Steve Higgins

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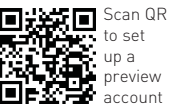
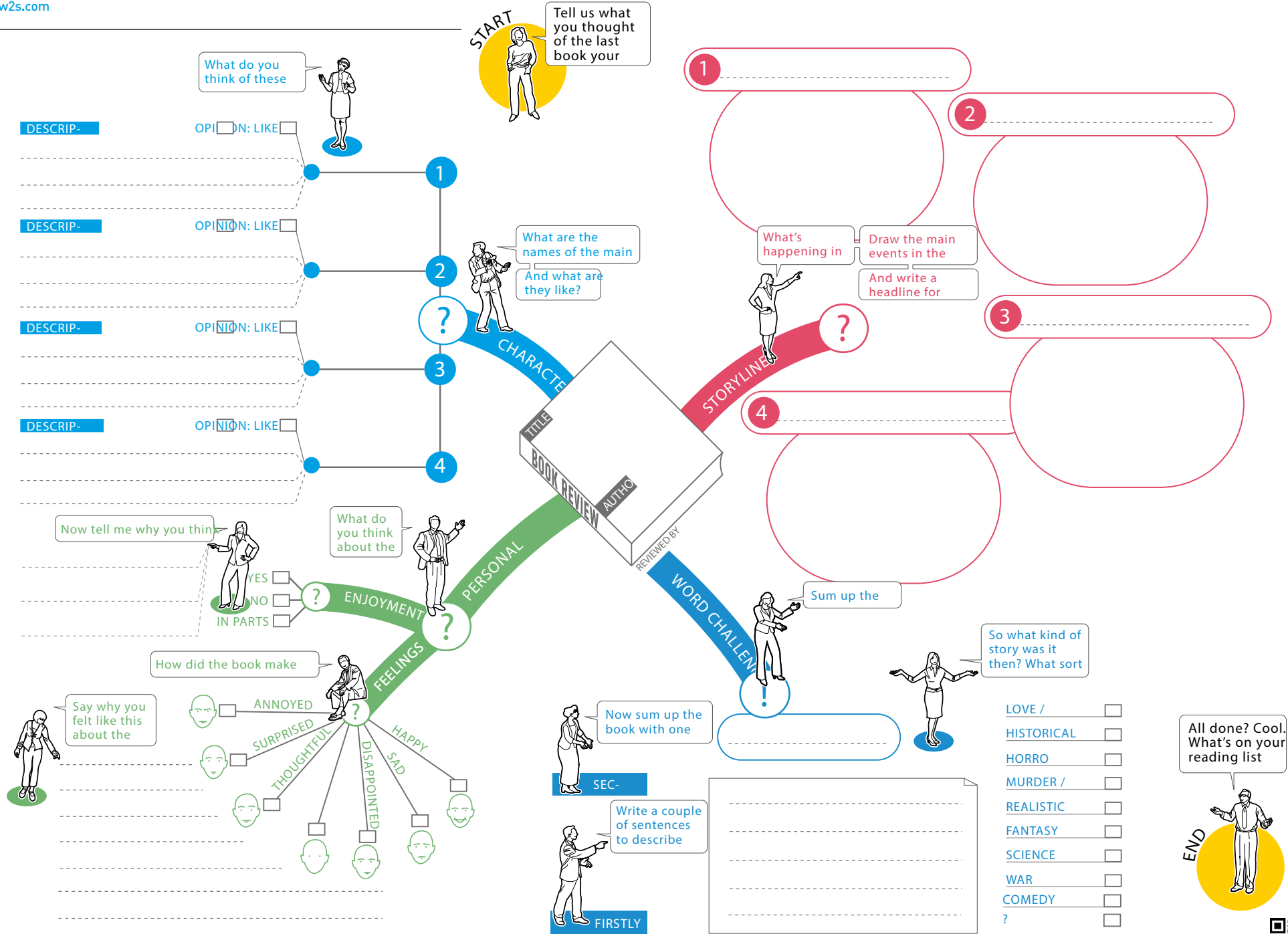
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HOW2[®] BOOK REVIEW MAP

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